THE UNIVERSITY OF NEW MEXICO BULLETIN

CATALOG ISSUE · · · 1967-68

DIRECTIONS FOR CORRESPONDENCE

The post office address of The University of New Mexico is Albuquerque, New Mexico 87106. Requests for specific information should be directed as follows:

GENERAL INFORMATION, ADDITIONAL LITERATURE, ENTRANCE, CREDENTIALS (other than Graduate School, School of Law, and School of Medicine), CALENDAR, REGISTRATION, ACADEMIC MATTERS ..... Director of Admissions

ADMISSIONS (other than Graduate School, Law School, and Medical School) Director of Admissions

GRADUATE SCHOOL (Admission and General Information) ..... Dean of the Graduate School

SCHOOL OF LAW (Admission and General Information) ..... Dean of the School of Law

SCHOOL OF MEDICINE (Admission and General Information) Dean of the School of Medicine

SUMMER SESSION ..... Director of the Summer Session

ANTHROPOLOGY FIELD SESSION ..... Chairman of the Department of Anthropology

APPLICATIONS FOR ADMISSION TO FIELD SESSIONS ..... Director of Admissions

EVENING CREDIT COURSES ..... Director of the Community College

HOUSING INFORMATION—DORMITORIES AND MARRIED HOUSING ..... Housing Director

SCHOLARSHIPS AND LOANS ..... Director of Student Aids

STUDENT EMPLOYMENT
- Federal Work-Study Program ..... Director of Student Aids
- Other Student Employment ..... Director of Placement

AIR FORCE RESERVE OFFICERS TRAINING CORPS ..... Air Force R.O.T.C. Unit

NAVAL RESERVE OFFICERS TRAINING CORPS ..... Executive Officer, Naval R.O.T.C. Unit

VETERAN'S INFORMATION ..... Veterans Affairs Officer

EXPENSES ..... Comptroller

CORRESPONDENCE AND EXTENSION COURSES ..... Extension Division

STUDENT AFFAIRS ..... Dean of Students

PERSONAL WELFARE ..... Dean of Women or Dean of Men

EDUCATIONAL, PERSONAL, AND CAREER COUNSELING ..... University College and Counseling Center

TESTING ..... Testing Center

GIFTS, GRANTS AND BEQUESTS ..... Director of Development

University office hours are, in general, 8:00 to 12:00 and 1:00 to 5:00 Monday through Friday. The Information desk of the Office of Admissions and Records, Room 102, Administration Building is also open 8:00 to 12:00 most Saturdays. Office hours of the University Cashier are 8:30 to 12:00 and 1:00 to 3:30 Monday through Friday. Administrative offices are open during most of the days of the official student Recess periods.

THE UNIVERSITY OF NEW MEXICO

BULLETIN

76TH CATALOG ISSUE

1967 unm 1968

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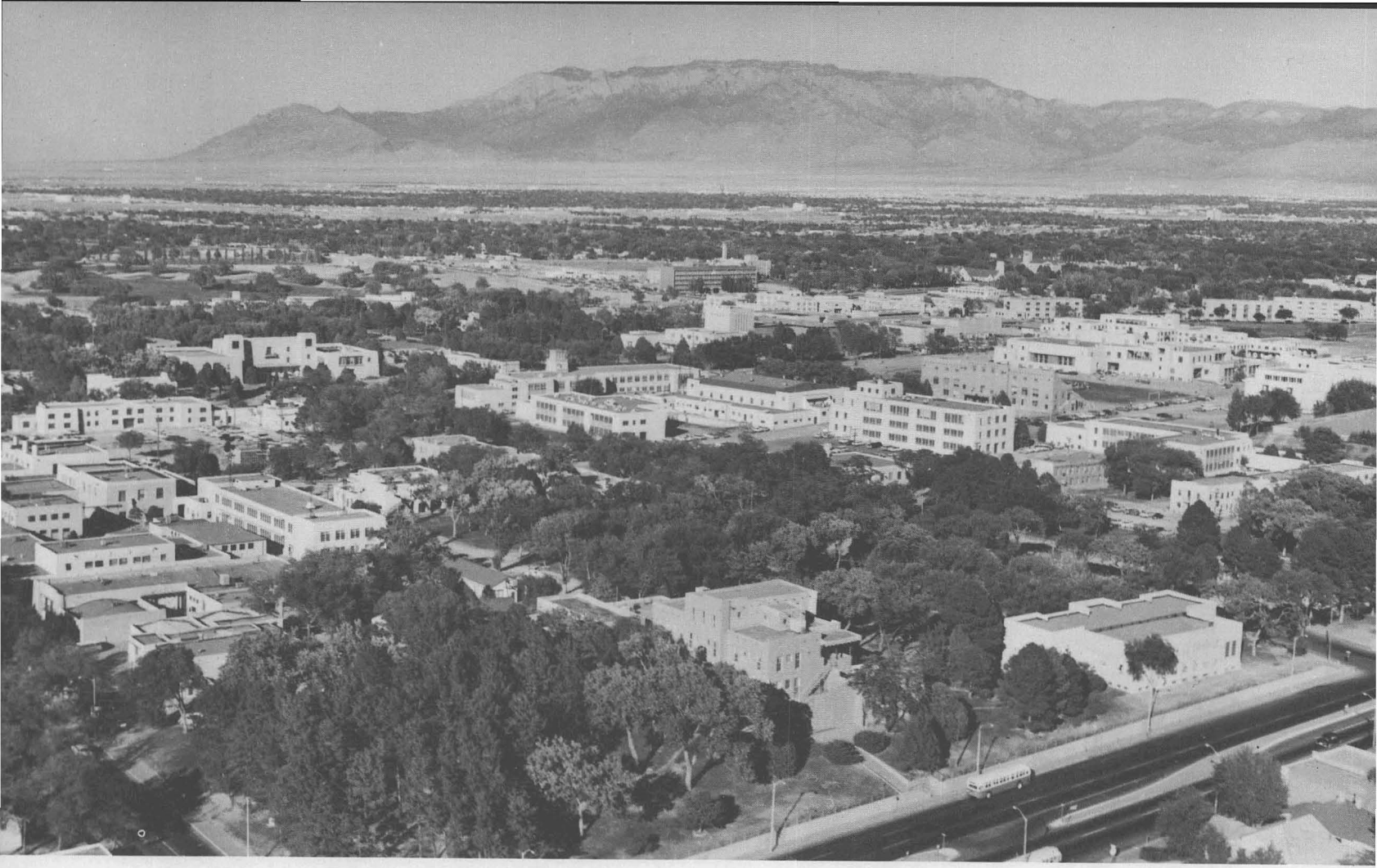

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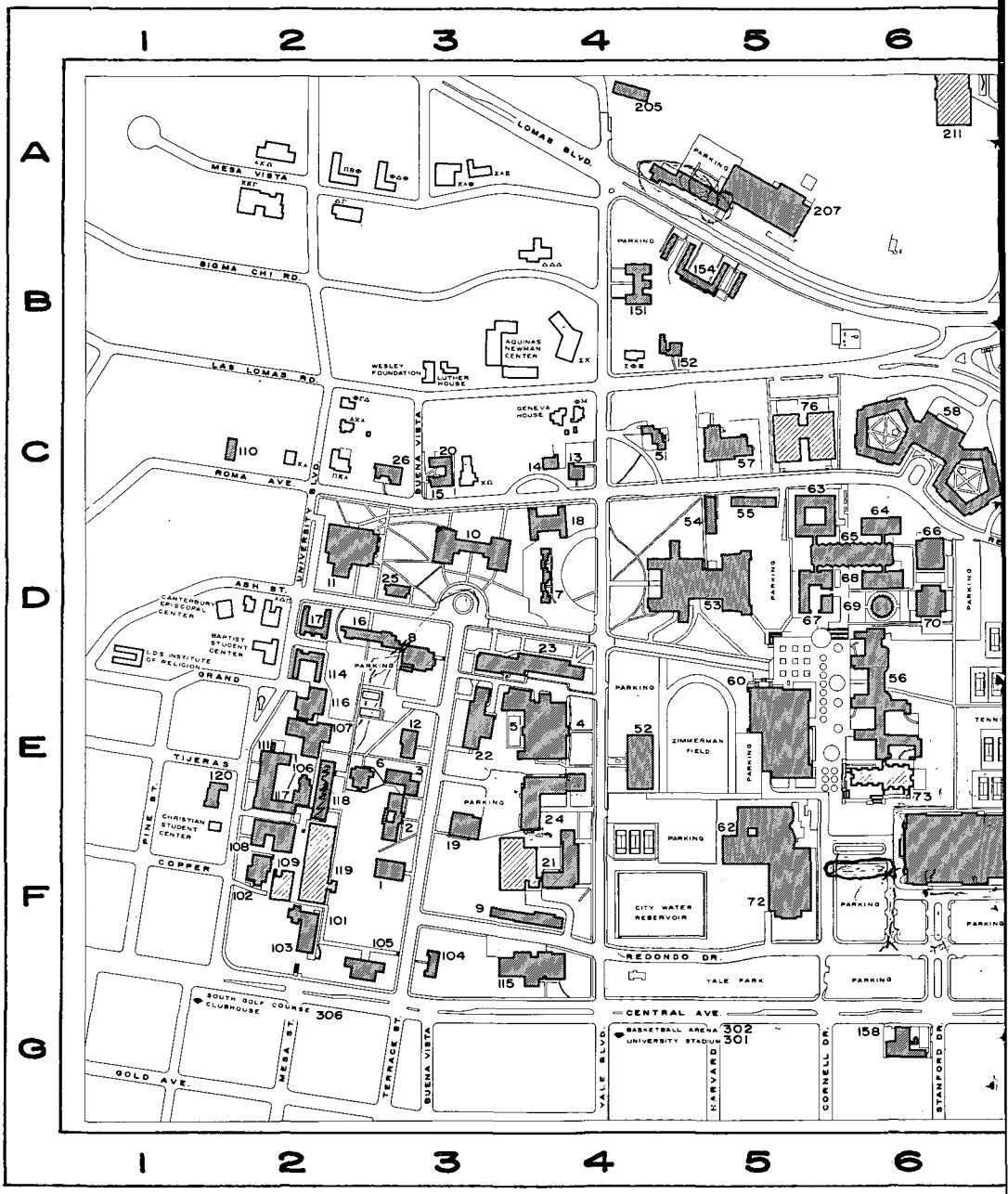
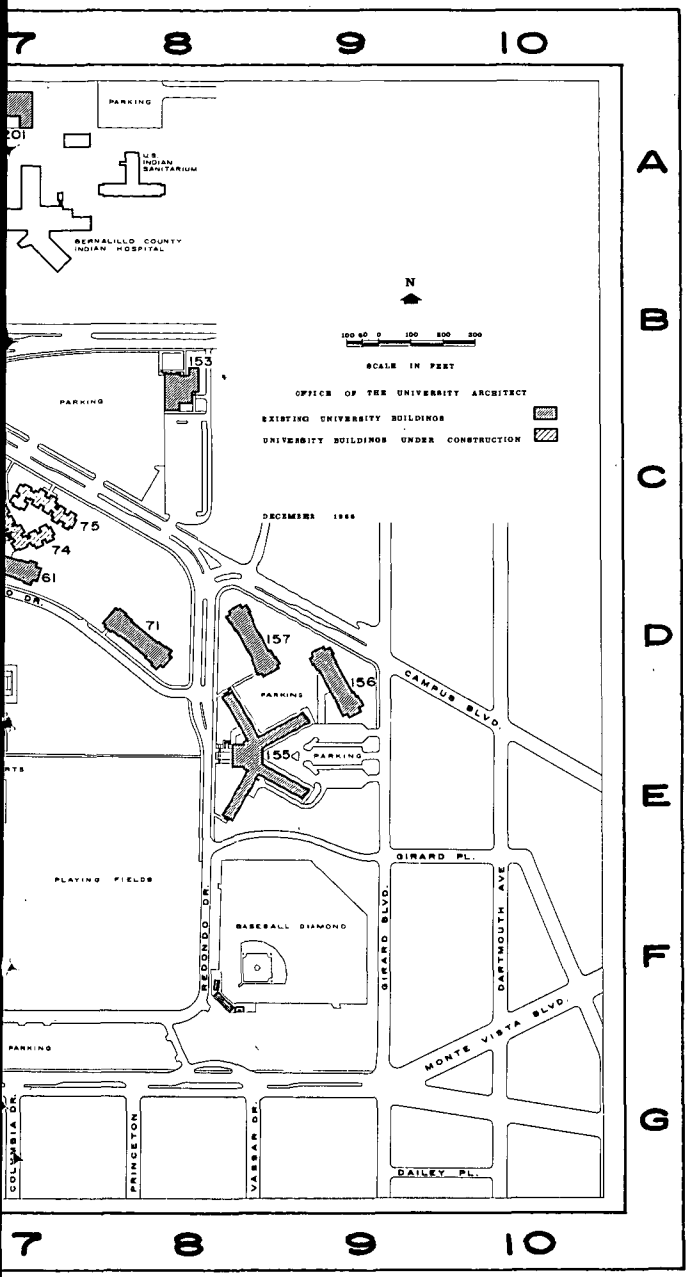


THE UNIVERSITY OF NEW MEXICO

CENTRAL CAMPUS

And a Portion of the North Campus



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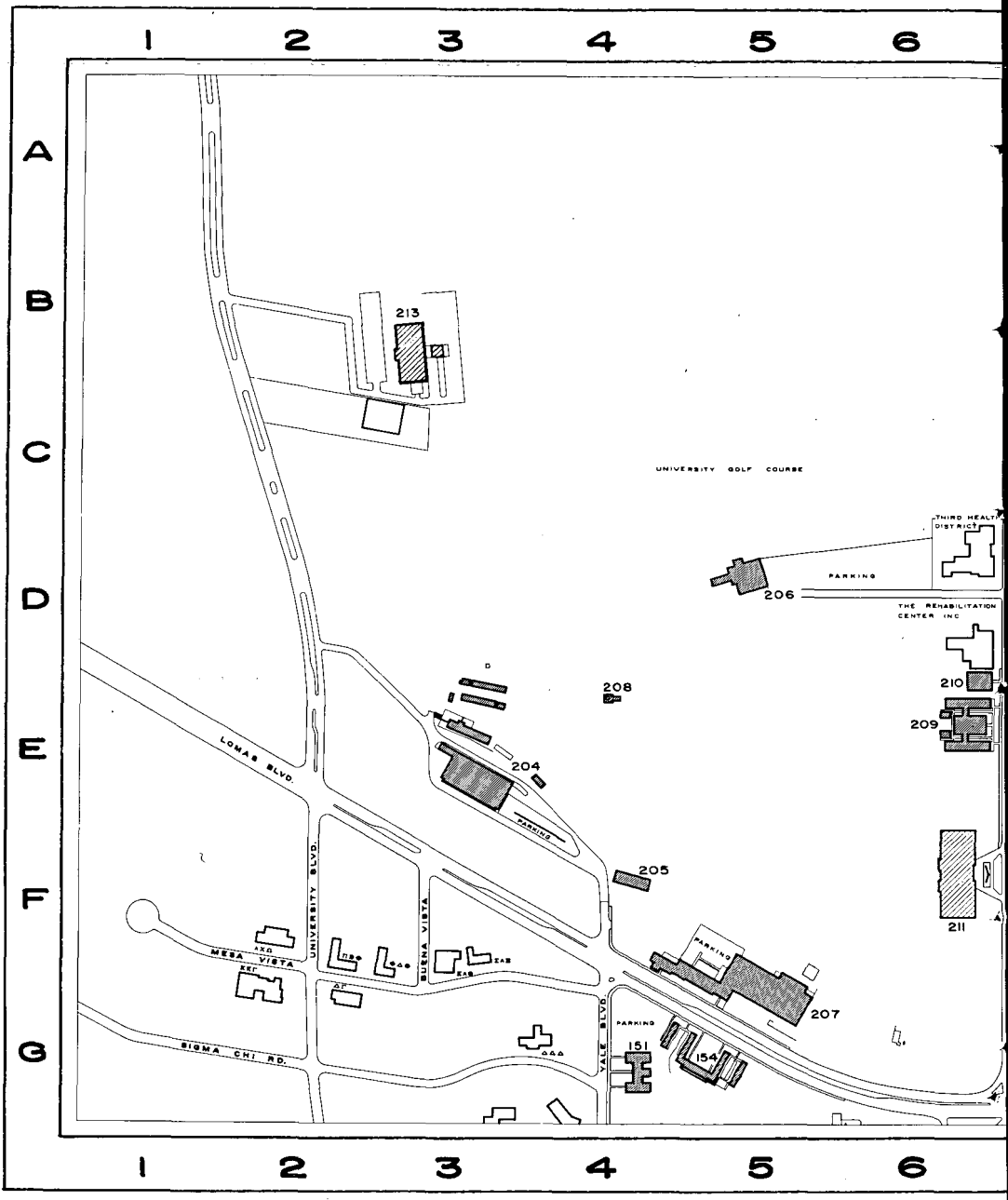
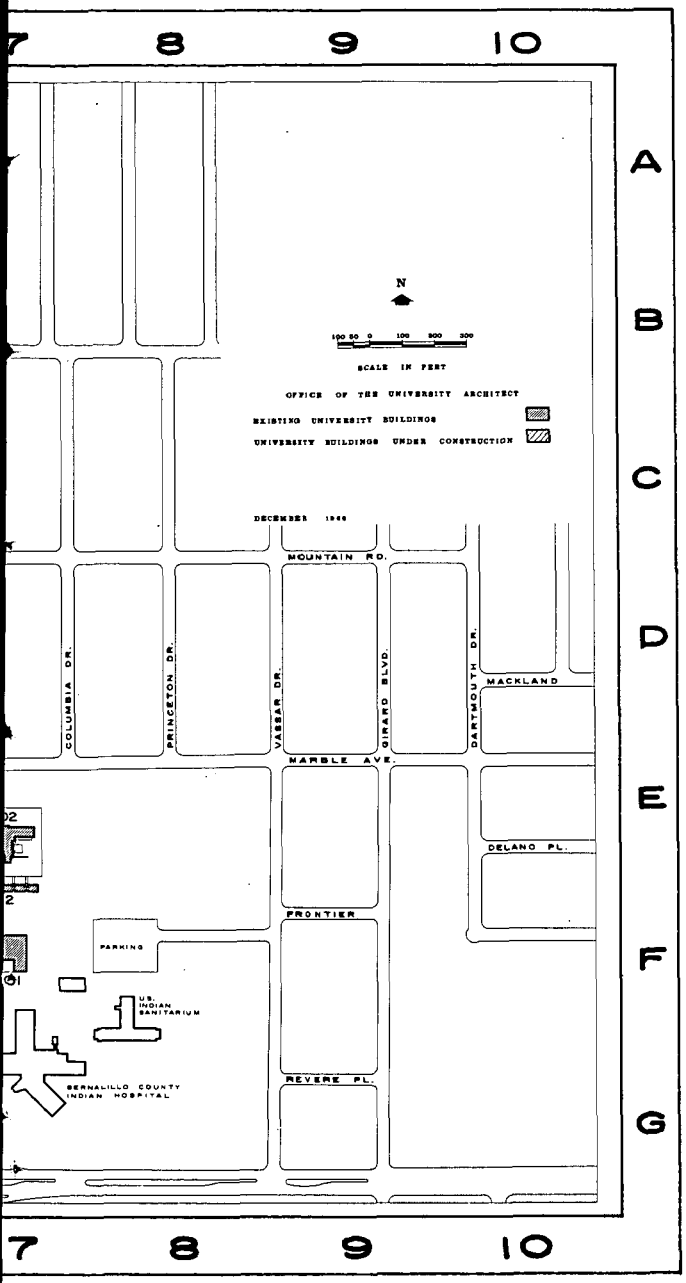


THE UNIVERSITY OF NEW MEXICO

NORTH CAMPUS

And a Portion of the Central Campus



North Campus Legend of Buildings

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1967

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ACADEMIC CALENDAR

1967 SUMMER SESSION **1967**

LAST DATE FOR RECEIPT OF APPLICATION AND CREDENTIALS OR APPOINTMENT REQUEST FOR ASSURANCE OF JUNE 17 REGISTRATION ..... June 10, Sat. Noon

New Student Orientation ..... June 16, Fri., 8 a.m.
Room 101, Anthropology Bldg.

Registration ..... June 17, Sat.

Instruction begins; late registration fee applies ..... June 19, Mon.

Late Registration closes; last day for additions to programs; change of program fee applies ..... June 23, Fri., 5 p.m.

End of second week; last day for withdrawal from course without grade ..... June 30, Fri., 5 p.m.

Fourth of July, holiday ..... July 4, Tues.

End of sixth week; last day for withdrawal from course without college approval ..... July 28, Fri., 5 p.m.

Session ends ..... Aug. 11, Fri., 10 p.m.

1967 ANTHROPOLOGY FIELD SESSION

Registration ..... June 17, Sat.

Field Session ends ..... July 28, Fri.

DEADLINE FOR RECEIPT OF ADMISSION APPLICATIONS AND CREDENTIALS FOR FALL SEMESTER ..... July 15

SEMESTER I, 1967-68 **1967**

New Student Orientation Period:
Assembly for New University College Students ..... Sept. 10, Sun., 7:30 p.m.
Johnson Gymnasium

Orientation for All New Undergraduates ..... Sept. 11, Mon.-Sept. 12, Tues.

Preregistration processing for new NROTC students, Stadium Building ..... Sept. 11, Mon.-Sept. 12, Tues.

Advisement and Registration for all students ..... Sept. 13, Wed.-Sept. 16, Sat.

Instruction begins; late registration fee applies ..... Sept. 18, Mon.

Late Registration closes; last day for additions to programs; change of program fee applies ..... Sept. 30, Sat. noon

End of fourth week; last day for withdrawal from course without grade ..... Oct. 13, Fri., 5 p.m.

Homecoming, holiday ..... Oct. 14, Sat.

NMEA Convention, recess begins ..... Oct. 25, Wed., 10 p.m.

Classes resume ..... Oct. 30, Mon., 7:30 a.m.

Midsemester; deadline for faculty grade reports for first half of Fall semester ..... Nov. 15, Wed., 9 a.m.

Thanksgiving recess begins ..... Nov. 22, Wed., 10 p.m.

Classes resume ..... Nov. 27, Mon., 7:30 a.m.

End of twelfth week; last day for removal of Incomplete grade; last day for withdrawal from course without college approval ..... Dec. 16, Sat. noon

Christmas recess begins ..... Dec. 20, Wed., 10 p.m.

ACADEMIC CALENDAR

	1968
Classes resume	Jan. 4, Thu., 7:30 a.m.
*Closed Period	Jan. 15, Mon.-Jan. 27, Sat.
*Pre-Examination Week	Jan. 15, Mon.-Jan. 21, Sun.
*Semester Final Examinations	Jan. 22, Mon.-Jan. 27, Sat.
Semester ends	Jan. 27, Sat., 10 p.m.
DEADLINE FOR RECEIPT OF ADMISSION APPLICATIONS AND CREDENTIALS FOR SPRING SEMESTER	**Jan. 1**

SEMESTER II, 1967-68

New Student Orientation Period: Assembly for New Students	Feb. 1, Thu., 7:30 p.m. Room 101, Anthropology Bldg.
Orientation for All New Undergraduates	Feb. 2, Fri.-Feb. 3, Sat.
Advisement and Registration for all students	Feb. 5, Mon.-Feb. 7, Wed.
Instruction begins; late registration fee applies	Feb. 8, Thu.
Late Registration closes; last day for additions to programs; change of program fee applies	Feb. 21, Wed., 5 p.m.
End of fourth week; last day for withdrawal from course without grade	Mar. 6, Wed., 5 p.m.
Midsemester; deadline for faculty grade reports for first half of Spring semester	Apr. 3, Wed., 9 a.m.
Spring recess begins	Apr. 10, Wed., 10 p.m.
Classes resume	Apr. 18, Thu., 7:30 a.m.
Honors Assembly	May 9, Thu., 7:30 p.m. ~~To be announced.~~
End of twelfth week; last day for removal of Incomplete grade; last day for withdrawal from course without college approval	May 8, Wed., 5 p.m.
Fiesta day, holiday	May 18, Sat. ~~To be announced.~~
*Closed Period	May 23, Thu.-June 5, Wed.
*Pre-Examination Week	May 23, Thu.-May 29, Wed.
*Semester Final Examinations	May 30, Thu.-June 5, Wed.
Deadline for Faculty Grade Reports for Graduating Students	May 30, Thu., 9 a.m.
Semester ends	June 5, Wed.. 10 p.m.
Commencement	June 7, Fri., 7:30 p.m.

1968 SUMMER SESSION

Registration (probable date)	June 15, Sat.
Instruction begins (probable date)	June 17, Mon.

* Pre-Examination Week and Semester Final Examination Week are closed to extracurricular and social campus activities.

IMPORTANT

The Catalog is the student's guide to the program and regulations of the University. The student is expected to familiarize himself with University regulations and to assume his proper responsibility in connection with them.

GLOSSARY OF COLLEGE TERMS

(as used at this University)

ACADEMIC YEAR . . . the period which includes the Summer Session (beginning in June), Semester I (mid-September through January), and Semester II (February to early June).

ACCREDITATION . . . the type of recognition held by an educational institution. There are a number of nationally recognized accrediting agencies and associations which are reliable authorities on the quality of training offered by educational institutions. By voluntarily conforming to the standards of excellence set by an agency or association, an institution becomes eligible for inclusion in its accredited or approved list. Regional accrediting associations such as the North Central Association of Colleges and Secondary Schools accredit the institution as a whole; professional agencies such as the Engineering Council for Professional Development are concerned in particular with the standards of the professional schools or programs in their respective fields.

ADMISSION . . . acceptance of an applicant for enrollment.

CLASS . . . the regularly scheduled meeting of an academic course; also a group of students whose graduation date is the same—freshman, sophomore, junior, senior.

CLASSIFICATION . . . the designation used for the student's year of study in terms of his progress toward his chosen degree—freshman, sophomore, junior, senior.

COLLEGE . . . an organizational unit of the University normally offering courses and curricula leading to a particular degree or degrees, and supervising the academic progress of students working toward those degrees. The University College supervises all freshmen programs but is not a degree-granting college. The degree colleges to which students may transfer, if eligible, after completion of the freshman year are: Arts and Sciences, Business Administration, Education, Engineering, Fine Arts, Nursing, and Pharmacy. The Graduate School, the School of Law, and the School of Medicine offer advanced study.

COURSE . . . a particular subject in which instruction is offered within a given period of time—thus, a course in English.

CREDIT . . . a numerical system for evaluating a student's progress toward a degree, described in terms of semester hours (see definition of semester hours). In order to earn a degree in the normal four-year period, the student will average at least 16 semester hours' credit per semester since the minimum credit required for any bachelor's degree is 124 semester hours.

CURRICULUM . . . a body of courses required for a degree or a diploma or constituting a major field of study.

DEGREE . . . a title bestowed as official recognition for the completion of a curriculum. The bachelor's degree is the first-level degree granted normally upon completion of a four-year course of study in a given field. The Juris Doctor degree, however, is a professional degree and normally requires seven years of college study. The master's degree is an advanced degree ranking above the bachelor's and below the doctorate. It normally requires at least one year beyond the bachelor's degree. The doctor's degree, or doctorate, is an advanced degree requiring at least three years beyond the bachelor's degree. The honorary degree is bestowed in recognition of outstanding merit or achievement without reference to the fulfillment of academic course requirements.

DEPARTMENT . . . a division of a college which offers instruction in a particular branch of knowledge; for example: the Department of English.

ELECTIVE . . . a course which the student may study by choice but which may or may not be required for his particular degree.

GRADUATE STUDENT . . . one who has earned a bachelor's degree and is enrolled for advanced work in the Graduate School.

MAJOR . . . the field of study in which the student chooses to specialize.

MINOR . . . the field of second emphasis. Fewer semester hours' credit are required for a minor than for a major.

NEW STUDENT . . . one who is registering for the first time in The University of New Mexico or for the first time in its Graduate School, its School of Law, or its School of Medicine, or a student transferring from non-degree to degree status in this University.

PREREQUISITE . . . the requirement which must be met before a certain course can be taken.

READMITTED STUDENT . . . one who has previously registered for residence credit in this University but whose attendance has been interrupted by one or more semesters.

REGISTRATION . . . the act of enrolling in classes. A registration period is held at the beginning of each semester and summer session. At that time, the student with the help of his adviser chooses a program of courses for the session and fills in forms necessary for proper recording of his enrollment.

RESIDENT-FOR-TUITION-PURPOSES . . . classification as a resident of the State of New Mexico for purposes of assessing tuition. Determined on the basis of regulations applying to all institutions of higher learning in New Mexico.

RESIDENT STUDY (OR RESIDENCE WORK) . . . enrollment in courses on the campus or in courses off-campus which are allowed by special action to count as residence credit, as distinguished from correspondence or extension credit.

RETURNING STUDENT . . . one who was registered in the immediately preceding session.

SEMESTER . . . an instructional period of 16 weeks. Semester I, or the Fall Semester, runs from mid-September through January; Semester II, or the Spring Semester, runs from February through early June.

SEMESTER HOUR . . . the credit that is allowed for one 50-minute period per week throughout a semester in a lecture class. A course listed for three hours' credit would meet for three periods per week throughout the semester; for example: on Monday, Wednesday, and Friday from 10:30 to 11:20 a.m. Credit for laboratory work, activity physical education, and ensemble music requires more class time per credit hour.

Many other terms are defined within the text of the catalog. Consult the index for page references.

THE REGENTS OF THE UNIVERSITY

THE HONORABLE DAVID F. CARGO, Governor of New Mexico, ex officio ..... Santa Fe

LEONARD J. DeLAYO, State Superintendent of Public Instruction, ex officio ..... Santa Fe

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IKE SINGER, JR. ..... Athletic Coordinator

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E. WAYNE BUNDY, Ph.D. ..... Program Manager
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[16] Center Discontinued January 20, 1967.

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[15] **ROGER WALLACE SHUGG,** Ph.D. ..... Director

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SAMUEL HOWARD NELSON, III, M.A. ..... Assistant Dean of Men

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GERALD M. SLAVIN, M.A. ..... Director

[4] On leave for the year.
[14] Resignation effective January 1, 1967.
[15] Appointment effective July 1, 1967.

NEW MEXICO UNION

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H. MAXWELL CAMPBELL, M.A. ..... Director
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MICHEAL HICKEY, M.D. ..... University Physician
HENRY BLAKE, M.D. ..... Psychiatrist (Part-time)
WILLIAM R. FISHER, M.D. ..... Psychiatrist (Part-time)
ERIC W. BEST, M.D. ..... University Physician (Part-time)
J. HUNT BURRESS, M.D. ..... University Physician (Part-time)
P. G. CORNISH, III, M.D. ..... University Physician (Part-time)
ALICE E. KELLEY, R.N. ..... Nursing Supervisor

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WALTER B. LEWIS ..... Safety Coordinator

CAMPUS SECURITY

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~~DORIS M. BARKER, B.S.~~ Glenna Armstrong as of 7/1/67 ..... Assistant Director
LEONA G. BRICKMAN ..... Assistant Director

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E. JAMES SMITH, Ed.D. ..... Director
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EDWIN JAMES SCHODORF ..... Director

PURCHASING

FRANK D. MANFREDI, B.B.A. ..... Purchasing Agent

EMERITI

[9] **KENNETH MILLER ADAMS,** N.A., Art Institute of Chicago; Art Students' League of New York. Professor Emeritus of Art.

NINA McGINNIES ANCONA, B.S., M.A., University of New Mexico. Associate Professor Emeritus of Music.

ARTHUR PAUL BAILEY, B.S., James Millikin University; M.S., Iowa State University. Professor Emeritus of Mechanical Engineering.

WILLIS LEE BARNES, Assistant Professor Emeritus of Health, Physical Education, and Recreation.

GLENN E. BLOOM, Superintendent Emeritus of the Printing Plant.

EARL BOWDICH, Superintendent Emeritus of the Department of Buildings and Grounds.

EDWARD FRANKLIN CASTETTER, B.S., Lebanon Valley College; M.S., Pennsylvania State College; Ph.D., Iowa State University. Academic Vice President Emeritus, Dean Emeritus of the Graduate School, Professor Emeritus of Biology.

ceased 1/3/68

KENNETH M. CHAPMAN, Art Institute of Chicago, Art Students' League, New York; Litt.D., University of Arizona; L.H.D., University of New Mexico; D.F.A., Art Institute of Chicago. Professor Emeritus of Indian Art.

LENA CECILE CLAUVE, B.A., University of New Mexico; M.A., Teachers College, Columbia University. Dean Emeritus of Women, Professor Emeritus of Music Education.

RALPH WADDELL DOUGLASS, B.A., D.F.A., Monmouth College; Art Institute of Chicago; Julian's Academy (Paris); Art Students' League of New York. Professor Emeritus of Art.

HELEN HEACOCK ELLIS, B.A., M.A., University of New Mexico; M.S.W., University of Chicago. Associate Professor Emeritus of Sociology.

JAMES LAWTON ELLIS, B.S. in E.E., M.S. in E.E., Georgia School of Technology. Professor Emeritus of Electrical Engineering.

GRACE LONG ELSER, B.Ped., New Mexico Highlands University; B.S., Kansas State College; M.S., Cornell University. Associate Professor Emeritus of Home Economics.

MARSHALL ELMER FARRIS, B.S. in M.E., Purdue University; M.S. in M.E., University of Texas. Dean Emeritus of the College of Engineering, Professor Emeritus of Mechanical Engineering.

G. WARD FENLEY, A.B., M.A., Baylor University; Ph.D., University of North Carolina. Director Emeritus of Information and Publications.

EVERETT HAYES FIXLEY, B.S. in Ed., University of Kansas; Ed.M., Ed.D., Harvard University. Professor Emeritus of School Administration.

ETHEL ARNOLD FLEMING, B.A., University of Nebraska; M.A., Colorado State College. Assistant Professor Emeritus of English.

ALBERT DUANE FORD, B.S. in M.E., M.S. in M.E., Montana State College. Professor Emeritus of Mechanical Engineering.

RAYMOND JOHN FOSS, B.S.C.E., South Dakota School of Mines and Technology. Professor Emeritus of Civil Engineering.

FRANK C. GENTRY, B.A., M.A., University of Oklahoma; Ph.D., University of Illinois. Professor Emeritus of Mathematics.

THERESA WITHERSTINE GILLETT, B.A., Rockford College; B.S. in L.S., M.A., University of Illinois. Chief Cataloger Emeritus, University Library.

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ROY WILLIAM JOHNSON, B.A., University of Michigan; Certificat, Université de Poitiers, France. Professor Emeritus of Physical Education.

RAYMOND JONSON, Chicago Academy of Fine Arts; Art Institute of Chicago; Portland, Oregon, Art School. Professor Emeritus of Art.

JULIA MARY KELEHER, B.A., M.A., University of New Mexico. Associate Professor Emeritus of English.

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[9] Deceased June 27, 1966.

FRANCIS MONROE KERCHEVILLE, B.A., Abilene Christian College; M.A., Ph.D., University of Wisconsin; Certificat, Université de Paris (Sorbonne). Professor Emeritus of Modern Languages.

JAY CARROLL KNODE, B.A., M.A., University of Nebraska; Ph.D., Columbia University. Dean Emeritus of the College of Arts and Sciences and of the General College, Professor Emeritus of Philosophy.

CLINTON H. S. KOCH, B.A., Hamline University; M.A., University of New Mexico. Assistant Professor Emeritus of Modern Languages.

WILLIAM MARTIN KUNKEL, Kimball School of Music; formerly flute soloist with John Philip Sousa's Band. Assistant Professor Emeritus of Music.

LINCOLN LaPAZ, B.A., Fairmont College; M.A., Harvard University; Ph.D., University of Chicago. Professor Emeritus of Mathematics and Astronomy.

ERNEST LYNNE MARTIN, B.S., New Mexico Western University; M.A., Ph.D., Indiana University. Professor Emeritus of Chemistry.

MAMIE TANQUIST MILLER, B.A., Hamline University; M.A., University of Minnesota; Ph.D., University of Southern California. Associate Professor Emeritus of Sociology.

LYNN BOAL MITCHELL, B.A., Ohio State University; M.A., Ph.D., Cornell University. Professor Emeritus of Classics.

LILLIAN SWENSON PANKRATZ, B.A. Colorado College; B.S., Simmons College; A.M.L.S. University of Michigan. Cataloger Emeritus.

THOMAS MATTHEWS PEARCE, B.A., University of Montana; M.A., Ph.D., University of Pittsburgh. Professor Emeritus of English.

GEORGE MAXWELL PETERSON, Ph.B., M.A., Ph.D., University of Chicago. Professor Emeritus of Psychology.

BESS CURRY REDMAN, B.A., University of New Mexico; B.Mus., Lamont School of Music. Assistant Professor Emeritus of Music.

FRANK DRIVER REEVE, B.A., M.A., University of New Mexico; Ph.D., University of Texas. Research Professor Emeritus of History.

JESSE TAYLOR REID, B.A., Howard Payne College; M.A., Baylor University; Ed.D., Teachers College, Columbia University. Professor Emeritus of Education.

JOHN DONALD ROBB, B.A., Yale University; Juilliard School of Music; American Conservatory at Fontainebleau; M.A., Mills College. Dean Emeritus of the College of Fine Arts, Professor Emeritus of Music.

JOSIAH COX RUSSELL, B.A., Earlham College; M.A., Ph.D., Harvard University. Professor Emeritus of History.

BENJAMIN SACKS, B.A., University of New Mexico; M.A., McGill University; Ph.D., Stanford University. Professor Emeritus of History.

FRANCE VINTON SCHOLES, B.A., M.A., Ph.D., Harvard University. Research Professor Emeritus of History.

RAMON JOSÉ SENDER, B.A., Instituto de Zaragoza; Lic. en Filosofia y Letras, Universidad Central de Madrid. Professor Emeritus of Modern Languages.

WILMA LOY SHELTON, B.A., B.L.S., University of Illinois. Librarian Emeritus, Professor Emeritus of Library Science.

ELIZABETH PARKINSON SIMPSON, B.S., University of New Mexico; M.S., Iowa State University. Professor Emeritus of Home Economics.

DANE FARNSWORTH SMITH, B.A., Vanderbilt University; M.A., Ph.D., Harvard University. Professor Emeritus of English.

VERNON GUY SORRELL, B.A., State University of Iowa; M.A., University of Illinois; Ph.D., University of California. Dean Emeritus of the College of Business Administration, Professor Emeritus of Business Administration.

[17] **EVELYN PHILLIPS STURGES,** M.D., Medical College of Virginia. University Physician Emeritus.

RALPH WILVER TAPY, B.S. in E.E., E.E., Rose Polytechnic Institute; M.S. in E.E., University of Michigan. Professor Emeritus of Electrical Engineering.

WILLIAM CHAUNCEY WAGNER, B.S. in C.E., C.E., South Dakota School of Mines; M.S. in C.E., Iowa State University. Professor Emeritus of Civil Engineering.

PAUL A. F. WALTER, JR., B.A., Ph.D., Stanford University; M.A., University of New Mexico. Professor Emeritus of Sociology.

ARTHUR ALBERT WELLCK, B.A., Carleton College; M.A., University of Chicago; Ph.D., Columbia University. Director Emeritus of Counseling and Testing.

[17] Deceased April 1, 1965.

FACULTY

FOR THE ACADEMIC YEAR 1966-67

TOM L. POPEJOY, B.A., M.A., University of New Mexico; LL.D., University of Arizona. President of the University.

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[7] **JAMES WILLIAM ABARR,** B.A., San Diego State College; M.A., University of Oregon. Visiting Lecturer in Journalism (Part-time).

WARD TERRY ABBOTT, B.S., U.S. Military Academy; C.E., M.C.E., Cornell University. Assistant Professor of Civil Engineering.

NORMA JEAN ADAMO, B.S., Loyola University; M.S., University of Maryland; Ph.D., University of Florida. Instructor in Anatomy.

CLINTON ADAMS, B.Ed., M.A., University of California. Dean of the College of Fine Arts, Professor of Art.

FREDERICK KARL ADAMS, B.S., Florida Southern College; M.Ed., Ph.D., University of Florida. Assistant Professor of Guidance and Special Education.

BOHUMIL ALBRECHT, C.E., Slovak Institute of Technology, Czechoslovakia; M.S., Ph.D., Columbia University. Professor of Mechanical Engineering.

HUBERT GRIGGS ALEXANDER, B.A., Pomona College; Ph.D., Yale University. Professor of Philosophy.

RICHARD CRENSHAW ALLEN, JR., B.S., Murray State College; A.M., University of Missouri. Instructor in Mathematics (Part-time).

SEYMOUR SAMUEL ALPERT, A.B., Ph.D., University of California (Berkeley). Assistant Professor of Physics.

DELORES GORDON ALLEYNE, B.A., M.D., University of Louisville. Adjunct Assistant Professor of Pediatrics (Part-time).

LINDA KAY AMOS, B.S., M.S., Ohio State University. Instructor in Nursing.

[7] **GLEN EUGENE ANDERSEN,** B.S.M.E., M.S., University of Nebraska. Adjunct Professor of Mechanical Engineering (Part-time).

ROBERT EDWIN ANDERSON, B.A., College of Wooster; M.D., Western Reserve Medical School. Associate Professor of Pathology.

ROGER YATES ANDERSON, B.S., M.S., University of Arizona; Ph.D., Stanford University. Associate Professor of Geology.

SHAREL ANDERSON, B.S., M.S., Utah State University. Instructor in Health, Physical Education, and Recreation.

JUNE ANDREWS, B.S., University of Michigan. Instructor in Health, Physical Education, and Recreation (Part-time).

FRANK ANGEL, JR., B.S., University of New Mexico; M.S., University of Wisconsin; Ph.D., University of California. Professor of Educational and Administrative Services.

GARO ZAREH ANTREASIAN, B.F.A., John Herron School of Art. Associate Professor of Art.

JOHN ANTHONY ARAGON, B.A., Highlands University; M.A., Ed.D., University of New Mexico. Assistant Professor of Educational Administration.

GEORGE WARREN ARMS, B.A., Princeton University; Ph.D., New York University. Professor of English.

ARTHUR ALEXANDER ARMSTRONG, JR., B.Ch.E., M.S., Ph.D., North Carolina State College. Associate Professor of Chemical Engineering.

KEITH AUGER, B.S., University of Wisconsin; M.Ed., Ed.D., University of Illinois. Assistant Professor of Elementary Education.

REYNALDO AYALA, B.A., University of Minnesota; M.A., Southern Illinois University. Instructor in Geography.

JOSEPHINE ELIZABETH BACA, B.S. in Nursing, St. Louis University; M.P.H., University of Minnesota. Assistant Professor of Nursing.

[3] **ARCHIE JOHN BAHM,** B.A., Albion College; M.A., Ph.D., University of Michigan. Professor of Philosophy.

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[7] First semester only.
[3] On sabbatical leave second semester.

GEORGE LeROY BAKER, Ph.C., B.S., University of Colorado; M.S., University of Florida; Ph.D., Purdue University. Professor of Pharmacy.

WILLIAM ERNEST BAKER, B.S.M.E., Ph.D., University of Texas; M.S., University of New Mexico. Associate Professor of Mechanical Engineering.

JANE LUCILE BALTZELL, B.A., Pembroke College; B.A., M.A., Cambridge University; M.A., University of California. Assistant Professor of English.

ROBERT KNIGHT BARNEY, B.S., M.S., University of New Mexico. Instructor in Health, Physical Education, and Recreation, Varsity Swimming Coach.

HARRY WETHERALD BASEHART, M.A., Ph.D., Harvard University. Professor of Anthropology, Co-editor of the **Southwestern Journal of Anthropology.**

JOHN MONTAYNE BATCHELLER, B.S., Potsdam Teachers College; M.A., Ed.M., Ph.D., University of South Carolina. Associate Professor of Music.

GRACE KATHLEEN BATES, B.S., University of Connecticut School of Nursing. Clinical Instructor in Nursing.

ERNEST WARREN BAUGHMAN, B.A., Ball State Teachers College; M.A., University of Chicago; Ph.D., Indiana University. Professor of English.

JOHN W. BEAKLEY, B.A., Texas Technological College; M.A., University of Texas; Ph.D., University of Arizona. Assistant Professor of Biology.

ELIZABETH MARIE BEAR, B.S., University of California (San Francisco); M.S., Wayne State University; C.N.M., Catholic Maternity Institute (Santa Fe). Assistant Professor of Nursing.

CHARLES LEROY BECKEL, B.S., University of Scranton; Ph.D., Johns Hopkins University. Associate Professor of Physics.

BARRETT LYNN BEER, B.A., DePauw University; M.A., University of Cincinnati; Ph.D., Northwestern University. Assistant Professor of History, Assistant Dean of the College of Arts and Sciences.

STOUGHTON BELL, II, B.A., M.A., Ph.D., University of California. Associate Professor of Mathematics, Director of the Computing Center.

EDWIN GEORGE BELZER, JR., B.S., West Chester State College; M.A., University of Maryland; Ph.D., University of Illinois. Assistant Professor of Health Education.

DAVID THEODORE BENEDETTI, B.A., M.A., University of New Mexico; Ph.D., University of Colorado. Associate Professor of Psychology, [10] Director of the Peace Corps Training Center.

BETTY SUE BENISON, B.S. Louisiana State University; M.A., University of Michigan. Instructor. in Health, Physical Education, and Recreation.

IVEN VELTON BENNETT, B.A., Chico State College; M.A., University of Nebraska; Ph.D., Boston University. Associate Professor of Geography.

HERSCHEL LAMAR BENTLEY, B.S., M.S., University of Arizona; Ph.D., Rensselaer Polytechnic Institute. Assistant Professor of Mathematics.

LOUIS CHARLES BERNARDONI, B.A., University of Illinois; M.A., Ed.D., Arizona State University. Assistant Professor of Guidance and Special Education.

DAVID WILMONT BESSEMER, B.S., M.S., University of New Mexico; Ph.D. University of Wisconsin. Assistant Professor of Psychology.

JOHN McCALL BICKNELL, B.A., M.D., University of Michigan. Assistant Professor of Neurology and Neurobiological Sciences.

KAREN KOSSUTH BIERSTEDT, B.A., Colorado College; M.A., University of California (Berkeley). Instructor in Modern and Classical Languages.

RONALD GALE BIERSTEDT, B.A., Colorado College; Ph.D., University of Colorado. Assistant Professor of Mathematics.

NADENE SIMON BLACKBURN, B.A., Eastern Washington College of Education; M.A., Northwestern University. Associate Professor of Dramatic Art.

WILLIAM RANDALL BLAKELY, B.A., M.D., University of California at Los Angeles. Assistant Professor of Surgery (Part-time).

JOSEPH BLANKENSHIP, B.S., Ohio University; M.M., Cincinnati Conservatory of Music; Ph.D., University of Texas. Professor of Music, Chairman of the Department of Music.

[7] **HAROLD WILLIAM BLODGETT,** A.B., A.M., Ph.D., Cornell University. Visiting Professor of English.

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[10] Center Discontinued January 20, 1967.

[7] First semester only.

[3] **JULIUS RUBIN BLUM,** B.A., Ph.D., University of California. Professor of Mathematics, Chairman of the Department of Mathematics and Statistics.

[4] **ARTHUR A. BLUMENFELD,** B.B.A., M.A., University of New Mexico. Assistant Professor of Business Administration, Director of the Bureau of Business Research.

LEWELLYN BOATWRIGHT, JR., B.S., Clemson Agricultural College; M.S., Ph.D., University of Illinois. Assistant Professor of Electrical Engineering.

PHILIP KARL BOCK, B.A., Fresno State College; M.A., University of Chicago; Ph.D., Harvard University. Associate Professor of Anthropology.

ROBERT ELGIN BOICE, B.A., M.A., Ph.D., Michigan State University. Visiting Assistant Professor of Psychology (Part-time).

W. ROBERT BOLAND, B.A., Davidson College; M.A., College of William and Mary. Instructor in Mathematics (Part-time).

CLAUDE MARIE BOOK, License, University of Paris; M.A., University of Texas. Assistant Professor of Modern Languages.

[3] **ERNEST TRUETT BOOK,** B.A., Baylor University; Ph.D., University of Texas. Assistant Professor of Modern Languages.

[8] **EARL WHITFIELD BOURNE,** A.B., Westminister College; M.S., Ph.D., Oklahoma State University. Assistant Professor of Biology.

GEORGE MOORE BOYDEN, B.A., Colorado College; M.D., University of Colorado Medical School. Assistant Professor of Medicine.

BEN JAY BRABB, B.S., M.S., D.D.S., University of Michigan. Instructor in Dental Hygiene (Part-time).

MARTIN DANIEL BRADSHAW, B.S.E.E., M.S.E.E., University of Wichita; Ph.D., Carnegie Institute of Technology. Assistant Professor of Electrical Engineering.

VIVIENNE MANSELL BRADY, B.A., M.A., University of California at Los Angeles. Instructor in Elementary Education (Part-time).

BENJAMIN BRANCH, A.B., Dartmouth College; M.D., Harvard Medical School. Adjunct Instructor in Obstetrics and Gynecology (Part-time).

MARTIN BRANDFONBRENER, M.D., Albany Medical College. Associate Professor of Medicine.

LOUIS ALEXANDER BRANSFORD, B.B.A., St. Michael's College; M.A., Ed.D., Colorado State College. Assistant Professor of Special Education.

JOHN G. BREILAND, B.A., Luther College; M.S., State University of Iowa; Ph.D., University of California at Los Angeles. Professor of Physics.

T. DARRELL BRESHEARS, D.D.S., University of Kansas City. Instructor in Dental Hygiene (Part-time).

JACOB JEROME BRODY, B.A., M.A., University of New Mexico. Assistant Professor of Anthropology, Curator of Exhibits.

CHESTER RAYMOND BROWN, B.S., M.S., Stout State College. Associate Professor of Education.

[8] **LAWRENCE CLIFFORD BROWN,** B.S., San Diego State College; M.S.W., Florida State University. Instructor in Home Economics (Part-time).

TIMOTHY ALAN BROWNING, B.A., Pacific Lutheran University; M.A., University of New Mexico. Instructor in Speech, Director of Forensics.

HOWARD CARNES BRYANT, B.A., University of California; M.S., Ph.D., University of Michigan. Associate Professor of Physics.

EDITH BUCHANAN, B.A., Meredith College; Ph.D., Duke University. Associate Professor of English.

JANE STANLEY BUCKLES, B.A., Iowa Wesleyan College; M.A., Northwestern University. Assistant Professor of Dramatic Art.

MARCIA MAE BULLARD, B.A., University of New Mexico; M.A., University of California. Instructor in English (Part-time).

EDWARD WAYNE BUNDY, B.A., M.A., State University of Iowa; Ph.D., University of Michigan. Program Director, Production Manager, Station KNME-TV; Associate Professor of Speech.

BAINBRIDGE BUNTING, B.S., University of Illinois; Ph.D., Harvard University. Professor of Art.

DORELEN FEISE BUNTING, B.A., Oberlin College; M.A., University of New Mexico. Instructor in English (Part-time).

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[3] On sabbatical leave second semester.
[4] On leave for the year.
[8] Second semester only.

[7] **DAVID LLOYD BURDICK,** A.B., University of California (Berkeley); M.A., University of New Mexico. Instructor in Mathematics (Part-time).

LLOYD ROBERT BURLEY, B.Ed., Duluth State Teachers College; M.A., Ph.D., State University of Iowa. Professor of Health, Physical Education, and Recreation.

[7] **MARY LOUISE BUTLER,** B.S., Iowa State University; M.S.Ed., University of New Mexico. Instructor in Mathematics (Part-time).

DOLORES SMITH BUTT, B.A., M.A., Ph.D., University of New Mexico. Assistant Professor of Speech.

WILLIAM JACKSON BYATT, B.S., Guilford College; M.S., University of North Carolina; Ph.D., University of Alabama. Associate Professor of Electrical Engineering.

WILLIAM ASMER BYNUM, JR., B.A., M.A., Marshall University; M.A., New Mexico Highlands University; Ph.D., University of Illinois. Associate Professor of Health, Physical Education, and Recreation.

THOMAS VINCENT CALKINS, B.A., M.A., University of New Mexico; M.F.A., Yale University. Assistant Professor of Dramatic Art.

FLOYD OLAN CALVERT, B.S.M.E., M.M.E., University of Oklahoma. Associate Professor of Mechanical Engineering.

LAURA MERLE CALVERT, B.A., M.A., University of New Mexico; Ph.D., Ohio State University. Assistant Professor of Modern Languages.

JOHN MARTIN CAMPBELL, B.A., University of Washington; Ph.D., Yale University. Associate Professor of Anthropology, Chairman of the Department of Anthropology.

PHILIP MONTGOMERY CAMPBELL, B.A., M.A., Ph.D., University of Colorado. Assistant Professor of Physics.

JUDITH WALLACE CAREY, B.A., University of Wichita; M.A., University of New Mexico. Assistant Professor of Speech.

HARRY JOHN CARLSON, B.S., M.S., New Mexico Western University; Ed.D., University of Arizona. Associate Professor of Elementary Education.

ALICE CARMONA-MORGAN, M.A., University of Lisbon. Instructor in Modern Languages (Part-time).

JOHN BRYAN CARNEY, JR., B.S., M.C.E., University of Oklahoma; Ph.D., University of Arizona. Assistant Professor of Civil Engineering.

GAIL LEE CARNS, B.A., Hiram College; M.A., University of New Mexico. Instructor in Mathematics (Part-time).

BARBARA ANNE CARPER, B.S., Texas Woman's University; M.Ed., Teachers College, Columbia University. Instructor in Nursing.

[7] **WILLIAM FREDERICK CARSTENS,** B.A., Ph.D., State University of Iowa. Instructor in English (Part-time).

DOROTHY MERRIL CARTER, B.S., M.A., University of Washington. Instructor in Nursing.

RAYMOND N. CASTLE, B.S., University of Idaho; M.A., Ph.D., University of Colorado. Professor of Chemistry, Chairman of the Department of Chemistry.

ROBERT FOSTER CASTLE, A.B., M.D., Western Reserve University. Associate Professor of Pediatrics.

WILMA KRAUSE CASTLE, A.B., M.D., Western Reserve University. Instructor in Pathology and Pediatrics.

THOMAS TELISPHORE CASTONGUAY, B.Met.Engr., University of Detroit; Ph.D., Iowa State University ~~of Iowa~~; Professor of Chemical Engineering, Chairman of the Department of Chemical Engineering.

ELMON LAMONT CATALINE, B.S., M.S., Ph.D., University of Michigan. Dean of the College of Pharmacy, Professor of Pharmacy.

ROY DUDLEY CATON, JR., B.S., M.A., Fresno State College; Ph.D., Oregon State University. Associate Professor of Chemistry.

ROBERT THOMAS CAUTHORNE, B.S., University of Virginia; M.D., Medical College of Virginia. Assistant Professor of Medicine.

COLSTON CHANDLER, Sc.B., Brown University. Assistant Professor of Physics.

FREDERICK MARTIN CHREIST, B.A., DePauw University; M.A., Ph.D., Northwestern University. Professor of Speech.

[7] First semester only.

LEON WHITNEY CHRISTENSEN, B.S., Utah State University. Instructor in Mechanical Engineering (Part-time).

KARL CHRISTMAN, B.S., M.B.A., Indiana University; C.P.A. Assistant Professor of Business Administration.

THOMAS WELDON CHRISTOPHER, B.A., Washington and Lee University; LL.B., University of Alabama; LL.M., S.J.D., New York University. Dean of the School of Law, Professor of Law.

PHAM CHUNG, License en Droit, University of Saigon; M.A., Ph.D., University of Pennsylvania. Assistant Professor of Economics.

PAUL ENGLISH CLARK, D.D.S., University of Kansas City. Instructor in Dental Hygiene (Part-time).

JAMES SPENCER CLARKE, B.S., Harvard College; M.D., Harvard Medical School. Professor of Surgery, Chairman of the Department of Surgery.

JOHN CHARLES CLARKE, Lieutenant, U.S.N., B.S., University of New Mexico. Assistant Professor of Naval Science.

EILEEN MARIE CLEARY, B.S.N., Loyola University; M.S.N., University of California. Instructor in Nursing.

WOODROW WILSON CLEMENTS, B.A., New Mexico Highlands University; M.A., University of New Mexico. Associate Professor of Health, Physical Education, and Recreation, Assistant Chairman of the Department of Health, Physical Education, and Recreation.

DOROTHY IRENE CLINE, B.A., University of Michigan; M.A., University of Chicago. Associate Professor of Government, Acting Director of the Division of Government Research.

RICHARD HUDSON CLOUGH, B.S., University of New Mexico; M.S., University of Colorado; Sc.D., Massachusetts Institute of Technology. Dean of the College of Engineering, Professor of Civil Engineering.

GARY LEE COATS, B.S., Portland State College; M.A., University of New Mexico. Instructor in Mathematics (Part-time).

RUBEN COBOS, B.A., M.A., University of New Mexico. Assistant Professor of Modern Languages.

[7] **JOANNE COCKELREAS,** B.A., University of Oregon; M.F.A., State University of Iowa. Instructor in English (Part-time).

SANFORD COHEN, B.A., M.A., Ph.D., Ohio State University. Professor of Economics.

FREDERICK COHN, B.S., Franklin and Marshall College; M.D., University of Pennsylvania. Adjunct Instructor of Obstetrics and Gynecology (Part-time).

VAN DEREN COKE, B.A., University of Kentucky; M.F.A., Indiana University. Professor of Art, Chairman of the Department of Art.

[8] **MODESTA ELMER COMEFORD,** B.A., M.A., University of Wisconsin. Instructor in Home Economics (Part-time).

LE ROY CONDIE, B.A., Brigham Young University; M.S., New York University; Ph.D., University of New Mexico. Associate Professor of Education.

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JOHN TERENCE CONWAY, B.F.A., John Herron School of Art; M.A., University of New Mexico. Instructor in Art (Part-time).

[7] **JAMES ARLIN COOPER,** B.S.E.E., M.S.E.E., University of New Mexico; Ph.D., Stanford University. Adjunct Professor of Electrical Engineering (Part-time).

JAMES GORDON COOPER, B.S., University of Maine; M.A., Ed.D., Stanford University. Associate Professor of Educational and Administrative Services.

THEODORE COOPER, B.S., Georgetown University; M.D., Ph.D., St. Louis University. Professor of Pharmacology and Surgery, Chairman of the Department of Pharmacology.

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FRANK CORTEZ, JR., B.S., University of New Mexico. Instructor in Health, Physical Education, and Recreation (Part-time).

[8] **WILLIAM THEODORE COTTON,** A.B., Cornell University; M.A., University of New Mexico. Instructor in English (Part-time).

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[7] First semester only.
[8] Second semester only.

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KENNETH EDWARD COX, B.Sc., Imperial College of Science and Technology, London; M.A.Sc., University of British Columbia; Ph.D., Montana State University. Assistant Professor of Chemical Engineering.

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BONNER MILTON CRAWFORD, B.A., Central Michigan University; M.A., Ph.D., University of Michigan. Professor of Education.

CLIFFORD SMEED CRAWFORD, B.A., Whitman College; M.S., Ph.D., Washington State University. Assistant Professor of Biology.

[4] **ROBERT WHITE CREELEY,** B.A., Black Mountain College; M.A., University of New Mexico. Lecturer in English.

VIRGINIA POINDEXTER CRENSHAW, B.A.B.E., Columbia Bible College; B.S.N., Vanderbilt University; M.P.H., University of North Carolina; Ed.D., George Peabody College for Teachers. Professor of Nursing.

GLENN ARTHUR CROSBY, B.S., Waynesburg College; Ph.D., University of Washington. Associate Professor of Chemistry.

NORTON BARR CROWELL, B.S., M.A., Southern Methodist University; M.A., Ph.D., Harvard University. Professor of English.

EDGAR FRANK CRUFT, B.S., Durham University, England; Ph.D., McMaster University, Canada. Assistant Professor of Geology.

CHARLES EDWARD CULLEN, D.D.S., Marquette University. Lecturer in Dental Hygiene (Part-time).

ALLIS W. CURRAN, B.A., University of Iowa; M.S.S., Smith College. Instructor in Psychiatric Social Work (Part-time).

WILLIAM SHELDON CURRAN. B.A., Harvard College; M.D., Harvard Medical School. Assistant Professor of Medicine, Assistant Dean of the School of Medicine.

ALICE HUSTON CUSHING, B.S., University of New Mexico; M.D., University of Colorado School of Medicine. Instructor in Pediatrics.

DONALD COLGETT CUTTER, B.A., M.A., Ph.D., University of California. Professor of History.

WILLIAM MINOR DABNEY, B.A., M.A., Ph.D., University of Virginia. Professor of History.

GUIDO H. DAUB, B.S., M.S., Ph.D., University of Wisconsin. Professor of Chemistry.

JEFFREY ROBERT DAVIS, B.E.E., M.S., Rensselaer Polytechnic Institute; Ph.D., Washington University. Assistant Professor of Mathematics.

PAUL BENJAMIN DAVIS, B.A., Oberlin College; M.A., Ph.D., University of Wisconsin. Assistant Professor of English.

NED J. DAVISON, B.A., University of Utah; M.A., Ph.D., University of California at Los Angeles. Associate Professor of Modern Languages.

KATHRYN GRISMER DAWSON, B.S., University of Miami; M.S., University of Colorado. Associate Professor of Nursing.

CHRISTOPHER DEAN, B.A., M.A., Ph.D., Harvard University. Associate Professor of Physics.

WILLIAM GEORGE DEGENHARDT, B.A., Syracuse University; M.S., Northeastern University; Ph.D., Texas Agricultural and Mechanical University. Assistant Professor of Biology.

WILLIAM FREDERICK JEKEL DeJONGH, B.A., M.A., University of Michigan; M.A., Ph.D., Harvard University. Professor of Modern Languages.

CALVIN LLOYD DePASS, B.S., Portland State College. Assistant Professor of Economics.

AGAMEMNON DESPOPOULOS, B.M., B.S., M.D., University of Minnesota. Associate Professor of Physiology.

JOHN RICHARD DETTRE, B.A., B.S.Ed., M.A., Ph.D., Ohio State University. Assistant Professor of Secondary Education.

[4] **ROBERT CHRISTOPHER DICK,** B.S.E., Kansas State Teachers College; M.A., University of New Mexico. Assistant Professor of Speech.

FRANKLIN MILLER DICKEY, B.A., University of Wisconsin; Ph.D., University of California at Los Angeles. Professor of English.

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[4] On leave for the year.

LORAIN FREDRICK DIEHM, B.S., M.S., Kansas State Teachers College. Assistant Professor of Health, Physical Education, and Recreation, Athletic Trainer.

SCOTT EDWARD DIETERT, B.A., Rice University; M.D., Washington University. Assistant Professor of Anatomy.

LOIS CHAMBERS DILATUSH, B.A., Ohio Wesleyan University; A.M., Oberlin College; Ph.D., University of Colorado. Assistant Professor of Sociology and Psychiatry.

EVERETT GEORGE DILLMAN, B.B.A., M.B.A., University of New Mexico; Ph.D. University of Texas. Assistant Professor of Business Administration, Acting Director of the Bureau of Business Research.

LETA PERRY DISALVO, B.A., Lawrence University; B.S., Spencerian College; M.A., Syracuse University. Instructor in English (Part-time).

HOWARD J. DITTMER, B.A., M.A., University of New Mexico; Ph.D., State University of Iowa. Professor of Biology, Assistant Dean of the College of Arts and Sciences.

ROBERT THOMAS DIVETT, B.S., Brigham Young University; M.A., George Peabody College for Teachers. Librarian of the Library of Medical Sciences, Associate Professor of Medical Bibliography.

JOVAN DJURIC, Elec. Engr., University of Belgrade; D.E.E., Serbian Academy of Sciences. Associate Professor of Electrical Engineering.

RONALD HOWARD DOLKART, B.A., University of California at Los Angeles; M.A., University of California (Berkeley). Assistant Professor of History.

RICHARD CHARLES DOVE, B.S. in M.E., M.S. in M.E., Ph.D., State University ~~of Iowa~~. Professor of Mechanical Engineering, Chairman of the Department of Mechanical Engineering.

ROBERT JOHN DOXTATOR, B.Ed., M.Ed., University of Indiana; Ed.D., University of Colorado. Associate Professor of Education.

HAROLD DEAN DRUMMOND, B.A., M.A., Colorado State College; Ed.D., Stanford University. Professor of Education, Chairman of the Department of Elementary Education.

DONALD WARD DUBOIS, B.S. in M.E., M.A., Ph.D., University of Oklahoma. Associate Professor of Mathematics.

[7] **ROSE MARIE DUDNEY,** B.A., M.A.T., Vanderbilt University. Instructor in Modern Languages. (Part-time).

MARIE-LOUISE duFAULT, B.S., Ed.M., Boston University. Assistant to the Director of the Dental Hygiene Program, Assistant Professor of Dental Hygiene.

ROBERT MANLY DUNCAN, B.A., M.A., Oberlin College; Ph.D., University of Wisconsin. Professor of Modern Languages.

ANN BUSH DUNLAP, B.A., M.A., University of Texas. Instructor in English.

JACK LOWELL DYER, B.A., Oklahoma City University; M.A., University of North Carolina; Ph.D., University of Colorado. Assistant Professor of Sociology.

ROBERT ROZEBOOM DYKSTRA, B.A., M.A., Ph.D., University of Iowa. Assistant Professor of History.

CHARLES DOUGLAS EARL, B.A., M.A., Chapman College. Instructor in Health, Physical Education, and Recreation (Part-time).

WILLIAM SHERWIN EBERLY, B.S., Seattle Pacific College; M.S., University of Washington; Ph.D., Washington State University. Assistant Professor of Mathematics.

ROGER DAVID ECK, B.S.Ch.E., Clarkson College; M.B.A., University of New Mexico. Instructor in Business Administration (Part-time).

RALPH LEMON EDGEL, B.A., University of Utah; M.B.A., Northwestern University. Professor of Business Administration; Associate Director of Business Economics, Bureau of Business Research.

RONALD RALPH EICHORN, B.S., University of Utah. Lecturer in Architecture.

FLORENCE HAWLEY ELLIS, B.A., M.A., University of Arizona; Ph.D., University of Chicago. Professor of Anthropology.

HENRY CARLTON ELLIS, B.S., College of William and Mary; M.A., Emory University; Ph.D., Washington University. Associate Professor of Psychology.

ROBERT M. ELLIS, B.A., Mexico City College; M.F.A., University of Southern California. Assistant Director of the University Art Museum, Assistant Professor of Art.

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[7] First semester only.

WILLIS HILL ELLIS, A.B., Wabash College; J.D., Indiana University. Associate Professor of Law.

WOLFGANG EUGENE ELSTON, B.S., City College of the City of New York; M.A., Ph.D., Columbia University. Associate Professor of Geology.

ROGER CHARLES ENTRINGER, B.S., State University of Iowa; M.S., Ph.D., University of New Mexico. Assistant Professor of Mathematics.

BERNARD EPSTEIN, B.A., M.S., New York University; Ph.D., Brown University. Professor of Mathematics, Acting Chairman of the Department of Mathematics.[8]

AHMED ERTEZA, B.S., M.S., Calcutta University; M.S.E.E., E.E., Stanford University; Ph.D., Carnegie Institute of Technology. Professor of Electrical Engineering.

WAYNE C. EUBANK, B.S., West Texas State College; M.A., Northwestern University; Ph.D., Louisiana State University. Professor of Speech, Chairman of the Department of Speech.

MELBOURNE GRIFFITH EVANS, B.A., Reed College; M.A., Ph.D., University of California. Associate Professor of Philosophy.

WILLIS LYNN EVERETT, B.S., M.S., Ph.D., University of Michigan. Associate Professor of Nuclear Engineering, Acting Chairman of the Department of Nuclear Engineering.

KARL THOMAS FELDMAN, JR., B.S.M.E., University of Kansas; M.S.M.E., Ph.D., University of Missouri. Assistant Professor of Mechanical Engineering.

GARY GENE FERGUSON, B.S., University of Houston; M.S., Baylor University. Instructor in Pharmacology.

PELAYO HIPOLITO FERNANDEZ, B.A., University of California; M.A., Wayne State University; Ph.D., Salamanca University, Spain. Assistant Professor of Modern Languages.

DOUGLAS PETER FERRARO, A.B., Columbia College; M.A., Ph.D., Columbia University. Assistant Professor of Psychology.

WILLIAM CARL FIEDLER, B.S., M.S., Ph.D., Purdue University. Associate Professor of Pharmacy.

JAMES SMITH FINDLEY, B.A., Western Reserve University; Ph.D., University of Kansas. Associate Professor of Biology.

MYRON FINK, B.A., Cornell University; LL.B., LL.M., New York Law School; M.S. in L.S., Columbia University. Law Librarian, Associate Professor of Law.

THEODORE NEWSON FINLEY, B.S., University of Washington; M.D., Johns Hopkins Medical School. Associate Professor of Medicine.

HOWARD VIVIAN FINSTON, B.A., M.A., Ph.D., Stanford University. Dean of the College of Business Administration, Professor of Business Administration.

ARNOLD GARTH FISHER, B.S., Brigham Young University; M.S., Sacramento State College. Instructor in Health, Physical Education, and Recreation (Part-time).

REGINALD HEBER FITZ, B.A., M.D., Harvard University. Dean of the School of Medicine, Professor of Medicine.

J. PAUL FITZSIMMONS, B.S., Ph.D., University of Washington. Professor of Geology.

[a] **MARTIN WILLIAM FLECK,** B.S., M.S., University of New Mexico; Ph.D., University of Colorado. Professor of Biology.

ROBERT FERDINAND FLEISSNER, B.A., M.A., The Catholic University of America; Ph.D., New York University. Instructor in English.

TROY SMITH FLOYD, B.J., M.A., University of Missouri; Ph.D., University of California. Associate Professor of History.

MORRIS ALLAN FORSLUND, B.A., M.A., Ph.D., Yale University. Assistant Professor of Sociology.

FRANK PARKER FOWLER, JR., B.S., M.S., University of Colorado. Assistant Professor of Business Administration, Director of Data Processing.

[8] **JOSEPH FRANK,** B.A., M.A., Ph.D., Harvard University. Professor of English, Chairman of the Department of English.

DONALD THA FRAZIER, B.S., M.S., Ph.D., University of Kentucky. Assistant Professor of Physiology.

KURT FREDERICK, Graduate of the State Academy of Music and State College of Music in Vienna; B.S., University of New Mexico; M.Mus., Ph.D., University of Rochester. Professor of Music.

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[a] On sabbatical leave second semester.

[8] Second semester only.

WILLIAM JENNINGS BRYAN FRENCH, SR., B.S., M.S., University of Tennessee. Instructor in Health, Physical Education, and Recreation (Part-time).

NATHANIEL ABRAHAM FRIEDMAN, B.S., M.S., University of Michigan; Ph.D., Brown University. Assistant Professor of Mathematics.

GENE FRUMKIN, B.A., University of California at Los Angeles. Lecturer in English.

ROBERT WATKINS FUGATE, Lieutenant, U.S.N.; B.S., University of North Carolina. Assistant Professor of Naval Science.

WILLIAM ROGERS GAFFORD, B.S., University of New Mexico; M.S., University of Texas. Professor of Civil Engineering, Special Adviser in the University College.

DAVID GALE, B.S., College of the City of New York; Ph.D., University of California (Berkeley). Assistant Professor of Microbiology.

LEONARDO GARCIA-BUNUEL, M.D., University of Zaragoza, Spain. Assistant Professor of Psychiatry.

[7] **GARLAND GENE GARDENHIRE,** B.S., West Texas State College; M.S., University of New Mexico. Instructor in Mathematics (Part-time).

WALTER ALVIN GATHMAN, B. Arch., Yale University. Lecturer in Architecture (Part-time).

[4] **BRUNO GEBA,** Diploma, National Institute for Physical Education (Vienna); Absolutorium; Doktorat an der Philosophischen Fakultaet, University of Vienna. Assistant Professor of Health, Physical Education, and Recreation, Director of Student-Faculty Recreation and Intramurals.

DOUGLAS ROLAND GEORGE, B.A., M.A., University of Minnesota. Assistant Professor of Art.

JOHN DOUGLAS GIBB, B.S., M.A., University of Utah; Ph.D., Wayne State University. Assistant Professor of Speech.

JAMES DARRELL GIBSON, B.S.A.E., M.S.A.E., Purdue University. Instructor in Mechanical Engineering.

ROBERT STANDISH GILLESPIE, B.A., University of Illinois; M.A., University of Iowa. Instructor in English (Part-time).

RONALD ERIC GINN, B.Arch., B.L.A., University of Florida. Lecturer in Architecture (Part-time).

CHARLOTTE WOODS GLICKFIELD, B.S., East Tennessee State University; M.A., Duke University. Instructor in English.

DOLORES GONZALES, B.A., Highlands University; M.A., Teachers College, Columbia University. Assistant Professor of Elementary Education.

NANCIE L. SOLIEN DE GONZALEZ, B.S., University of North Dakota; M.A., Ph.D., University of Michigan. Associate Professor of Anthropology and Sociology.

WILLIAM ANTHONY GOODMAN, B.F.A., M.F.A., San Francisco Art Institute. Instructor in Art.

CHARLES THERON GRACE, B.S.M.E., University of Colorado; M.S.M.E., University of Illinois. Professor of Mechanical Engineering, Assistant Dean of the College of Engineering, Director of the Sandia Technical Development and Educational Aids Programs.

WILLIAM GEORGE BROWN GRAHAM, B.A., Harvard University; M.D., University of Pennsylvania. Assistant Professor of Medicine.

WAYNE WILLIS GRANNEMANN, B.S.E.E., M.A., Ph.D., University of Texas. Professor of Electrical Engineering, Director of the Bureau of Engineering Research.

[1] **JOHN ROOT GREEN,** B.S., Ph.D., University of California. Professor of Physics.

ARNOLD H. GREENHOUSE, B.A., M.D., University of Kansas. Associate Professor of Medicine.

RICHARD JEROME GRIEGO, B.S., University of New Mexico; M.S., Ph.D., University of Illinois. Assistant Professor of Mathematics.

CHARLES RAY GRIFFITH, B.A., Ohio State University; Ph.D., Harvard University. Associate Professor of Education.

RONALD LLOYD GROW, B.A., M.A., University of California at Los Angeles. Assistant Professor of Art.

MERCEDES GUGISBERG, B.S., M.S., University of Minnesota. Associate Professor of Health, Physical Education, and Recreation.

FRANK JAMES GUSZAK, B.S.Ed., M.Ed., University of Texas; Ph.D., University of Wisconsin. Assistant Professor of Elementary Education.

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[7] First semester only.

[4] On leave for the year.

[1] On sabbatical leave for the year.

[7] **FRED D. GUTIERREZ,** B.S., M.A., University of New Mexico. Instructor in Mathematics (Part-time).

ROBERT EDWARD HAEBEL, Lt. Col., U.S.M.C.; B.S., Westchester Teachers College. Assistant Professor of Naval Science.

WILLIAM WALTER HAKALA, B.S., M.S.C.E., University of Minnesota; Ph.D., Virginia Polytechnic Institute. Assistant Professor of Civil Engineering.

[8] **JEROME HALL,** Ph.B., J.D., University of Chicago; Jur.Sc.D., Columbia University; S.J.D., Harvard Law School; LL.D., University of North Dakota. Visiting Professor of Law.

REINA FRANCES HALL, B.S., M.S., Catholic University of America; Ph.D., St. John's University. Professor of Nursing, Acting Dean of the College of Nursing.

DAVID BOYCE HAMILTON, JR., B.A., M.A., University of Pittsburgh; Ph.D., University of Texas. Professor of Economics.

ROBERT JOSEPH HANNY, B.S., M.A., Ph.D., Ohio State University. Assistant Professor of Secondary Education.

LEE DUANE HANSEN, B.S., Ph.D., Brigham Young University. Assistant Professor of Chemistry.

WILLIAM RICHARD HARDY, B.S., M.D., University of Illinois. Assistant Professor of Medicine.

CHARLES CLARK HARNER, B.A., Muskingum College; M.A., University of New Mexico. Instructor in Mathematics (Part-time).

ROBERT LYNN HARRIS, B.S., West Virginia Wesleyan; M.A., University of New Mexico. Instructor in Mathematics (Part-time).

RUTH BRODERICK HARRIS, B.S., Cornell University; M.S., University of Tennessee. Assistant Professor of Home Economics.

[7] **HELEN MAYER HARRISON,** B.A., Queens College; M.A., New York University. Instructor in English.

NEWTON HARRISON, B.F.A., M.F.A., Yale University. Assistant Professor of Art.

FREDERICK MICHAEL HART, B.S., LL.B., Georgetown University; LL.M., New York University. Visiting Professor of Law.

JOSEPH DAVID HASSETT, A.B., Licentiate in Philosophy, Licentiate in Theology, Woodstock College; M.A., Fordham University. Lecturer in Philosophy.

[11] **FERREL HEADY,** A.B., A.M., Ph.D., Washington University. Academic Vice President, Professor of Government.

EDWARD HENRY HEATH, B.S., College of Idaho; M.Ed., University of Idaho; Ph.D., University of Illinois. Assistant Professor of Health, Physical Education, and Recreation.

KATHLEEN FRANCES HEATH, B.A., Marylhurst College; M.S., University of Illinois. Instructor in Health, Physical Education, and Recreation (Part-time).

JOHN JAMES HEIMERICH, B.S., M.S., Kansas State College. Professor of Architecture.

PETER ALLARD HELFERT, B.S. in Ed., University of Kansas; M.A. in Ed., Columbia University; Ph.D., University of Texas. Associate Professor of Educational and Administrative Services.

[8] **JEAN DRAKE HENDRICKSON,** B.S.Ed., Ohio State University; M.A., University of New Mexico. Instructor in Educational and Administrative Services (Part-time).

MORRIS S. HENDRICKSON, B.S., Birmingham Southern College; M.A., Ph.D., Ohio State University. Director of Institutional Research, Professor of Mathematics.

WILLIAM HENTEL, B.S., New York University; M.D., University Basel, Switzerland. Associate Professor of Pathology.

SIMON HERMAN, B.S., M.S., Ph.D., Wayne State University. Lecturer in Business Administration (Part-time).

REUBEN HERSH, B.A., Harvard University; M.S., Ph.D., New York University. Assistant Professor of Mathematics.

FRANK CUMMINGS HIBBEN, B.A., Princeton University; M.S., University of New Mexico; Ph.D., Harvard University. Professor of Anthropology, Director of the Museum of Anthropology.

MARTHA BETH HICKS, B.S.N., Washington University; M.S., University of Maryland. Associate Professor of Nursing.

RICHARD CHARLES HILDNER, B.S., College of Wooster; M.A., Ph.D., Ohio State University. Visiting Lecturer in Mathematics (Part-time).

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[7] First semester only.
[8] Second semester only.
[11] As of January 1, 1967.

[5-3]**HAMLIN LEWIS HILL, JR.**, B.A., University of Houston; M.A., Ph.D., University of Texas. Associate Professor of English.

WILLARD WILLIAMS HILL, B.A., University of California; Ph.D., Yale University. Professor of Anthropology.

ANTHONY GROVE HILLERMAN, B.A., University of Oklahoma; M.A., University of New Mexico. Associate Professor of Journalism.

ABRAHAM HILLMAN, B.A., M.A., Brooklyn College; Ph.D., Princeton University. Associate Professor of Mathematics.

FRED JOHN HINGER, B.A., Texas Technological College; M.A., Colorado State College of Education. Assistant Professor of Health, Physical Education, and Recreation.

GEORGE HIRSHFIELD, B.A., Brooklyn College; M.A., Columbia Teachers College. Assistant Professor of Secondary Education.

CLARENCE CLAYTON HOFF, B.A., Bradley University; M.S., Ph.D., University of Illinois. Professor of Biology.

ANNIE LAURA HOGAN, B.A., University of New Mexico. Instructor in English (Part-time).

RICHARD LEE HOLEMON, B.S., Southeast Missouri State College; M.A., Ed.D., Washington University. Assistant Professor of Educational and Administrative Services.

JOANNE FIELD HOLLAND, A.B., Bryn Mawr College; B.A., Oxford University; Ph.D., Harvard University. Assistant Professor of English.

[7] **ERVIN FREDERICK HOLLE**, B.S., Concordia Teachers College; M.A., University of New Mexico. Instructor in Educational and Administrative Services (Part-time).

ROBERT HOLZAPFEL, B.A., M.A., Ph.D., State University of Iowa. Assistant Professor of Modern Languages.

TAMARA HOLZAPFEL, B.A., University of North Carolina at Greensboro; M.A., Ph.D., State University of Iowa. Assistant Professor of Modern Languages.

LISE MARIE HOSHOUR, B.A., Barnard College. Instructor in Modern Languages (Part-time).

[2] **ARTHUR VINCENT HOUGHTON, III**, B.S., M.S., University of Illinois; Ph.D., Purdue University. Professor of Mechanical Engineering.

ALVIN WENDELL HOWARD, B.A.Ed., M.Ed., Western Washington State College; B.A., University of Washington; Ed.D., University of Oregon. Assistant Professor of Secondary Education.

JOHN LEE HOWARTH, B.A., M.A., University of Cambridge; B.S., M.S., Ph.D., University of London. Associate Professor of Physics.

MARY ANN HOWELL, B.A., Antioch College. Instructor in Elementary Education.

[1] **EDWIN CHASE HOYT**, B.A., Harvard University; LL.B., Harvard Law School; Ph.D., Columbia University. Professor of Government, Chairman of the Department of Government.

[7] **CHUN-KIANG HUANG**, B.Sc., D.Sc., Tohoku University, Sendai, Japan. Visiting Professor of Geology (Part-time).

WILLIAM HENRY HUBER, JR., B.A., LL.B., Ohio State University. Director of the University College and Counseling Center, Professor of Business Administration.

GEORGE WILLIAM HUDSON, B.S.E., University of Arkansas; M.S., University of New Mexico. Instructor in Mathematics (Part-time).

[4] **GARY CLYDE HUFBAUER**, B.A., Harvard College; Ph.D., University of Cambridge. Assistant Professor of Economics.

MARY KATHERINE VOGT HUFF, B.S., M.S., University of Texas. Instructor in Home Economics.

[7] **WILLIAM CARROLL HUGHES**, B.S., University of Utah; M.S., University of New Mexico. Instructor in Civil Engineering (Part-time).

JIM DUFF HUGHEY, B.A., Oklahoma State University; M.S., Ph.D., Purdue University. Assistant Professor of Speech.

CORNIE LEONARD HULSBOS, B.S., M.S., Ph.D., Iowa State University. Professor of Civil Engineering, Chairman of the Department of Civil Engineering.

GEORGE MILLARD HUNSLEY, B.A., University of New Mexico. Visiting Lecturer in Journalism (Part-time).

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[5] On leave first semester.
[3] On sabbatical leave second semester.
[7] First semester only.
[2] On sabbatical leave first semester.
[1] On sabbatical leave for the year.
[4] On leave for the year.

DAVID HERBERT HUNT, B.A., University of New Mexico. Instructor in Health, Physical Education, and Recreation (Part-time).

RICHARD GEORGE HUZARSKI, B.S.C.E., University of Wisconsin; M.S., Texas Technological College. Professor of Civil Engineering.

[3] **CHARLES LATIF HYDER**, B.S., M.S., University of New Mexico; Ph.D., University of Colorado. Assistant Professor of Physics.

[2] **FRANK WILLIAM IKLÉ**, B.A., Ph.D., University of California at Berkeley. Professor of History.

DENNY OUZTS INGRAM, JR., B.A., LL.B., University of Texas. Associate Professor of Law.

HELEN MOYER INGRAM, B.A., Oberlin College. Assistant Professor of Government.

WILSON HOWARD IVINS, B.A., Western Michigan University; M.A., University of Arizona; Ed.D., University of Colorado. Professor of Education, Chairman of the Department of Secondary Education.

WILLIS DANA JACOBS, B.A., M.A., University of New Mexico; Ph.D., University of North Carolina. Professor of English.

DAVID JAMES, III, Lieutenant, U.S.N., B.A., Louisiana Polytechnic Institute. Assistant Professor of Naval Science.

[4] **MELVIN FIVA JANOWITZ**, B.A., University of Minnesota; Ph.D., Wayne State University. Assistant Professor of Mathematics.

FRANK J. JANZA, B.S.E.E., M.S.E.E., University of Denver; D.Sc., University of New Mexico. Associate Professor of Electrical Engineering.

JAMES RUSH JARRETT, B.A., Quincy College; B.Arch., Yale University. Assistant Professor of Architecture.

J. CHARLES JENNETT, B.S.C.E., M.S.C.E., Southern Methodist University. Instructor in Civil Engineering (Part-time).

LEONARD LEON JERMAIN, B.S., M.S., University of Oregon. Associate Professor of Journalism.

ROBERT CLIFFORD JESPERSEN, B.A., University of Utah; M.A., Ph.D., Stanford University. Assistant Professor of Modern Languages.

NORMAN LAFAYETTE JETER, Lieutenant Commander, U.S.N., B. Mus. Ed., Central Missouri State College; M.M., Northwestern University. Assistant Professor of Naval Science.

GEORGE ANTHONY JOCUMS, A.B., M.A., Duquesne University. Assistant Professor of Modern and Classical Languages.

ARLEE WAYNE JOHNSON, B.A., Southwestern State College (Oklahoma); M.A., University of New Mexico. Instructor in Speech, Assistant Director of Forensics.

DAVID MARCUS JOHNSON, B.A., St. Olaf College; M.A., Ph.D., University of Connecticut. Assistant Professor of English.

GORDON VERLE JOHNSON, B.S., M.S., University of California (Berkeley); Ph.D., University of Arizona. Assistant Professor of Biology.

PEDER JACK JOHNSON, B.A., M.A., University of Minnesota; Ph.D., University of Colorado. Assistant Professor of Psychology.

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WILLIAM WAYNE JOHNSON, B.S., M.S., Ph.D., University of Minnesota. Assistant Professor of Biology.

ARTHUR WOODRUFF JONES, B.A., Harvard University; B. Arch., University of Pennsylvania. Assistant Professor of Architecture.

EDWARD DAVIS JONES, Commander, U.S.N.; B.A., University of Missouri. Associate Professor of Naval Science.

MARY LOUBRIS JONES, B.A., Pennsylvania State University; M.A., Northwestern University. Instructor in English.

RICHARD TERRY JONES, Captain, U.S.A.F., B.A., Williams College. Associate Professor of Air Science.

SCOTT WILSON JORDAN, A.B., M.D., University of Kansas. Assistant Professor of Pathology.

FREDERICK DSUIN JU, B.S., University of Houston; M.S., Ph.D., University of Illinois. Associate Professor of Mechanical Engineering.

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[3] Second semester only.

[2] On sabbatical leave first semester.

[4] On leave for the year.

CHARLES BURNETT JUDAH, B.A., M.A., Ph.D., University of Illinois. Professor of Government, Acting Chairman of the Department of Government.

JOHN KACERE, M.F.A., *State University of Iowa. Professor of Art.*

MILTON KAHN, B.S., University of California; Ph.D., Washington University. Professor of Chemistry.

LEO KANOWITZ, B.A., College of the City of New York; LL.B., University of California; LL.M., Columbia University. Associate Professor of Law.

SIMON TSAI KAO, B.S., Chi-Nan National University of China; Ph.D., Catholic University of America. Associate Professor of Mathematics.

RALPH JAY KAPLAN, B.A., Hofstra College; M.D., Albany Medical College. Instructor in Neurosurgery and Neurobiological Sciences.

SHLOMO KARNI, B.S.E.E., Israel Institute of Technology; M.Eng., Yale University; Ph.D., University of Illinois. Associate Professor of Electrical Engineering.

MELVIN LOUIS KATZ, JR., B.S., Ph.D., California Institute of Technology. Associate Professor of Mathematics.

M. LUE KEEFFE, D.H., Marquette University. Clinical Instructor in Dental Hygiene.

WILLIAM EARL KEEFFE, D.D.S., Marquette University. Instructor in Dental Hygiene (Part-time).

WALTER BURROUS KELLER, B.Mus., M.A., Indiana University; Juilliard Graduate School; Ph.D., Harvard University. Professor of Music.

DAVID OTIS KELLEY, B.A., M.A., University of Southern California. University Librarian, Professor of Library Science.

VINCENT COOPER KELLEY, B.A., University of California at Los Angeles; M.S., Ph.D., California Institute of Technology. Professor of Geology, Chairman of the Department of Geology.

EDWARD JAMES KELLY, B.S., University of Santa Clara; M.S., Ed.D., University of Oregon. Assistant Professor of Guidance and Special Education.

RUBEN DAVID KELLY, B.S., M.S., Ph.D., Oklahoma State University. Associate Professor of Electrical Engineering.

DALE EUGENE KEMPTER, B.M., B.M.E., University of Kansas; M.M.E., University of New Mexico. Assistant Professor of Music.

GEORGE LEONARD KEPPERS, B.Ed., St. Cloud State College; M.A., Colorado State College; Ed.D., University of Colorado. Professor of Guidance and Special Education, Chairman of the Department of Guidance and Special Education.

DAVID SOLOMON KING, B.A., Manchester College; M.A., Ph.D., Indiana University. Assistant Professor of Astronomy.

ALEXANDER LIONEL KISCH, B.A., Columbia University; M.D., Harvard Medical School. Assistant Professor of Medicine.

EUGENE LARUE KLINGLER, JR., B.S., M.D., Tufts University. Assistant Professor of Medicine.

IAN C. S. KNIGHT, M.B., Ch.B., University of Edinburgh. Assistant Professor of Surgery.

HAROLD KNUD KNUDSEN, B.S., M.S., Ph.D., University of California. Associate Professor of Electrical Engineering.

ROBERT HARRY KOCH, A.B., M.A., Ph.D., University of Pennsylvania. Associate Professor of Astronomy.

KARL PETER KOENIG, B.A., Trinity College; M.S., Ph.D., University of Washington. Assistant Professor of Psychology.

JACK KOLBERT, B.A., M.A., University of Southern California; Ph.D., Columbia University. Professor of Modern Languages.

[7] **ROLAND BEALL KOOL,** LL.B., University of New Mexico. Lecturer in Business Administration (Part-time).

LAMBERT HERMAN KOOPMANS, B.A., San Diego State College; Ph.D., University of California at Berkeley. Associate Professor of Mathematics.

ARNOLD HERMAN KOSCHMANN, B.A., Valparaiso University; B.S.E.E., M.S., Ph.D., Purdue University. Professor of Electrical Engineering, Chairman of the Department of Electrical Engineering.

FRIEDA ANN KOSTER, B.A., Colorado College. Instructor in Mathematics (Part-time).

WILLIAM JACOB KOSTER, B.S., Ph.D., Cornell University. Professor of Biology.

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[7] *First semester only.*

[7] **THEODORE JOHN KREPS,** A.B., University of Colorado; M.A., Ph.D., Harvard University. Visiting Distinguished Professor of Business Administration.

ALBERT MASAKIYO KUDO, B.A., University of Toronto; M.S., McMaster University. Assistant Professor of Geology.

JOSEPH MARSHALL KUNTZ, B.A., M.A., University of New Mexico; Ph.D., University of Denver. Associate Professor of English.

AARON J. LADMAN, B.A., New York University; Ph.D., Indiana University. Professor of Anatomy, Chairman of the Department of Anatomy.

ENRIQUE EUFRASIO LAMADRID, B.A., Western Maryland College; M.A., New Mexico Highlands University; M.A.T.S., University of New Mexico Assistant Professor of Modern Languages.

LLOYD EDMOND LAMB, B.A., North Texas State College; M.S., Ph.D., Purdue University. Assistant Professor of Speech.

DONALD N. LANGE, B.S., University of Minnesota; M.A., University of New Mexico. Instructor in Elementary Education (Part-time).

HAROLD WADE LAVENDER, A.B., Southern Methodist University; M.A., Ph.D., University of New Mexico. Dean of Students, Assistant Professor of Educational and Administrative Services.

WAYNE RODERIC LAZORIK, B.S., University of Minnesota. Instructor in Art.

JOHN K. LEACH, B.S., Baldwin-Wallace College; M.D., Albany Medical College. Assistant Professor of Medicine.

CHRISTOPHER PRATT LEAVITT, B.S., Ph.D., Massachusetts Institute of Technology. Professor of Physics.

FRANCIS NEWTON LEBARON, B.S., Massachusetts Institute of Technology; M.A., Boston University; Ph.D., Harvard University. Associate Professor of Biochemistry.

MARION TURNBULL LEBRON, B.A., Goucher College; M.A., Johns Hopkins University. Instructor in Classics (Part-time).

MARY SCANLAN LEHMER, B.A., University of New Mexico; Ed. M., Harvard University. Instructor in Home Economics.

[7] **WALDEMAR CONRAD LEIDING,** B.A., State University of Iowa; M.A., University of New Mexico; Ph.D. University of Houston. Visiting Associate Professor of Psychology (Part-time).

LEONA LOUISE LEONARD, B.S., Columbia University; M.S., Ph.D., New York University. Assistant Professor of Pathology.

THEODORE JOHN LEPPI, B.A., Albion College; Ph.D., Yale University. Assistant Professor of Anatomy.

JEROME LEVY, B.A., University of New Mexico; M.A., Ph.D., University of Denver. Assistant Professor of Behavioral Science.

[2] **JAMES VERNON LEWIS,** B.A., M.A., Ph.D., University of California. Associate Professor of Mathematics.

RALPH WAYNE LEWIS, B.F.A., M.A., University of New Mexico. Assistant Professor of Art.

LESTER M. LIBO, M.A., Ph.D., Stanford University. Associate Professor of Psychiatry.

WOLFRAM LIEPE, B.A., Antioch College; M.A., University of Chicago. Associate Professor of Economics.

EDWIN LIEUWEN, B.A., M.A., Ph.D., University of California. Professor of History, Chairman of the Department of History.

[4] **ALAN DONALD LIKER,** B.B.A., City College of New York; LL.B., LL.M., New York University School of Law. Associate Professor of Law.

LAWRENCE LITTWIN, B.A., Brooklyn College. Assistant Professor of Government.

EDWARD GOVERNOR LLOYD, B.A., University of New Mexico. Instructor in Intramural and Student-Faculty Recreation (Part-time).

ROBERT BERNER LOFTFIELD, B.S., M.A., Ph.D., Harvard University. Professor of Biochemistry, Chairman of the Department of Biochemistry.

DOROTHY MUMFORD LOGAN, B.A., New Mexico State Teacher's College; M.A., University of New Mexico. Instructor in English.

FRANK ANDERSON LOGAN, B.A., M.A., Ph.D., State University of Iowa. Professor of Psychology, Chairman of the Department of Psychology.

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[7] First semester only.

[2] On sabbatical leave first semester.

[4] On leave for the year.

[4] **ROBERT LEROY LONG,** B.S.E.E., Bucknell University; M.S.E., Ph.D., Purdue University. Assistant Professor of Nuclear Engineering.

AARON NORTH LONGFIELD, B.A., University of North Carolina; M.D., Northwestern University; M.S., University of Colorado. Associate Professor of Medicine.

ALBERT RICHARD LOPES, B.A., M.A., Ph.D., University of California. Professor of Modern Languages.

CATHERINE ELLEN LOUGHLIN, B.S., University of Connecticut; M.Ed., Pennsylvania State University; Ed.D., Rutgers University. Assistant Professor of Elementary Education.

WILLIAM STEVENS LOVEKIN, B.S., University of Arizona; M.D., Columbia University. Assistant Professor of Medicine.

ALICE HENTZELT LUFT, Pharmacological Institute of the University of Jena; Certificate, Ministry of the Interior, Thuringia. Instructor in Modern Languages (Part-time).

[4] **PATRICK DANIEL LYNCH,** B.A., St. John's University; M.A., Ph.D., University of Minnesota. Associate Professor of Education.

DONALD CLARK MacPHAIL, M.B., Ch.B., University of Edinburgh; M.Ch. Orth., University of Liverpool. Adjunct Assistant Professor of Surgery (Part-time).

RAYMOND RALPH MacCURDY, JR., B.A., M.A., Louisiana State University; Ph.D., University of North Carolina. Professor of Modern Languages, Chairman of the Department of Modern and Classical Languages.

[7] **FRED IRA MAGEE,** B.S., University of Southern Mississippi; M.A., University of Mississippi. Instructor in Mathematics (Part-time).

MIRIAM PITSCHNER MALM, B.S., University of New Mexico. Instructor in Chemistry.

LEON JESUS MARQUEZ, B.A., M.A.T.S., University of New Mexico. Instructor in Modern Languages.

JOHN STEPHEN MARTIN, B.A., Hofstra University; M.A., University of Georgia; Ph.D., University of Wisconsin. Assistant Professor of English.

WILLIAM CLARENCE MARTIN, JR., B.S., Purdue University; M.A., Ph.D., Indiana University. Associate Professor of Biology.

[2] **JOSÉ ELEAZAR MARTINEZ,** B.S. in C.E., University of New Mexico; M.S., Iowa State University of Iowa. Professor of Civil Engineering.

CHARLES GERALD MASINTON, B.A., University of Colorado; Ph.D., University of Oklahoma. Assistant Professor of English.

ALEXANDER SIMEON MASLEY, B.S., University of Minnesota; M.A., Ed.D., Columbia University. Professor of Art Education, Chairman of the Department of Art Education.

JACK HIRAM MATTHEWS, B.S., University of Kansas; M.B.A., University of New Mexico; D.B.A., Indiana University. Visiting Associate Professor of Business Administration.

PETER JOHN MAUD, B.S., University of Oregon. Instructor in Health, Physical Education, and Recreation (Part-time).

MARVIN CLARK MAY, B.S. in C.E., University of New Mexico; M.S., Oklahoma State University. Professor of Civil Engineering.

JORG WERNER PETER MAYER, Dipl.Math., Dr.Rer.Nat., University of Giessen, Germany. Associate Professor of Mathematics.

SIGRID LUISE HENRIETTE MAYER, University of Malaya. Instructor in Modern Languages (Part-time).

[4] **BAILEY B. McBRIDE,** B.A., David Lipscomb College; M.A., Ph.D., University of Tennessee. Assistant Professor of English.

ELINOR FLORENCE McCLOSKEY, B.A., Washington State University; M.A., University of Denver; Ed.D., Teachers College, Columbia University. Assistant Professor of Library Science.

DOUGLAS REEVE McEWEN, B.S., Bowling Green State University; M.M.Ed., Indiana University; Ph.D., Colorado State College. Assistant Professor of Music.

[3] **FRANCES McGILL,** B.A., Mills College; M.S., University of Washington; Ph.D., Ohio State University. Associate Professor of Health, Physical Education, and Recreation.

ELIZABETH JOHANNA McGRAW, B.M.E., Drake University; M.M., Northwestern University. Instructor in Music.

[7] **PATRICIA ANN McGUIRE,** B.A., University of New Mexico. Instructor in German (Part-time)

[4] On leave for the year.
[2] On sabbatical leave first semester.
[7] First semester only.
[3] On sabbatical leave second semester.

DOUGLAS WILLIAM McKAY, B.A., University of Maine; M.D., Tufts University Medical School. Adjunct Assistant Professor of Surgery (Part-time).

DONALD ALEXANDER McKENZIE, B.A., University of New Mexico; Ph.D., Stanford University. Professor of Modern Languages.

LEROY CLARENCE McLAREN, B.A., San Jose State College; M.A., Ph.D., University of California at Los Angeles. Professor of Microbiology, Chairman of the Department of Microbiology.

DONALD REED McLAUGHLIN, B.S., University of California at Los Angeles; Ph.D., University of Utah. Assistant Professor of Chemistry.

IMOGEAN HELENA McMURRAY, B.S., Oklahoma College for Women; M.S., University of Tennessee. Assistant Professor of Home Economics.

[8] **LUCY GALE McMURRAY,** B.A., University of Wisconsin; M.D., Marquette University School of Medicine. Adjunct Assistant Professor of Pediatrics and Psychiatry (Part-time).

DONALD CHRISTOPHER McRAE, B.F.A., M.A., University of New Mexico. Assistant Professor of Music, Assistant Dean of the College of Fine Arts.

[7] **MICHAEL KAY MEHRING,** B.S., Colorado State University; M.P.E., Idaho State University. Instructor in Health, Physical Education, and Recreation (Part-time).

HAROLD CHARLES MEIER, B.A., M.A., Ph.D., University of Colorado. Assistant Professor of Sociology.

IVEN PETER MELADA, B.A., State Teachers College (West Chester, Pa.); M.A., University of California (Berkeley). Assistant Professor of English.

VELMA RUTH MELLOTT, B.A., Hamline University. Instructor in Dental Assisting.

[7] **DAVID GLENN MERRIFIELD,** A.B., Wheaton College; M.A., Kent State University. Instructor in Mathematics (Part-time).

RICHARD CLYDE METZLER, B.S., University of Michigan; M.A., Ph.D., Wayne State University. Assistant Professor of Mathematics.

[7] **SARAH LEE MEYER,** B.A., University of California (Riverside). Instructor in Mathematics (Part-time).

DONALD EDWARD MICHEL, B.M.E., B.S., M.M.E., Ph.D., University of Kansas. Visiting Professor of Music.

[7] **JOSEPH FRANCIS MILENSKY,** B.A., State University of New York at Binghamton. Instructor in Mathematics (Part-time).

HUGH MILTON MILLER, B.A., University of Oregon; M.A., Ph.D., Harvard University. Professor of Music.

[18] **GLADYS ELIZABETH MILLIKEN,** B.A., Bates College; M.A., New York University. Assistant Professor of Health, Physical Education, and Recreation.

MERLE MITCHELL, B.A., Southern Methodist University; M.A., University of New Mexico; Ph.D., George Peabody College for Teachers. Associate Professor of Mathematics.

RUSSELL DUNCAN MITCHELL, B.S., M.S., Southern Illinois University. Instructor in Health, Physical Education, and Recreation; Varsity Gymnastics Coach.

WAYNE PAUL MOELLENBERG, B.A., University of Colorado; M.A., Ed.D., Colorado State College. Assistant Professor of Educational and Administrative Services.

RONALD RUTT MOHLER, B.S., Pennsylvania State University; M.S.E.E., University of Southern California; Ph.D., University of Michigan. Associate Professor of Electrical Engineering.

JOHN ALBAN MONTGOMERY, B.A., University of California at Berkeley; M.S., University of Illinois. Assistant Professor of Health, Physical Education, and Recreation.

ALEXANDER VALENTINE MONTO, B.S., University of Illinois; M.D., Washington University; M.P.H., University of Pittsburgh. Assistant Professor of Psychiatry.

JAMES CLARK MOORE, B.A.Ed., M.A.Ed., Ph.D., Arizona State University. Assistant Professor of Education, Director of Testing.

SUNDARAM CHIDAMBARAM MOORTHY, B.Sc., Kerala University (India); M.S., Ph.D., University of Pennsylvania. Visiting Assistant Professor of Electrical Engineering.

PERRY T. MORI, B.S., B.A., M.B.A., Northwestern University; LL.B., University of New Mexico; C.P.A. Professor of Business Administration.

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[8] Second semester only.

[7] First semester only.

[18] *Deceased January 20, 1967.*

JESSIE FARRINGTON MORRIS, B.A., Salem College; M.A., University of Connecticut. Instructor in English.

[4] **BURT JULES MORSE,** B.S., City College of New York; M.A., Columbia University; Ph.D., New York University. Assistant Professor of Mathematics.

EDWARD ALBERT MORTIMER, JR., A.B., Dartmouth College; B.M., M.D., Northwestern University. Professor of Pediatrics, Chairman of the Department of Pediatrics.

[7] **INGEBORG MUEHLHAHN,** Instructor in German (Part-time).

ROBERT ALLIOT MUNSICK, B.S., Cornell University; M.D., Ph.D., Columbia University. Professor of Obstetrics and Gynecology, Chairman of the Department of Obstetrics and Gynecology.

PATRICIA MURPHY, B.A., University of Rochester; M.A., University of Wisconsin. Lecturer in French.

RICHARD E. MURPHY, B.A., St. Lawrence University; M.A., George Washington University; Ph.D., Clark University. Professor of Geography, Chairman of the Department of Geography.

RAYMOND CARL MURRAY, A.B., Tufts University; Ph.D., University of Wisconsin. Associate Professor of Geology.

TRACY WILSON MURRAY, B.A., Washington State University; M.A., Michigan State University. Assistant Professor of Economics.

[7] **ROBERT JOHN MYERS,** B.S., State University of New York; M.S., Saint Bonaventure University; E.D., Teachers College, Columbia University. Instructor in Educational and Administrative Services (Part-time).

HOWARD NAEVE, B.S., University of Southern Illinois; D.D.S., University of Iowa. Lecturer in Dental Hygiene (Part-time).

LEONARD M. NAPOLITANO, B.S., Santa Clara University; M.S., Ph.D., St. Louis University. Associate Professor of Anatomy.

GERALD DAVID NASH, B.A., New York University; M.A., Columbia University; Ph.D., University of California. Associate Professor of History.

MARSHALL RUTHERFORD NASON, B.A., M.A., Louisiana State University; Ph.D., University of Chicago. Professor of Modern Languages.

IRENE MURPHY NAVARRE, G.D.H., University of Minnesota. Clinical Instructor in Dental Hygiene (Part-time).

WILLIAM C. NAYLOR, Lieutenant Colonel, U.S.A.F.; B.S., East Central State College; M.Ed., Sul Ross State College. Commanding Officer of the Air Force ROTC Unit, Professor of Air Science.

MARTIN CYRIL NEEDLER, A.B., Ph.D., Harvard University. Associate Professor of Government, Director of the Division of Inter-American Affairs.

ROBERT DEWEY NESBITT, B.S., North Texas State University; M.Ed., Texas Agricultural and Mechanical University. Assistant Professor of Secondary Education.

MARK NEUWELD, B.A., Northwestern University; M.A., Ph.D., Harvard University. Associate Professor of Government.

STANLEY STEWART NEWMAN, Ph.B., M.A., University of Chicago; Ph.D., Yale University. Professor of Anthropology. Co-editor of the **Southwestern Journal of Anthropology.**

[7] **MERVIN ELMER NEWTON,** B.S., University of Santa Clara. Instructor in Mathematics (Part-time).

THUAN VAN NGUYEN, B.A., Nguyen Khuyen College; M.A., University of New Mexico; M.S., Stanford University. Instructor in Electrical Engineering (Part-time).

EDWARD GILLIGAN NOLAN, M.A., B.Ed., University of Edinburgh; M.A., Ph.D., Princeton University. Associate Professor of Business Administration.

RALPH DAVID NORMAN, B.S., College of the City of New York; M.A., Teachers College, Columbia University; Ph.D., Ohio State University. Professor of Psychology.

[8] **STUART ALVORD NORTHROP,** B.S., Ph.D., Yale University. Research Professor of Geology, Curator of the Geology Museum.

MONICA NOVITSKI, D.H., D.D.S., Marquette University. Professor of Dental Hygiene, Director of the Dental Hygiene Program.

EDWIN JAMES NOWAK, B.S., Northwestern University; Ph.D., Princeton University. Assistant Professor of Chemical Engineering.

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[4] On leave for the year.
[7] First semester only.
[8] On sabbatical leave second semester.

RALPH DOUGLAS O'DELL, B.S., Ph.D., University of Texas. Assistant Professor of Nuclear Engineering.

WALTER GREGORY O'DONNELL, LL.B., *John Marshall Law School;* B.A., M.A., Western Reserve University; Ph.D., Columbia University. Visiting Professor of Business Administration.

KENNETH WILLIAM OLM, B.A., Pomona College; M.A., University of New Mexico; Ph.D., University of Texas. Visiting Professor of Business Administration.

JANICE KAY OLSON, B.A., Western State College; M.S., University of Wisconsin. Instructor in Health, Physical Education, and Recreation.

CYRUS OMID' VARAN, B.S., South Dakota State College; M.S., University of Kansas; Ph.D., University of Delaware. Assistant Professor of Civil Engineering.

BRIAN EDGAR O'NEIL, B.A., M.A., University of California (Berkeley). Lecturer in Philosophy, Assistant Dean of the Graduate School.

BRUCE H. OSBORNE, B.S., Brigham Young University; M.S., Utah State University. Instructor in Health, Physical Education, and Recreation (Part-time).

[13] **ROBERT OSEASOHN,** B.S., Tufts College; M.D., Long Island College of Medicine. Professor of Epidemiology and Community Medicine, Chairman of the Department of Epidemiology and Community Medicine.

GERALD DENNIS OTIS, B.A., University of Minnesota; M.A., Ph.D., University of Arizona. Instructor in Behavioral Science.

MARVIN LOUIS OVITZ, B.S., M.D., University of Oregon. Assistant Professor of Pathology.

CULLEN BRYANT OWENS, B.A., Berea College; M.S., Northwestern University; Ph.D., Cornell University. Associate Professor of Speech.

CARL ERICH PAAK, B.A.E., School of the Art Institute of Chicago; M.A., Ohio State University. Associate Professor of Art.

DARWIN LYNN PALMER, A.B., Oberlin College; M.A., Columbia University; M.D., New York University Medical School. Instructor in Medicine.

FRANK EDWARD PAPCSY, B.S., Upsala College; M.A., New York University; A.C.S.M. Assistant Professor of Health, Physical Education and Recreation.

RENEE WOLFSON PAPPER, B.A., Barnard College; M.D., New York University College of Medicine. Assistant Professor of Radiology (Part-time).

SOLOMON PAPPER, B.A., Columbia University; M.D., New York University. Professor of Medicine, Chairman of the Department of Medicine.

JAMES WALLACE PARK, B.S.C., M.B.E., University of Mississippi. Assistant Professor of Business Administration.

ALFRED LEROY PARKER, B.S., M.S., Oklahoma State University. Assistant Professor of Economics.

CALVIN CLYDE PATTERSON, B.E.C.E., M.C.E., Johns Hopkins University; Ph.D., University of Texas. Assistant Professor of Civil Engineering.

JEAN MARIE PAULSON, B.S.N., University of New Mexico. Instructor in Clinical Nursing.

JOHN PEARSON, N.D.D., Harrogate College of Art, England; Cert., Royal Academy School, London; M.F.A., Northern Illinois University. Instructor in Art.

DANIEL PAUL PETERSEN, B.M.E., D.E.S., Rensselaer Polytechnic Institute; M.S.M.E., Massachusetts Institute of Technology. Associate Professor of Electrical Engineering.

GEORGE THOMAS PETROL, B.S., Albright College; M.A., University of New Mexico. Assistant Professor of Health, Physical Education, and Recreation.

[4] **PAUL VERNON PETTY,** B.S.E., Arkansas State Teachers College; M.A., Duke University; Ph.D., University of Texas. Professor of Education, Chairman of the Department of Educational ~~and~~ Administrative Services. Val Administrative Services

DOUGLAS DUANE PHILLIPS, B.S.Ch.E., Washington University; Ph.D., University of Minnesota. Assistant Professor of Chemical Engineering.

ROY GLENWOOD PICKETT, B.A., M.A., Ph.D., State University of Iowa. Associate Professor of English.

RONALD JAMES PIOTROWSKI, B.S., University of Wisconsin; M.F.A., Pratt Institute. Instructor in Art Education.

CHARLOTTE LEWIS PIPER, B.A., Baker University. Assistant Professor of Health, Physical Education, and Recreation, Special Adviser in the University College.

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[13] As of April 1, 1967.

[4] On leave for the year.

[7] **LYNNETTE BIRDSALL PLUMLEE,** B.A., Pomona College; Ph.D., University of Chicago. Visiting Associate Professor of Psychology (Part-time).

MICHAEL POLLAY, B.S., M.D., University of Wisconsin; M.S., University of Colorado. Assistant Professor of Surgery.

[7] **LAWRENCE DATE POSEY,** B.S., M.S., Ph.D., University of California. Adjunct Professor of Nuclear Engineering (Part-time).

LOREN DAVID POTTER, B.S., North Dakota State Agricultural College; M.A., Oberlin College; Ph.D., University of Minnesota. Professor of Biology, Chairman of the Department of Biology.

JOHN STANTON POTTS, B.S.E.E., M.S.E.E., Chico State College. Instructor in Electrical Engineering (Part-time).

MARY JANE POWER, A.B., Regis College; A.M., Ph.D., University of Wisconsin. Assistant Professor of English.

[7] **RICHARD ROLAND PRAIRIE,** B.S., University of Minnesota; M.S., Ph.D., North Carolina State College. Adjunct Professor of Mechanical Engineering (Part-time).

LOUIS ELLIOT PRICE, A.B., University of California at Los Angeles; M.A., Ph.D., State University of Iowa. Associate Professor of Psychology.

DONALD VICTOR PRIOLA, B.S., Ph.D., Loyola University. Instructor in Pharmacology.

[3] **PETER PROUSE,** B.A., Princeton University; M.A., University of New Mexico; Ph.D., Northwestern University. Associate Professor of Education.

MARGOT MARIE PURDY, B.S., Texas Woman's College; M.S., Eastern New Mexico University. Assistant Professor of Health, Physical Education, and Recreation.

KEEN RAFFERTY, B.A., University of New Mexico. Professor of Journalism, Chairman of the Department of Journalism.

MARY HICKS RAYMOND, B.A., Baylor University; M.A., University of New Mexico. Instructor in English (Part-time).

LAWRENCE RAYMOND RECK, B.Ed., Wisconsin State University; M.S., University of Wisconsin. Instructor in Educational and Administrative Services (Part-time).

VICTOR H. REGENER, Dr.-Ing., Technische Hochschule, Stuttgart. Research Professor of Physics, Chairman of the Department of Physics and Astronomy.

[1] **HEINZ JURG RENGGLI,** Dr.Sc., Swiss Federal Institute of Technology. Associate Professor of Mathematics.

[7] **JON ARTHUR REUSCHER,** B.S., M.S., Ph.D., Texas A & M University. Adjunct Professor of Nuclear Engineering (Part-time).

VIRGINIA REVA, B.A., St. Mary's College, Notre Dame; M.A., University of Michigan. Associate Professor of Business Administration.

COSMA BEE RHINEHART, R.N., Stanford University School of Nursing; B.S., University of California at Los Angeles; M.A., Teachers College, Columbia University. Instructor in Nursing.

WILLIAM EARL RHOADS, B.Mus., M.Mus., University of Michigan. Associate Professor of Music.

HAROLD V. RHODES, B.A., M.A., University of Wichita; Ph.D., University of Arizona. Assistant Professor of Government.

JOHN MARSHALL RHODES, B.A., University of California at Los Angeles; M.A., Los Angeles State College; Ph.D., University of Southern California. Associate Professor of Psychology.

EDWARD JAMES RHOMBERG, B.S.C.E., M.S.C.E., University of Notre Dame; Ph.D., Iowa State University. Associate Professor of Civil Engineering.

CHARLES GILBERT RICHARDS, B.S.E., M.S.E., Ph.D., University of Michigan. Assistant Professor of Mechanical Engineering.

GEORGE MEYER RIDENOUR, B.A., College of Wooster; M.A., Ph.D., Yale University. Professor of English.

JOHN ALLEN RIDER, B.S., Northwestern State College; M.A., University of Wyoming; Ed.D., University of Nebraska. Associate Professor of Secondary Education.

[19] **JESSE LeROY RIEBSOMER,** B.A., DePauw University; Ph.D., Cornell University. Professor of Chemistry.

HAROLD ORVILLE RIED, B.A., Nebraska Wesleyan University; M.A., Ph.D., University of Nebraska. Director of Extension, Summer Session, and Community Services, Professor of Education.

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[7] First semester only.
[3] On sabbatical leave second semester.
[1] On sabbatical leave for the year.
[19] Deceased February 13, 1967.

[1] **MARVIN LeROY RIEDESEL,** B.A., Cornell College; M.S., Ph.D., State University of Iowa. Associate Professor of Biology.

BRUCE JOSEPH RIGSBY, B.A., University of Louisville; Ph.D., University of Oregon. Assistant Professor of Anthropology.

DANIEL JOHN RITTER, B.A., DePauw University; M.A., Middlebury College. Instructor in English (Part-time).

ELAINE ROBERT, Abitur, Frauenoberschule, Vienna. Instructor in Modern Languages (Part-time).

GEORGE ROBERT, Student of Edward Steuermann and Anton von Webern. Professor of Music.

LEO ROMERO, B.A., University of New Mexico; M.A., University of California at Los Angeles. Adjunct Instructor in Psychiatric Social Work (Part-time).

[3] **JUDAH ISSER ROSENBLATT,** B.A., Johns Hopkins University; Ph.D., Columbia University. Associate Professor of Mathematics.

[4] **SIDNEY ROSENBLUM,** B.A., Drew University; M.A., Ohio State University; Ph.D., State University of Iowa. Associate Professor of Psychology.

ABRAHAM ROSENZWEIG, B.S., University of Pennsylvania; Ph.D., Bryn Mawr College. Associate Professor of Geology.

WALTER JOHN ROTH, B.S., University of Michigan; M.S., University of New Mexico. Instructor in Mathematics (Part-time).

GUNTHER ERIC ROTHENBERG, B.A., Ph.D., University of Illinois; M.A., University of Chicago. Associate Professor of History.

DONALD DENNIS ROYER, B.S., University of Albuquerque. Instructor in Business Administration.

JAMES LYNN RUFF, B.A., Carleton College; M.A., Ph.D., Northwestern University. Assistant Professor of English.

WILLIAM BARTON RUNGE, B.S., M.Ed., Colorado State University; Ed.D., University of Southern California. Professor of Education.

WALTER EDWARD RUTKOWSKI, B.S., Rhode Island School of Design. Instructor in Art Education.

DEVOY ALONZO RYAN, B.S., Southwest Missouri State College; M.Ed., D.Ed., University of Missouri. Professor of Education.

ACYR SALGARELLO, A.B., Faculdade de Filosofia, Universidade de Minas Gerais, Brazil. Assistant Professor of Modern Languages.

CHARLOTTE GAYLE SAMPLEY, B.A., M.A., Eastern New Mexico University. Instructor in Business Administration.

PATRICIA FLAGG SANBORN, B.A., Mount Holyoke College; M.A., Ph.D., Columbia University. Assistant Professor of Philosophy.

L. NORMA SANTA ANNA, B.A., University of Arizona; M.A.T.S., University of New Mexico. Instructor in Modern Languages.

[5] **CHARLES WILLIAM SARGENT,** B.A., M.A., Michigan State University; M.A.L.S., University of Michigan; Ph.D., University of New Mexico. Deputy Librarian of the Library of Medical Sciences, Assistant Professor Medical Bibliography.

JOAN KIMIKO SATO, B.S., Westminister College; M.S., Purdue University. Assistant Professor of Economics.

JOSEPH VICTOR SCALETTI, B.A., M.S., University of Connecticut; Ph.D., Cornell University. Associate Professor of Microbiology.

TERENCE JOSEPH SCALLEN, B.S., College of St. Thomas; M.D., Ph.D., University of Minnesota. Assistant Professor of Biochemistry.

DON PAUL SCHLEGEL, B.A., University of Cincinnati; M.A., Massachusetts Institute of Technology. Professor of Architecture.

PAUL FREDERIC SCHMIDT, A.B., University of Rochester, Ph.D., Yale University. Professor of Philosophy, Chairman of the Department of Philosophy.

TONY FREDERIC SCHNEIDER, Captain, U.S.N.; B.A., Westminster College; M.A., Boston University. Commanding Officer of the Naval ROTC Unit, Professor of Naval Science.

ROBERT HAROLD SCHNURR, B.S.E.E., University of New Mexico; M.S.E.E., University of Denver. Instructor in Electrical Engineering (Part-time).

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[1] On sabbatical leave for the year.
[3] On sabbatical leave second semester.
[4] On leave for the year.
[5] Second semester only.

MORTON GERALD SCHOENFELD, Juilliard Graduate School; B.Mus., Rollins College; M.Mus., University of Wisconsin. Associate Professor of Music.

HOWARD LINN SCHREYER, B.Sc., University of Alberta; M.S., Ph.D., University of Michigan. Assistant Professor of Mechanical Engineering.

FLORENCE MARGARET SCHROEDER, B.S., Iowa State College; M.A., Teachers College, Columbia University; Ph.D., New York University. Associate Professor of Home Economics.

KARL H. SCHWERIN, B.A., University of California; Ph.D., University of California at Los Angeles. Assistant Professor of Anthropology.

VICTOR VIO SEARCY, B.S., M.S., Oklahoma State University. Instructor in Chemistry.

WILLIAM FRANKLIN SEARS, M.D., University of Texas. Adjunct Assistant Professor of Psychiatry (Part-time).

LLOYD SEATON, JR., B.A., M.S., San Jose State College; C.P.A. Assistant Professor of Business Administration.

JAMES MARSHALL SEBRING, B.A., Indiana University. Assistant Professor of Anthropology.

arch 1/67 **VERLE RUE SEED,** B.A., B.S., J.D., University of Illinois; LL.M., Columbia University. Professor of Law.

[8] **DONALD FRANK SEELINGER,** B.A., M.C., University of Colorado. Assistant Professor of Medicine.

RICHARD JOSEPH SEI, D.D.S., Creighton University. Lecturer in Dental Hygiene (Part-time).

ARMOND HAROLD SEIDLER, B.S., M.S., Ph.D., University of Illinois; F.A.C.S.M. Professor of Health, Physical Education, and Recreation, Chairman of the Department of Health, Physical Education, and Recreation.

WESLEY THOMAS SELBY, B.F.A., Western Maryland College; M.M., University of New Mexico; M.M., University of Colorado. Instructor in Music (Part-time).

CARL MARVIN SELINGER, A.B., University of California at Berkeley; LL.B., Harvard Law School. Associate Professor of Law.

ROBERT ALAN SENESCU, B.A., Columbia College; M.D., Boston University Medical School. Professor of Psychiatry, Chairman of the Department of Psychiatry.

WILLIAM MAC SEYMOUR, B.Mus.Ed., Music and Arts College. Assistant Professor of Music.

IAN LORIMER SHAND, B.S., M.D., University of Manitoba. Assistant Director of the Student Health Service, Associate Professor of Health, Physical Education, and Recreation.

MALCOLM PITMAN SHARP, B.A., Amherst College; M.A., University of Wisconsin; LL.B., S.J.D., Harvard Law School. Visiting Professor of Law.

[7] **EDWIN JOHN SHERRY,** B.A., M.A., Fordham University; Ph.D., Yeshiva University. Instructor in Mathematics (Part-time).

WILLIAM ANDREW SHINNICK, B.S., Northwestern University; M.S., Massachusetts Institute of Technology. Assistant Professor of Business Administration (Part-time); Director of the Technology Application Center.

ERNEST R. SIMON, M.D., Harvard Medical School. Associate Professor of Medicine.

KATHERINE GAUSS SIMONS, B.A., Grinnell College; M.A., Columbia University. Associate Professor of English.

JOHN CHAMBERLAIN FYFE SIMPSON, B.Sc., University of Bishop's College (Quebec); B.A., M.D., C.M., Queen's University (Ontario). Instructor in Surgery.

DONALD EMANUEL SKABELUND, B.S., Utah State University; Ph.D., University of Utah. Assistant Professor of History.

VICTOR J. SKOGLUND, B.S., M.S., University of California; D.Eng., Yale University. Professor of Mechanical Engineering.

[7] **MARSHALL MAXWELL SLUYTER,** B.S., Newark College; M.S., New York University; Ph.D., Illinois Institute of Technology. Adjunct Professor of Mechanical Engineering (Part-time).

ELLA MAY SMALL, B.A., Texas Wesleyan College; M.A., Texas State College for Women; Ed.D., University of California at Los Angeles. Professor of Health, Physical Education, and Recreation, Assistant Chairman of the Department of Health, Physical Education, and Recreation.

DANIEL EDWARD SMITH, B.A., University of New Mexico; M.D., University of Colorado School of Medicine. Assistant Professor of Surgery.

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[8] Second semester only.
[7] First semester only.

GEORGE WINSTON SMITH, B.A., M.A., University of Illinois; Ph.D., University of Wisconsin. Professor of History.

LESLIE FRANK SMITH, B.Sc., Ph.D., University of London. Visiting Assistant Professor of Biochemistry.

MARY ELIZABETH SMITH, B.A., University of Michigan; M.A., Columbia University; Ph.D., Yale University. Assistant Professor of Art.

SAMUEL DAVID SMITH, Studied in Africa, Orient, Near East, and United States. Professor of Art.

ROBERT EDWIN SNAPP, B.A., M.A., University of New Mexico; M.F.A., Yale University. Professor of Dramatic Art, Chairman of the Department of Dramatic Art.

EDNELL MARGARET SNELL, B.S., B.Ed., M.A., Washington State University; Ed.D., Teachers College, Columbia University. Associate Professor of Home Economics, Chairman of the Department of Home Economics.

JANE SNOW, B.Mus., M.Mus., Cincinnati College of Music. Associate Professor of Music.

SIDNEY SOLOMON, B.S., University of Massachusetts; Ph.D., University of Chicago. Professor of Physiology, Chairman of the Department of Physiology.

HARALD SONNENBERG, B.Sc., M.Sc., University of Manitoba; Ph.D., Free University, Berlin. Assistant Professor of Physiology.

PAUL MARK SONNINO, B.A., M.A., Ph.D., University of California at Los Angeles. Assistant Professor of History.

HAROLD DEAN SOUTHWARD, B.S., West Texas State College; M.A., Ph.D., University of Texas. Associate Professor of Electrical Engineering.

[7] **JAMES EVANS SPERLING,** B.A., LL.B., Washburn University. Visiting Lecturer in Law (Part-time).

GEORGE P. SPRINGER, A.B., M.A.T., M.A., Ph.D., Harvard University. Dean of the Graduate School, Associate Professor of Anthropology.

MARJORIE EVARTS SPRINGER, B.A., Smith College; M.S.W., Simmons College. Adjunct Instructor in Psychiatric Social Work (Part-time).

KENNETH HOTTENSTEIN STAHL, B.A., Carthage College; B.S., M.S., State University of Iowa; Ph.D., University of Maryland. Associate Professor of Pharmaceutical Chemistry.

DAVID EDGAR STARKEY, B.M.E., Central Methodist College; B.M., M.M., D.M., Indiana University. Assistant Professor of Music.

[7] **SAMUEL DOW STEARNS,** B.S.E.E., Stanford University; M.S.E.E., Ph.D., University of New Mexico. Adjunct Professor of Electrical Engineering (Part-time).

JAMES ELDON STEELMAN, B.S.E.E., Texas Technological College; S.M.E.E., Massachusetts Institute of Technology. Instructor in Electrical Engineering (Part-time).

ARTHUR STEGER, B.A., University of Pennsylvania; M.A., Ph.D., University of California. Associate Professor of Mathematics, Assistant Dean of the Graduate School.

ANNE KERCHEVAL STEINER, B.A., M.A., University of Missouri; Ph.D., University of New Mexico. Assistant Professor of Mathematics.

EUGENE FRANCIS STEINER, B.S., M.A., Ph.D., University of Missouri. Assistant Professor of Mathematics.

GEORGE GREGORY STEPHEN, B.S., Lawrence Institute of Technology; M.A., University of Detroit. Instructor in Mathematics (Part-time).

JOHN AULTON STEPHENS, Lieutenant Commander, U.S.N.; B.S., California Maritime Academy. Assistant Professor of Naval Science.

[2] **JACK RAMSEY STEPHENSON,** B.Mus.Ed., B.Mus., M.Mus.Ed., Ph.D., University of Kansas. Professor of Music.

ROBERT SAMUEL STONE, B.A., Brooklyn College; M.D., Downstate Medical Center, State University of New York. Professor of Pathology, Chairman of the Department of Pathology, Associate Dean of the School of Medicine.

BRUCE D. STORRS, M.D., McGill University; M.P.H., Harvard University. Visiting Professor of Nursing (Part-time).

WILLIAM TAFT STUART, A.B., George Washington University; Ph.D., University of Oregon. Assistant Professor of Anthropology.

HARRY PAUL STUMPF, B.A., University of Colorado; M.A., George Washington University; Ph.D., Northwestern University. Assistant Professor of Government.

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[7] First semester only.

[2] On sabbatical leave first semester.

DEREK BERTRAM SWINSON, B.Sc., Queen's University, Belfast; M.Sc., Ph.D., University of Alberta. Assistant Professor of Physics.

[8] **KEN MICHAEL SYMES,** B.S., M.S., Utah State University. Instructor in English.

[6] **JOHN TATSCHL,** Diploma, Austrian State Teachers College; Diploma, Vienna Academy of Applied Arts; Diploma, Master School of Sculpture, Vienna Academy of Fine Arts. Professor of Art.

ERNEST WARNOCK TEDLOCK, JR., B.A., M.A., University of Missouri; Ph.D., University of Southern California. Professor of English.

PAUL THORLEIF THERKILDSEN, B.S., Bradley University; M.S., Ph.D., University of Colorado. Associate Professor of Economics.

ROY THOMAS, B.Sc., University of Alberta; Ph.D., University of California. Professor of Physics.

JOSEPH WILMER THOMPSON, B.A., M.S., Ph.D., University of Illinois. Visiting Professor of Business Administration.

STEVEN WRIGHT THOMPSON, B.A., M.D., Ohio State University. Assistant Professor of Medicine.

DONALD CHILDRESS THORN, B.S., Texas Agricultural and Mechanical University; M.S., Ph.D., University of Texas. Professor of Electrical Engineering.

BILLY JOE THORNE, B.S., Phillips University; M.S., Kansas State University. Instructor in Mathematics (Part-time).

JAMES IRVING THORNTON, B.A., University of New Mexico; M.M., Cincinnati Conservatory. Assistant Professor of Music.

JAMES LLEWELLYN THORSON, B.S., in Ed., M.A., University of Nebraska; Ph.D., Cornell University. Assistant Professor of English.

HENRY JACK TOBIAS, B.A., Ohio State University; M.A., Yale University; Ph.D., Stanford University. Assistant Professor of History.

SEI TOKUDA, B.S., University of Hawaii; Ph.D., University of Washington. Assistant Professor of Microbiology.

GERALD LEIGH TRAUT, B.S., University of Wisconsin (Milwaukee); M.S., University of New Mexico. Instructor in Biology.

CHESTER COLEMAN TRAVELSTEAD, B.A., Western Kentucky State College; M.Mus., Northwestern University; Ph.D., University of Kentucky. Dean of the College of Education, Professor of Education.

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LAWRENCE LEO TREU, B.A., University of Missouri at Kansas City. Instructor in Health, Physical Education, and Recreation (Part-time).

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HOYT TROWBRIDGE, B.A., M.A., Ph.D., University of Wisconsin. Dean of the College of Arts and Sciences, Professor of English.

HORACIO ULIBARRÍ, B.A., St. Thomas Seminary; M.A., New Mexico Highlands University; Ed. D., University of New Mexico. Assistant Professor of Educational and Administrative Services.

SABINE REYES ULIBARRÍ, B.A., M.A., University of New Mexico; Ph.D., University of California at Los Angeles. Associate Professor of Modern Languages.

ROBERT FELLOWS UTTER, B.A., Ph.D., University of California at Los Angeles. Lecturer in Educational and Administrative Services (Part-time).

ALBERT EDGAR UTTON, B.A., University of New Mexico; B.A., M.A., Oxford University. Associate Professor of Law, Editor of the **Natural Resources Journal.**

CARLOS A. VAAMONDE, M.D., University of Buenos Aires. Assistant Professor of Medicine.

NICHOLAS ERNEST VANDERBORGH, A.B., Hope College; M.A., Ph.D., Southern Illinois University. Assistant Professor of Chemistry.

[7] **WYBE JELLE'S van der MEER,** B.S. in Arch., Illinois Institute of Technology; M.S., University of New Mexico. Instructor in Civil Engineering. (Part-time).

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[8] Second semester only.
[6] On leave second semester.
[7] First semester only.

MAEBERT CAROLE VAN DER VOORT, B.A., Drake University. Instructor in English.

MARILYN JANET VAN GRABER, B.A., University of Vermont; M.A., University of Alabama. Assistant Professor of Speech.

DAVID WRIGHT VARLEY, B.A., Oberlin College; M.A., Ph.D., University of Michigan. Associate Professor of Sociology, Chairman of the Department of Sociology.

ALBERT WILLIAM VOGEL, B.A., M.A., University of New Mexico; Ed. D., American University. Assistant Professor of Educational and Administrative Services.

BEVERLY LACY SCHOONOVER VOGEL, B.A., University of North Carolina at Greensboro; M.A., University of New Mexico. Instructor in Art Education (Part-time).

THOMAS REED VREELAND, JR., B.A., B.Arch., Yale University. Professor of Architecture, Chairman of the Department of Architecture.

WALTER WARREN WAGAR, B.A., Franklin and Marshall College; M.A., Indiana University; Ph.D., Yale University. Associate Professor of History.

EVELYN SARGENT WALKER, B.A., University of New Mexico. Instructor in English (Part-time).

HAROLD LEROY WALKER, B.S., M.S., E.Met., Michigan College of Mining and Technology. Director of Research and Fellowship Services, Professor of Metallurgical Engineering.

ROBERT J. WALPOLE, D.D.S., Baylor University. Lecturer in Dental Hygiene (Part-time).

ANNA FRANKE WALTER, B.A., Texas College of Arts and Industries; M.A., University of New Mexico. Instructor in Mathematics (Part-time).

[3] **L. HELEN WALTERS,** B.S., Teachers College, Columbia University; M.A., University of Minnesota; Ed.D., Colorado State College. Associate Professor of Elementary Education.

JAMES CHARLES WAMBOLD, B.S., Pennsylvania State University; M.S., Carnegie Institute of Technology. Instructor in Mechanical Engineering.

FREDERICK BOLTON WARNER, B.A., M.A., University of Arkansas; LL.B., University of Colorado; Ph.D., University of Illinois. Assistant Professor of English.

RICHARD ALLEN WARNER, B.S., Central Michigan University; M.S., Bradley University; Sp.E., University of Michigan. Assistant Professor of Secondary Education.

ELIZABETH WATERS, Hanya Holm School, New York City; student of the dance with Ruth St. Denis. Assistant Professor of Dance.

FRED WILLIAM WATKINS, B.A., M.D., University of Colorado. Instructor in Medicine.

RICHARD S. WATTS, M.D., Wayne University. Assistant Professor of Medicine.

JAMES KILBURN WEAVER, B.A., Harvard College; M.D., University of Colorado School of Medicine. Assistant Professor of Surgery.

WILLIAM UZZIEL WEEKS, B.S., M.S., Iowa State University. Associate Professor of Health, Physical Education, and Recreation, Head Football Coach.

[3] **HENRY P. WEIHOFEN,** Ph.B., J.D., J.S.D., University of Chicago. Professor of Law.

PAULA FENIMORE WEINS, B.S., Bradley University; M.A., Northwestern University. Assistant Professor of Nursing.

ROSEMARIE WELSH, Diplom-Dolmetscher, Heidelberg University. Instructor in Modern Languages.

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[3] On sabbatical leave second semester.

[4] On leave for the year.

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[3] On sabbatical leave second semester.

[7] First semester only.

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[7] **BRUNO JULIUS MANZ,** Dipl-Physicist, University of Mainz, Germany; Dr. rerum naturalis, Institute of Technology, Aachen, Germany. Professor of Physics (Part-time).

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[7] First semester only. [8] Second semester only.

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[7] First semester only.
[8] Second semester only.
[10] Deceased June 2, 1966.

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[12] On disability retirement as of July 1, 1963, but not on emeritus status.
[8] Second semester only.

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GENERAL INFORMATION

THE UNIVERSITY of New Mexico has as its primary responsibility the task of serving the citizens of the State of New Mexico by offering the opportunity of a well-rounded education at the higher level. The ultimate goal of college or university education is to equip the maximum number of citizens with the understanding and wisdom which will aid them in becoming useful and responsible members of a democratic society. The University also recognizes its duty to supply other services which foster the culture and welfare of the people.

GENERAL EDUCATION

PERSONAL DEVELOPMENT. There are skills, intellectual abilities, and standards of behavior which are essential to the educational and moral progress of every individual. Therefore, the University recognizes its responsibility to help each student toward the highest possible personal development through the attainment and maintenance of skills of communication, skills of reasoning and critical thinking, good habits of study and of independent investigation, and sound standards of behavior in matters of health and of social responsibility.

LIBERAL EDUCATION. The University proposes also to bring the student to an awareness of current problems and a desire to aid in their solution, and above all, to give him the enlarged perspective that comes through an understanding of the social, scientific, artistic, literary, religious, and philosophical traditions—the cultural heritage of mankind.

SPECIAL AND PROFESSIONAL EDUCATION

It is a further purpose of the University to provide opportunities for training in scholarly and technical fields. To serve the needs of the State and the welfare of its people, the University offers a variety of curricula for those students who desire and are capable of professional attainment. Training in the professions is intended to supplement the general education of the student and to equip him for a career.

SCHOLARSHIP AND RESEARCH

A prime responsibility of the University is to make its contribution to the total body of knowledge through original investigation. A special obligation to give due concern to the problems of the State and region is also recognized. To these ends the University encourages its students and faculty to engage in research, scholarship, and creative activity by providing suitable facilities in an atmosphere conducive to achievement.

The findings of research are made available to the public through various bureaus, a program of publications, and technical advisory services.

ADULT EDUCATION AND CULTURAL PROGRAMS

In order to extend its services to those not regularly enrolled as full-time students, the University offers extension, correspondence, and evening courses. In addition, by sponsoring exhibits, lectures, forums, and concerts on its campus and through the media of radio and television, the University seeks to make significant contributions to the cultural life of the State.

ACCREDITATION

The University has been a member of the North Central Association of Colleges and Secondary Schools since 1922. The Extension Division was approved by the National University Extension Association in 1930. Approval of the Association of American Universities was given to the University in 1933, and the American Association of University Women recognized the University in the same year. The curricula in Civil, Electrical, and Mechanical Engineering have been fully accredited by the Engineers' Council for Professional Development since 1937. In 1948 the College of Pharmacy was accredited by the American Council on Pharmaceutical Education and in 1952 it was accepted into membership by the American Association of Colleges of Pharmacy. The School of Law was approved by the American Bar Association in February, 1948, and was admitted to membership in the Association of American Law Schools in December, 1948. In the same year, the College of Education was accredited by the American Association of Colleges for Teacher Education. In 1954 the Association transferred its list of accredited institutions to the National Council for Accreditation of Teacher Education. In 1961 the National Council conducted a full-scale examination of the teacher education programs and, as a result, granted full accreditation for all programs at this institution for the preparation of teachers, school administrators, and guidance counselors through the doctor's degree. The University was admitted to membership in the National Association of Schools of Music in 1950. The program of the Department of Journalism has been accredited by the American Council on Education for Journalism since 1955. The basic program of the College of Nursing, including public health nursing, was first accredited in 1959 by the National League for Nursing. The School of Medicine has been recognized as a provisional member of the Association of American Medical Colleges since 1963. Initial accreditation by the Liaison Committee on Accreditation of the Council on Medical Education of the American Medical Association and the Association of American Medical Colleges was accorded in 1966.

The University is approved for veterans' training under the several Public Laws governing educational benefits.

ACADEMIC PROGRAMS

The University is composed academically of eight undergraduate colleges, the Graduate School, the School of Law, and the School of Medicine. The undergraduate colleges include:

University College, an administrative unit which supervises the programs of all freshman students
College of Arts and Sciences
College of Business Administration
College of Education
College of Engineering
College of Fine Arts
College of Nursing
College of Pharmacy

Information about these colleges and their programs is contained in the individual college sections of this bulletin.

Summer and evening credit offerings are also a part of the University's academic program on the campus. Off-campus credit is offered by extension classes and correspondence courses and through off-campus residence centers at Gallup, and the Holloman and Los Alamos Graduate Centers.

SITUATION

The University is situated in Albuquerque, the center of a metropolitan area of 350,000 inhabitants. The campus lies a mile above sea level on a plateau overlooking the Rio Grande, and about 12 miles from the lofty Sandia mountains. Albuquerque is noted for its dry and sunny climate. Although the weather undergoes the normal seasonal changes, temperatures are not extreme.

New Mexico is assuming a position of growing importance in the development of atomic and nuclear weapons and nuclear propulsion, and as a center for guided missile and rocket research and testing. The Los Alamos Scientific Laboratory, birthplace of the atomic bomb, is located 100 miles to the north; the Air Force Missile Development Center at Holloman Air Force Base and the Army's White Sands Proving Grounds are some 250 miles to the south; while in Albuquerque itself are the Air Force Special Weapons Center at Kirtland Air Force Base, the Field Command of the Armed Forces Special Weapons Project at Sandia and Manzano Bases, and one of the major research and development centers of the Atomic Energy Commission.

The city is on the A.T.&S.F. Railway and is served by transcontinental bus and air lines. Interstate Highways 40 and 25 intersect at Albuquerque.

Historic Santa Fe is approximately 60 miles to the north, and a number of Indian pueblos including picturesque Taos and Acoma are within easy driving distance.

HISTORY

The University of New Mexico was created by an act of the Territorial Legislature in 1889, opened as a summer normal school on June 15, 1892, and began full-term instruction on September 21 of the same year. Its development since that time has been extraordinary. The 20 acres comprising the original campus have become more than 500; buildings have increased from a single structure to 89.

The development of new colleges and divisions has kept pace with the physical growth of the institution. The College Department became the College of Literature and Arts in 1898, later acquiring its present title of College of Arts and Sciences. The College of Engineering opened in 1906, and the Graduate School in 1919. In 1928 the College of Education was created; in 1935 the General College; and in 1936 the College of Fine Arts. A unit of the United States Naval Reserve Officers Training Corps was established May 20, 1941. In 1945 the following new divisions became an active part of the University program: the College of Pharmacy, the Division of Government Research, and the Bureau of Business Research. In 1946 the Institute of Meteoritics was added to the University's research program. The College of Business Administration and the College of Law

were organized in the fall of 1947. The title "College of Law" was changed to "School of Law" in 1960. An Air Force Reserve Officers Training Corps unit was established in 1949. Although extension work was offered as early as 1913, the Extension Division as a separate unit with a full-time director began operations in 1928. A reorganization took place in 1953 which combined the Division of Extension, the Summer Session, the credit and non-credit evening program, conferences, and short-course offerings under the single administrative unit, Division of Extension, Summer Session, and Community Services. This Division also administers the Community College (credit and non-credit sections). The College of Nursing was established in 1955, and in 1956 the Los Alamos Graduate Center and the University College were created. Upon the establishment of the University College, the General College was abandoned. The Holloman Graduate Center was created in 1957 and in 1966 was redesignated the Holloman Graduate and Continuing Education Center. The School of Inter-American Affairs, established in 1941, was known as the Division of Foreign Studies from 1959 to 1965 when it became the Division of Inter-American Affairs. A School of Medicine was established in 1961 and enrolled its first entering class in the fall of 1964. While initial plans were for a two-year school of the basic medical sciences, approval was received in 1965 to move to a four-year program. The University has ~~46~~ 51 instructional departments or units; work leading to the master's degree is offered in ~~40~~ 43 fields, and toward the doctor's degree in ~~17~~ 21.

University administrators have for many years realized that the situation of The University of New Mexico provides it with a wealth of source material in the historical and archaeological background of the nation, and that its proximity to the Indian, Spanish, and Mexican cultures makes it a natural place for the study and appreciation of those cultures. They have, therefore, encouraged the development of Southwestern and Latin American studies and research. Some tangible evidences of this interest are found in the uniform architectural style (a modification of the Indian pueblo), which has been described as "the outstanding example of the effective use of regional architecture in the United States," the offering of a major in Latin American Studies, the annual Field Session in Anthropology, and the various examples of Indian, Mexican, and Spanish-American paintings, carving, and weaving to be found throughout the campus buildings.

GOVERNMENT AND SUPPORT

The government of the University is vested in the Regents and the Faculty. Five Regents are appointed by the Governor of the State for a term of six years; the Governor and the Superintendent of Public Instruction are ex officio members of the Regents.

The University is supported chiefly by appropriations made by the State Legislature, by income from the rental of lands granted to it by the Federal Government, by the income from royalties on the oil taken from these lands, and by student fees.

DEVELOPMENT OFFICE

The function of the Development Office is to encourage private support, both financial and non-financial, of The University of New Mexico, thereby enabling

the University to increase its contributions to the State and to the Nation in terms of teaching, research, and service. Additional financial support obtained from private sources enables the University to incorporate into its program those features which are essential to educational leadership and distinction, but which are beyond the financial responsibility of the State. Non-financial support—that is, understanding and goodwill—is essential to the successful execution of the programs and policies of the University.

The major objectives of the Development Program are: (1) to promote a better understanding of The University of New Mexico and to interpret its programs, its progress, and its needs to the public; (2) to develop and enlist the active interest and support of individuals and groups in its behalf; and (3) to provide these individuals and organizations with the opportunity to support voluntarily the University.

Although it operates as a separate unit, the Alumni Office is a part of the Development Office. This makes it possible to coordinate Alumni Association activities with the promotional activities of the overall development program.

ALUMNI ASSOCIATION

The Association is maintained through cooperative efforts of the University and the alumni body. All graduates and former students of The University of New Mexico are members of the Association. Programs and policies of the organization are determined by a board of directors, whose members are chosen with respect to college, graduation year, and geographic location.

The Association coordinates and directs Homecoming activities, arranges class reunions, organizes alumni clubs throughout the State and Nation, promotes citizenship among undergraduates, assists with student recruitment, provides advice to the University administration upon request, assists in the University's legislative relations program, and in other ways encourages alumni interest in and support of the University.

The Greater U. N. M. Fund was established in 1963 to help provide, through contributions from alumni and friends, certain features that are characteristic of a quality institution but which are often beyond the ability of the State to provide. These would include such benefits as scholarships, specialized equipment, library materials, and funds for faculty research.

The **Alumnus,** official organ of the Association, is published six times a year and is mailed to all members. Alumni Association file records include information on more than 30,000 persons who have attended the University since its opening. Master geographical and class files are maintained.

The Association's offices are located in the New Mexico Union, Suite 242.

CAMPUS AND BUILDINGS

The campus of The University of New Mexico is in the eastern section of the city of Albuquerque and comprises over 500 acres, landscaped with grass, giant cottonwoods, elms, and mountain evergreens. Most of the ~~89~~ buildings exemplify the University's distinctive architectural style, contemporary in treatment but with strong influence from the Spanish and Pueblo Indian cultures. The archi- 94

tecture is characterized by rectangular terraced masses, protruding vigas, patios, balconies, portals, and earth-color walls slightly inclined to recall ancient adobe houses. Within easy walking distance of the instructional and administrative center of the campus are the dormitories, an 18-hole golf course, a swimming pool, tennis courts, campus theatre, faculty residences, and sorority and fraternity houses. (See the campus maps in the front of the Catalog for a listing of individual buildings.)

THE ZIMMERMAN LIBRARY

BUILDING. The general University Library is housed in a building which is frequently cited as the best example of the modified pueblo style of Southwestern architecture unique to this campus. The building, enlarged by an addition completed in the summer of 1966, provides for a future collection of 650,000 volumes and seats for 1,725 readers. It contains 69 faculty studies and 207 carrels for graduate students. On separate floors are complete library services for the Social Sciences, Humanities, Science and Engineering, and General Reference. The Special Collections Department is housed in second-floor rooms including a large vault and the Thomas Bell Room for rare materials.

RESOURCES. Library collections include 381,234 cataloged and processed volumes, several thousand other cataloged serials and pamphlets, 159,820 government publications, 10,182 reels of microfilm, 120,574 microcards, 55,843 maps, several thousand pamphlets and pictures, and a large collection of archival material. These resources provide adequate study and research facilities for undergraduate work and for the special fields in which graduate work is offered.

SPECIAL COLLECTIONS. The Coronado Room contains an extensive collection of books and other materials concerning the history and culture of the Southwest in general and New Mexico in particular. It contains State publications and books about New Mexico, several hundred bound volumes of photostats of the archives of Spain, Mexico, and New Mexico, letters, manuscripts, documents and State archival materials assembled by the U. S. Historical Records Survey.

The business history collection contains records of the First National Bank of Santa Fe, 1871-1926, the Ilfeld Company, 1865-1907, Gross, Kelly & Co., 1880-1940, Bond & Son, Inc., 1900-1940, and several others.

The Van de Velde Collection of Mexican Materials, consisting of 8,686 bound volumes, 93 maps, and 50 linear feet of pamphlets was purchased in 1939 by a special appropriation of the State Legislature. It contains much rare and valuable material dealing with history, archaeology, ethnology, geology, folklore, literature, and art of Mexico.

The Catron Collection, of 9,574 volumes, is an extensive and valuable library begun by Julia W. and Thomas B. Catron and given to the University Library by their sons, C. C. Catron, T. B. Catron, F. A. Catron and J. W. Catron. Outstanding items are several hundred Spanish and Mexican publications of the 16th to 19th centuries, and 375 filing cases and boxes of letters and documents dealing with territorial New Mexico events, particularly the land grant system of the State.

The Otero Collection, given by former Governor and Mrs. Miguel A. Otero in

Main Lobby, Zimmerman Library

1939, contains 465 volumes on the Southwest and general fields, as well as a valuable manuscript and museum collection.

The Field Collection of old Spanish and Mexican Art, which includes 96 pieces of silver and 69 other art objects, was given by the estate of Neill and Mary Lester Field in 1939.

USE OF THE LIBRARY. The Library is open to all students in all departments of the University. In addition to serving the students and faculty, and subject to their needs, the Library is available for use by citizens of the State, by permission.

Books withdrawn for home use may be kept two weeks. Reserved books may be used only according to rules posted at the Reserve desk. Fines are charged for the late return of books.

HOURS. The Library is open from 8 a.m. to 11 p.m., Mondays through Fridays; from 8 a.m. to 5 p.m., Saturdays; and Sundays from 1 to 11 p.m.

FINE ARTS LIBRARY

The Fine Arts Library is located in the Fine Arts Center. This newly established library contains the library materials for art, music, drama, and architecture. Reference service in these areas is handled by the Fine Arts Library staff. A special room houses rare books and other valuable resources. Two practice rooms, with pianos, are located in the library complex. Library patrons use these facilities to perform works from scores.

The Fine Arts Library maintains its own complete card catalog. Separate divisions are provided for approximately 27,831 books and scores and 4,000 recordings and tapes. The audio materials, which include the Archive of Southwestern Music, are available for use through specially designed listening facilities.

A reference collection of 53,500 slides and 13,350 photographs and reproductions is maintained by the Fine Arts Library. The collections are particularly strong in American Indian art, Pre-Columbian art, Spanish Colonial art and architecture, and 20th-century art and architecture.

LAW LIBRARY

The School of Law Library, housed separately with the law school, received an auspicious start through donation of the Francis C. Wilson, Francis E. Wood, and other private law library collections. It contains 69,000 volumes and is being augmented by approximately 400 volumes each month. The library includes comprehensive collections of British, Federal, and State court reports, including special and annotated series, session laws, current State and Federal statutes, legal treatises, periodicals, encyclopedias and digests, administrative reports, and other classes of legal materials.

LIBRARY OF THE MEDICAL SCIENCES

The Library of the Medical Sciences, housed in Medical School Building 2, 900 Stanford Dr. N.E., also houses the Bernalillo County Medical Society Library. The collection, now totaling over 40,000 volumes, is the largest medical col-

lection in the Southern Rocky Mountain region. The Library subscribes to over 1300 biomedical serials. It is one of the most highly mechanized medical libraries in the United States, and was the first library awarded a research grant under the Medical Library Assistance Act of 1965. The staff is engaged in research on applications of computers in medical libraries and also other research in medical communications and documentation.

MUSEUMS, COLLECTIONS, AND EXHIBITIONS

MUSEUM OF ANTHROPOLOGY

The collections and exhibits of the Museum of Anthropology are located in the south wing of the Anthropology Building. Exhibits feature the life of the Palaeo Indians, Early Pueblo life, the Pueblo Golden Age, and two exhibits on late pueblo culture. In the latter is a full scale reproduction of a section of one of the famous painted kivas at the site of Pottery Mound. Other exhibits in the new Museum of Anthropology Hall include those of Navajo, Northwest Coast, Eskimo, Plains and South American Indians. A series of special anthropological exhibits feature Navajo silver, the Gallina culture, Mimbres pottery, Mound Builder cultures, Mexican and Andean archaeology, Navajo and Pueblo weaving, evolution, races of Man, linguistics, archaeological and ethnological techniques, cultures of Oceania, African tribal art, and cultures of the South Pacific and of various prehistoric periods of Europe and the Old World. These exhibits are available to the public. The museum wing is open 9 a.m. to 4 p.m. Tuesday through Saturday. School groups and others may make special arrangements. Director: Frank C. Hibben. Curator: J. J. Brody.

UNIVERSITY ART MUSEUM

The University Art Museum, located in the Fine Arts Center Building, was opened in October, 1963. The Museum's physical facilities, among the finest in the Southwestern States, are of a size to permit concurrent presentation of a continuing series of major exhibitions, together with selections from the University's permanent collection. Notable among the exhibitions organized by the Museum during the past three years were **Art Since 1889,** a survey of European and American painting, sculpture, drawing, and prints; **The Painter and the Photograph,** an exhibition tracing the relationships of painting and photography in 20th century art; and retrospective exhibitions of the distinguished New Mexico artists, **Kenneth M. Adams, Andrew Dasburg, Raymond Jonson,** and **Georgia O'Keeffe.** Three major exhibitions, **Impressionism in America, 20th Century Sculpture,** and **Cubism: Its Impact in the United States,** were organized in cooperation with the Junior League of Albuquerque. The gallery is open daily except Monday and Saturday from 12 to 5 p.m.; for groups, other hours by arrangement; closed during academic holidays. Acting Director: Clinton Adams.

GEOLOGY MUSEUM

(Geology Building) The Geology Museum has a double purpose: it is designed to serve the general public and to supplement the instructional program. Exhibits include a systematic series of minerals, a stratigraphic series of fossil animals and plants, a paleontologic series of fossil and modern invertebrates, and systematic series of igneous, sedimentary, and metamorphic rocks.

Other notable features are an exhibit illustrating how fossils are preserved; an exhibit of New Mexico metallic and nonmetallic ores; rotating exhibits of various geological materials; a series of map displays; a geologic cross-section through Mount Taylor and the Sandia Mountains, together with numerous rock samples; and an unusually fine fluorescence-phosphorescence exhibit of minerals under both long-wave and short-wave ultraviolet light. The Albuquerque Gem and Mineral Club maintains a case with rotating exhibits of specimens, including gems and precious stones. A visual seismic recorder, connected to a seismograph at the U.S. Coast and Geodetic Survey's Albuquerque Seismic Center in the Manzano Mountains southeast of Albuquerque, shows major earthquakes as they occur throughout the world. The museum is generally open 8 a.m. to 9 p.m. Monday through Saturday. Curator: Stuart A. Northrop.

HARWOOD FOUNDATION

The University of New Mexico maintains the Harwood Foundation in Taos, New Mexico. The Foundation has an excellent and extensive collection of paintings by artists who have lived and worked in New Mexico. Selections from the collections are frequently exhibited. Director: Mrs. Toni Tarleton.

JONSON GALLERY

This gallery on the campus at 1909 Las Lomas Road, N.E. is open to the public daily from 12 noon to 6 p.m. The exhibition program features monthly one-man shows or group shows by New Mexico artists, with emphasis upon contemporary painting. During the summer, the gallery presents an annual exhibition of paintings by Raymond Jonson, Director of the gallery.

MUSEUM OF SOUTHWESTERN BIOLOGY

(Biology Building) The Department of Biology maintains the Museum of Southwestern Biology, the most important single source of New Mexican vertebrates and plants, including the J. Stokley Ligon bird collection. This is a research museum, maintained for the use of all serious students of Southwestern field biology, although priority in the use of materials is reserved for University students and staff. Curators: Mammals and Birds, J. S. Findley; Reptiles and Amphibians, W. G. Degenhardt; Fishes, W. J. Koster; Plants, W. C. Martin.

RESEARCH AND FELLOWSHIP SUPPORT ACTIVITIES

THE OFFICE OF RESEARCH AND FELLOWSHIP SERVICES

Harold L. Walker, Director

The Office of Research and Fellowship Services is an administrative agency of the Graduate School of the University.

The broad purposes of the Office of Research and Fellowship Services are:

(1) to foster a more effective and more extensive program in research and other scholarly pursuits within the University;

(2) to make a continuing survey of the research and other scholarly and creative interests, activities, and needs, as well as of the human and physical resources, within the University; and to disseminate this information to departments, the University administration, and possible sponsors of research;

(3) to coordinate, insofar as possible and desirable, the various research and fellowship activities on campus;

(4) to seek funds in support of research and other scholarly and creative activities and interests in the University, including faculty and student fellowships; and to disseminate to appropriate individuals, faculty, and administration information concerning application procedures for such financial aid;

(5) to assist faculty members in determining that proposals are prepared in accordance with the policies of the University and of the sponsoring agency;

(6) to act as the University's reviewing and transmitting officer for all research proposals submitted to outside agencies, except for those emanating from the School of Medicine.

RESEARCH ALLOCATIONS COMMITTEE. The Research Allocations Committee supervises and allocates the University Research Fund. The Committee communicates with the Dean of the Graduate School and meets with him formally at least once each semester to discuss the availability and allocation of funds. The Committee receives requests from faculty members for grants-in-aid, determines faculty eligibility for grants from the Fund and the amount of such grants, and appraises the merits of proposed research projects as well as the productivity of the applicants.

THE BUREAU OF BUSINESS RESEARCH

Arthur A. Blumenfeld, Assistant Professor of Business Administration, Director; Ralph L. Edgel, Professor of Business Administration, Associate Director for Business Economics; Everett G. Dillman, Assistant Professor of Business Administration and Associate Director for Administration; William A. Shinnick, Associate Director for Technology Applications; John B. Arango, Associate Director for Community Development; A. David Sandoval, Economist; Peter J. LaLonde, Assistant Economist; Eldon G. Marr, Assistant Economist; Margaret I. Meaders, Editor; Dora K. McGrath, Assistant Editor; Shirley J. Huzarski, Data Supervisor; Donald R. House, Community Specialist.

The Bureau of Business Research, established in July 1945, cooperates closely with the College of Business Administration. Its purpose is to promote the economic welfare of the State through investigation and study of economic and business problems and through the dissemination of information. More specifically, its objectives are to promote the development and intelligent use of the State's resources and full employment for its people; to assist businesses in dealing with their problems of marketing, internal operations, and planning; to encourage the pursuit of business and economic research by students and faculty; and to provide a medium through which the skills and talents of the College of Business Administration and the University as a whole may be made of assistance to the community.

The basic activities of the Bureau consist of gathering, analyzing, and interpreting data concerning the economic life of the State—its population, natural resources, employment opportunities, income, business activities, and markets. Studies are initiated by the Bureau or are undertaken for business concerns, governmental agencies, or other interested organizations. So that the results of its studies may be used, information is disseminated through Bureau publications, the press, radio, and television. Bureau publications include these:

New Mexico Business, a monthly journal which regularly carries more than 70 indexes of business activity in New Mexico, a short article summarizing recent business activity, and a feature article on some business or economic problem or area.

The Retail Food Price Bulletin, a quarterly report presenting the results of the Bureau's survey of food prices at representative food stores in Albuquerque.

The "Business Information Series," which consists of numerous releases incorporating results of small studies and collections of information of current interest.

The "New Mexico Studies in Business and Economics," a series in which research monographs on various subjects are issued at irregular intervals.

The "County Economic-Background Series," individual reports on the development and nature of the economy of New Mexico counties.

Other activities include the Southwest Management Development Program, which embraces several types of intensified adult-education programs, including special courses and conferences tailored to the needs of specific groups and a series of week-long advanced executive conferences offered several times each year at pleasant Bishop's Lodge in the foothills of the Sangre de Cristo Mountains north of Santa Fe.

The Bureau also acts as consultant to persons desiring to avail themselves of its services; in addition, it sponsors conferences at which businessmen, civic leaders, and scholars may meet to exchange information and pool their resources toward the solution of common problems.

TECHNOLOGY APPLICATION CENTER. This Center provides the means of transferring newly developed product ideas, processes, innovations, and other new technology to private industry. In association with NASA's Office of Technology Utilization, TAC combines sophisticated techniques of handling information with a multidisciplinary staff of experienced engineers and business specialists, complemented by the faculty and the resources of the University and several other participating centers throughout the Nation. The four major areas of services offered are (1) a retrospective search, starting with identification of clients' problems and including a computerized search of some 200,000 data documents and an ultimate selection of all information relevant to each problem; (2) a selective dissemination service, consisting of making available to clients a bimonthly selection of reports on pertinent developments, new materials, and new products; (3) industrial applications, consisting of another series of bimonthly reports—these aimed at aiding clients to streamline their technological needs; (4) other services, including marketing information and ac-

cess to a series of special bibliographies and a wide range of aids in management, engineering, and the sciences, with these aids being made available by numerous campus programs. Staff: William A. Shinnick, Director; Applications Engineers: Thomas R. Lyons, Eugene Burch.

CENTER FOR COMMUNITY ACTION SERVICES. This Center operates a broad program of technical assistance to communities desiring to set up community-action agencies and programs. The Center is part of the program of the Office of Economic Opportunity. Staff: John B. Arango, Director; Gerald T. Kenna, Assistant Director; William W. McKinstry, Assistant Director; Field Representatives: Byron T. Hopewell, Facundo B. Valdez, Eugene Rey Hill, Macon Foster, Gabriel Rodriguez, Willfred Martinez.

DATA BANK. A new program of the Bureau, the Data Bank is the official repository of an enormous volume of statistical and other material on New Mexico and of pertinent regional and national data. Upon request from individual citizens, official agencies and departments, institutions, private business firms, etc., the Data Bank identifies, assembles, and forwards materials meeting precise needs. Free staff time on each request is limited; however, users may come to the Data Bank and gather their own materials.

STATE TECHNICAL-SERVICES CENTER. Upon request, this new division of the Bureau locates and provides technical information outside the NASA area and the TAC program. It also supplies referrals to sources of expertise and presents such material through conferences and seminars.

PROGRAM FOR COORDINATION OF THE HIGHER EDUCATION ACT OF 1965. This new Bureau activity supplies broad administrative services for and coordination of all New Mexico programs operated under Title I of this Act.

THE BUREAU OF ENGINEERING RESEARCH

W. W. Grannemann, Professor of Electrical Engineering, Director.

Established in 1937 as an Engineering Experiment Station, the Bureau of Engineering Research is an integral part of the College of Engineering. Research activities in the College of Engineering are directed toward (1) maintaining an engineering faculty who are leaders in the discovery and development of new engineering knowledge, (2) supporting the engineering graduate program by affording graduate students high-level research opportunities, and (3) service to the citizens and industry of the State of New Mexico.

It is the purpose of the engineering research program not only to train future research workers, but also to carry out a program of research that assures both sound investigations of a fundamental nature in the engineering sciences and work devoted to the solution of State problems and to greater utilization of the State's natural resources. Through publications, cooperative activity with New Mexico industry, and the conduct of sponsored contract research projects, it is the purpose of the Bureau of Engineering Research to play a prominent role in the industrial and technical development of New Mexico.

THE DIVISION OF GOVERNMENT RESEARCH

Acting Director: Dorothy I. Cline, Associate Professor of Political Science.

Supervisory Board: David B. Hamilton, Professor of Economics, Chairman; Nancie Gonzalez, Associate Professor of Sociology and Anthropology; Harry Stumpf, Assistant Professor of Political Science.

The Division of Government Research, created by the University in July 1945, has as its purpose the study of government and politics in New Mexico and the region.

The Division selects for study contemporary subjects of importance to the people of the State, publishes the completed studies, and makes them available to interested citizens and officials in New Mexico and elsewhere.

No conclusions concerning University policies or views are to be drawn from published studies. Opinions expressed in studies are those of the authors, who accept responsibility for them.

LECTURES

THE ANNUAL RESEARCH LECTURESHIP

The Annual Research Lectureship of the University, established in 1954, was authorized by the General Faculty in order to encourage, recognize, and honor research and creative work and to acquaint the University community and the public with the achievements of faculty members. The Graduate Committee and the University Research Committee, in joint sponsorship and with the approval of the University Administration, make the yearly nominations of the lecturer.

CARL GRABO MEMORIAL LECTURES

These lectures in memory of Carl Grabo, Visiting Professor at the University from 1947 to 1954, are offered each year under the auspices of the Department of English and are open to the public. They are supported by income from a fund established by friends of Carl Grabo.

MILITARY TRAINING

AIR FORCE ROTC

The purpose of Air Force ROTC is to select and train students who possess the character, intelligence, aptitude, and desire to become officers in the United States Air Force.

Air Force ROTC is now a 2-year program for university students. Normally, a student will begin during the fall semester of his sophomore year processing which includes written and physical tests as well as 6 weeks of field training during the summer preceding his junior year. All male students who have 2 years of academic work remaining for their degree, either at the baccalaureate or graduate level, are eligible for formal enrollment providing all processing has been completed the previous year.

Individuals must be able to be commissioned prior to reaching age 30 if programmed for other than flying training. If programmed for flying training, individuals must be commissioned prior to reaching 26½ years of age.

Uniforms and textbooks for Air Force ROTC courses are provided by the Air Force. Participants receive approximately $130 for the six-weeks training period (in addition to six cents per mile travel pay) and $40 per month for 20

months while participating in the program on campus. Total cadet pay for the 2-year program will be approximately nine hundred dollars.

Cadets are required to attend Aerospace Studies courses for 3 hours per week. Credit for Air Force ROTC courses may be applied toward an academic degree except in the College of Business Administration. Most other undergraduate colleges of the University have made arrangements whereby Aerospace Studies courses may be used as elective courses. For cadets who have gained sufficient hours under the old 4-year program, the College of Arts and Sciences and the College of Education offer a minor study in Aerospace Studies.

Those cadets who were enrolled in AFROTC during or before the 1964-65 academic year will continue with the 4-year program. No freshmen or sophomores will be formally enrolled in AFROTC during the 1967-68 academic year.

NAVAL ROTC

A Naval Reserve Officers Training Corps Unit, established by the Navy Department is in operation at The University of New Mexico. The NROTC offers the opportunity for NROTC students to obtain a commission in the U.S. Navy and Marine Corps and the U. S. Naval Reserve and Marine Corps Reserve upon completion of the baccalaureate requirements.

Three types of programs are included in the NROTC. Entering male freshmen who have been selected by the Navy Department after nationwide competitive examination are enrolled as Regular NROTC students. Regular NROTC students receive $50 per month and have their tuition, books and fees, and uniforms paid for by the Navy. Examinations for the Regular Program are given each winter by the Navy Department. Additional information concerning the Regular Program can be obtained from high school principals, Navy recruiters, and the Professor of Naval Science in the University NROTC Unit.

The 4-year Contract NROTC program is open to all entering male freshmen. The Professor of Naval Science will select applicants based on the results of a written examination and a required physical examination, both of which are given at the University during July, August, September, January and February. Contract NROTC students receive their Naval Science textbooks and uniforms without charge and are paid approximately $40 per month during their junior and senior years. Additional information on the Contract Program can be secured from the Professor of Naval Science in the NROTC Unit.

The 2-year Contract NROTC program is open to male students who have 2 more years of academic work remaining until the award of their baccalaureate degrees. Such students are required to attend a 6-week summer cruise prior to entering the program to make up the Naval Science academic and military training they would have taken in their first 2 years of college had they been in the NROTC program. While on this cruise the participants receive approximately $117 for the 6-weeks training period. Upon entering the program at the beginning of their junior year they will commence to receive $40 per month, which will be paid during their junior and senior years. Application for the two year program must be made early in Semester II of the Sophomore year.

Regular NROTC students are commissioned in the Regular Navy or Marine Corps, while Contract students are commissioned in the Naval or Marine Corps

Reserve. Contract students may, however, be commissioned in the Regular Marine Corps, provided they so request and vacancies exist.

Students may enter the NROTC at other than freshman level provided their entry is approved by the Naval Science Department Chairman and they agree to "double up" in Naval Science courses in order to graduate in a total of 4 years of college-level work.

Naval Science courses are open to any student who is attending The University of New Mexico; however, registration as a "Naval Science student" must be approved by the Chairman of the Naval Science Department. Students desiring to take Naval Science for credit need not be members of the NROTC Unit.

WESTERN REGIONAL STUDENT PROGRAM

The University participates in the Western Regional Student Program in the fields of Journalism and Nursing. For further information regarding eligibility for the Program, the student should consult the Western Interstate Commission for Higher Education certifying officer in his home state.

ADMISSION AND REGISTRATION

APPLICATION AND CREDENTIALS

ALL COMMUNICATIONS regarding entrance to the undergraduate colleges of the University should be addressed to the Director of Admissions. The University requires that each new student file an application for admission (form to be obtained from the Office of Admissions and Records) and pay a $10 application fee. In addition, he must have his credentials sent directly to the Director of Admissions from the high school or college(s) previously attended; transcripts in the possession of students are not acceptable for entrance purposes. All beginning freshmen and transfer students who have completed fewer than 26 semester hours of credit acceptable to this University are required also to take the American College Tests and to have official scores transmitted to the Director of Admissions. A former student in the University who was not enrolled here for the previous regular semester is required to file an application for readmission, except that students who complete work in the summer session are not required to file an application to re-enter in the fall. Transcripts of any college-level studies taken since the last regular attendance at the University will be required. **Deadlines for the receipt of application and credentials are July 15 for the fall semester and January 1 for the spring semester. The deadline for Dental Hygiene is April 1.**

Students are accepted for admission to the University for the second semester, which begins in February, as well as for the fall and summer sessions, except that students may enroll for the first semester of Law, Medicine, or Dental Hygiene only in the fall.

Applicants for the Graduate School, the School of Law or the School of Medicine and applicants for the Dental Hygiene or Dental Assisting programs are referred to those respective sections of this catalog.

AMERICAN COLLEGE TESTS (ACT)

The American College Testing Program battery of tests is required for advisement and placement purposes of all students applying for admission as beginning freshmen and of transfer students applying with fewer than 26 semester hours of college credit acceptable by this University. Other national tests may not be substituted for the ACT. Although the American College Tests are given several times each year, it is recommended that they be taken on a fall testing date during the student's senior year in high school. Students are required to register with ACT in advance of the testing sessions. High school seniors should consult their counselors for registration deadlines and testing dates and places.

APPLICATION FEE

An Application Fee of $10 is payable when the application for admission is submitted. This fee is not refundable. The application and credentials of students who apply for admission but do not enroll are kept on file for one calendar year after the beginning of the session for which application was made. The Application Fee paid with the original application will be extended to cover a reapplication made within that time-limit.

FRESHMEN

HOW TO APPLY

Each freshman is required to:

1. Present an application for admission (see above).
2. Enclose with the application form the $10 application fee.
3. Have ACT scores (see p. 73) sent to the Director of Admissions.
4. Request that his high school send an official transcript of his record to the Director of Admissions.

When the application, transcript, and ACT test results have been received, the Office of Admissions will send to the applicant notice of eligibility or ineligibility for admission. In some cases, a preliminary notice of eligibility will be issued prior to the final notice of admission. The final notice of admission will be accompanied by an advisement and registration appointment, a housing application form if the student requires dormitory accommodations, registration instructions, and a medical examination form.

WHEN TO APPLY

The University has a July 15 deadline for receipt of applications, all required credentials, and required test scores from students planning to enroll for the fall semester. The deadline for receipt of these items for the spring semester is January 1. To accommodate students desiring an early determination, applications from high school students will be accepted as early as the first semester of the senior year, provided ACT scores are also available at that time. From the University's standpoint, the ideal time for a student to file his application is shortly after the beginning of his final semester. At that time the student should arrange to have his ACT scores sent to the University (unless he has previously done so), and to have his high school mail directly to the Director of Admissions a transcript complete for his first seven semesters and including a list of all courses in progress. No application will be processed until all required items, including the ACT scores, are available. The partial transcript will provide a basis for extending tentative admission to the apparently eligible applicant, subject to receipt of a final transcript showing grades and credit for the senior year, and the graduation date.

UNIVERSITY COLLEGE

All freshmen are enrolled in the University College until they have completed satisfactorily a minimum of 26 semester hours and have met specific requirements for admission to the degree-granting colleges of the University.

ADMISSION BY CERTIFICATE

The standard of preparation for admission to freshman status in the University is the 4-year high school course. High schools accredited by regional accrediting associations, state departments of education, or state universities, are recognized by The University of New Mexico.

Graduates of accredited high schools may be admitted to the University upon presentation of transcripts showing graduation from a 4-year high school with

no fewer than 15 units (or graduation from a senior high school with a minimum of 11 units).

The minimum qualitative requirement for admission of New Mexico residents is a grade average of C in previous academic work, exclusive of grades in physical education activity and ensemble music courses. A higher average (2.5 on a 4.0 grading system) is required of applicants who are not legal residents of New Mexico. The applications of students whose records do not meet the indicated requirements may be subject to review by the Committee on Entrance and Credits.

Graduates of unaccredited or partially accredited high schools who present transcripts which meet admission requirements in all respects except accreditation may become eligible for admission upon validating the unaccredited high school work by successful scores on the ACT tests.

If the applicant is not a high school graduate but has completed a minimum of 15 required units in an accredited high school, has achieved an exceptional record, has satisfied the specified high-school-level subject-matter requirements of this University, makes a score satisfactory to the University on the ACT tests and has the unqualified recommendation of his principal or superintendent, he may be considered for early admission. A personal interview with the Director of Admissions is required before a decision is made. The University does not encourage early admission.

The University recommends that freshmen be at least 16 years of age.

SUBJECT MATTER REQUIREMENTS. In determining admission status, it is the primary concern of the University that the applicant have adequate preparation for successful college work. As evidence of adequate preparation, it is required that the applicant's transcript show within the 15 minimum required units successful completion of at least 13 units in specified subject-matter areas. Of these 13 units, 9 units must be distributed as follows:

English—3 units

Social Studies—2 units (including 1 unit in U. S. history)

Science—2 units, 1 unit of which must be in Biology, Chemistry, or Physics

Students intending to study nursing are advised to have completed at least 1 unit in chemistry.

Mathematics—2 units (Algebra, Geometry, Trigonometry, or higher mathematics)

The minimum 2-unit requirement may be satisfied with 2 units of algebra or 1 unit of algebra and 1 unit of geometry.

A student intending to study engineering or architecture will find it necessary, in order to complete his prescribed curriculum without loss of time, to have completed at least the following high-school mathematics: 2 units of algebra, 1 unit of plane geometry, ½ unit of trigonometry or college-preparatory mathematics. See "High School Preparation" in College of Engineering or Department of Architecture sections. These preparatory courses are also recommended for students planning to major in mathematics.

Main Campus Entrance

Students planning to enter the fields of pharmacy, pre-medicine, pre-dentistry, nursing, the sciences, or business administration are advised to include in their preparation at least intermediate algebra and plane geometry.

The remaining 4 units of the specified 13 must be chosen from the following list of restricted electives. Not more than 2 units in Group A and 2 units in Group F may be used to satisfy restricted elective requirements.

Group A—English, Journalism, Speech
Group B—French, Spanish, Latin, German, and other foreign languages
Group C—Algebra, Plane Geometry, Solid Geometry, Trigonometry, or higher mathematics
Group D—General Science, Biology, Chemistry, Physics, Physiology, Geology
Group E—History, Geography, Sociology, Economics, Government, Psychology, Social Science
Group F—Fine Arts (Music, Art, Drama)

The 2 or more additional units may be from any of the above categories or in any other courses for which credit is granted by the student's high school.

ADMISSION WITH ENTRANCE DEFICIENCIES

An applicant who otherwise qualifies for admission to the University may be admitted with a high school record which shows no more than 2 units in subject-matter deficiencies, except that admission to the Dental Hygiene Program is not granted when deficiencies exist. Time limitations in that program preclude deficiency removal after enrollment.

REMOVAL OF ENTRANCE DEFICIENCIES

Applicants admitted to the University with subject-matter deficiencies are urged, when time permits, to enroll in an accredited high school for the specific courses in which they are deficient and to complete these courses before actual enrollment in the University.

A student admitted to the University with deficiencies in English or in mathematics may not enroll in a college-level course in these fields until he has satisfied the specified high school requirements. If he qualifies on the ACT tests for enrollment in college-level mathematics or for unrestricted enrollment in college-level English courses, the deficiencies in these subjects will be considered removed. If the student does not achieve qualifying scores on these tests in English and mathematics, deficiencies in these areas must be removed by high school correspondence courses or non-credit courses offered by this University.

A student admitted with deficiencies in areas other than English or mathematics may remove deficiencies by satisfactory completion of regular college courses in the areas of deficiency. Although a grade of D in a college course may be used to satisfy a high-school-level deficiency, college credit will be granted only for courses in which the student earns a grade of C or better. A 3-semester-hour college course will remove a 1-unit entrance deficiency except in laboratory science in which 4 semester hours will be required.

ADMISSION BY EXAMINATION

A graduate of an accredited high school who *is not* eligible for admission because of excessive subject-matter entrance deficiencies may be admitted if he has achieved a qualifying percentile on the University of New Mexico norms for the ACT.

A student 21 years of age or more who has not been graduated from high school may be admitted if he achieves standard scores averaging 61 or above on the high-school-level General Educational Development tests.

The student admitted by examination will be held responsible for removal of deficiencies in the specified subject-matter areas. (See "Removal of Entrance Deficiencies" above.)

ADVANCED PLACEMENT PROGRAM

The University participates in the Advanced Placement Program of the College Entrance Examination Board. Credit may be granted for advanced placement examinations completed with grades of 3, 4, or 5 if recommended by the academic departments concerned.

TRANSFERRING STUDENTS

HOW TO APPLY

Each new student who has attended other colleges or universities and who is seeking admission to an undergraduate college is required to file with the Office of Admissions and Records an application for admission (form to be obtained from that office) accompanied by the required $10 Application Fee. He should also request the authorities at each institution attended to send an official transcript of his record to the Director of Admissions. The student who is applying with fewer than 26 semester hours of college credit acceptable by this University must also have sent to the Director of Admissions his official scores on the American College Tests (see p. 73) and a complete official transcript of his high school work. No application will be processed until all required items, including the ACT scores where applicable, are on file.

A student currently enrolled in another institution at the time he makes application and applying for admission for the following session to one of the undergraduate colleges of this University should arrange to have forwarded to the Director of Admissions an official transcript which includes a listing of courses in progress as well as all completed work. On the basis of these partial credentials, a determination of admission status will be made pending receipt of the final transcript, thus enabling the student to make definite his plans for transfer.

The student must indicate on the application all previous college attendance. An applicant is not permitted to ignore previous college attendance or enrollment even though he may prefer to repeat all of his previous college courses. A student found guilty of non-disclosure or misrepresentation in filling out the admission application form, or a student who finds after admission or enrollment that he is ineligible for academic or any other reason to return to his last institution and who fails to report this immediately to the Admissions Office, will be subject to disciplinary action, including possible dismissal from the University.

Applicants seeking admission to the Graduate School, the School of Law, or the School of Medicine of this University are referred for admission require-

ments and procedures to those respective sections of this catalog and to the **Bulletin** of the respective School.

WHEN TO APPLY

The application, required credentials, and ACT results (when applicable) must be on file in the Admissions Office not more than 6 months in advance of the session for which application is being made and not later than July 15 for the fall semester and January 1 for the spring semester.

UNIVERSITY COLLEGE

All students who have completed fewer than 26 semester hours of acceptable college credit will be required to enroll in the University College. (See p. 137.)

The student who has completed 26, but fewer than 64, semester hours of acceptable college credit and who is found admissible but who has not met the special admission requirements of the degree-granting college of his choice may be required to enroll in the University College until he has qualified for transfer to the degree-granting college. (See the respective college sections of this catalog for admission requirements.)

The University College will not accept students who have attempted 72 or more academic semester hours or who have earned 64 or more academic semester hours.

ADMISSION PROCEDURE

When the application, Application Fee, all required credentials, and the ACT results (if applicable) have been received, the Office of Admissions will send to the applicant a notice of eligibility, or ineligibility, for admission. In some cases preliminary notice of eligibility will be issued prior to the final notice of admission. The final notice of admission will be accompanied by an advisement and registration appointment, a housing application form if the student requires dormitory accommodations, registration instructions, and a medical examination form.

An evaluation of the transferred credit will be completed as soon as possible after the admission status has been determined. In some instances it will not be prepared until after the notification of admission has been issued. If the student receives his evaluation prior to registration, he should retain it for use at that time.

REGULATIONS

The minimum qualitative requirement for University admission of New Mexico residents is a grade average of C in all previous college work, exclusive of grades in physical education activity and ensemble music courses. A higher average (2.5 on a 4.0 grading system) is required of applicants who are not legal residents of New Mexico. The applications of students whose records do not meet the indicated requirements may be subject to review by the Committee on Entrance and Credits. A student under suspension from any other college or university will not be considered for admission during the period of disqualification.

A transferring student is required to meet the freshman entrance requirements (see p. 75) except that if he has completed in an accreditedl collegiate institution, which has granted him regular status, 2 semesters (26 semester hours mini-

mum) of work which meets the University's qualititative admission requirements, his preparatory record will be considered cleared even though the credits do not meet our requirements in full.

Students from fully accredited institutions ordinarily will be given full credit for work transferred, insofar as the courses taken are the same as, or equivalent to, courses offered in the college in which the student enrolls in this institution. Grades of D earned in other institutions are not acceptable for credit in The University of New Mexico.

Only an approximate evaluation can be made prior to registration, and all credit is tentative until the student has completed at least one semester of satisfactory work in residence.

Credits transferred from an accredited junior college will be accepted up to a maximum to be determined by the college in which the student is enrolled. In accepting junior college credits, no courses will be considered as above sophomore level.

No credit is accepted from technical institutes which are not members of regional accrediting associations. Only credit earned in non-technical subjects is accepted from technical institutes which are accredited by a regional accrediting association.

Applicants from unaccredited institutions must have the equivalent of a 2.5 University of New Mexico index to be eligible for admission by transfer. Credit earned in unaccredited institutions is usually accepted on the same basis as by the state university of the state in which the institution is situated. When acceptance of credit on a validation basis is indicated, the student will be required to validate such credit by at least a 2.0 index on his first 30 semester hours of residence study here. The maximum credit which will be allowed on a validation basis is 60 semester hours plus not more than 4 credits in physical education activity courses. Where it seems proper, examinations for the validation of credit may be required.

Correspondence and extension credit from institutions not accredited by regional accrediting associations is not accepted for transfer. A student who has completed such correspondence or extension work in a course comparable to one offered by this University has the privilege of establishing credit here under the regulations governing special examinations to establish credit.

CONCURRENT ENROLLMENTS. Credit will not be granted for college courses carried either through extension or correspondence, or in residence at another institution of college level, when a student is enrolled for residence credit in this University, except upon prior written approval of the dean or director of the college in which the student is enrolled here.

UNCLASSIFIED STUDENTS. Students transferring from unaccredited or partially accredited institutions are unclassified until they have validated credit in accordance with the University regulations. This designation is also used temporarily when the evaluation has not been made and definite classification cannot, therefore, be determined.

READMITTED STUDENTS

A student who has previously enrolled in residence in the University but whose attendance has been interrupted by one or more regular semesters is required to file an application for readmission whether he plans to attend in degree or in non-degree status. The degree student who, during his absence from the University, has attended another collegiate institution, or has taken college-level courses by correspondence or extension, must provide complete official transcripts of such studies. The Application Fee is not required of undergraduate students who have formerly attended the University in degree status. Students applying for readmission in regular status are required to meet the application deadlines.

A student enrolled in another institution at the time of application and applying for readmission to one of the undergraduate colleges should arrange to have forwarded an official transcript which includes a listing of courses in progress as well as all completed work. An applicant for readmission to the Graduate School, to the School of Law, or to the School of Medicine will have the required transcripts sent to the respective School. On the basis of these partial credentials, a determination of readmission status will be made pending receipt of the final transcript, thus enabling the student to make definite his plans for re-entry.

Credit earned during suspension from this University will not be accepted for transfer.

UNIVERSITY COLLEGE

The readmitted student in regular status who has not completed 26 semester hours of acceptable college credit will be required to enroll in the University College (see p. 137).

The readmitted student in regular status who has completed 26, but fewer than 64, semester hours of acceptable college credit and who is found readmissible but who does not meet the special admission requirements of the degree-granting college to which he is seeking readmission may be required to enroll in the University College until he has qualified for transfer to the degree-granting college. (See the respective college sections of this catalog for admission requirements.)

The University College will not accept students who have attempted 72 or more academic semester hours (including hours with grade of Incomplete) or who have earned 64 or more academic semester hours.

NON-DEGREE STUDENTS

Persons wishing to pursue credit courses, either evening or daytime, without meeting the full requirements for admission to undergraduate status, may apply for non-degree status in the University's Community College provided the following qualifications are met:

The applicant must be at least 21 years of age, or must have been graduated from high school. (High school graduates who have not been out of high school for a year or more may not enroll in non-degree status, but should file formal application for degree status in the University.)

A student who has exhausted his eligibility in the University College and who is not academically eligible to enter a degree-granting college of this University may not enroll in non-degree status.

It is not the policy of the University to permit students from other countries to register in non-degree status.

The applicant who wishes to register in non-degree status is required to file a short application form with the Office of Admissions. These forms may be obtained from that office.

Previous academic records are not required of applicants for non-degree status. It is urged, however, that non-degree students planning to enroll in advanced courses requiring prerequisites bring with them at registration some evidence that prerequisites have been fulfilled.

Applicants for non-degree status are required to certify that they are not under suspension from any college or university. A student found guilty of non-disclosure or misrepresentation in filling out the admission application form, or a student who finds after admission or enrollment that he is ineligible for academic or any other reason to return to his last institution and who fails to report this immediately to the Admissions Office, will be subject to disciplinary action, including possible dismissal from the University.

The student registered in non-degree status is subject to all University regulations governing registration, attendance, and academic standing. Credit earned in non-degree status is recorded on the student's permanent record and may be applied in an undergraduate degree program when the student has satisfactorily established degree status by meeting the entrance requirements of the University and of the degree-granting college of his choice. Credit earned in non-degree status may not be allowed for graduate credit or applied toward a degree in the Graduate School even though graduate status is subsequently established or re-established. Students in Non-degree status who do not have a bachelor's degree or equivalent may not enroll in 500-600 level courses.

The student in non-degree status may not enroll for more than 7 semester hours during a regular session without special approval of the Director of the Community College.

No undergraduate college of the University will accept in a degree program in excess of 30 semester hours earned while the student has been registered in non-degree status, nor is a college obligated to accept any hours earned in non-degree status which do not fulfill college degree requirements. The student who is approaching this 30-hour limitation in non-degree status, and who wishes to continue taking courses for credit, should consult the Admissions Office concerning procedures required to establish regular degree status. Regular status must be attained prior to the student's next registration. If regular status is not attained, the student will be allowed to register in courses as an auditor only, receiving no credit.

Non-degree students applying for regular status are required to follow admission procedures and to provide all items requested of transfer students (see p. 78).

GRADUATE STUDENTS

Refer to "Graduate School" and to the **Graduate School Bulletin.**

LAW STUDENTS

Refer to "School of Law" and to the **Law School Bulletin.**

MEDICAL STUDENTS

Refer to "School of Medicine" and to the **Medical School Bulletin.**

STUDENTS FROM OTHER COUNTRIES

The University admits qualified students who are citizens of other countries. The non-citizen is required, for visa purposes, to enter in regular status. He is, therefore, required to present, in addition to the application for admission: official certified transcripts from each secondary school attended; official certified transcripts from each college and university attended; American College Tests scores, if applicable (see p. 73); official certifications of any state or national examinations taken; evidence of satisfactory results on the "Testing of English as a Foreign Language" examinations in areas where these examinations are administered (in other areas, a certificate or statement from the American consul as evidence of a competent reading, writing, and speaking knowledge of the English language will be considered); and a certified statement which shows ability to meet financial responsibilities while in the United States.

To facilitate his admission procedure, the applicant should gather all credentials and send them in the same mail to the Director of Admissions, except that American College Tests results are sent direct to the University by ACT. Applications for graduate-level study (beyond a first college-level degree) and all the credentials listed above (excepting only the secondary school credentials) should be mailed to the Dean of the Graduate School.

VETERANS

A veteran is defined as any person who served in the Armed Forces for a minimum of 90 days from September 16, 1940 to July 26, 1947, or who during a subsequent period of active duty, became eligible under one of the Public Laws governing educational benefits for veterans.

The veteran student should follow the requirements and procedures outlined in the "Admission and Registration" section of the catalog in seeking admission to the University. For certification of eligibility for educational benefits under one of the Public Laws, he should make application to the Regional Office of the Veterans Administration for his home state.

Credit for service training and experience is granted on the basis of measured educational achievement, in conformity with the procedures recommended by the North Central Association of Colleges and Secondary Schools and the American Council on Education. Students who were eligible for educational benefits under one of the Public Laws or who served on active duty during a period of at least 1 calendar year after July 26, 1947 must apply for such credit during the first semester of enrollment in regular status. Any credit tentatively allowed will become a part of the student's permanent record after he has completed a minimum of 12 semester hours at this University. Total semester hours of military credit to be accepted in a specific degree program will be at the discretion of the degree-granting college of this University in which the student is registered. A maximum

of 8 semester hours elective credit is allowed for basic or recruit training apportioned as follows: First Aid, 2 semester hours; Hygiene, 2 semester hours; Physical Education Activity, 4 semester hours. Eight semester hours, apportioned the same as credit granted for service in the U. S. Armed Forces, will be granted to foreign students who have completed military training, provided they can show official credentials in support of their statements. Credit earned in specialized army and navy programs conducted by college and university staffs is allowed in accordance with the recommendations of the administering institution. Credit for work done in formal training programs is allowed in accordance with the recommendations of the American Council on Education or on the basis of examinations here. U. S. Armed Forces Institute courses are acceptable if courses have been taken through university extension divisions accredited by regional accrediting associations. Other U.S.A.F.I. courses may be accepted if recommended by the American Council on Education and validated by successful scores on "End-of-Course Tests" or "Subject Standardized Tests." U.S. Armed Forces Institute correspondence courses not directly transferable or validated by these tests may be established by examination in this University. No credit is allowed for the College-Level General Educational Development Tests nor for the Comprehensive College Tests (General Examinations). The veteran has the opportunity, while enrolled in regular status in the University, to demonstrate his competence in any University subject, and to establish credit in that subject, by passing an examination as required by the Committee on Entrance and Credits.

MEDICAL EXAMINATIONS

A student enrolling for 8 or more semester hours for the first time, or returning to the University after an absence of one year or more, is required to have a physical examination from his own doctor. This must be reported on the official University forms (provided at the time the student is notified of his admission) and must be filed with the Student Health Service **prior to his registration.** Students will be re-examined by the University physicians when such examinations are indicated. Health-seeking students may be accepted at the University if, in the judgment of the University physicians, their admission does not endanger themselves or their associates. The University may refuse enrollment to, or cancel the enrollment of, any student who is unfit to carry on class work, or whose condition might be a menace to the health of other students.

REGISTRATION

ORIENTATION

At the opening of each semester a new-student orientation period is conducted beginning with a new-student assembly (see the Calendar). The purpose of this program is to acquaint the new student with some of his fellows, to help him feel more at home in new surroundings, to permit him to meet advisers and counselors, and to familiarize him with University methods and life.

Every freshman student entering the University is required to take a speech test administered by a Speech Department staff member. If this test shows significant defects, the student may be required to take Speech 103 or Speech

105, and to do additional work in the Speech and Hearing Clinic under staff direction.

After the student's arrival on the campus, the Student Council issues a **Freshman Handbook** which contains information on student organizations, library rules, campus regulations, suggestions for effective study, etc.

During his first registration, each new student is assigned by the dean or director of his college to a faculty adviser who assists him in planning his academic program. The adviser keeps a permanent file on each of his advisees and is available for consultation.

REGISTRATION PROCEDURE

Details of the registration procedure are contained in a special notice issued by the Admissions and Records Office, and distributed to students with their appointments for advisement and registration.

TIME OF REGISTRATION

Students are urged to register on the days set aside for registration (see University Calendar). A late registration fee is charged to each student who does not complete his registration on the specified days. No student may enroll late in any course unless he has the permission of the instructor concerned and of the dean or director of the college in which he is enrolled. A student may not be admitted to the University more than two weeks after the opening of a semester.

PAYMENT OF TUITION AND FEES.

Payment of tuition and fees is required in advance of registration. Instructions for payment and payment deadline dates are made available to the student in advance of each session. For specific information about tuition and fees, see pp. 86-89.

SELECTIVE SERVICE REGULATIONS FOR EDUCATIONAL DEFERMENT

Selective Service regulations require that the student seeking educational deferment report his enrollment to his local draft board at the beginning of each school year and that he keep his board informed of changes in his status. The University, at the student's request, will provide his local board with confirmation of his enrollment. A Selective Service card is included in the student's registration packet at each regular semester registration. Completion of the card constitutes a request that the University notify the student's local board of his enrollment. When the student feels there are special circumstances his board should know about his enrollment, he should consult with the Records Office in the Administration Building.

STUDENT RESPONSIBILITY

The University will hold the student responsible for completion of the courses for which he has been enrolled, unless he obtains approval for a change in his registration, or files an official withdrawal from the University.

CHANGE IN ENROLLMENT

See "General Academic Regulations."

STUDENT EXPENSES

FEES (REGULAR SESSION)

FEES ARE CHARGED according to the number of semester hours carried by a student; auditors (those enrolled in a course for no credit) pay the same fees as students enrolled for credit. All tuition and fee charges, as well as fees for special services, are subject to change without notice.

REGISTRATION FEES (undergraduate, graduate, and Law):

	Per Semester	
	N.M. Residents	**Non-Residents**
Students carrying 12 or more hours:		
Tuition and Fees*	$204.00	$459.00
Student Group and Health and Accident Fee (optional)[1]	8.50	8.50
Total Tuition and Fees with Group Insurance	$212.50	$467.50
All students carrying 11 hours or fewer:		
Tuition and Fees, per semester hour	$ 17.00	$ 38.25

Graduate students who enroll for master's thesis or for doctoral dissertation will pay regular tuition rates.

Applied music fees of $16 per credit hour, in addition to regular tuition, will be charged all full-time University students enrolling for applied music courses beyond their curriculum requirements. Part-time students should consult the Music Department for a schedule of applied music fees.

REGISTRATION FEES (Medical School):

	Per Semester	
	N.M. Residents	**Non-Residents**
Tuition and Fees*	$300.00	$600.00
Student Group Health and Accident Fee[2]		

Students enrolling in the School of Medicine as non-residents will pay non-resident tuition during the full period of enrollment in the Medical School except that Western Interstate Commission for Higher Education Exchange Students will be charged the same tuition as a resident of the State of New Mexico.

TUITION AND FEE PAYMENT

All students are required to pay tuition and fees, or to make arrangements satisfactory to the University for such payment, **prior** to the beginning of the advisement and registration procedure.

Instructions for payment of tuition and fees are outlined in the Fee Announcement which is sent to the student with his other registration materials.

Checks or money orders should be made payable to THE UNIVERSITY OF NEW MEXICO and should be mailed to the Cashier, The University of New Mexico, Albuquerque, New Mexico, 87106. **Do not mail cash. To assure credit to the proper student account, it is mandatory that payment be accompanied by the Student Payment Record form and the Cashier's Record form.** These forms bear the student's name and identification number.

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* Tuition and fees in the case of all new students includes a $5 matriculation fee; and in the case of all full-time students, includes fees for major athletic events.

[1] The group health and accident insurance is available only to students enrolling for 8 or more semester hours. Participation is at the student's option.

[2] Arranged by Medical School; fees to be determined.

HOUSING FEES

See Catalog section "Student Housing."

OTHER FEES FOR SPECIAL SERVICES

Application fee	$10.00
Change in program after end of second week	1.00
Late payment penalty (tuition)	5.00
Late registration fee	5.00
Removal of Incomplete grade, per course	2.00
Advanced Standing Examination, and examination to establish credit, per credit hour	2.50
Examination to validate credit†, per course	2.00
Other faculty-administered special examinations‡	2.00
Transcript of credit (per copy)	1.00
Deferred payment fee	5.00
Penalty for dishonored checks	2.00
Late ACT Testing	10.00
Graduate School Foreign Language Test	6.00
Miller Analogies Test	5.00
Air Force ROTC activity fee, per year payable in full Semester I	8.00
Graduation fee, all bachelor's and master's candidates	10.00
Master's thesis binding fee	6.00
Architectural thesis fee	6.00
Law students' dues for N.M. Student Bar Association, per yr.	10.00
English 010	20.00
Mathematics 010	20.00
Home Economics 445L (Home Management)	50.00
Horseback Riding (PE 131)	30.00
Men's Bowling (PE 137)	6.50
Women's Bowling (PE 130)	13.00
Ice Skating and Skiing (PE 141)	30.00
Applied Music (see p. 86).	
Use of practice rooms	
1 hour per day, per semester	4.00
Each additional hour per day, per semester	2.00

RESIDENCE FOR TUITION PURPOSES. A resident student, subject to the qualifications below, is defined as one who shall have maintained bona fide residence in the State of New Mexico for at least 12 consecutive months immediately preceding his or her registration or re-registration in The University of New Mexico and who can provide evidence satisfactory to the University of his or her intent to retain residence in New Mexico.

Any person unable to qualify as a resident for tuition purposes shall be required to pay the non-resident fee.

The following general rules govern:

A Minor Student is entitled to resident student status upon proof of the bona fide residence in New Mexico of his, or her, custodial parent or guardian for the one year immediately preceding the student's registration or re-registration.

An Adult Student is entitled to resident student status if he or she has maintained bona fide residence in New Mexico continuously for 12 months immediately preceding his or her registration or re-registration and if he or she

† Applies to college credit already earned in another college-level institution but not directly acceptable under University regulations.

‡ See definition of special examinations, p. 129

can provide evidence satisfactory to the University of intent to retain residence in the State. The residence of a married woman is determined by the residence of her husband.

Teachers. Any person who has taught in a public or parochial school system in New Mexico on a full-time basis for a full school year of approximately nine months immediately in advance of his registration or re-registration may qualify as a resident of New Mexico for tuition purposes, provided such person can give evidence satisfactory to the University of intent to continue to make New Mexico his home.

Special Residence Problems. Persons who have special problems concerning residence should arrange for a conference with the Director of Admissions.

Changes in Residence Status. A change in status from non-resident to resident for tuition purposes can be made only after satisfactory evidence has been presented in writing to the Director of Admissions that residence requirements have been met.

BREAKAGE. The tuition provides for a nominal or "normal" amount of breakage in laboratory or other courses. Excessive breakage will be billed separately to the students responsible therefor.

INSURANCE PLAN. See p. 117 for explanation.

ASSOCIATED STUDENTS FEE. The assessment of this fee is a voluntary action of the student body, through its organization, the Associated Students of The University of New Mexico and the University collects this fee as an accommodation to the Associated Students. The fee is included in the fees paid by all full-time students. The Associated Students Fee is distributed to the student organizations as shown in the Constitution of the Associated Students. Copies of the Constitution may be obtained from the Office of the Deans of Men and Women.

STUDENT ACCOUNTS. Students are required to pay all accounts due the University during one semester **before** registering for a new semester.

REFUNDS UPON WITHDRAWAL

When a full-time student withdraws voluntarily from the University during the 1st week of the semester, $5 of his tuition will be retained as a service fee. After the 1st week, registration fees will be refunded (where the student withdraws voluntarily) to the end of the 5th week of the semester as follows:

80% refund during the 2d week
60% refund during the 3d week
40% refund during the 4th week
20% refund during the 5th week

Students withdrawing after the 5th week of a semester, or those withdrawing at any time under discipline or because of academic deficiencies, will not be entitled to any refund. There is no refund for English 010 or Mathematics 010 after the first week of classes.

PROGRAM CHANGE. One dollar is charged for each change of program form processed after the second week of classes. Tuition, as applicable, is charged for all courses added. The refund schedule above, for withdrawal, applies when courses are dropped and a tuition adjustment is necessary. There is no refund for English 010 or Mathematics 010 after the first week of classes.

ESTIMATE OF TOTAL EXPENSE

The minimum amount necessary for expenses of resident students while attending the University is estimated as follows, per semester:

Tuition and fees	$204.00
Student health and accident insurance	8.50
Books and supplies	75.00
Board and room	402.00
Clothing, laundry, misc.	250.50
Total, per semester	$940.00

Non-resident students must add $255 per semester to the foregoing tuition. All charges are subject to change without notice.

STUDENT HOUSING

FACILITIES AND REGULATIONS

THE UNIVERSITY operates residence halls for full-time undergraduate students. All of these structures are modern, relatively new buildings with attractive living accommodations designed to meet the specific needs of University students. The convenience and economy of housing and dining facilities located on campus within easy walking distance of classroom and recreational facilities are welcomed by students carrying a full academic load.

The housing services are an integral part of the total educational experience provided by the University. Each hall is under the supervision of trained personnel who provide leadership, counsel, and a wealth of educational opportunities to the residents. Residents of each hall elect a governing body which plans and organizes a full program of cultural, intramural, and social activities. All residents are afforded the opportunity to enjoy and participate in a democratic type of group living.

A proportion of the residence hall capacity will be reserved for returning students. The remainder will be available to students new to the University and will be assigned in order of the receipt of housing contracts and deposits.

Students enrolled in the University College, whose homes are not in Albuquerque, are required to live in University residence halls unless given permission to live elsewhere by the Dean of Men or by the Dean of Women upon authorization of the students' parents. Women enrolled in degree-granting colleges may live off campus with parental authorization. Wherever they live, students are expected to conduct themselves so as to bring no discredit to the University.

All students must register their correct addresses with the Deans of Men and Women. Any change in address should be reported immediately to the Records Office which will in turn notify the Personnel Dean and the dean or director of the college in which the student is enrolled.

RESERVATIONS

NEW AND READMITTED STUDENTS

The Director of Admissions will study each student's application for admission or readmission and his high school or college transcript. When the applicant has been found admissible, the procedures will be as follows:

1. The student will be informed of his acceptance and if he is required to have, or desires, University housing, he will be sent a housing application which he should complete and return to the Housing Collections Office, Mesa Vista Hall.
2. When the student's housing application is received, a formal room and board contract will be issued according to room space available. The student should complete the contract (to include the signature of his parent or guardian if he is under 21 years of age), and return it with his advance housing deposit of $25.00 to the Housing Collections Office.

By the terms of this contract, the student agrees to reside in University housing for 2 semesters within an academic year.

3. When the student's remittance is received, housing space will be confirmed by the Housing Collections Office. Upon arrival at the University, students should report directly to the hall to which they have been assigned. Specific room assignments are issued only when a student checks into his hall. Both men and women students should plan to arrive between 8:00 a.m. and 10:00 p.m.

4. All questions concerning an exception to housing regulations should be addressed to the Dean of Men or to the Dean of Women.

HOUSING RESERVATION FEE

An advance deposit of $25.00 is required of all students who desire University housing. The deposit is retained by the University against possible losses or damages incurred by the resident for as long as the student remains in the residence halls and renews his room and board contract for succeeding years.

The deposit is automatically forfeited if an applicant for housing fails to give notice of cancellation, or if notice of cancellation is received later than August 1 in the case of a fall semester reservation, or January 1, if the reservation is for the spring semester. The deposit is also forfeited if a student fails to complete residence for the period of his room and board contract.

STUDENTS CONTINUING IN ATTENDANCE

Students living in the residence halls are required to make housing reservations for the following year not later than May 1 of the spring semester. Student occupancy in residence halls is on a school-year basis. Unless a contract is renewed with the Housing Collections Office, living space will be assigned to another student and the deposit will be automatically refunded by July 15.

CHANGES IN STUDENT'S PLANS

Should an applicant for admission or re-admission to the University find it impossible to keep an advance reservation, he should notify the Director of Admissions. A reservation must be cancelled no later than August 1 for Semester I, or January 1 for Semester II, in order to receive a refund of the Advance Housing Deposit. A student returning for the fall semester should notify the Housing Collections Office no later than August 1. The deposit is automatically forfeited if notice of cancellation is received later than the applicable dates above.

GENERAL REGULATIONS

Upon receipt of the housing contract and the $25.00 advance housing deposit, a residence hall assignment will be made. Consideration will be given to the preference of the student when possible, but the University reserves the right to make room assignments and changes.

Married women students must have permission of the Dean of Women to live in residence halls.

The University reserves the privilege of closing its residence halls during

the Christmas and spring recesses. When the halls are to be closed, they must be vacated by noon of the first day of the recess. They will be re-opened the day before classes resume.

All students who are not required to remain on campus for Commencement activities must vacate their rooms not later than 24 hours after their last final examination in the spring semester.

Dogs or other pets are not permitted in University buildings or on University premises for sanitary reasons.

ROOM AND BOARD CHARGES

All students occupying rooms in residence halls are required to take their meals at the University dining halls. Room and board charges are payable in advance to the Housing Collections Office, Mesa Vista Hall. Payment may be made in full or in four installments as described below.

Rates for Board and Room in Residence Halls

	Per Semester	Per Year
Single Room	$453.00	$906.00
Double Room (per person)	402.00	804.00

Rates include a $3.00 residence hall social fee for each semester.

All rates for University room and board are subject to change whenever necessary to defray operating costs. These rates do not provide for meals during official recesses as listed in the Academic Calendar.

All the foregoing rates for University housing for men or women provide for University-supplied bed linens. All other personal linens, pillows, towels, and blankets are provided by the student. The use of electric blankets is not permitted. Phones are provided in each student room.

PAYMENT OF ROOM AND BOARD

Room and board is payable on or before August 15 for Semester I, and January 5 for Semester II. Installment payments include a $2.00 deferred payment fee and are due as follows:

	Double	Single	Semester I	Semester II
1st payment	$104.00	$155.00	August 15	January 5
2nd payment	$100.00	$100.00	September 15	February 15
3rd payment	$100.00	$100.00	October 15	March 15
4th payment	$100.00	$100.00	November 15	April 15

A student moving into a residence hall during a semester will make payment on or before the date he occupies his room.

DINING HALLS

To the extent that facilities permit, students living off-campus or in fraternity or sorority houses are permitted to eat at the University dining halls. Information concerning rates and types of meal tickets can be obtained from the Housing Collections Office, Mesa Vista Hall.

MARRIED HOUSING

The University owns and operates some furnished one-bedroom apartments for married students. An applicant for this type of housing must be enrolled in The University of New Mexico as a full-time student. Apartment residents may remain in University housing during the summer months if they plan to re-register for the fall semester. No dogs or other pets are permitted.

REFUNDS

ROOM REFUNDS

Refunds for room rent are calculated on the following basis:

If a student officially withdraws:

	Refund
During the first 2 weeks of classes	80%
During the 3rd and 4th weeks of classes	60%
During the 5th and 6th weeks of classes	40%
During the 7th and 8th weeks of classes	20%

A student who withdraws after the 8th week of classes will receive no rent refund.

BOARD REFUNDS

Board refunds are prorated on a weekly basis according to an established rate schedule.

FINANCIAL AID

The Student Aids Office is responsible for the administration of undergraduate student financial aid and financial counseling to students who apply for aid. Students who are interested in loans, scholarships, or Work-Study employment should apply to this office. Some of the programs administered by the Student Aids Office are: NDEA Loans, Nursing Student Loans, Cuban Loans, USA Loans, Federal Guaranteed Loans, University Short Term Loans, The Federal Work-Study Program, The University Scholarship Program, both Academic and Athletic, and the Educational Opportunity Grant Program. The Student Aids Office is located in Building Y-1 (Air-Force ROTC Building).

The Placement Center administers all student employment except the Federal Work-Study Program. The Placement Center Office is located in T-10.

LOAN FUNDS

The University administers its own Student Loan Fund and cooperates in the administration of several others. Applications and information concerning all loan funds are available in the Student Aids Office.

The maximum amount available from this fund is $100. General rules applying to the University loan funds are:

1. Applicant must have been in residence at The University of New Mexico for at least one semester.
2. Applicant must be receiving grades of "C" or better in subjects carried at the time of application.
3. Applicants desiring loans from the student loan fund may be requested to have the signature of one substantial local citizen on the bank note.
4. In order for a student to be eligible to apply for a student loan, it will be necessary for him to have paid in full any previous loans which he has obtained.

Six other loan funds are available for small, short-term loans: The Mortar Board Loan Fund, the Khatali-Vigilante Loan Fund, the Joe L. Kramer Loan Fund, the Phikeia Loan Fund, the Donald R. Fellows Memorial Loan Fund, and the S. U. B. Club Loan Fund. These six funds are administered through the Office of the Dean of Men.

Other loan funds available to students at the University are: The American Association of University Women's Loan Fund; Revolving Loan Fund of the Ancient, Free and Accepted Masons of New Mexico; Educational Loan Fund of the Grand Commandery of Knights Templar of New Mexico; The McGaffey Memorial Loan Fund of the Albuquerque Rotary Club; The Women's Club Loan Fund; The Altrusa Club Loan Fund; The G. Perry Steen Memorial Student Loan Fund; Zonta Club of Albuquerque Loan Fund; A. & L. Rosenbaum Loan Fund; The Pharmacy Scholarship Loan Fund; The Kiwanis-Milne Loan Fund; the State Bar of New Mexico Loan Fund; the Lois and Harry Bruch Memorial Loan Fund; and the Walter B. Fuente Memorial Loan Fund.

NATIONAL DEFENSE STUDENT LOANS

The National Defense Student Loan Program is one of the features of Public Law 85-864, the National Defense-Education Act of 1958. Under the terms of the act, funds are available for loans to qualified undergraduate and graduate students. The law provides that special consideration be given to students with superior academic backgrounds. The deadline for filing a loan application is July 15 for the fall semester and December 1 for the spring semester.

NURSING STUDENT LOANS

Low interest loans, from Federal funds, are available to regularly enrolled students in the College of Nursing who are in need of funds to help finance their education.

The student must be enrolled in the College of Nursing to qualify for a loan under this program. Interested students should apply to the Director of Student Aids, Bldg. Y-1. Deadlines for applications are July 15 for the fall semester and December 1 for the spring semester.

FEDERAL PROGRAM OF LOW-INTEREST INSURED LOANS TO STUDENTS

The University participates in this program established under the Higher Education Act of 1965, PL 89-329. Loans made to students under this program are endorsed with Federal funds. This program, at present, is being operated within the framework of United Student Aid Funds. Applicants may secure these loans from commercial banks after being certified by the University. Repayment starts 9 months after the student leaves school. Interest will be paid by the Federal Government while the student remains in school and one-half after he leaves school if his adjusted family income is less than $15,000 per year. Interested students should contact the Director of Student Aids, Building Y-1 for further information.

UNITED STUDENT AID FUND LOANS

The University of New Mexico has established a reserve with United Student Aids Funds, so that students can obtain low-cost, long-term bank credit. This reserve enables United Student Aid Funds to endorse bank loans made to needy students by their hometown banks. The applicant applies to the loan officer at his hometown bank. Applications are available from either the bank or the Student Aids Office.

COLLEGE WORK-STUDY PROGRAM

The University participates in the College Work-Study Program established under the Economic Opportunity Act of 1964. This program permits colleges and universities to employ students who are in need of earnings from part-time employment in order to pursue their courses of study. Students are limited to 15 hours per week while enrolled full time in the University. During summer, and periods when the University is not in session, they may work 40 hours per week. Interested students should apply to the Director of Student Aids, Building Y-1 for application forms and further information.

OTHER STUDENT EMPLOYMENT

The part-time employment program administered by the Placement Bureau is quite extensive, including work both on and off the campus. Campus jobs are located in the various offices of the University, in the dining halls, and in the dormitories. A few students obtain work in private homes where they may earn their room and board in exchange for a few hours of work a day. The Center also has many calls from business and private citizens in Albuquerque for students to fill part-time jobs.

Any student wishing part-time employment is requested to file an application with the Placement Center. Applications for part-time employment must be renewed each year. For Placement Center Service to graduating students and alumni see p. 117.

VOCATIONAL REHABILITATION

(For the Physically Handicapped)

Through the New Mexico Division of Vocational Rehabilitation which operates under the supervision of the State Board for Vocational Education, the State and Federal Government offer financial assistance for payment of tuition to those students who have physical disabilities. Other assistance may also be given to these physically handicapped students who are financially unable to provide the services for themselves.

The following are some of the requirements for acceptance for service by the Program:

(1) Applicant must be a resident of New Mexico and have a permanent physical disability, whether congenital or as a result of an accident or a disease, and (2) must be capable of carrying a course and maintaining at least a "C" average. (3) Training in the course chosen must offer an opportunity for employment for the individual without being injurious to his health and must be within his physical capacities.

Both men and women are eligible for the service. Those with military service who have acquired physical disabilities will be accepted only after their training under the Veterans Administration has expired.

The Rehabilitation Service is a part of our system of public education as are our grammar schools, high schools, colleges and universities. Those who can qualify should apply for this service.

HOW TO APPLY. Those students having disabilities who wish to apply should do so by writing to one of the New Mexico Rehabilitation Offices at the National Building, 5th and Marquette, N.W., Albuquerque, New Mexico; P.O. Box 2406, Santa Fe, New Mexico; Petroleum Building, Roswell, New Mexico; Dennison Building, 1480 N. Main Street, Las Cruces, New Mexico; Petroleum Center Building, Farmington, New Mexico; or P.O. Box 328, Las Vegas, New Mexico. A counselor will arrange an interview to discuss the program in detail with those who have applied. Application must be made and case accepted before obligation for tuition has been made.

SCHOLARSHIPS AND AWARDS

The University awards scholarships to a substantial number of its entering freshmen and upperclassmen each year. The qualifications expected of the recipients and the amounts of the awards vary. Some carry special stipulations or require that the student major in a specific field, but the majority of awards require only a strong scholastic record and a need for financial assistance.

Announcements of awards for scholarships, prizes, medals, and certificates are made after approval by the Faculty Scholarships, Prizes, and Loans Committee. Information on all scholarships and awards may be obtained from the University Student Aids Office.

Students holding University sponsored scholarships must reapply for them each semester. Deadlines are April 15 for the fall semester and December 1 for the spring semester.

Application for admission to the University of New Mexico, and scores on the American College Tests (in the case of freshman applicants), must be on file in the Admissions Office before a student can be awarded a scholarship (see "Admissions" section of this catalog). A scholarship application must also be submitted to the Student Aids Office; only one scholarship application is required regardless of the number of scholarships in which a student may be interested. Scholarship application forms may be obtained from the Student Aids Office. High school seniors may also obtain forms from their high school counselors or principals. April 1 is the deadline for applying for scholarships for the following fall semester.

These factors are considered in awarding scholarships: (1) the academic record; (2) scores on the ACT tests, if applicable; (3) need for financial assistance; and (4) the recommendation of the student's counselor or principal (in the case of freshman applicants).

The Thomas S. and Louise Freeman Bell and the Daniel C. Jackling Scholarships are for students with outstanding academic records. The Bell and Jackling Scholarships vary in amount from $300 to $800, with a financial evaluation by College Scholarship Service used as the criterion for determining the amount of the award. Tuition scholarships are awarded to students with outstanding academic records. Financial need is not so important a consideration in the awarding of these scholarships as in the Bell and Jackling awards.

A few scholarships are available for students who are not residents of New Mexico. These students are required to file statements with College Scholarship Service regardless of the award sought.

For information on scholarships in Latin American Studies, Law, Naval R.O.T.C., and Pharmacy, see those respective sections of this catalog.

Fellowships and Assistantships for graduate students are also available. Application for these may be made to the Dean of the Graduate School.

A listing of the scholarships and prizes available to University of New Mexico students follows.

EDUCATIONAL OPPORTUNITY GRANTS

The University of New Mexico, under provisions of the Higher Education Act of 1965 PL 89-389, awards several Educational Opportunity Grants each

year to incoming freshmen and enrolled students. In order to be selected a student must:

(1) Be accepted for enrollment and be in good standing;

(2) Show evidence of academic or creative promise and capability of maintaining good standing in his course of study;

(3) Be of **exceptional financial need** and unable to pursue a course of study without the Grant.

Students who think they are qualified should write or see the Director of Student Aids, Bldg. Y-1 for application forms and further information.

Scholarships are listed by Freshmen and Upperclass as well as by College or Department. Scholarships not specific as to major field of study are listed as Miscellaneous.

FRESHMAN SCHOLARSHIPS

Miscellaneous

Albuquerque Breakfast Lions Club Scholarship. A $200 annual scholarship given to a student who suffers a handicap of vision not correctable to a reading level. Recipient may be resident or non-resident.

The Albuquerque City Panhellenic Scholarships. Each year the Albuquerque City Panhellenic provides a number of scholarships for entering freshman women from the Albuquerque public high schools. The awards are based on recommendations from the high school principals, scholastic aptitude, participation in extracurricular activities, and financial need.

The Albuquerque Downtown Lions Club Scholarship. The awards cover full tuition costs for instate students. The recipients must be graduates of New Mexico high schools, must signify their intention of taking, or must be pursuing, a course in the field of physical therapy. They must show need for financial help and have demonstrated ability to do college work.

American Legion Auxiliary Department of New Mexico Scholarship. A $100 scholarship is given to the finalists in the American Legion Department Oratorical Contest.

The Clayton C. and Agnes May Barber Memorial Scholarships. A trust fund established in 1956 by the wills of the late Clayton C. Barber, former employee of the University, and of his wife, Agnes May Barber, provides scholarships for children of the employees of the physical plant.

The Thomas S. and Louise Freeman Bell Scholarships. Income from a trust fund is used for scholarships for worthy students. The purpose of this gift is solely to help promote and encourage among the students a higher grade of scholarship and application to studies.

The Philo S. Bennett Scholarship. The income from a trust fund of $1,200 is awarded annually to a woman student, at the beginning of the second semester of her freshman year, who is most worthy, who has resided in New Mexico for at least the preceding 4 years, and who will continue as a resident student in the University.

The Bernalillo County Veterinary Practitioners Association Scholarships. Two scholarships in the amount of $250 will be awarded annually to applicants demonstrating financial need and/or expressing interest in the study of veterinary medicine. Selection of the recipients shall be left to the Committee on Scholarships, Prizes, and Loans. Recipients may be freshmen or upperclass.

The Burkhart-Parsons Memorial Scholarships. The income from a trust fund established by the late Mrs. Miriam P. Burkhart provides approximately $800 for scholarships to be awarded annually to freshmen students who are graduates of the Albuquerque public schools. The scholarships are awarded for Semester II of the current academic year.

The Department of Chemical Engineering Scholarships. Income from a trust fund is awarded to worthy second semester freshmen interested in Chemical Engineering to encourage scholarship.

The Christian Science Organization Tuition Scholarship. The fund for this scholarship was established by Dr. Marie Pope Wallis in honor of the late Dr. Dorothy Woodward. A full tuition scholarship, it is available to any student who is a Christian Scientist and who demonstrates financial need. Recipients may retain the award for as long as 5 years on maintenance of a C average.

The Vera Darnall Memorial Student Assistance Fund. A short-term student assistance fund established by friends in the memory of the late beloved Mrs. Vera Darnall, Administrative Assistant to Director of Admissions and Registrar at The University of New Mexico. The fund is to be used for students with financial need and is administered by the Office of Student Aids.

The James M. Doolittle Memorial Scholarship. The interest from a trust fund of $1,000 established by Mrs. J. M. Doolittle in memory of her husband, Mr. James M. Doolittle, is awarded each year to a student who has made a high scholastic average in a New Mexico high school, who enters The University of New Mexico as a freshman, and who is in need of financial assistance.

The Joe Feinsilver Student Assistance Fund. Mr. Feinsilver set up a $36,000 trust, income from which is to be used to help students in financial need. The program is administered through the Student Aids Office.

The General Motors Scholarship. A scholarship sufficient to supplement fully the resources of the student so that he will be assured of 4 years of college is made available annually to an entering freshman by the General Motors Corporation. The award is made by the University.

The Daniel C. Jackling Scholarships. Income from a trust fund is used for scholarships for worthy students. The purpose of this gift is solely to help promote and encourage among the students a higher grade of scholarship and application to studies.

The Frederick Herbert Kent and Christina Kent Scholarships. Three scholarships are awarded annually to high school students, residents of the State, on the basis of high school grades, recommendation of the principal, and financial need.

The Kirtland Air Force Base Officers' Wives Scholarships. Two tuition scholarships awarded to children of Armed Services personnel assigned to Kirtland Air Force Base or to children of retired Air Force personnel living in the immediate area. The recipients are selected on the basis of their academic achievement, recommendations, and citizenship. The award is renewable if the student's academic achievement is outstanding. Selection is made by the Scholarships, Prizes, and Loans Committee of The University of New Mexico.

The Kiva Club Scholarships. A few tuition awards are made to Indian students each year by the University of New Mexico Kiva Club.

The Kiwanis Club of Highland Scholarship. The Kiwanis Club of Highland each year awards a year's tuition scholarship total deserving student who is a resident of Albuquerque.

Kiwanis Club of Sandia Scholarship. A scholarship awarded by the Sandia Kiwanis Club to a member of the Highland High School Key Club. The award is for $300 and goes to a young man who has shown leadership ability, good citizenship, and has established a good high school record.

The Carlisle Kruger Memorial Scholarship. A $500 scholarship is awarded annually to a male student who is in good academic standing and who participates in intercollegiate track.

Pueblo of Laguna Scholarship. The governing body of the Pueblo has established a scholarship fund to assist students who are members of the pueblo to obtain their college education. The size of the award varies according to the student's needs. Final selection is in the hands of a committee set up by the Governor of the Pueblo. Applications can be obtained directly from the Pueblo Governor's Office.

The Louis A. McRae Scholarship Fund. A scholarship fund established in the name of Mr. Louis A. McRae, a pioneer of New Mexico and long-time friend of The University of New Mexico. The income from a trust fund to a first-semester freshman, resident of New Mexico.

National Merit Scholarship. A supplemental grant to the public colleges attended by National Merit Scholars for assistance to students who are not Merit Scholars. For National (unsponsored) Merit Scholars the grant is $100 a year, up to a maximum of 20 annual grants at any one college.

The New Mexico Philosophical Society Tuition Scholarship Essay Contest. New Mexico high school students may win a tuition scholarship for one year at one of the five state institutions of higher learning by writing an essay on "the doctrine of human equality." The contest is sponsored jointly by the Philosophical Society and the five schools.

Monica A. Novitski Scholarship. Awarded to a first year dental hygiene student with financial need and scholastic ability. Selection is made by the Director of the Dental Hygiene Programs.

The Osoff Scholarship and Loan Fund. An organization of Albuquerque women grant financial assistance in the memory of Frieda Osoff, prominent Albuquerque humanitarian and philanthropist. The aid is in the form of either scholarship or loan available to a varied number of students and is granted on the basis of need and scholastic ability. Applications may be obtained at the Student Aids Office with the selection of recipient and amount of award determined by the organization.

Premmco Track Scholarship. An award of $500 made to a regularly enrolled student who participates in intercollegiate track and field. Selection is made by the Committee on Scholarships Prizes, and Loans based on recommendation of the Director of Athletics.

Sandia Base Woman's Club Scholarships. The Sandia Base Woman's Club awards two $250 tuition scholarships. One scholarship is for an entering freshman student and the other for a second-year student. The awards are to be made by the Sandia Base Woman's Club on the basis of financial need and scholarship. Students applying for the scholarships must be legal dependents or wards of Armed Forces personnel attached to Sandia Base, or of personnel employed at Sandia Base by the Sandia Corporation, or of personnel employed at Sandia Base by A.E.C.

The Santa Fe Motor Company Scholarship. The scholarship is awarded to a dependent of an employee of the Santa Fe Motor Company covering full tuition, fees and board and room.

Dr. Joseph Franklin Schoen Scholarship. A tuition scholarship established by the Contractors' Equipment and Supply Company in honor of Dr. Schoen. The award goes to an entering freshman in any of the professional colleges of the University. Selection of the recipient is based on scholastic ability and need for financial assistance.

Sam Stratton Scholarship. Granted by the New Mexico High School Coaches Association in the name of Sam Stratton, former coach and president of the Coaches Association. Recipient must be physically handicapped, attend a New Mexico college or university and show financial need. Application may be made through local high school coach.

The United Daughters of the Confederacy Scholarship. The Nora Mitchell McDowell Chapter of Albuquerque awards a $100 scholarship for the second semester of each academic year to a male or female student who is the lineal descendant of a Confederate soldier.

The Universal Constructors Scholarship. Universal Constructors of Albuquerque established several annual scholarships of $700 each for sons and for daughters of weekly employees. The scholarships may be renewed to the original recipients each semester until graduation, provided that they maintain a satisfactory academic record and have financial need.

University Alumni Association Scholarships. The UNM Alumni Association, through the Greater UNM Fund, has made available two annual $250 scholarships for sons or daughters of UNM Alumni. The awards, based on scholastic ability and financial need, are determined by the University scholarship committee.

Arts and Sciences

Helene Wurlitzer Foundation of New Mexico Arts and Sciences Scholarship. An annual $250 scholarship awarded by the Wurlitzer Foundation is made to a Taos High School graduate who will enroll in the College of Arts and Sciences here at the University. The recipient is recommended to the Foundation by the principal of Taos High School.

Engineering

The Associated General Contractors of New Mexico Scholarships. The Associated General Contractors of New Mexico present a number of scholarships yearly to Civil Engineering students. These scholarships are in the amount of $200 per year for 4 years and may be granted to freshmen at The University of New Mexico or at New Mexico State University.

The Caroline Thornton Carson Memorial Scholarship. The income from a trust fund of $20,000 established by Mr. James G. Oxnard and Mr. Thornton Oxnard in memory of their mother provides a scholarship for a freshman engineering student who has high academic record, and who is of high moral character and in need of financial assistance. There shall be no restrictions as to race, color, religion, or sex.

The Contractors' Equipment and Supply Company Scholarship. A tuition scholarship established by the above company for an entering freshman who intends to major in engineering. Selection of the recipient is based on scholastic ability and need for financial assistance.

Music

Band Grant-In-Aid. Awards of $100 made to students selected by the Music Department to participate in The University of New Mexico "Pep" Band.

John Albert Butteri Memorial Scholarship. An annual award to a freshman music major to be awarded his/her sophomore year. Selection is made by the music faculty based on scholastic and musical ability and financial need. The award is for $150 per year.

The Music Performance Awards. From the proceeds of departmental concerts, the faculty of the Department of Music in 1956 established a number of awards to be given freshman students on the basis of auditions conducted among New Mexico high school seniors in piano, voice, stringed instruments, and wind instruments respectively, the judges to be faculty members of the Department of Music. The scholarships are paid in two installments; in order to receive the second half of his scholarship a recipient must maintain creditable grades as defined by the Department of Music. Interested high school seniors may obtain information about auditions from the Department of Music.

Nursing

The Allstate Insurance Company Foundation Scholarship in Nursing. The recipient is to be a first-year nursing student selected on the basis of financial need, interest in a nursing career, and scholastic ability. Preference will be given to students who have residence in New Mexico, or secondly, in the Rocky Mountain states.

Carlsbad Memorial Hospital Auxiliary. A nursing scholarship for freshman or upperclass. Applicants should apply direct to the Auxiliary and selection is made by the Auxiliary.

The Forty and Eight Grand Voiture of New Mexico Scholarships in Nursing. The following scholarships are given annually to freshmen in the College of Nursing upon the recommendation of the Dean of the College: **Bob Mullin Memorial Scholarship,** $300 per year for 4 years; **Earle Stark Memorial Scholarship,** $150 per year for 4 years; **Grand Voiture Scholarship,** $150 per year for 4 years.

The Forty and Eight Voiture 703 Scholarship in Nursing. A scholarship sponsored by Voiture 703 in Albuquerque for a student in nurse's training. The award pays $150 per year for 4 years.

The Jessie Smith Noyes Foundation Scholarship. Merit type scholarships for graduating seniors of New Mexico high schools who are entering the field of nursing. Scholarships are renewable based upon grades and financial need.

The Osoff Nursing Loan Fund. A short-term loan fund has been established by an organization of Albuquerque women in the memory of Frieda Osoff, prominent Albuquerque humanitarian and philanthropist. No interest rates are charged with individual stipulations established for re-payment of loans. Applicants may apply through the College of Nursing.

Pharmacy

The New Mexico Allied Pharmaceutical Scholarship. A scholarship of $300 a year for 5 years is awarded on the basis of scholarship, ability, and need to a graduate of a New Mexico high school who enrolls in the pharmacy program. This scholarship was established and is maintained by the contributions of New Mexico pharmacists.

Speech

The Department of Speech Forensic Scholarship for Freshmen. A scholarship awarded annually to a worthy freshman. The basis for awarding the scholarship is forensic excellence, good scholarship, and need. The Department of Speech is to make recommendations to the Scholarships, Prizes, and Loans Committee.

FRESHMAN AWARDS AND PRIZES

High School Achievement Award. Presented to entering freshmen from the UNM Alumni Association and Greater University of New Mexico Fund on the basis of scholastic achievement and recommendation of their high school principals.

Kappa Alpha Theta Poetry Awards. To stimulate interest in creative writing, Kappa Alpha Theta annually presents awards in amounts of $15 and $10 for the two outstanding poems presented to the English Department.

The Kappa Kappa Gamma Alumnae Memorial Prize for Poetry. An annual prize of $25 to be awarded as a first prize for poetry in the undergraduate literary contests in the English Department. This prize was established by the Kappa Kappa Gamma Alumnae Association in memory of all deceased members of the Association and of the New Mexico Chapter of Kappa Kappa Gamma.

The Phi Kappa Phi Freshman Prizes. Cash prizes of $25 are awarded to the man and woman who, while carrying a full-time course of study, rank highest in general scholarship for the freshman year.

Pickett and Eckel Slide Rule Prize. A prize consisting of a slide rule is awarded annually to an outstanding freshman student in architecture.

The Vemco Prize in Architectural Engineering. A prize consisting of a set of Vemco drawing instruments and Vemco Tec pencil is awarded to the outstanding regularly enrolled freshman in engineering drawing upon recommendation of the faculty of the Department of Architecture.

UPPER CLASS SCHOLARSHIPS

Miscellaneous

Air Force Reserve Officers Training Corps Cadet Scholarships. Two scholarships, in the amounts of $100 and $50, are awarded annually to sophomore or junior cadets in AFROTC. The awards are based on academic ability, leadership, and financial need.

Albuquerque Breakfast Lions Club Scholarship. A $200 annual scholarship given to a student who suffers a handicap of vision not correctable to a reading level. Recipient may be resident or non-resident.

Albuquerque Chapter of the National Secretaries Association Scholarship. An annual award of $150 made by the above group to a female student at the University. Selection of the recipient is made by the association.

The Albuquerque Downtown Lions Club Scholarships. The awards cover full tuition costs for instate students. The recipients must be graduates of New Mexico high schools, must signify their intention of taking, or must be pursuing, a course in the field of physical therapy. They must show need for financial help and have demonstrated ability to do college work.

The American Association of University Women Scholarship. A scholarship of $200 is granted by the Albuquerque branch of the A.A.U.W. to promote advanced training for women. It is given to a graduate woman student. Selection is made on the basis of scholarship, financial need, and ability as indicated by recommendations from professors.

The American Petroleum Institute Scholarships. The Institute each year awards a number of scholarships of $500 to outstanding students.

The Ballut Abyad Scholarship. The interest from a trust fund of $2,500 is given annually to either a man or woman student at The University of New Mexico who is in need of financial assistance.

The Clayton C. and Agnes May Barber Memorial Scholarships. A trust fund established in 1956 by the wills of the late Clayton C. Barber, former employee of the University, and of his wife, Agnes May Barber, provides scholarships for children of the employees of the physical plant.

The Thomas S. and Louise Freeman Bell Scholarships. Income from a trust fund is used for scholarships for worthy students. The purpose of this gift is solely to help promote and encourage among the students a higher grade of scholarship and application to studies.

The Bernalillo County Veterinary Practitioners Association Scholarships. Two scholarships in the amount of $250 will be awarded annually to applicants demonstrating financial need and/or expressing interest in the study of veterinary medicine. Selection of the recipients shall be left to the Committee on Scholarships, Prizes, and Loans. Recipients may be freshmen or upperclass.

The Eva Boegen Newman Center Memorial Scholarships. Two scholarships of $50 each are awarded annually by the Aquinas Hall Newman Center in memory of Mrs. Eva Boegen, one to a student who maintains at least a B average and has financial need and one to a student who maintains at least a C average and has financial need. (See also the Eva Boegen Newman Center Prize listed below.)

The Chi Omega Alumnae Scholarship. A scholarship equal to one semester's resident tuition given each year by the Chi Omega Alumnae to a woman student who has earned a minimum of 30 semester hours at The University of New Mexico, who has creditable scholarship, and who has need of financial assistance.

The Christian Science Organization Tuition Scholarship. The fund for this scholarship was established by Dr. Marie Pope Wallis in honor of the late Dr. Dorothy Woodward. A full tuition scholarship, it is available to any student who is a Christian Scientist and who demonstrates financial need. Recipients may retain the award for as long as 5 years on maintenance of a C average.

Lena C. Clauve Scholarship of the Maia Chapter of Mortar Board. A scholarship established in honor of Lena C. Clauve by the Maia Chapter of Mortar Board. It is to be awarded to a woman student who has completed 3 semesters of creditable work at the University and is in need of financial assistance. The recipient is selected by a special Mortar Board Committee.

The Lou Beverly Damron Memorial Scholarship. At least $100 of the proceeds from a trust fund established by the parents of Lou Beverly Damron, Class of 1952, as a memorial to their son, is awarded annually to a member of Sigma Chi Fraternity above the rank of freshman who has the highest scholastic record during the year.

The Vera Darnall Memorial Student Assistance Fund. A short-term student assistance fund established by friends in the memory of the late beloved Mrs. Vera Darnall, Administrative Assistant to Director of Admissions and Registrar at the University of New Mexico. The fund is to be used for students with financial need and is administered by the Office of Student Aids.

The Faculty Women's Club Scholarships. One or more scholarships equal to one semester's tuition are awarded to a senior or junior woman on the basis of need and scholarship. The awards are made in May of each academic year.

The Joe Feinsilver Student Assistance Fund. Mr. Feinsilver set up a $36,000 trust, income from which is to be used to help students in financial need. The program is administered through the Student Aids Office.

The Edward Grisso Memorial Scholarship Fund. A trust fund established by Mr. W. D. Grisso of Oklahoma City as a memorial to his son provides a scholarship each fall for a junior male student who has made the most improvement in grades during his sophomore year over his freshman year. The recipient is selected by a special advisory board.

The Gwinn Henry Memorial Scholarship Fund. A $500 fund established by the University of New Mexico Alumni Letterman's Association as a memorial to the late Coach Gwinn Henry is used to assist in the education of a worthy student athlete who is regularly enrolled at The University of New Mexico.

Russell E. Herbert Memorial Scholarship. Granted by the Mesa Lodge #68, Ancient, Free and Accepted Masons of New Mexico, a tuition scholarship for one year for a deserving student of high moral character and graduate of an Albuquerque high school. Recipient is selected by the Mesa Lodge #68.

The Daniel C. Jackling Scholarships. Income from a trust fund is used for scholarships for worthy students. The purpose of this gift is solely to help promote and encourage among the students a higher grade of scholarship and application to studies.

The Kappa Kappa Gamma Memorial Scholarship. A scholarship of $150 is given each year by Kappa Kappa Gamma Sorority to a woman student who has earned a minimum of 30 semester hours at The University of New Mexico, who has creditable scholarship, and who has need of financial assistance.

The Kennecott Copper Corporation Scholarships. The Chino Mines Division provides a number of scholarships of $500 each to students in New Mexico institutions. Two of these scholarships are awarded to students who are sophomores or upperclassmen at the University, who are majoring in certain specified fields, who have acceptable scholarship and financial need, and who are recommended to the Chino Mines Scholarship Committee by the University through the Scholarships, Prizes, and Loans Committee.

The Kirtland Air Force Base Officers' Wives Scholarships. Two tuition scholarships awarded to children of Armed Services personnel assigned to Kirtland Air Force Base or to children of retired Air Force personnel living in the immediate area. The recipients are selected on the basis of their academic achievement, recommendations, and citizenship. The award is renewable if the student's academic achievement is outstanding. Selection is made by the Scholarships, Prizes, and Loans Committee of The University of New Mexico.

The Kiva Club Scholarships. A few tuition awards are made to Indian students each year by the University of New Mexico Kiva Club.

The Kiwanis Club of Highland Scholarship. The Kiwanis Club of Highland each year awards a year's tuition scholarship to a deserving student who is a resident of Albuquerque.

The Carlisle Kruger Memorial Scholarship. A $500 scholarship is awarded annually to a male student who is in good academic standing and who participates in intercollegiate track.

Pueblo of Laguna Scholarship. The governing body of the Pueblo has established a scholarship fund to assist students who are members of the pueblo to obtain their college education. The size of the award varies according to the student's needs. Final selection is in the hands of a committee set up by the Governor of the Pueblo. Applications can be obtained directly from the Pueblo Governor's Office.

Marshall Scholarships. These are offered by the British Government in gratitude for the Program for European Recovery. Graduating seniors and graduate students of either sex under 26 years of age are eligible for the 24 new awards made annually. The scholarships are for two years, and may be extended for a third year. They are tenable in any university in the United Kingdom for study leading to a degree in any field. The stipend covers tuition, fees, transatlantic passages, and a maintenance grant of $1,540.

The Abraham Lincoln Mitchell Scholarship. Miss Dorothy Coulter of Albuquerque has established a trust fund in the amount of $4,000 in honor of Abraham Lincoln Mitchell. The income from this fund is to be awarded to a man or woman student of The University of New Mexico who has completed the freshman year of college. First consideration will be given second or third-year students in the School of Law. Students interested in the field of race relations will be given special consideration.

National Merit Scholarship. A supplemental grant to the public colleges attended by National Merit Scholars for assistance to students who are not Merit Scholars. For National (unsponsored) Merit Scholars the grant is $100 a year, up to a maximum of 20 annual grants at any one college.

Monica A. Novitski Scholarship. Awarded to a first year dental hygiene student with financial need and scholastic ability. Selection is made by the Director of the Dental Hygiene Programs.

The New Mexico Petroleum Industries Scholarships. Each year the N.M.P.I.C. awards two scholarships for $250 to students of the six state institutions.

The Osoff Scholarship and Loan Fund. An organization of Albuquerque women grant financial assistance in the memory of Frieda Osoff, prominent Albuquerque humanitarian and philanthropist. The aid is in the form of either scholarship or loan available to a varied number of students and is granted on the basis of need and scholastic ability. Applications may be obtained at the Student Aids Office with the selection of recipient and amount of award determined by the organization.

Pi Beta Phi Arrowcraft Scholarship. An annual scholarship is awarded to a University of New Mexico student, either a graduate or undergraduate, for summer study in Gatlinburg, Tennessee. Credit is given through the University of Tennessee. The program includes concentrated study in all major areas of crafts. The award covers room, board and tuition and is awarded in the spring.

The Piggly Wiggly Scholarship. The Piggly Wiggly Stores of Albuquerque award biennially a scholarship which includes a full year's tuition and all necessary textbooks.

Premmco Track Scholarship. An award of $500 made to a regularly enrolled student who participates in intercollegiate track and field. Selection is made by the Committee on Scholarships, Prizes, and Loans based on recommendations of the Director of Athletics.

Residents Housing Council Scholarships. Two annual scholarships, each in the amount of $300, will be available to dormitory residents. One scholarship will be awarded to a female student, the other to a male student, upon the recommendation of the Residents Housing Council.

The Rhodes Scholarship. The trustees of the will of Cecil Rhodes provide for a maximum of 32 scholars each year, each scholar to receive an honorarium of $2,000 per year and to study 2 or 3 years in Oxford University, England. Early in the fall semester a representative of the University nominates candidates to the state committee for selection. This committee may select 2 men to represent the State of New Mexico before the district committee, which in turn selects no more than 4 scholars to represent the 6 states which compose a district. The scholarship is for graduate students and applications should be directed to the Graduate School.

Sandia Base Woman's Club Scholarships. The Sandia Base Woman's Club awards two $250 tuition scholarships. One scholarship is for an entering freshman student and the other for a second-year student. The awards are to be made by the Sandia Base Woman's Club on the basis of financial need and scholarship. Students applying for the scholarships must be legal dependents or wards of Armed Forces personnel attached to Sandia Base, or of personnel employed at Sandia Base by the Sandia Corporation, or of personnel employed at Sandia Base by A.E.C.

The Santa Fe Motor Company Scholarship. The scholarship is awarded to a dependent of an employee of the Santa Fe Motor Company covering full tuition, fees and board and room.

The Wilma Loy Shelton International Fellowship for Women. This annual fellowship, established in 1951 by The University of New Mexico Chapter of Mortar Board, senior women's honorary society, to promote international understanding through the education of women leaders, awards $400 provided by the active chapter of Mortar Board plus tuition and fees provided by the University to a foreign woman student, preferably in the Graduate School, to be chosen by a special committee.

Sigma Chi Mothers Club Scholarships. Two scholarships of $120 each have been provided, one to be awarded in the spring semester and one in the fall to members of the Sigma Chi Fraternity who are above the rank of freshman, have financial need, and have satisfactory scholarship.

Sam Stratton Scholarship. Granted by the New Mexico High School Coaches Association in the name of Sam Stratton, former coach and president of the Coaches Association. Recipient must be physically handicapped, attend a New Mexico college or university and show financial need. Application may be made through local high school coach.

The United Daughters of the Confederacy Scholarship. The Nora Mitchell McDowell Chapter of Albuquerque awards a $100 scholarship for the second semester of each academic year to a male or female student who is the lineal descendant of a Confederate soldier.

The Universal Constructors Scholarship. Universal Constructors of Albuquerque established several annual scholarships of $700 each for sons and for daughters of weekly employees. The scholarships may be renewed to the original recipients each semester until graduation, provided that they maintain a satisfactory academic record and have financial need.

University Alumni Association Scholarships. The UNM Alumni Association, through the Greater UNM Fund, has made available two annual $250 scholarships for sons or daughters of UNM Alumni. The awards, based on scholastic ability and financial need, are determined by the University scholarship committee.

University Dames Club Scholarship. A full tuition scholarship is awarded annually to a member or the husband of a member of the Dames Club who has attended The University of New Mexico and who has attained a 2.5 grade average. The recipient must be a full-time student working for a degree and must have financial need.

University Golfer's Association Scholarship. A $375 scholarship is given to a student participating in the intercollegiate golf program of the University. The recipient will be selected by the coach of the golf team, who will make his recommendation to the Scholarship, Prizes, and Loans Committee of the University.

Eric L. Williams Memorial Scholarship. The University of New Mexico Golf Course has established in memory of Eric L. Williams an annual scholarship consisting of a tuition and fees award to a student active in the collegiate golf program.

Archaeology

The Archaeological Society of New Mexico Scholarship. A scholarship is awarded to a student majoring in archaeology. The recipient of this scholarship will be selected by the members of the Department of Anthropology.

Architecture

The American Institute of Architects Scholarship. A scholarship and a book on architecture are awarded to an outstanding junior student in Architecture, the scholarship to be applied toward the student's tuition in his fifth year.

Kinney Brick Company Scholarship in Architecture. The Kinney Brick Company of Albuquerque, New Mexico, has established two awards of $250 each for students in the Architecture Department who have completed at least 2 years. The scholarship is renewable, and the recipient is selected by the Scholarship, Prizes, and Loans Committee of the University based on recommendations received from the Chairman of the Architecture Department.

New Mexico Chapter of The American Institute of Architects Scholarship. A scholarship and a book on architecture are awarded to an outstanding junior student in Architecture, the scholarship to be applied toward the student's tuition in his fourth year.

New Mexico Concrete Masonry Association Award in Architecture. Dividends earned from a fund established by the New Mexico Concrete Masonry Association is awarded annually as a tuition scholarship to a promising student in architecture.

Fine Arts

The Alpha Delta Pi Alumnae Scholarship in Art. The Albuquerque Alumnae Club of Alpha Delta Pi sorority has established a scholarship to be awarded to a sophomore woman in the Department of Art who has attended the University at least one year and who is recommended by the faculty of the Department of Art on the basis of need and creative ability. The scholarship is paid to the recipient at the beginning of her junior year.

Art Fund Scholarships. The Art Department receives a limited amount of funds each year from projects it sponsors. This income is used for scholarships for students in the Art Department.

The New Mexico Art League Scholarship. A scholarship of $100 provided to promote art education is awarded on the basis of scholarship, need and ability to a junior or senior student on recommendation of the faculty of the Art Department.

Helene Wurlitzer Foundation of New Mexico Fine Arts Scholarship. The foundation offers a scholarship of $250 to a student in the College of Fine Arts at the University of New Mexico. Selection of the recipient will be made by the Governing Board of the Foundation in connection with the College of Fine Arts.

Arts and Sciences

The George A. Kaseman Memorial Scholarship. A trust fund established by Mrs. George A. Kaseman as a memorial to her late husband, to perpetuate his interest in the development of New Mexico by aiding young people in obtaining a university education, provides an annual scholarship of $750 or more to be awarded to a student in the College of Arts and Sciences, preferably a

resident of New Mexico, who shall rank in the upper one-fifth of his high school graduating class and who shall have economic need for this scholarship.

Botany

The Dora Lewis Sanders Scholarship. An annual scholarship of $100 established by the New Mexico Federation of Garden Clubs in 1951 is awarded to a junior or senior student majoring in botany.

Business Administration

Albuquerque Legal Secretaries Association Scholarship. The scholarship in the amount of $100 is awarded to a female student enrolled in the College of Business Administration. The award may be made to the same student in successive years. Preference may be given to a student who plans to stay in New Mexico after graduation. Financial assistance must be a factor in making the selection. Recipient shall be selected by the Committee on Scholarships, Prizes, and Loans upon the recommendation of the Dean of the College of Business Administration.

Auxiliary of the New Mexico Society of Certified Public Accountants Scholarship. The award is given to a senior man or woman on the basis of academic standing in the College of Business Administration. The scholarship is for $200 for one semester only. Organization requests a brief letter expressing why applicant is interested in the field of study to accompany application. Applications are supplied by the Dean of Business Administration and selection is made by the auxiliary.

The Credit Women's Breakfast Club of Albuquerque Scholarship. This scholarship of $50 is awarded to a woman student in the College of Business Administration upon recommendation of the Dean of that College.

The Duke City Business and Professional Women's Club Scholarship. A scholarship of $200 is awarded annually to a sophomore or junior woman student in the College of Business Administration or the College of Education on the basis of scholarship, need, and the recommendation of the dean of the college involved.

The Alonzo Bertram McMillen Memorial Scholarship. The Occidental Life Insurance Company established this scholarship as a memorial to the late Alonzo Bertram McMillen, a founder of the company, to cover the cost of room, board, and tuition. The scholarship is awarded annually to a student in the College of Business Administration who is a resident, is of excellent character, shows active interest in good citizenship and in general student activities, has an average academic record, and is in need of financial assistance.

The New Mexico Society of Certified Public Accountants Scholarship. Awarded on basis of a competitive examination. Information available at the Student Aids Office.

The Southern Union Gas Company Scholarships. Three scholarships of $500 each, one for a student in the College of Business Administration and two for students in the Department of Mechanical Engineering. Recipients must be male students, preferably juniors or seniors. They shall be of good character and proven ability and shall be in need of financial assistance.

Drama

The University Theatre Training Scholarship. The Department of Dramatic Art provides a scholarship of $150 each semester which is awarded in the spring of each year upon recommendation of the faculty of the Department on the basis of need, scholarship, and suitability for the training involved.

Education

The Albuquerque Classroom Teachers Association Scholarship. A scholarship awarded annually to a student in the College of Education who is preparing to teach in the elementary schools of New Mexico.

The Alpha Delta Kappa—Gamma Chapter Scholarship. A $50 annual scholarship. This is to be given to a woman who is training to become a teacher and who is in her junior or senior year.

Bandelier Parent-Teacher Association Scholarship. Awarded for the second semester to a junior or senior in the College of Education. The recipient shall have indicated a sincere desire to enter the teaching profession, be of high moral character, have a high academic standing and financial need.

John E. Beck Memorial Scholarships. The family of the late Otho E. Beck has established three annual $500 scholarships in memory of their son and brother, John E. Beck. Two scholarships are awarded each semester in the College of Engineering and one each semester in the College of Education. Recipients are residents of New Mexico with demonstrated academic ability and financial need. Selections are made upon recommendations from the deans of the Colleges of Engineering and Education.

The Bernalillo County Council of Parent-Teacher Association Scholarships. Several annual scholarship of $250 each have been provided for juniors or seniors in the College of Education preparing to teach in the elementary schools of New Mexico.

Ward Curtis Scholarship Fund. An award of $200 granted by the New Mexico State Congress of Parent Teachers Association to an upperclass student in Education and a graduate from a New Mexico high school. Need, scholastic ability and devotion to ideals of democracy and education shall be stipulations to this award.

The Daughters of Penelope Memorial Scholarship. An annual scholarship in the amount of $50 established in memory of all deceased members of the Helen of Troy Chapter 19, to be awarded to a man or woman student who is a resident of New Mexico and who plans to teach in the elementary or secondary schools. Scholarship and need are determining factors.

Delta Kappa Gamma Grant-in-Aid in Education. A scholarship of $75 awarded for the spring semester by the Albuquerque Chapter of Delta Kappa Gamma Society, an international honorary for women educators. The recipient must be a junior or senior in the College of Education who needs financial assistance.

The Ives Memorial Scholarships. These scholarships were established in memory of Mrs. Julia Louise Ives and Mrs. Helen Andre Ives. The income from a $15,000 fund provides three scholarships for women students. Candidates must be residents of New Mexico, preferably living in Albuquerque, in good health, of good moral character, of high scholastic standing, and they must intend to teach. The scholarships are awarded by the President of the University in July of each year.

Kappa Kappa Iota—Beta Conclave Scholarship. An annual scholarship of $50 to be given to a worthy senior from the College of Education, upon recommendation of the Dean of the College.

The Kathleen McCann Memorial Scholarship of Pi Lambda Theta. Alpha Mu Chapter of Pi Lambda Theta, women's honorary society in education, has established a scholarship of $100 as a memorial to the late Professor Kathleen McCann. The scholarship is awarded to a woman student above freshman rank who is preparing to teach.

The John Milne Memorial Scholarship Fund. A trust fund of $5,000 established as a memorial to the late John Milne, Superintendent of Albuquerque Schools for 45 years, provides scholarships for students who plan to be teachers.

The Millicent A. Rogers Foundation Scholarship in Education. This scholarship of $500 is awarded annually to a resident above the rank of freshman in the College of Education, on the basis of need and scholastic achievement. The Millicent A. Rogers Foundation has been established by the sons and friends of the late Mrs. Millicent A. Rogers, who was for many years a resident of Taos and who was deeply and actively interested in the people and the culture of the region.

The Dr. C. R. Spain Memorial Scholarship. A scholarship based upon the income from a trust in memory of the late Dr. C. R. Spain in the field of education. Recipient may be upperclass or graduate student. Applications may be obtained from the Student Aids Office.

Engineering

The American Society for Quality Control Scholarship. A scholarship of $200 established by the Albuquerque Section of the American Society for Quality Control is awarded annually to a junior or senior in the College of Engineering on recommendation of the Dean of that college. The scholarship has been established to promote interest in the application of statistical methods and quality control in the engineering field.

The Associated General Contractors of New Mexico Scholarships. The Associated General Contractors of New Mexico present a number of scholarships yearly to Civil Engineering students. These scholarships are in the amount of $200 per year for 4 years and may be granted to freshmen at The University of New Mexico or at New Mexico State University.

John E. Beck Memorial Scholarships. The family of the late Otho E. Beck has established three annual $500 scholarships in memory of their son and brother, John E. Beck. Two scholarships are awarded each semester in the College of Engineering and one each semester in the College of Education. Recipients are residents of New Mexico with demonstrated acdemic ability and financial need. Selections are made upon recommendations from the deans of the Colleges of Engineering and Education.

The Craig Elton Bresenham Memorial Scholarship in Engineering. An annual scholarship in the amount of $300 established by Jack Bresenham, an alumnus of the University, as a memorial to his late son, Craig Elton Bresenham. The recipient shall be an undergraduate student in the College of Engineering who has displayed an active interest in the engineering profession through participation in one or more student professional organizations.

The Carter Scholarships. Income from a trust fund established by Mr. and Mrs. Rufus H. Carter, Jr., provides scholarship awards for qualified students in the Colleges of Engineering and Nursing. Recipients are selected on the basis of financial need and scholarship.

The Hewlett-Packard Company/Neely Sales Division. The scholarships are open to electrical engineering or physics students above the rank of freshman who are residents of California, Arizona, Nevada, or New Mexico.

The Harry and Mable F. Leonard Scholarship Fund. This is a scholarship established by the Leonards for an undergraduate student in engineering or geology. The recipient must be a resident of the State of New Mexico. The need for financial aid is the primary factor in selection and scholarship is the second.

The Phillip D. Miller Memorial Scholarship. Mrs. Kathleen P. Miller has established a scholarship in memory of her husband, Mr. Phillip D. Miller. The scholarship is given annually to an upperclass student interested in a career in engineering, with the opportunity of having the award renewed if his academic work is satisfactory. The award is for $350.

The Rust Tractor Company Scholarship. The Rust Tractor Company has established a scholarship of $250 to go each year to a sophomore in Civil Engineering. The award is open to residents of New Mexico and can be renewed each year until graduation if the recipient's academic work is good and he continues to progress satisfactorily toward a degree in Civil Engineering.

The Southern Union Gas Company Scholarships. Three scholarships of $500 each are provided, one for a student in the College of Business Administration and two for students in the Department of Mechanical Engineering. Recipients must be male students, preferably juniors or seniors. They shall be of good character and proven ability and shall be in need of financial assistance.

The Standard Oil Company of Texas Scholarship in Chemical Engineering. A scholarship of $500 is awarded to a junior or senior in the Department of Chemical Engineering on recommendation of the faculty of that department on the basis of scholarship, extracurricular activities, and good citizenship. A matching grant of $500 is made to the Department of Chemical Engineering. Available periodically on a rotational basis.

Universal Oil Products Scholarship. Chemical Engineering scholarship of $500 established by the Universal Oil Products Company of Des Plaines, Illinois is awarded to a junior or senior in the Department of Chemical Engineering on recommendation of the faculty of that department on the basis of scholarship, extra-curricular activities and good citizenship. A matching grant of $500 is made to the Department of Chemical Engineering.

The Western Electric Fund Scholarship. Through this fund, Western Electric provides an annual scholarship to a student in the College of Engineering. The award is for tuition, fees, and books.

Western Electronic Educational Funds Scholarships. Two scholarships of $250 to electrical engineering majors of sophomore or higher rank. Selection is based on academic achievement, financial need. The University Scholarships, Prizes, and Loans Committee will make the final selection based on recommendations received from the Electrical Engineering Department.

Geology

The Albuquerque Gem and Mineral Club Scholarship. An annual scholarship of $200 to be awarded to a deserving geology major with special interest in mineralogy.

The Aztec Oil and Gas Company Scholarship. Aztec Oil and Gas Company annually awards $400 to a geology major on the basis of need, scholarship, and interest in following a career in petroleum exploration. The recipient preferably will be a New Mexico resident at the junior or senior level. Selection is made by the Department of Geology.

C. L. Herrick Memorial Fellowship in Geology. A fellowship granted in geology to a graduate student. Applicants should inquire at the Department of Geology.

The Harry and Mable F. Leonard Scholarship Fund. This is a scholarship established by the Leonards for an undergraduate student in engineering or geology. The recipient must be a resident of the State of New Mexico The need for financial aid is the primary factor in selection and scholarship is the second.

History

The Alfred and Miriam N. Grunsfeld Scholarships. The income from a $10,000 trust fund provides two scholarships for men and two for women. The conditions governing the Grunsfeld Scholarships are as follows: (1) recipients must be legal residents of the State of New Mexico; (2) recipients must have been in full-time attendance at the University during their sophomore year; (3) recipients shall not have completed more than 66 semester hours by the end of the semester in which they are awarded the scholarships; (4) at least three of the four scholarships shall be

awarded to students who declare at the time of application their intention to major in the Department of History or the Department of Political Science (a subsequent change in the major from either of these two departments to another department may terminate the award); (5) in selecting the recipients, consideration shall be given to their general scholarship and to their financial need.

The John F. Kennedy Memorial Scholarship. Income from a trust fund is awarded to a student or students engaged in original and scholarly research in the humanities or social sciences, preferably in the history of New Mexico and the Southwestern United States. Recipients shall be designated by the Scholarships, Prizes, and Loans Committee upon recommendation by the chairmen of the humanities and social science departments. Neither race nor creed is a factor in the selection of recipients. Two distinguished citizens of New Mexico, Calvin P. Horn and Senator Clinton P. Anderson, were instrumental in the establishment of this fund which is financed by private contributions and by the income derived from the sale of a book written by Mr. Horn entitled **New Mexico's Troubled Years.**

Home Economics

Albuquerque Food Service Association Scholarship. A scholarship in honor of Dr. Charles R. Spain, former Superintendent of Albuquerque Public Schools, is given a graduate of an Albuquerque public high school. Financial need and potential for completing degree with a major in Home Economics are necessary. Applicant must have completed 13 hours in Home Economics and have enrolled in 13 additional hours.

The Albuquerque Home Economics Club Scholarship. An annual scholarship of $100 awarded to a sophomore majoring in home economics. The scholarship will be awarded on the basis of financial need, scholarship and interest in following a career in home economics. The award will be announced in May of the academic year.

The Kappa Omicron Phi Scholarship. Pi Chapter of this national professional honorary in home economics provides a $60 scholarship for a senior who is a major in home economics. It is awarded on the basis of scholarship and financial need.

The Elizabeth P. Simpson Scholarship. A scholarship equal to one semester's resident tuition given each year by Chi Omega Alumnae of Albuquerque in honor of Mrs. Elizabeth P. Simpson, Professor Emeritus of Home Economics and Chi Omega member. The award is granted to a woman student who has earned a minimum of 30 semester hours at The University of New Mexico, who has creditable scholarship, and is in need of financial assistance.

Journalism

The Toppino-Golden Scholarship in Journalism. A scholarship of $100 which was established to encourage students to pursue a career in journalism is awarded in the fall of each year by the Journalism Department.

Medicine

Bernalillo County Chapter of the National Infantile Paralysis Foundation Scholarships. Two annual scholarships of $300 each are provided for students in the School of Medicine. Recipients must be New Mexico residents and are selected upon recommendations from the Dean of the School of Medicine.

The Bernalillo County Medical Association Scholarship. A scholarship in the amount of $300 given to a first-year medical student who must be a resident of Bernalillo County.

The Clarence Milton Botts, Jr., Memorial Scholarship. The income from a trust fund of $5,000, given by Dr. W. R. Lovelace as a memorial to Lieutenant Colonel C. M. Botts, Jr., who was killed in action near Manila, Philippine Islands, May 15, 1945, is awarded each year to a premedical student of junior or senior rank who is outstanding in scholarship and who gives promise of being a good medical student.

The Dr. Eric P. Hausner Memorial Scholarship. The income from a trust fund established by the Santa Fe Chapter of the Heart Association is awarded annually to a junior or senior student who has been accepted for admission to an approved medical college.

Charles May Memorial Scholarship Fund. A memorial scholarship fund established by Mr. May's wife. The interest from a $5000 trust fund is awarded each year to a pre-medical student with outstanding scholarship and the promise of being a good medical student.

The Thomas M. Wilkerson Memorial Scholarship. The income from a trust fund of $5,000 established by Dr. W. R. Lovelace in honor of Major Thomas M. Wilkerson, who was killed January 29, 1946 while in the service of his country, is awarded each year to a junior or senior premedical student who is outstanding in scholarship and who gives promise of being a good medical student.

The Women's Club of Albuquerque Scholarship. The Women's Club of Albuquerque has established an annual $100 scholarship for a first-year woman student in the University's School of Medicine. Selection, made upon the recommendation of the Dean of the School of Medicine, is based on scholastic ability and financial need.

Music

Band Grant-In-Aid. Awards of $100 made to students selected by the Music Department to participate in The University of New Mexico "Pep" Band.

Beta Sigma Phi Scholarship in Music. A $250 scholarship established by the Albuquerque chapters of Beta Sigma Phi for a woman student majoring in music who is a resident of Albuquerque. The recipient must be of high moral character, have a satisfactory academic record, and have genuine financial need. Preference will be given members or relatives of members of Beta Sigma Phi. The scholarship is renewable each year.

The Carl Cramer Memorial Band Scholarship. Friends of the late Carl Cramer have established this scholarship to be awarded to a member of the University band. Primary selection criteria are scholastic and musical ability and financial need.

Mu Phi Epsilon Scholarship, Albuquerque Alumnae Chapter. A scholarship of $75 awarded each spring, to be applied toward tuition for the following fall semester by this national professional music sorority. The recipient, who must be a music major, is selected by a committee from the Music Department and Mu Phi Epsilon.

The Presser Foundation Scholarship in Music. A scholarship of $400 is awarded by The Presser Foundation of Philadelphia to a student in music upon recommendation of the President of the University and the Chairman of the Music Department.

The Sigma Alpha Iota Alumnae Scholarships in Music. The Albuquerque Alumnae Chapter of Sigma Alpha Iota will make available one or more tuition scholarships to qualifying applicants in the field of music. There will be an alumnae scholarship committee appointed yearly to organize and review qualifications with the University of New Mexico Scholarships, Prizes, and Loans Committee.

The Sigma Alpha Iota Patroness Scholarship. The Albuquerque Patroness Chapter of Sigma Alpha Iota has established an annual scholarship of $50 to be awarded to a member of the Alpha Sigma Chapter of this national honorary music fraternity.

The Albert Gallatin Simms Music Scholarship Fund. A trust fund established by music lovers who have enjoyed the June Music Festivals for many years has been established as a means of expressing their gratitude to Mr. Simms. The income from the fund will provide one or more scholarships for students majoring in music and studying stringed instruments.

The Berta Hurt Van Stone Memorial Scholarship. Mr. and Mrs. Walter M. Mayer of Santa Fe, New Mexico, have established a scholarship of $100 to be given annually in memory of Mrs. Berta Hurt Van Stone, Mrs. Mayer's mother, to a student majoring in the field of music.

Nursing

The Allstate Insurance Company Foundation Scholarship in Nursing. The recipient is to be a first-year nursing student selected on the basis of financial need, interest in a nursing career, and scholastic ability. Preference will be given to students who have residence in New Mexico, or secondly, in the Rocky Mountain states.

Army Nurse Corps Candidate Program. An effort by the Army to train nurses for the Army Nurse Corps. The Army pays the tuition, fees, room, board, books, and supplies. Application is made through the Dean of the College of Nursing.

Bernalillo County Medical Association Women's Auxiliary Scholarship. A $300 scholarship based on financial need is given to a student in the College of Nursing. Preference is given to a Bernalillo County resident. Scholarship is awarded to the university on alternate years.

The Barbara Hunt Bresenham Memorial Scholarship in Nursing. An annual scholarship in the amount of $300 established by Jack Bresenham, an alumnus of the University, as a memorial to his late wife, Barbara Hunt Bresenham, a former student in the College of Nursing. The recipient shall be a female student in the College of Nursing who has completed her freshman year, who has indicated a desire to follow a career in nursing, and who is a member of the Student Nurse's Association.

Carlsbad Memorial Hospital Auxiliary. A nursing scholarship for freshman or upperclass. Applicants should apply directly to the Auxiliary and selection is made by the Auxiliary.

The Carter Scholarships. Income from a trust fund established by Mr. and Mrs. Rufus H. Carter, Jr., provides scholarship awards for qualified students in the Colleges of Engineering and Nursing. Recipients are selected on the basis of financial need and scholarship.

The Forty and Eight Voiture 703 Scholarship in Nursing. A scholarship sponsored by Voiture 703 in Albuquerque for a student in nurse's training. The award pays $150 per year for 4 years.

The Forty and Eight Voiture 1377 Scholarship in Nursing. The Los Alamos Voiture of the Society of Forty and Eight provides a scholarship of $100 to be awarded to a student in the College of Nursing upon recommendation of the faculty of that College.

The Portia Irick Nursing Scholarship. A fund established under the joint sponsorship of the Altrusa Clubs and Business and Professional Women's Clubs throughout New Mexico in honor of Portia Irick, who was an outstanding public health nurse in New Mexico.

The Marjorie Little-Emily Hines Memorial Scholarship. Provided by the New Mexico Nurses Association, District #12, of Grant County, this $200 scholarship is for a nursing student who is a resident of New Mexico, preferably from Grant County.

The Reverend Uvaldo Martinez Memorial Scholarship. A scholarship provided by the New Mexico Health Foundation as a memorial to the late Reverend Uvaldo Martinez is awarded to a student who desires to enter the field of public health nursing in New Mexico, is Spanish-speaking, needs financial assistance, and shows creditable scholarship.

Navy Nurse Corps Candidate Program. An effort by the Navy to train nurses for the Navy Nurse Corps. The Navy pays the tuition and fees, room and board, and books and supplies. Application is made through the Dean of the College of Nursing.

New Mexico Nurses Association District #1. A scholarship of $150 is awarded every three years to the University of New Mexico to a student in the College of Nursing. Selection is based upon academic achievement, nursing aptitude and the recommendation of the Dean of the College of Nursing.

The New Mexico Nurses Association District #16. A tuition scholarship in the amount of $300 to a student enrolled in the College of Nursing and approved by the Dean of the College of Nursing. Scholastic ability and financial need must be shown. Scholarship is renewable provided recipient meets the required qualifications.

New Mexico Nurses Association District #14. A $400 scholarship to a senior student from New Mexico based upon financial need to enter or finish his education in the field of nursing. Applications must be received prior to January 1st of the academic year. Beginning or transfer students must have a letter of acceptance from the school they plan to enter.

New Mexico State Medical Society Women's Auxiliary Scholarship in Nursing. This scholarship of $300 is awarded annually to a student in the College of Nursing upon recommendation of the Dean of that College.

The Jean Norris Scholarship in Nursing of the Progress Women's Club of Albuquerque. This scholarship provides $300 for a student in the College of Nursing upon recommendation of the Dean of that College. It was established to honor Jean Norris who was a nurse and a past president of the club.

The Jessie Smith Noyes Foundation Scholarship. Merit type scholarships for graduating seniors of New Mexico high schools who are entering the field of nursing. Scholarships are renewable based upon grades and financial need.

The Osoff Nursing Loan Fund. A short-term loan fund has been established by an organization of Albuquerque women in the memory of Frieda Osoff, prominent Albuquerque Humanitarian and Philanthropist. No interest rates are charged with individual stipulations established for re-payment of loans. Applicants may apply through the College of Nursing.

The Pilot Club of Albuquerque Scholarships in Nursing. Scholarships of $300 each to be awarded to students in the College of Nursing upon recommendation of the faculty of that College on the basis of residence, grades, ability, and need.

The Progress Women's Club of Albuquerque Scholarship in Nursing. This scholarship provides $300 per year for a student in the College of Nursing. The recipient is selected upon recommendation of the Dean of the College.

Millicent A. Rogers Foundation Scholarship in Nursing. An award of $500 is made to a student in the College of Nursing.

The Student Nurse Association Scholarship. The Student Nurse Association of The University of New Mexico offers a scholarship each year to a nursing student who is active in the Association.

Pharmacy

The American Foundation for Pharmaceutical Education Scholarships. These scholarships are awarded to third-, fourth- or fifth-year students in the College of Pharmacy who rank in the upper quarter of their classes scholastically and who can demonstrate need. The scholarships vary in value and are made possible by an annual grant from the American Foundation for Pharmaceutical Education.

The John W. Dargavel Foundation Scholarship. The John W. Dargavel Foundation, sponsored by the National Association of Retail Druggists, annually provides a $200 scholarship for a third-, fourth-, or fifth-year student in the College of Pharmacy. The award is made by the College of Pharmacy.

The Davis Brothers Scholarship. A scholarship of $300 provided by the Albuquerque Division of Davis Brothers, Inc., is awarded annually to a student in the College of Pharmacy on the basis of scholarship, ability, and need.

The Eva M. Farone Memorial Scholarship. A scholarship of $500, established in memory of the late Eva M. Farone by her husband, is awarded annually to a qualified and deserving student in the College of Pharmacy. Preference will be given to women students.

McKesson and Robbins, Inc. Pharmaceutical Scholarship. A scholarship of $300 established by the El Paso and Amarillo Divisions of McKesson and Robbins, Inc., to be awarded annually to a student in the College of Pharmacy.

The New Mexico Allied Drug Travelers Association Scholarship. A scholarship of $300 is awarded annually to a junior or senior student in the College of Pharmacy who has creditable scholarship and who has need of financial assistance.

The New Mexico Allied Pharmaceutical Scholarship. A scholarship of $300 a year for 5 years is awarded on the basis of scholarship, ability, and need to a graduate of a New Mexico high school who enrolls in the pharmacy program. This scholarship was established and is maintained by the contributions of New Mexico pharmacists.

The Women's Pharmaceutical Auxiliary Scholarship. A scholarship of $300 established by the Women's Pharmaceutical Auxiliary in New Mexico to cover the cost of tuition and books is awarded annually to a student in the College of Pharmacy upon the recommendation of the Dean and the approval of a committee of the Auxiliary.

Pharmacy Alumni Association Scholarship. The Pharmacy Alumni Association of New Mexico annually awards a scholarship to a pharmacy student of junior or senior rank. The award is for resident tuition for one academic year as well as payment of the health insurance. The recipient is selected by a committee composed of Pharmacy Alumni Association members.

Philosophy

The Theo Karvelas Scholarship in Philosophy. Mr. Theo Karvelas, longtime Albuquerque resident and friend of the University, has established a $250 annual scholarship for students majoring in philosophy. Criteria for selection of recipients are financial need and academic ability.

Speech

The Don Kirby Forensic Scholarship. A scholarship of $100 established by Mr. Kirby because of his belief that participation in forensic activities is of extreme importance to college students. Selection of the recipient is based on forensic excellence, good scholarship, and need. The award is made by the University Scholarships, Prizes, and Loans Committee upon the recommendation of the Department of Speech.

UPPER CLASS AWARDS AND PRIZES

The ACF Industries Prizes in Technical Writing. Prizes of $50, $30, and $20 are provided by ACF Industries for winners in a University-wide competition in technical writing.

The Allied Arts Competition of the Illuminating Engineering Society. Prizes of $25, $15, and $10 are awarded to students in Architecture for the winning entries in a competition in illumination design.

The Student Branch of the American Pharmaceutical Association Sophomore Award in Pharmacy. The University of New Mexico Branch of the American Pharmaceutical Association annually awards an appropriate book and certificate to the sophomore student in the College of Pharmacy who ranks highest in scholarship in his class.

American Society for Testing Materials Membership Awards. Two student memberships in the American Society for Testing Materials are awarded to two outstanding senior students in architecture.

Evelyn Duffett Ancona Prize (Music). A $25 prize is awarded each April to an active member of Alpha Sigma Chapter of Sigma Alpha Iota who has made a valuable contribution to the group through her active interest and participation.

The Architectural Design Faculty Awards. Three prizes, each consisting of a current architectural book, are awarded annually to the outstanding sophomore, junior, and senior student in Architecture.

The Eva Boegen Newman Center Prize. An annual prize of $50 is awarded to the student who renders outstanding service to the Newman Center.

The George E. Breece Prize in Engineering. A cash prize consisting of the income from a $600 trust fund is awarded to a graduating senior in engineering, who is enrolled for a full time course of instruction, upon the basis of character, general ability, and excellence of scholastic record as shown during the last 2 consecutive years of residence in the University.

The Chemical Rubber Company Handbook Award in Physics. A current copy of the **Handbook of Chemistry and Physics** will be awarded annually to the student in Physics 260, 261, or 262 selected as most capable by the Chairman and staff of the Physics Department.

The Chi Omega Prize in Economics. Twenty-five dollars is awarded each year to the regularly enrolled woman student (Chi Omega members excepted) who has done the best work in economics during the academic year. Selection is made on the basis of scholarship.

The Charles Florus Coan Prize. The income from a trust fund donated by faculty and friends as a memorial to Charles Florus Coan, Ph.D., Professor of History and Political Science, is awarded annually, for excellence in scholarship, to a worthy student whose major field of study is history.

The Marian Coons Prize. A memorial prize consisting of the interest from a $750 trust fund is given each year to the regularly enrolled senior in the Department of Home Economics who is voted the most kind by her classmates and teachers in that department.

The Harry L. Dougherty Memorial Prize in Engineering. A cash prize consisting of the income from a trust fund contributed by colleagues, students, and friends, as a memorial to Mr. Harry L. Dougherty, Assistant Professor of Civil Engineering, is awarded each year to the student in the College of Engineering who has made the highest scholastic average in residence during his freshman and sophomore years while carrying a normal course of study.

Faculty Award in Pharmacy. The Faculty of the College of Pharmacy annually makes an appropriate award to the graduating senior in the College of Pharmacy who has attained the highest grade average for the entire course in pharmacy.

The Charles LeRoy Gibson Memorial Prize. The interest from a trust fund created by students and colleagues of Charles LeRoy Gibson, Ph.D., Associate Professor of Chemistry, is given to the senior student, major or minor in chemistry, who is judged most outstanding by the faculty of that department.

Carol M. Goodkin Prize. An annual prize of $25 to be awarded to an Indian student in the College of Nursing. The award was established by Mr. and Mrs. R. P. Goodkin to recognize outstanding achievement in this area.

Robert P. Goodkin Prize. An annual prize of $25 to be awarded to an Indian student majoring in Sociology. The award was established by Mr. and Mrs. R. P. Goodkin to recognize outstanding achievement in this area.

The H. J. Hagerman Prize. An annual $50 cash prize was established by the New Mexico Taxpayers Association in 1938. This is awarded to the regularly enrolled undergraduate student who presents the best original study in the field of taxation and public finance in New Mexico. The study should be submitted by December 1st to the faculty of the Department of Economics.

The Hamilton Watch Award. Each year the Hamilton Watch Company presents a watch to an outstanding senior in the College of Engineering. The recipient is selected by the College of Engineering Scholarship and Awards Committee.

R. E. "Jake" Haverstock Award in Art. An award of $150 will be made each year to a student in the Art Department who has demonstrated some form of unusual ability or progress in any field of that Department.

The Telfair Hendon, Jr., Memorial Prize. The interest from a trust fund of $500 established by John F. Hendon in memory of his brother, Mr. Telfair Hendon, Jr., Instructor in English, is given to the graduating senior who has achieved the highest scholastic record as a major in the Department of English.

The H. E. Henry Award in Pharmacy. A pocket watch appropriately engraved is presented annually to a male student in the graduating class of the College of Pharmacy on the basis of scholarship, ability, and promise in the field of pharmacy.

Kappa Alpha Theta Poetry Awards. To stimulate interest in creative writing. Kappa Alpha Theta annually presents awards in amounts of $15 and $10 for the two outstanding poems presented to the English Department.

The Kappa Kappa Gamma Alumnae Memorial Prize for Poetry. An annual prize of $25 to be awarded as a first prize for poetry in the undergraduate literary contests in the English Department. This prize was established in memory of all deceased members of the Association and of the New Mexico Chapter of Kappa Kappa Gamma.

The Barbara Kiker Memorial Prize. Friends of the late Mrs. Barbara Kiker have established a trust fund at the University to support a memorial prize in Dance. Recipients shall be either male or female students who are regularly enrolled at the University and who have made contributions toward the excellence of the Dance Program of the University. Recipients shall be selected by the Faculty Committee on Scholarships and Awards based upon recommendations received from the Chairman of the Department of Music. The Prize, in the amount of $50, shall be awarded annually near the end of the Spring Semester.

Langell Art Supply Stores Award. The recipient of this $25 award is selected by the faculty of the Art Department for the best creative work of art, in painting, submitted in the annual student art show.

Law Prizes, see **School of Law Bulletin.**

The Mike S. Millican Memorial Prize. The interest from a trust fund established by colleagues of Mike S. Millican, members of the Chemistry Department, and friends of the University is given to a senior student with a B.S. major in chemistry who is judged outstanding by the faculty of the department.

New Mexico Home Builders Competition. Prizes of $100, $75, $50, and $25 are awarded annually to students in the Department of Architecture who are winners in a competition for the best residential designs.

The New Mexico Section of the American Society of Civil Engineers Award. A certificate of merit with entrance dues paid for junior membership in the A. S. C. E., together with a membership badge, is given to a graduating student in civil engineering who excels in scholarship, holds membership in the student section of the engineering society, is active in student engineering organizations, and who, in the opinion of his professors, shows promise of becoming a successful engineer.

The New Mexico Society of Professional Engineers' Wives Award. The Women's Auxiliary of the New Mexico Society of Professional Engineers awards each spring to a graduating senior in the College of Engineering a cash prize equivalent to the registration fee for the New Mexico Engineer-in-Training Examination. The prize is awarded on the basis of need, scholarship, and interest in Professional Engineering Registration.

The Phi Kappa Phi Senior Prize. Fifty dollars is given each year by the local chapter of Phi Kappa Phi to the graduating senior of any of the colleges of the University who makes the highest scholastic record of his class.

Phi Sigma Kappa Prize in Creative Play Writing. Phi Sigma Kappa has established an award of $30 annually for the best one-act play submitted in the creative writing contest.

Carl Redin Memorial Prize for Drawing. An award of $25 to be made for the best creative work of art submitted in the annual student art show.

Reynolds Metals Company Competition. An annual award of $200 to the student submitting the best original design for a building component in aluminum.

The Rose Rudin Roosa Prize. The income from a $1,000 trust fund is awarded each year to the upperclassman or graduate student in the Department of Political Science who has indicated in the opinion of his professors, the most positive interest in the development of good citizenship. A paper is required.

The George St. Clair Memorial Prize. The interest from a trust fund established by colleagues, students and friends of George St. Clair, Professor of English, Department Head and Dean of the College of Fine Arts, is granted to the student who has made the greatest contribution in acting, stage design, lighting, or production in the Department of Dramatic Art.

The Katherine Mather Simms Memorial Prize. A $50 prize as a memorial award is made each year to a regularly enrolled undergraduate, who has been in residence at least one semester preceding the time of the contest, on the basis of excellence in prose composition and on the quality of a competitive essay.

The Smead Manufacturing Company Prize. For outstanding achievement in business education a student is annually awarded a prize consisting of membership in the United Business Education Association, a subscription to the **U.B.E.A. Forum,** and a binder embossed with the student's name.

The Student Nurse Association Award. The Student Nurse Association gives a cash award each year to the nursing student who is chosen the Student Nurse of the Year.

The Tile Council of America Award in Architectural Engineering. Prizes of $25, $15, and $10 are awarded by the Tile Council of America to the winning students in a competition in architectural design.

The Lenna M. Todd Memorial Prize. The interest from a trust fund of approximately $2,000 is available annually to be awarded to the student or students doing the best work in creative writing in the Department of English. This endowment was created by the will of Dana Paul Todd, as a memorial to his mother, Mrs. Lenna M. Todd. Dana Todd, Class of '33, served in the United States Army in the Philippines and died in a Japanese prison camp at Osaka, on or about August 15, 1943.

The Wall Street Journal Award. A prize consisting of a one year's subscription to the **Wall Street Journal** and a suitably engraved medallion are given annually to the graduating senior in the Finance Concentration of the College of Business Administration who has the highest scholastic average.

The Eric H. Wang Memorial Fund. Because of Mr. Wang's interest in the improvement of the engineering profession, the interest from a trust fund established in his name is used to help senior engineering students either to pay for special refresher courses taken prior to the Engineer-in-Training examination or to pay the EIT examination fee.

The Irene R. Wang Memorial Prize. Two annual prizes ($50 plus accrued interest) established by Mrs. Eric H. Wang in memory of her daughter, to two freshmen enrolled in the General Honors Program who have excelled in written work.

MEDALS AND CERTIFICATES

The Beta Alpha Scholarship Key in Accounting. A certificate of achievement and a gold key are awarded annually by Beta Alpha, honorary accounting fraternity, to the graduating senior in the College of Business Administration with the highest grade in all his accounting courses.

Delta Sigma Pi Scholarship Key. This key is awarded annually by Delta Sigma Pi, national professional fraternity in business administration, to that male senior who upon graduation ranks highest in scholarship for the entire course in commerce and business administration.

The C. T. French Medal. The medal is awarded to a graduating senior of the College of Arts and Sciences who has obtained, during his last two years of continuous residence, the highest general average for scholarship in a program of not less than 14 credit hours a semester.

The Kappa Psi Award in Pharmacy. A certificate is awarded annually to the male student who has the highest scholastic average in the senior class of the College of Pharmacy. If the student is a member of Kappa Psi, a key is awarded in addition to the certificate.

The Kappa Psi Junior Award in Pharmacy. Gamma Rho Chapter of Kappa Psi pharmaceutical fraternity annually awards an appropriate book and certificate to the junior student in the College of Pharmacy who ranks highest in scholarship in his class.

The Kappa Psi Scholarship Honors Certificate. The Grand Council of Kappa Psi pharmaceutical fraternity awards annually a certificate to each member of Kappa Psi who completes the full junior and/or senior year (last 2 years of the professional curriculum) with a minimum grade-point average of 3.0 for each year. A member may qualify for a certificate for each of the 2 years.

The New Mexico Pharmaceutical Association Award in Pharmacology and Other Biological Sciences. The New Mexico Pharmaceutical Association annually awards an appropriate book, or books, and certificate to the graduating senior in the College of Pharmacy who ranks highest in scholarship in the required courses in Pharmacology and other biological sciences.

The College of Pharmacy Alumni Association Award in Pharmaceutical Chemistry and Chemistry. The Alumni Association of the College of Pharmacy annually awards an appropriate book, or books, and certificate to the graduating senior in the College of Pharmacy who ranks highest in scholarship in the required courses in pharmaceutical chemistry and chemistry.

The Phi Gamma Nu Scholarship Key. This key is awarded annually to the senior woman student, not necessarily a member of the fraternity, who upon completion of seven semesters of college work ranks highest for the entire course in Business Administration or Commercial Education. The award is made by the Dean of the College of Business Administration and the Dean of the College of Education.

The Phi Sigma Certificates in Biology. Each year the National Society of Phi Sigma awards a certificate to a regularly enrolled undergraduate student and another certificate to a graduate student in The University of New Mexico for excellence in biology and promise of future achievement.

Pickett and Eckel Slide Rule Prize. A prize consisting of a slide rule is awarded annually to an outstanding freshman student in architecture.

STUDENT SERVICES

ALL divisions of the University concerned with student welfare and activities are under the coordinating supervision of the Dean of Students. There follow descriptions of some of the services and programs which supplement the University's educational program and assist the student in his academic and personal development.

Information in regard to Admission and Registration, Student Housing, and Financial Aid will be found in those respective sections of this catalog. An explanation of the orientation and advisement program is given on p. 84.

DEANS OF MEN AND OF WOMEN

The Deans of Men and of Women and their staffs are responsible for most of the personal counseling of individual students. Records of the extracurricular activities of students are compiled and kept in this office.

The Deans are responsible for the counseling programs in the residence halls and for the supervision of social fraternities and sororities. They also serve as advisers to the student honorary organizations.

COUNSELING AND TESTING SERVICES

See "University College and Counseling Center," pp. 137-139.

OFFICE OF INTERNATIONAL SERVICES

INTERNATIONAL STUDENT PROGRAM. The University of New Mexico is committed to the support and encouragement of an international student program. The Director of International Services acts in a liaison capacity with faculty and administrative departments of the University on behalf of the foreign students. His staff also endeavors to assist the student from abroad by counseling with him and by encouraging him to use the services offered by the University in areas such as academic advising, student health, insurance, counseling and testing, housing, and employment.

In addition to making proper referrals, the Office of International Services provides orientation programs, community hospitality, and immigration assistance to the student from abroad. The Director attempts, moreover, to give a maximum of personal attention to the unique problems of the foreign students.

FULBRIGHT PROGRAM. The Director of International Services acts as Fulbright Program Adviser. His duties in this capacity include publicizing the Fulbright competition, announcing grants offered, providing application forms, counseling American students, and arranging faculty committees for interviews and evaluations.

HEALTH SERVICE

The Student Health Service provides facilities for medical advice, treatment, and if necessary, bed care, for acute illnesses of relatively short duration. The Student Health Service is not a teaching department and is staffed by experienced physicians and graduate nurses. Consultation with the physicians is

available at regular morning and afternoon office hours, and the Service is open for emergency care 24 hours a day.

The Student Health Service is supported by a budgeted allocation from fees and is available to all students carrying 8 or more semester hours. Beyond this there is no charge for medical services rendered. It should be noted, however, that drugs ordered on prescription must be purchased by the student from any drugstore. Should the services of a specialist be required, the student will be referred for treatment at his own expense.

Each student enrolling for the first time, or re-enrolling after an absence of a year or more, is required to arrange for a physical examination by his own physician prior to enrollment or re-enrollment. The examination is to be reported on a form prepared by the Health Service. Evaluation of the health of a student whose medical examination reveals a condition affecting his eligibility, or his ability to perform satisfactorily, is the responsibility of the Health Service. A student whose condition indicates the need for a limitation of activity in physical education, or an excuse from the physical education requirement, may obtain such an excuse from one of the University physicians. The Health Service is authorized to exclude from residence halls or classrooms a student suffering from contagious or communicable disease.

The Health Service maintains constant supervision over sanitary conditions in residence halls, dining halls, swimming pools, and classrooms.

Full information is contained in the brochure, "This Is Your Health Service," which is issued at registration and should be preserved for reference.

INSURANCE PLAN

The University, after study and consultation with representatives of insurance companies, has adopted an insurance plan designed to protect students against those burdensome expenses which may result from unexpected severe illness, injury, or major surgery. Participation is optional on the part of the student.

The University plan provides low-cost coverage, through a national insurance company, while the student is in school and while he is away during interim vacation periods. It provides for medical, surgical, and hospital benefits to apply against expense incurred for necessary care **beyond that provided by the Student Health Service.** Benefits under this plan are payable in addition to those the student may receive from any other policy.

Any student enrolled during a regular semester for 8 or more semester hours is eligible to participate in the plan during that semester upon payment of a special fee (see Student Expenses). Arrangements may also be made for protection during the summer session or summer vacation period.

Details of this insurance plan, including a schedule of benefits, are mailed to new and readmitted students as a part of the admissions procedure.

PLACEMENT CENTER

The Placement Center is maintained to assist students in finding part-time employment to supplement their incomes while they are in school, and to aid graduating seniors and alumni in finding suitable and satisfactory employment in permanent positions. For information concerning service to enrolled students see p. 96.

The Center acts as a general clearing house for registrants seeking employment and for employers and school administrators seeking college-trained personnel. Seniors who are graduating, alumni who are seeking a change, and students who are seeking part-time employment are urged to register with the Center, Building T-10, Roma Avenue.

The Center keeps on file a complete record of each registrant's scholarship, employment experience, activities, and personal qualifications and seeks the proper placement of the individual, commensurate with his training and background. The Center maintains constant contact with the conditions and trends of the nation's job market. Representatives from industry and school administrators are urged to visit the campus to interview seniors for possible employment.

No fee is charged for services rendered. Graduates are invited to use the services of the Center in the years following their graduation.

STUDENT AIDS OFFICE (See p. 94.)

DIVISION OF VETERANS AFFAIRS

The University of New Mexico is fully approved for the training of students eligible under the Veterans Administration educational assistance programs. The Division of Veterans Affairs was established to provide every possible service to these students, and to aid in the solution of any problems that might arise in the students' relations with the University and the Veterans Administration. The student is given assistance in obtaining a certificate of eligibility from the Veterans Administration, certification of his registration so that training allowance may start, proper withdrawal or interruption of his educational program, and information of any changes in procedures and regulations of the University and the Veterans Administration. This Division also has the authority to provide educational or vocational counseling to any student under the Veterans Administration educational program, and to assist students in the selection of an objective and in the development of a program of education. All documentary forms necessary for these government programs are available in this office.

NEW MEXICO UNION

The New Mexico Union is well planned to provide a focal point for the cultural and recreational activities of the University. It is the center of a consolidated program enlisting the joint efforts of student government, program directorate committees, student organizations, and staff to bring about a balance of activities providing the greatest values and benefits for students and staff. All students are members of the Union, and their cooperation and contributions are depended upon to assure its total success. A board made up of students, faculty, and administrative representatives acts as adviser to the Union Director in building matters. The Program Directorate, working under the Union Board and with the Union staff, has the responsibility of planning and executing a program of activities for the Union.

The Associated Students' Bookstore, the Alumni Offices, and the Activities Center, the hub of out-of-class activities at the University, are located in the Union. A feature of the Activities Center is the master calendar, which lists all

campus events of student interest and provides a clearing house for these events. Union food services include a fountain, cafeteria, dining room, catering facilities, and a recreation lounge which converts to a commuters' room over the noon lunch period. Also included are a hobby-crafts area, music listening rooms, barber shop, a 200-seat auditorium, and complete games facilities including bowling, table tennis, and billiards. Eight guest rooms are available to campus visitors. Lounges, a ballroom, and many meeting rooms round out the facilities which enable the Union to serve the University campus.

ATHLETICS

The University's intercollegiate athletic program is conceived to be an extension of the work offered in the Physical Education Department, which, in turn, shares a responsibility with all other segments of the University to maintain general academic standards of high quality. Athletes are expected to participate, first and primarily, as full members of the student community. The faculty of the University, within its powers, assumes responsibility for keeping the environment conducive to these objectives.

Intercollegiate athletics are governed by regulations of the Western Athletic Conference, the general athletic policy of the University, the North Central Association of Colleges and Secondary Schools, and the National Collegiate Athletic Association.

Varsity sports include football, basketball, track and field, baseball, tennis, golf, swimming, wrestling, and gymnastics.

The University also sponsors an intramural program designed to supplement the prescribed courses in physical education. The intramural program includes swimming, tennis, handball, golf, cross-country, track and field, volleyball, touch football, bowling, baseball, lacrosse, softball and basketball. A parallel program of sports appropriate for women is sponsored by the Women's Recreational Association.

Many indoor sports are centered on the main campus in Johnson Gymnasium, which includes an indoor pool, two large arenas, handball courts, and other specialized areas. The recently completed Basketball Arena, with a seating capacity of 15,000, is located on the south campus. Outdoor recreational facilities maintained by the University include a golf course, a swimming pool, rifle range, tennis courts, and numerous playing fields.

CULTURAL OPPORTUNITIES

The Associated Students, through the Cultural Program Committee, present a varied fare of concerts, theater, and lectures. Students may also purchase season tickets for Community Concerts, the Civic Symphony, and the Albuquerque Little Theater, in some instances at reduced rates.

The University Art Museum in the Fine Arts Center presents masterworks of traditional and contemporary art as well as the work of faculty and students. The Jonson Gallery, also on the campus, offers one-man shows by contemporary artists. New Mexico has a long tradition in the visual arts. Museums and galleries abound in the State. Those in Albuquerque and Santa Fe are readily accessible to the interested student.

RELIGIOUS ACTIVITIES

Practically all religious denominations are represented in the city of Albuquerque. The churches all welcome the University students and invite them to share in their religious life and services. The University maintains a policy of non-sectarianism, but encourages its students to affiliate with the religious organizations of their choice and to attend services regularly.

The following religious organizations invite student affiliation: Baha'i Student Association, Baptist Student Union, Canterbury Club, Christian Science Organization, Christian Student Center, Deseret Club, Hillel Counselorship, The Islamic Society, Lobo Christian Fellowship, Lutheran Student Association, Newman Club, United Campus Christian Fellowship, and Wesley Foundation.

STUDENT ORGANIZATIONS

ASSOCIATED STUDENTS

All students enrolled for 12 or more semester hours are affiliated as "The Associated Students of The University of New Mexico." The Associated Students function under a constitution approved by student referendum, by the Faculty, and by the Regents of the University. The government of the Associated Students has three principal branches: the executive, consisting of the President and certain appointed executive officers; the legislative, consisting of the Student Senate composed of 25 senators elected at large; and the judicial, consisting of the Student Court appointed by the President and approved by the Senate.

ASSOCIATED WOMEN STUDENTS

The Associated Women Students is composed of all regularly enrolled undergraduate women students of the University. The purpose of the organization is to govern women students in women's affairs, to maintain standards of conduct, and to promote broad social interests for all women students. It is governed by a council, the members of which are representatives of all women's organizations on the campus.

HONORARY AND SERVICE ORGANIZATIONS

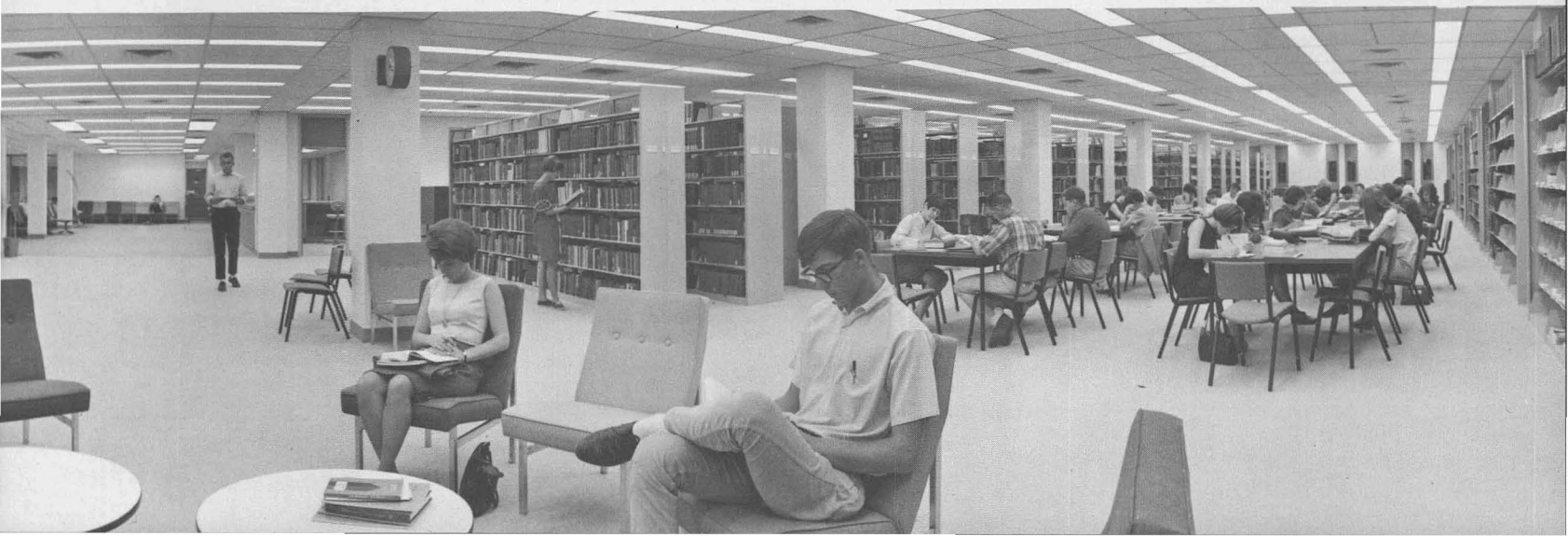
The following organizations are active: Phi Beta Kappa, Phi Kappa Phi, Blue Key, Mortarboard, Alpha Phi Omega, Chakaa, Las Campañas, Spurs, Vigilante, Circle K.

Many professional and departmental organizations are also active on the campus.

SOCIAL GROUPS

Fraternities: Alpha Epsilon Pi, Alpha Kappa Lambda, Delta Sigma Phi, Kappa Alpha, Kappa Sigma, Lambda Chi Alpha, Omega Psi Phi, Phi Gamma Delta, Phi Delta Theta, Phi Sigma Kappa, Pi Kappa Alpha, Sigma Alpha Epsilon, Sigma Chi, Sigma Phi Epsilon.

Sororities: Alpha Chi Omega, Alpha Delta Pi, Chi Omega, Delta Delta Delta, Delta Gamma, Kappa Alpha Theta, Kappa Kappa Gamma, Phi Mu, Pi Beta Phi.



Fraternity and sorority relations are controlled by the Interfraternity Council and the Panhellenic Council respectively. These organizations also take prominent places in student activities.

Other social groups: Town Club.

For information in regard to other student organizations and activities, see the **Student Handbook.**

STUDENT PUBLICATIONS

The **New Mexico Lobo,** the campus newspaper, is published four times each week, and **The Mirage** is the campus yearbook issued at the end of the spring semester each year. **The Thunderbird,** a literary magazine issued twice during each semester, carries literary contributions submitted by students.

The publications are edited and managed by students under the supervision of the Student Publications Board comprised of both student and faculty members, the majority of the Board, however, being student members.

The student editors and managers of these publications are elected by the Publications Board for a period of two semesters.

GENERAL ACADEMIC REGULATIONS

THE STUDENT is advised to familiarize himself with the academic regulations of the University. He is solely responsible for complying with all regulations of the University, of his respective college, and of the departments from which he takes courses, and for fulfilling all requirements for his particular degree.

CLASS HOURS AND CREDIT HOURS

A class hour consists of 50 minutes. One class hour a week of recitation or lecture, throughout a semester, earns a maximum of one credit hour. One class hour a week of laboratory, orchestra, chorus, or physical training, throughout a semester, earns from one-third to one-half credit hour.

GRADES

The grades awarded in all courses are indicative of the quality of work done. Their significance is as follows:

A, Excellent. 4 grade points per credit hour.

B, Good. 3 grade points per credit hour.

C, Average. 2 grade points per credit hour.

D, Barely Passed. 1 grade point per credit hour.

F, Failed. F is also given in any course which the student drops after the fourth week of a semester or second week of a summer session, while doing failing work.

I, Incomplete. The grade of I is given only when circumstances beyond the student's control have prevented his completing the work of a course within the official dates of a session. (See grade of PR.) The I automatically becomes an F if not removed (1) within the first 12 weeks of the next semester of residence, (2) within the next 4 semesters, if the student does not re-enroll in residence. The student may change the I to a passing grade by satisfactorily performing the work prescribed by the instructor. (Arrangements should be made with the instructor within a reasonable time in advance of the planned date of completion.) The student obtains from the office of his dean or director a permit to remove the I, pays the $2 fee, and takes the card to the instructor, who completes it and returns it to the Office of Admissions and Records where official entry on the student's record is made. A student may re-enroll in a course for which a grade of I still stands on his record only upon petition to, and approval by, the Committee on Entrance and Credits for change of the Incomplete grade to a grade of W.

W, Dropped Without Discredit. W is given in any course which the student drops officially after the fourth week of the semester or second week of the summer session, while doing passing work, subject to the regulations for dropping a course or for withdrawal from the University. These regulations appear under "Change in Program of Studies" on p. 124, and under "Withdrawal from the University" on p. 125.

CR, Credit. CR is used to report satisfactory completion of a master's thesis or doctor's dissertation.

NC, No Credit. NC is used to report unsatisfactory completion of master's thesis or doctor's dissertation.

PR, Progress. This grade is used to indicate that a thesis, dissertation, or a graduate problem is in progress but not complete. When the problem is complete, a regular grade is reported. For the PR grade for Problems, the Graduate School enforces the time-limit regulations applicable to the grade of I. When the thesis or dissertation is complete, CR or NC is reported. When, in the judgment of an instructor, the nature of a 500-level course does not permit meaningful eight-weeks' grades, the symbol PR may be used to indicate satisfactory progress.

The mark of NR, No Report, is used only in reports prepared by the Records Office for release to students and parents, to indicate that the instructor has not reported a grade.

CHANGE IN GRADE. No grade except I can be raised by a special examination. A grade of I can be changed to a passing grade in a manner to be determined in each case by the instructor concerned with the approval of the dean or director of the college. (See I above.)

Any other change in grade, after the grade is on record in the Office of Admissions and Records, may be made only after reasons for such change have been submitted in writing by the instructor concerned, and approved by the Committee on Entrance and Credits.

GRADE REPORTS

At mid-semester (normally the end of the eighth week of the semester), and at the end of the semester, grades are reported for all courses to the Admissions and Records Office.

Copies of end-of-semester grades are mailed to parents of undergraduate students, with the exception of married students and students over 21 years of age.

SCHOLARSHIP INDEX

A student's academic standing is referred to in terms of a scholarship index obtained by dividing the total number of grade points earned at The University of New Mexico by the total number of hours attempted at The University of New Mexico.* Hours given a mark of W or I will be excluded in this computation, but hours of F will be counted. All honors and prizes depending upon scholarship are determined by ranking students according to this index.

CHANGES IN ENROLLMENT

CHANGE IN PROGRAM OF STUDIES. The student who desires to add a course to, or drop a course from, his program of studies should obtain from his college office a petition for change in program of studies. The student obtains signatures called for and returns the form to the Office of Admissions and Records where official entry is made on the student's record. A course may not be added to a student's program after the second week of the semester or the first week of the summer session (see the Academic Calendar). No grade is assigned when a student officially drops a course during the first 4 weeks of the semester or the first 2 weeks of the summer session, except that a grade of F assigned by an

* Exclusive of hours in nonprofessional physical education and ensemble music.

instructor on the basis of University regulations relating to student dishonesty will be shown. When a student drops a course officially after the first 4 weeks of the semester or the second week of the summer session, he will receive a grade of W or F according to his standing in the course at the time of withdrawal, except that no student may withdraw after the twelfth week of the semester or the sixth week of the summer session with a grade of W without petition to, and approval by, the dean or director of his college. For regulations governing withdrawal from all courses for which a student is enrolled, refer to "Withdrawal from the University" below. In the School of Law, a student desiring to drop a course after the first 8 weeks must petition the faculty of that School in writing to drop the course and receive a grade of W therein.

The student is responsible for the completion of every course for which he has registered; if he drops a course at any time without filing the official change of program form, he will receive a grade of F in the course. A fee of $1 is charged for any change made in the student's program of studies after the end of the second week of the semester or after the end of the first week of the summer session.

Transfer from one section to another section of the same course is effected by application to, and approval by, the department chairman involved. By use of the Section Change Authorization form, the department chairman notifies the Records Office of the approved change. No withdrawal grade is assigned in a section change.

CHANGE IN COLLEGE. A student who desires to change his registration from one college to another within this University shall petition the dean or director of the college in which he is currently enrolled. This petition requires approval of both colleges and is then filed in the Office of Admissions and Records.

CHANGE IN ADDRESS. Each student is expected to keep the University authorities informed as to his address. Any change in address should be reported immediately to the Office of Admissions and Records.

ADDITION OF CORRESPONDENCE OR EXTENSION COURSES TO PROGRAM. A resident student may enroll for correspondence and extension courses only when the addition of such courses does not cause his program to be in excess of the maximum load allowed, and only after permission has been given by the dean or director of his college.

WITHDRAWAL FROM THE UNIVERSITY

When a student wishes to withdraw from all the courses in which he is enrolled during the semester, he should secure a withdrawal card from the office of the Dean of Men or Women. Any unmarried undergraduate student under 21 years of age must have a letter of permission from parents to withdraw from the University. No grades are assigned when a student withdraws officially from the University during the first 4 weeks of the semester or the first 2 weeks of the summer session, except that grades of F assigned on the basis of University regulations relating to student dishonesty will be shown. Grades of W or F are shown on the student's record if he withdraws officially from the University after the first 4 weeks of the semester or first 2 weeks of a summer session, except that no

undergraduate or non-degree student may withdraw from the University after the twelfth week of the semester or the sixth week of the summer session with a grade or grades of W except upon petition to, and approval by, both the dean or director of his college and the Personnel dean. The graduate student withdrawing under these conditions must petition to and secure approval from the Graduate Dean. When a student leaves the University during a semester and does not carry out his withdrawal according to this regulation, he becomes liable for a grade of F in all of his classes, even though he is passing his courses up to the time of leaving.

REPETITION OF COURSE

A student may repeat a course without special permission (but may receive credit only once), except for one in which a grade of Incomplete was earned (see p. 124). When a student repeats a course in which he has previously made a D or F, hours and points for all attempts will be counted in his scholarship index. Hours and points for repetition of a course in which the student has previously earned a grade of C or better will not be counted in his scholarship index.

AUDITED COURSES

A student may register for a course as an auditor, without credit, provided he obtains the permission of the instructor concerned and of the dean or director of the college having jurisdiction over his program of studies. The fee for audited courses is the same as for credit courses.

A student may not change from audit to credit basis after the first 2 weeks of the semester or the first week of the summer session.

He may change from credit to audit basis within the first 4 weeks of the semester or the first 2 weeks of the summer session regardless of his grade at the time the change is made. Change from credit to audit between the end of the fourth week and the end of the twelfth week of the semester or between the end of the second week and the end of the sixth week of the summer session can be made only if the undergraduate student is earning a passing grade. The student enrolled for graduate credit may change from credit to audit after the fourth week of the semester or the second week of the summer session only if he is earning a grade of A or B. After the twelfth week of the semester or the sixth week of the summer session, a student enrolled for undergraduate credit may, subject to approval by the dean or director of his college, change from credit to audit only if he is earning a grade of C or better.

CLASSIFICATION

A student admitted to one of the degree-granting colleges from the University College will be classified on entry into the degree-granting college as a sophomore. Classification beyond sophomore status will be determined by the college on the basis of the student's progress toward his chosen degree.

SCHOLASTIC REGULATIONS

DEAN'S LIST

At the end of each semester all the undergraduate colleges and the School of Law recognize excellence in scholarship by publishing the names of students

who have achieved outstanding academic records. These Dean's Lists are made available to University and outside news media.

SCHOLASTIC STANDING

The standing of all students (including those who withdraw from the University during the session) with respect to scholarship is checked at the end of each semester and summer session (or at the time of withdrawal). At such times, all students who are deficient in scholarship are placed on probation, or suspended, in accordance with the following regulations. A student placed on probation at any time will remain on probation until the next final examination period.

PROBATION

UNIVERSITY COLLEGE. The minimum scholarship index to remain in good academic standing in the University College is 1.40 through the semester or summer session in which a student has equaled or exceeded the limit of 30 hours attempted. Thereafter the minimum scholarship index required shall be 1.70. A student is placed on academic probation at the end of any semester or summer session in the University College if his scholarship index falls below the applicable minimum indicated above.

DEGREE-GRANTING COLLEGES AND NON-DEGREE STATUS. A student in a degree-granting college or in non-degree status is in good academic standing if his academic record shows either: (1) a scholarship index (as defined in this catalog) of 2.0 or better, or (2) a grade-point average of 2.0 or better on all work taken while enrolled in a degree-granting college or in non-degree status. A student will be placed on academic probation at the end of any semester or summer session when his academic record fails to equal one of the two minimums set out above. (The student is reminded that the grade-point average required for graduation from some colleges may be, in certain individual cases, higher than the grade average necessary to avoid probation.)

SUSPENSION

UNIVERSITY COLLEGE. A student is subject to suspension at the end of any semester or summer session in which he was carried on academic probation as defined above, unless he has succeeded in removing himself from such probation by acquiring the minimum scholarship index. No student, however, is subject to suspension or dismissal because of his grade-point index until the end of the semester or summer session in which the cumulative number of hours attempted exceeds 16.

DEGREE-GRANTING COLLEGES AND NON-DEGREE STATUS. A student in a degree-granting college or in non-degree status whose name has appeared on a probation list at the end of any semester or summer session is subject to suspension at the end of his next semester or summer session if he has not qualified for removal from probation status by that time.

A student who has been suspended is not eligible to re-apply for admission for a period of one calendar year from the date of suspension. The readmission of a suspended student to the University after the expiration of the suspension

period is contingent upon the approval of the dean or director of the college to which he is seeking admission or readmission. A student who is suspended for poor scholarship or who, after having been placed on probation, fails to re-register for the following semester, shall be considered as on probation upon his return to the University. The same regulation applies to a student who withdraws from the University while on probation (unless his withdrawal grades make him subject to suspension). A dean may require a student who is on probation at the time of registration to enroll for the minimum number of hours, and he may at any time require a student on probation to drop as many hours as seem to be in excess of the student's ability.

College of Business Administration: For additional regulations, see section "College of Business Administration."

College of Nursing: For additional regulations, see section "College of Nursing."

College of Pharmacy: For additional regulations, see section "College of Pharmacy."

SUSPENSION BY SCHOLARSHIP COMMITTEES OR DEANS. Regulations on probation and suspension as described above apply only at the end of a semester or summer session. However, during the progress of any semester or summer session the dean of a college may refer the case of a delinquent student to a college committee on scholarship; and such committee may recommend to the dean probation or suspension from the University for such student.

Attention is called also to the possibility of suspension as a result of excessive absence. See below.

GRADUATE SCHOOL DISQUALIFICATION

See the **Graduate School Bulletin.**

ATTENDANCE

Students are expected to attend all meetings of the classes in which they are enrolled. No extensions of the vacation periods are given to any students, regardless of the location of their homes. Non-attendance at classes due to late registration is considered the same as absence incurred after registration.

Instructors will keep a record of class attendance, and will report excessive absences to the dean or director of the college concerned. A student with excessive absences may be dropped from a course with the grade of F, by the dean or director of the college upon recommendation of the instructor. The dean or director may suspend a student from the University, on the grounds of neglected duty, when he has thus been dropped from two courses.

Absences due to illness, field trips, athletic trips, etc., are to be reported by the student to the instructor and to the Personnel Dean. Such report does not relieve the student of responsibility for lost work. It is the duty of the student to take the initiative in arranging with his instructors to make up work missed.

Students who are absent and unexcused from final examinations, or other closing exercises of the classes in which they are enrolled shall be given the grade of F. A grade of I may be given when there is a valid reason for absence from the examination.

DISHONESTY IN ACADEMIC MATTERS

Every student is expected to abide by the highest standards of honorable conduct in academic matters. Dishonest action in connection with tests, quizzes, or assignments, whether in the classroom or out, generally will be cause for dismissal from the University.

Non-disclosure or misrepresentation in filling out applications or other University records will make a student liable for disciplinary action, including possible dismissal from the University.

TRANSCRIPTS OF CREDIT

A student is entitled to one official transcript without charge at undergraduate and at graduate level prior to graduation. He is entitled to a second transcript without charge after graduation. A student who has not requested a free transcript before graduation is entitled to two transcripts without charge after graduation. After a student has secured the transcripts to which he is entitled without charge, additional transcripts are charged for at the rate of $1 each. No charge will be made for transcripts submitted to the New Mexico State Department of Education for teacher certification purposes. Transcripts of credits cannot be issued until all accounts with the University are settled.

If the student requires special statements to be made concerning his record, or if special forms are to be filled out, the transcript fee of $1 will be charged for such service.

SCHOLASTIC STATUS. An undergraduate student has the status: "in good standing," "on probation," or "under suspension." The University's period of suspension is one calendar year. At the expiration of the suspension period, the student may apply for readmission; but re-enrollment requires the approval of the college dean or director.

HONORABLE DISMISSAL. The status "in good standing," or "on probation," entitles the student to honorable dismissal, and on transcripts no separate statement of honorable dismissal is necessary. Whether he completes a semester, or withdraws with permission before the end of the semester, a student is entitled to honorable dismissal provided that he has the necessary scholastic status and is in good standing regarding conduct and financial obligations. Honorable dismissal implies that the University will permit the student to re-register in the next session.

EXAMINATIONS

REGULAR EXAMINATIONS. Examinations in each course are held at the close of each semester, and at intervals during the semester at the discretion of the instructor. All students, including graduating seniors, are required to take semester final examinations.

ENGLISH PROFICIENCY EXAMINATION. See p. 131.

GRADUATE RECORD EXAMINATION. See p. 132.

SPECIAL EXAMINATIONS. A special examination is one taken at a time other than regularly with the class. Classified as special examinations are: examina-

tions given to make up missed regular course examinations, Advanced Standing examinations, examinations to establish credit, examinations to validate unaccredited, or otherwise unacceptable, credit earned at other college-level institutions, examinations to remove a grade of I, examinations for the removal of entrance deficiencies.

A fee is charged for all special academic examinations administered by the faculty. Examinations for Advanced Standing and all examinations to establish credit are charged for on a per-credit-hour basis. (See p. 87.) For fees charged for other types of special examinations, see p. 87.

Before the student is admitted to a special examination, he must present to the instructor a permit signed by the dean or director of his college. For those examinations where a fee is required, the permit must show the Comptroller's receipt of the fee.

EXAMINATION FOR ADVANCED STANDING. A student in residence in an undergraduate college shall have the privilege of passing a course in the University by special examination without attendance upon the course, and receive undergraduate credit therefrom, such privilege to be subject to the following restrictions:

1. He shall not have been previously registered in the course in any division of any college or university.
2. The applicant shall have a scholarship index of 3.0 or more in a normal program of studies completed during the last semester (or last 2 summer sessions) in residence, and he shall be doing superior work at the time of taking the examination.
3. The examination shall have the approval of the dean or director of the college, the chairman of the department, and the instructor concerned.
4. The applicant shall obtain from the dean or director of his college a permit for the examination, and shall pay in advance the required fee of $2.50 per credit hour.
5. The student shall obtain in the examination a grade not lower than C, and shall show a mastery of the course acceptable to an examining committee of three, appointed by the dean or director, including the instructor and the chairman of the department concerned.
6. Credits earned through advanced standing examinations do not apply to residence requirements.

DEGREE REQUIREMENTS

The student may graduate under the catalog requirements for the year in which he was enrolled for the first time in the degree-granting college of The University of New Mexico from which he is seeking a degree, provided he completes graduation requirements within a continuous six-year period. If a student interrupts his attendance, or transfers from one degree-granting college to another within the University, he must graduate under the catalog in effect at the time of his readmission or transfer.

For information concerning the various degrees offered, and for course and scholastic requirements leading to these degrees, students should refer to those sections of the catalog devoted to the colleges.

The student is solely responsible for knowing the rules and regulations concerning graduation requirements and for registering in the courses necessary to meet specifications for the degree.

THE ENGLISH PROFICIENCY REQUIREMENT. Every student at The University of New Mexico is required, by the General Faculty of the University, to demonstrate a command of the fundamentals of English by making a qualifying score on the English Proficiency Examination administered by the University, or by earning a grade of "C" or better in a remedial English course (English 010). Normally, all students will take this test during their first semester of attendance, and those who do not make a qualifying score will enroll in English 010 during their second semester of attendance. All freshmen whose ACT scores qualify them for English 102 during their first semester will be considered to have completed the EPE requirement. Students who place in English 010 upon entrance may satisfy the requirement by completing this remedial, non-credit course with a grade of "C" or better or by "testing out," that is, making a passing score on the examination when it is offered. Students admitted to University College must satisfy this requirement before they will be allowed to transfer to any degree-granting college of the University. Transfer students admitted to degree-granting colleges from other institutions must pass this examination at the earliest possible date after enrolling at the University. The examination will be given once each semester. It is the student's responsibility to obtain information regarding the date(s) of the test.

TWO UNDERGRADUATE DEGREES. Two undergraduate degrees may not be granted a student until he has earned the equivalent of 5 years' college work (as represented by a minimum of 30 semester hours above the requirements for the first degree) and has fulfilled all requirements for both degrees, including senior residence requirements. A transferring graduate should notify the Director of Admissions when applying for admission if he plans to work for a second undergraduate degree.

SCHOLASTIC REQUIREMENT. The minimum University requirement for a bachelor's degree is at least a 2.0 cumulative grade-point average on the last 124 semester hours of degree work or such greater number as is required for the degree sought. The individual colleges, however, have the privilege of requiring for their respective degrees an average higher than this minimum. The student is referred to the various college sections for individual college requirements.

SPECIFIC COURSES REQUIRED. Four semester hours of nonprofessional activity physical education shall be completed by all undergraduate students in the University. Veterans, NROTC students, students over 30 years of age, and handicapped students excused by the University Physician are exempted from the physical education requirement. Exemption for NROTC and for medical excuse is on a semester-by-semester basis. Not more than 1 semester hour per semester nor more than 4 total hours of nonprofessional physical education may be credited toward a degree.

For specific requirements leading to degrees in the various curricula, students should refer to the courses of study outlined in the listings of the different colleges.

DIVIDENDS AND PENALTIES. For every 15 semester hours of A, or for every 30 semester hours of B, the hours required for graduation are reduced by one. The maximum of such dividends allowed is four. For every 15 semester hours of D, the hours required for graduation are increased by one. No dividends or penalties are given in the Colleges of Business Administration, Engineering, Fine Arts, Nursing, and Pharmacy. Dividends and penalties are assessed only on work done in residence at The University of New Mexico.

SENIOR RESIDENCE REQUIREMENTS. Residence credit is defined as credit earned by attendance in regular classes on the University of New Mexico campus or in one of its field sessions. Credits earned through the Extension Division or by examination are not counted toward the residence requirement.

Students who have done less than 60 semester hours in residence previous to senior status (see "Classification") shall earn 30 semester hours in residence in the senior year.

Students who have done 60 semester hours, but less than 90, in residence previous to senior status, shall earn 24 semester hours in residence in the senior year.

Students who have done 90 or more semester hours in residence previous to senior status shall earn 15 semester hours in residence in the senior year.

In no case is the number of hours specified to be earned in the senior year to be interpreted as necessarily the last hours.

Students may fulfill part or the whole of this residence requirement by summer session attendance.

The student who has completed a baccalaureate degree and who is seeking a second undergraduate degree will be reclassified by the degree college in accordance with the hours and requirements completed toward the new degree. Senior residence requirements for the second degree will be determined on the same basis as those for the first degree.

RESIDENCE REQUIREMENTS IN MAJOR AND MINOR. At least one-half of the minimum number of credit hours required for major study and one-fourth of the minimum number of credit hours required for minor study must be class or laboratory work earned in residence in the University. When a senior transfer student plans to complete a major by presenting credit hours earned in residence at another institution, the major department, or the director of the interdepartmental major, may modify this ruling, not, however, below one-fourth of the total minimum hours required for the major (or the interdepartmental major).

GRADUATE RECORD EXAMINATION. All seniors are required to take the Graduate Record Examination during the last term of residence.

EXTENSION AND CORRESPONDENCE HOURS ALLOWED TOWARD DEGREE

1. Credit is allowed for correspondence and extension courses completed at this University or through other colleges and universities accredited by regional accrediting associations.
2. As many as 40 semester hours in correspondence and extension courses will be allowed toward the bachelor's degree provided that at least 10

of the 40 have been earned in extension courses taught by regular resident instructors of the University. Of this 40-hour maximum, no more than 30 hours will be allowed in correspondence work.

3. Credit for extension and correspondence courses completed in institutions not accredited by regional accrediting associations is not accepted for transfer. A student who has completed such correspondence or extension work in a course comparable to one offered by the University has the privilege of establishing credit here under the regulations governing special examinations to establish credit.
4. The hours earned by correspondence or extension from accredited institutions other than The University of New Mexico may be counted towards degree requirements but the grades will not be included in the grade-point average of the student. (See "Scholarship Index," p. 124.)
5. Courses taken from other institutions must correspond to those offered at The University of New Mexico.
6. Any graduating senior not in residence who expects to offer credits earned by correspondence toward fulfillment of degree requirements must have prior approval of the dean of his college.

   For regulations governing the addition of correspondence or extension courses to the student's program while he is in residence, refer to p. 125.
7. No credit will be given for a course taken by correspondence if the student has previously received a grade of F in the course at this University. Exceptions to this rule can be made only upon petition to, and approval by, the Committee on Entrance and Credits.
8. The student is solely responsible for complying with all regulations stated in the current **Correspondence Bulletin.**

COMMENCEMENT

Normally, commencement exercises are held at the end of Semester II. Students who complete their requirements in an off-session receive their diplomas at the next regular commencement.

Students must participate in the commencement exercises at the time of receiving diplomas, unless excused by the dean of the college concerned.

HONORS WORK AND GRADUATION WITH HONORS

It is possible for a student to graduate with General Honors (Honors in General Studies), or with Departmental Honors, or with both. The designations for the various levels of Honors in General Studies are as follows: **cum laude** in General Studies, **magna cum laude** in General Studies, **summa cum laude** in General Studies. The student becomes a candidate for Honors only; the level of Honors with which he is graduated is determined by the General Honors Council. Designations for graduation with Departmental Honors are as follows: **cum laude, magna cum laude,** and **summa cum laude.** In Departmental Honors also the student is a candidate for Honors and the level of Departmental Honors with which

he graduates is determined by his department (or college, in colleges which are not departmentalized).

Graduation with Honors, either General or Departmental, is in no sense automatic. The student is required to make application for candidacy. Information regarding Honors in General Studies and the method of gaining admission to this program can be obtained in the office of the Director of General Honors.

High school graduates who intend to enter the University in the fall and who would like to be considered for admission to the General Honors program should make application for admission to the University as early in the spring as possible and should request of their high school principals that their full transcripts be sent to the University as promptly as possible after their high school graduation. Chances of being accepted into the Honors program will be greatly enhanced if students arrange to have their ACT scores sent to the Director of Admissions in the early spring (see p. 73). No freshman (or transferring student required to have ACT scores), even if fully qualified, can be assured of a place in the General Honors program in the first semester of his enrollment unless his application for admission and ACT scores are on file well in advance of registration.

Information regarding the Honors Program in a specific department or college can be obtained in the main departmental or college office.

THE GENERAL HONORS PROGRAM. The General Honors Program (leading to graduation with Honors in General Studies) is available to students in any undergraduate degree-granting college or division of the University. Normally, the student enters this program in his freshman year. Requirements for graduation with Honors in General Studies are as follows: (a) an over-all grade point average of 3.2; (b) completion of 15 to 21 hours in courses listed under "General Studies" in the section of this catalog entitled "Courses of Instruction," including normally the program for the junior and senior years; (c) certification by the General Honors Council; (d) completion at The University of New Mexico of all of the last 60 hours of the work for the bachelor's degree. In addition to these minimal requirements, the General Honors Council may set such additional qualitative requirements as are approved by the University Faculty. Completion of the required General Studies courses does not necessarily mean that the student will graduate with General Honors.

The major purposes of the program of General Honors are as follows: (1) to supply additional breadth to the student's general education; (2) to put the able student more directly into competition with other able students so that his achievement may be more nearly in line with his potentialities; (3) to give the able student full opportunity to express himself in writing and in vital discussions in small groups; (4) to thrust the abler student into an environment that will offer improved intellectual opportunity and a greater challenge.

Performance and the level of achievement in the General Honors Program will not be judged by mechanical quantitative standards. The student will be under constant surveillance in small groups by a variety of faculty members. The program, in short, is designed to offer the student an opportunity; and the stu-

dent is expected to respond with liveliness, imagination, and complete conscientiousness.

The candidate for General Honors may be dropped from the program at any time when his performance shows that he is not responding fully to the opportunities being offered him.

Special advising is available to all students who are candidates for General Honors. Information about advising of Honors students can be obtained in the office of the Director of General Honors.

Students in General Honors will be constantly encouraged to undertake also Departmental Honors.

THE DEPARTMENTAL HONORS PROGRAM. A Departmental Honors program is available to the qualified student in many departments of the University and will ultimately be available in nearly all departments. The student should inquire of the chairman of his major department (or the dean of the college in colleges which are not departmentalized) as to the availability of a program. Normally, the student enters a Departmental Honors program in his junior year. He should at least make his intention of graduating with Departmental Honors known to his chairman or dean early in his junior year. Admission to Departmental Honors candidacy can in no case be granted later than the beginning of the student's senior year.

Minimal requirements for graduation with Departmental Honors are as follows: (a) an over-all grade point average of 3.2; (b) not less than 6 credit hours in independent study, senior thesis, or special courses open only to candidates for graduation with Honors in the department (or college, if the college is not departmentalized).

Departments or colleges may have differing additional quantitative and qualitative requirements. The prospective Departmental Honors student should confer with the chairman of the department (or the dean of the college) regarding the requirements above the minimum requirements set forth just above.

The purposes of departmental honors programs are as follows: (1) to intensify and deepen the student's knowledge in his major field; (2) to put this specialized knowledge into better relationship with knowledge in related fields and in the larger general area of the student's specialization; (3) to bring the student under closer guidance of, and into closer acquaintance with, teachers in his field.

Graduation with Departmental Honors shall never be a matter solely of performance in standard courses or of grade-point averages in either the field of specialization or the entire program of the student. Continuance in departmental honors programs and the level of honors at which the candidate shall be graduated are both in the discretion of the department.

SCHOOL OF LAW GRADUATION HONORS

The J.D. degree may, in the discretion of the Law School faculty, be awarded with the honors indicated to graduating students who have achieved the following over-all grade-point averages in their law school work: 3.4, **cum laude;** 3.6, **magna cum laude;** 3.8, **summa cum laude.**

GRADUATION WITH DISTINCTION

Students graduating with a scholarship index which ranks them in the upper 5 per cent of the graduating class of the University will automatically receive the degree "with Distinction." Ranking will be based only upon work taken by the student at The University of New Mexico. Eligible senior students who have taken all of their work at this University will automatically receive this honor. Transferred students must present a minimum of 45 semester hours earned at this University in order to be eligible for the "Distinction" list; however, their transfer records shall be subject to review by the Scholarships, Prizes, and Loans Committee for the purpose of determining the quality of their over-all academic accomplishment.

UNIVERSITY COLLEGE AND COUNSELING CENTER

ALL FRESHMEN entering the University are enrolled in the University College. The primary purpose of the College is to give each student the maximum opportunity to select the course of study best suited to his needs and aptitudes. To this end the College plans an individual program of testing, counseling, and guidance for each student.

A freshman who has decided to prepare for admission to a specific degree-granting college of the University will be assigned an adviser from the faculty of that college. With his adviser's approval, he should undertake a program of courses recommended by his chosen college for the freshman year. These programs are described in the sections of this catalog devoted to the several colleges.

A freshman who has not decided on a specific college should develop, with the aid of his adviser, a program of first-year courses designed to help him discover areas of interest and special competence. He should also request vocational guidance. The student who uses this exploratory approach should be advised that if he later chooses to enter one of the colleges having a very specific freshman program, he may require more than the usual 4 years to earn a degree.

Students who fail to meet the admission requirements of a degree-granting college at the end of the freshman year, or who wish further to adjust themselves to degree work, may remain in the University College through the sophomore year, subject to the scholastic regulations of the College.

Many students, for one reason or another, do not find a 4-year course leading to a degree advisable. For them the University College can provide a variety of 2-year programs leading to a certificate of completion:

ADMISSION REQUIREMENTS

For admission requirements to the University College, see the "Admission" section of this bulletin. The University College will not accept students who have attempted 72 or more academic semester hours or who have earned 64 or more academic semester hours.

No student may enroll in the University College after he has been admitted to any degree-granting college of The University of New Mexico.

CONTINUATION IN UNIVERSITY COLLEGE

No student will be permitted to re-enroll in the University College if at the end of his previous semester or term of enrollment he had attempted a total of 72 or more semester hours (including hours with grade of Incomplete) or earned a total of 64 or more semester hours.

THE ENGLISH PROFICIENCY EXAMINATION

All University College students must satisfy the English Proficiency Requirement before being accepted into any degree-granting college of the University. It is strongly recommended that the student pass this examination during his first semester or take English 010 during his second semester, as described on page 131. Failure to do this can result in failure to transfer to the degree-granting college of the student's choice at the end of the freshman year. Delay

in meeting the requirement can result in a student's exhausting his University College eligibility and not qualifying to transfer to a degree college. All questions regarding the EPE should be directed to the University College office.

SCHOLASTIC REGULATIONS

See pp. 126-129.

ADMISSION TO A DEGREE-GRANTING COLLEGE

The **minimum** requirements for transfer from the University College to any degree-granting college are:

1. Twenty-six hours of earned credit.
2. (a) A scholarship index of at least 2.0 on all hours attempted;

   or

   (b) A scholarship index of at least 2.0 on all hours attempted in the previous 2 semesters of enrollment; provided that, if fewer than 26 hours were attempted in the previous 2 semesters, a scholarship index of at least 2.0 shall be required on all work attempted in as many previous consecutive semesters as are necessary to bring the student's total hours attempted to at least 30.
3. (a) A satisfactory score on the English Proficiency Examination (administered by The University of New Mexico);

   or

   (b) A grade of C or better in a remedial English course offered on a non-credit basis by The University of New Mexico English department.

For additional admission requirements of a particular degree-granting college, refer to the admission regulations set forth in the section of this catalog devoted to that college.

CERTIFICATE OF COMPLETION

Upon application to the University College Office, a University College Certificate will be awarded to any student who meets the following requirements: (1) completion of 60 semester hours of college work with a passing grade, of which at least 30 hours have been earned in The University of New Mexico with 15 of these 30 hours earned in the University College of The University of New Mexico; and (2) a cumulative average of 1.70 on all work attempted through the semester or session in which the total of college credits earned first becomes 60 or more. (Nonprofessional courses in physical education may not be counted in these totals.)

Students seeking the University College Certificate may pursue courses in the Department of Naval Science only with the permission of the Director of the University College and the Professor of Naval Science.

COUNSELING

For assistance with problems related to scheduling or specific courses, students should contact their academic advisers during regular office hours scheduled for consultation.

Students needing assistance with educational, personal, or career problems should contact the Counseling Center, a division of the University College, which offers counseling without charge to all regularly enrolled students of The University of New Mexico. Students are assisted with their problems through conferences with counselors and special advisers, and through the use of standardized tests, such as interest, study habits, and adjustment inventories. Emotional problems are given consideration in cooperation with the Student Health Service.

Pre-enrollment counseling for non-university students is provided at a nominal charge.

A reading clinic is available within the Counseling Center for any student whose reading deficiences will detract from his ability to derive maximum benefit from his university experience. This service is conducted in small classes and supervised laboratory practices which begin in the first weeks of the semester. All classes are non-grade, non-credit, and require no additional fee.

Students wishing to make use of the Counseling Center are invited to telephone or stop in at the University College office in the Stadium Building, Room 240, to arrange for an appointment.

DIVISION OF VETERANS AFFAIRS

See p. 118.

TESTING DIVISION

The Testing Division of the University College and Counseling Center is located in the Counseling and Testing Building. The Division coordinates special group testing required by the University and gives individual tests as requested by the Counseling Center and the Office of Veterans Affairs. The Division also serves as a testing center for national programs such as the Graduate Record Examinations, Miller Analogies Test, Law School Admission Test, American College Test, GED (high school equivalency test), and numerous others. Information concerning these programs may be obtained from the Division.

In addition to testing services, the Division performs institutional research related to the University testing programs and provides consulting services to UNM faculty and staff in the area of measurement and evaluation. By special arrangement, Division personnel are available to assist non-UNM institutions or agencies with problems related to the field of testing. The Division has a test library which contains most of the standardized tests published in the areas of intelligence, achievement, aptitude, interest, and personality. The library is open to faculty, staff, qualified students, and qualified non-students.

TWO-YEAR SECRETARIAL PROGRAM

In recognition of the increasing demand for trained office personnel, this program is designed to give students not only the basic knowledge and skills necessary for initial employment, but also a solid background in the liberal arts. In recent years greater appreciation of the value of well-planned and well-directed office services has opened an attractive field of employment for college-

trained men and women. Those who choose this curriculum are able to advance more rapidly toward positions requiring managerial and supervisory responsibility.

Freshman Year

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
Hist 101 Western Civ	3	History 102 Western Civ	3
BA 112 Interm Typ	3	BA 114 Begin Dicta	3
BA 113 Shorth Theory	3	BA 262 Adv Typ	3
Spch 101 or 255 Fund of Spch or Pub Spkg	3	Elective	3
Physical Ed	1	Physical Ed	1
	15 + PE		15 + PE

Sophomore Year

BA 105 Prin of Acctg	3	BA 257 Sec Off Prac	3
BA 117 Off Mach & Filing	2	BA 265 Bus Communications	3
Econ 200 Prin of Ec	3	Electives	9
BA 253 Transcription	3	Physical Ed	1
Electives	4		
Physical Ed	1		
	15 + PE		15 + PE

Electives would be taken from the following areas as determined by the student's major adviser:

Political Science	Fine Arts
English	Mathematics
Psychology	Sociology

A student who has had business subjects in high school would be advised to omit BA 112, BA 113, and BA 114. This arrangement would enable the student to select 9 more hours from the list of electives.

COLLEGE OF ARTS AND SCIENCES

THE COLLEGE OF ARTS AND SCIENCES offers instruction in subjects or fields which relate to man's cultural, social, and scientific achievements, with more regard to historical and philosophical backgrounds and developments than to immediate practical use. Although the fields of study offered in the College underlie the more specialized work of the graduate, professional, or vocational school, the degrees and courses of study are designed as ends in themselves, supplying knowledge of mankind's and the student's own potentialities which will enable him to live better and later to perform better in his chosen field.

DEGREES

Upon the recommendation of the faculty and the President of the University, the degree of Bachelor of Arts or Bachelor of Science is conferred by the Regents upon those candidates who have completed all specified requirements. Differing requirements are specified for the Bachelor of Arts degree and for the Bachelor of Science degree if biology, chemistry, geology, or psychology is the subject of major study; the student must choose beforehand the degree for which he wishes to work. A candidate who completes the requirements for a major in dietetics, mathematics, or physics will receive the degree of Bachelor of Science unless special request is made for the Bachelor of Arts degree. (Bachelor of Science in Medical Technology is the only choice of degree in that field.) A candidate who completes requirements with a major in any other subject will receive the Bachelor of Arts degree.

RELATION TO PROFESSIONAL AND VOCATIONAL COURSES

Courses preparatory to law, medicine, and the other professions are planned and taught as cultural subjects and do not infringe upon the work of the professional school. Concerning the limited acceptance of work in business administration, education, engineering, law, medicine, nursing, pharmacy, and fine arts, see "Electives" and "Special Curricula."

ADMISSION

All freshman students are admitted to the University College. A detailed statement of entrance requirements is in the "Admission" section of this catalog.

ADMISSION FROM UNIVERSITY COLLEGE

Requirements for transfer from the University College into the College of Arts and Sciences are as follows:

1. Twenty-six hours of earned credit.
2. (a) A scholarship index of at least 2.0 on all hours attempted;

   or

   (b) A scholarship index of at least 2.0 on all hours attempted in the previous 2 semesters of enrollment; provided that, if fewer than 26 hours were attempted in the previous 2 semesters, a scholarship index of at least 2.0 shall be required on all work attempted in as many previous consecutive semesters as are necessary to bring the student's total hours attempted to at least 30.

3. Completion of the English Proficiency Examination (administered by The University of New Mexico) with a satisfactory score or a grade of C or better in a remedial English course offered on a non-credit basis by the University's English Department.

4. Of the 26 hours mentioned in "1" above, 23 hours must be acceptable towards graduation from the College of Arts and Sciences.

TRANSFERS

Transfer to the College of Arts and Sciences from another degree-granting college of The University of New Mexico requires a scholarship index of 2.0 on all work attempted while the student was enrolled in the other degree-granting college(s).

A student seeking to transfer to the College of Arts and Sciences from another accredited institution must meet the University's general qualitative admission requirements for transfer and, in addition, must present a minimum of 26 semester hours, 23 hours of which must be in courses acceptable toward graduation from the College of Arts and Sciences. Transfer students must complete admission requirement No. 3 (immediately above) during the first semester of enrollment in this University.

TRANSFERRED GRADE OF D. Courses with grade of D transferred from another institution cannot be allowed for credit in The University of New Mexico. In certain sequences of courses in the College of Arts and Sciences, however, where grades of D from another institution are involved, it is possible for a student to secure a waiver of certain lower-division requirements. For information upon this possibility, the student may consult the Dean of the College.

GRADUATION REQUIREMENTS

Candidates for the degree of Bachelor of Arts or Bachelor of Science are required to complete a total of 124 semester hours in academic subjects, and 4 semester hours in physical education, with a scholarship index of 2.0 on all work attempted in academic subjects.

In the first 2 years, whether the student is technically enrolled in the College of Arts and Sciences or not, he is expected to acquire certain basic essentials and to explore several different fields to determine where his interests lie. In the last 2 years the student devotes himself to the completion of his group requirements, to his major and minor, and to the permitted electives that he may wish to take.

As soon as the student has earned as much as 80 semester hours toward his degree, he should pick up a degree application from the Dean's office, have it completed, and return it to the Dean's office. A summary showing exactly what is required for completion of the degree will be prepared and sent to the student. **The student is solely responsible for completing all requirements for graduation.**

Specific graduation requirements are as follows:

1. Completion of 124 semester hours in academic subjects and 4 semester hours in physical education.

2. Grade points equal to twice the total number of hours of college-level work which the student has ever attempted. This is exclusive of hours in nonprofessional physical education and ensemble music.

3. Completion of at least 40 hours in courses numbered 300 or above, with at least a 2.0 average in all such hours attempted.

4. Completion of the English Proficiency Examination with a satisfactory score. (Normally, this is a requirement for admission.)

5. Completion of at least 1 major and 1 minor, or 2 majors; or fulfillment of all requirements in one of the combined curricula of the College of Arts and Sciences definitely specified in the catalog.

6. Completion of the Graduate Record Examination.

7. Completion of the Group Requirements described below.

GROUP REQUIREMENTS

The purpose of the following group requirements is to insure that the student will explore various fields of knowledge before beginning to concentrate too heavily in a field of his choice. The group requirements also aim to give a certain guarantee of the breadth of the student's knowledge regardless of the specialty he may wish to choose in taking his degree. The student should arrange his program so that he will be able to fulfill these group requirements as early in his career as possible. He has not earned the right to concentrate in his specialty until he has made a reasonable effort to fulfill the group requirements. The following rule, therefore, is extremely important:

A student may not take any courses numbered 300 or above (junior-senior courses) until he has completed 30 hours in the 5 groups and unless he is also concurrently enrolled in 1 course in a majority of the groups in which he still has deficiencies. (If there are deficiencies in 4 or 5 groups, at least 1 course in each of 3 of those groups must be taken; deficiencies in 2 or 3 groups, at least 1 course in each of 2 of those groups; deficiency in 1 group, 1 course in that group.) Exceptions to this rule can be made only with the written permission of the Dean of the College.

The acceptability of transferred work toward fulfilling group requirements lies in the judgment of the Director of Admissions and the Dean of the College.

No course may be counted toward the satisfaction of requirements in more than one group, but a course may be counted toward the fulfillment of both a group requirement and a major or minor requirement.

Courses in General Studies, taken in the Honors Program, may, with the approval of the Dean, be counted toward the satisfaction of requirements in similar areas in Groups III, IV, and V.

The requirements in the groups are as follows:

I. English. Six semester hours must be earned in English 101, 102 (unless English 101 has been waived), and 3 additional credit hours must be earned in a course in literature numbered above 200. A student deficient in writing skill may at any time be referred to English Workshop for remedial aid. Normally English 101 and 102 should be completed within the first 2 semesters of enrollment in the University.

II. Foreign Language. The student is required to take as many semesters of one foreign language as he needs to complete the fourth semester course in that language. For the student who chooses a language which he has not previously studied, this ordinarily means a minimum of 4 semesters, as well as a minimum of 12 semester hours.

Students who have studied a language in high school, or those who believe they have proficiency in a language, may determine the level at which they should begin language study by consulting the Chairman of the Department of Modern Languages. However, a student who has had two or more years of a foreign language in high school cannot enroll for credit in the beginning semester of that language without permission of the course chairman or undergraduate major advisor. See individual language for details.

To receive credit hours toward graduation for demonstrated competence in a foreign language, without actually taking courses in the language, a student must take advanced standing examinations. (See p. 130.)

III. Humanities. Nine semester hours (not more than 6 from any one area) must be completed in courses in the following areas: (a) History; (b) Literature (either English or foreign); (c) Philosophy; (d) Art History or Music History or Speech (to the extent of 3 semester hours).

IV. Social Science. Nine semester hours (not more than 6 from any one area) must be completed in courses in the following areas: (a) Anthropology; (b) Economics; (c) Geography; (d) Political Science; (e) Sociology.

V. Mathematics and Natural Science. Fourteen semester hours (not more than 8 from any one area, and including 2 semesters in courses that require laboratory work) must be completed in courses in the following areas: (a) Astronomy; (b) Biology; (c) Chemistry; (d) Geology; (e) Mathematics; (f) Physics; (g) Psychology.

MAJOR AND MINOR STUDIES

At the beginning of his junior year a student shall select and declare (1) a major and a minor subject or (2) two major subjects, or (3) one of the special curricula of the College, and his program of studies thereafter shall meet with the approval of the chairman of his major department or the supervisor of the special curriculum.

Only work of at least C quality is accepted toward the major and the minor; in the case of a special curriculum, all work within the general area of the specialization must be of at least C quality. (Courses in which grades of D are earned in The University of New Mexico may be accepted as electives and in fulfillment of group requirements.)

For the Bachelor of Science degree in the College of Arts and Sciences in departments requiring a major and a minor, the major department may specify in lieu of a single minor in one department a distributed minor in courses in related departments. The distributed minor shall consist of not less than 30 semester hours nor more than 36 semester hours. With the permission of the Dean, some relaxation may be allowed in the rules relating to number of hours required in courses numbered 300 or above and to penalties for excessive hours in freshman

courses when these rules are in conflict with distributed minor requirements. In all cases, however, the student will be expected to have at least 35 hours in courses numbered 300 or above. The student should consult the chairman of his major department if he wishes to take a distributed minor.

A distributed minor in Comparative Literature or in Russian Studies may be elected by candidates for either the Bachelor of Science or Bachelor of Arts degree. A distributed minor in American Studies is also available for students majoring in Anthropology, Economics, English, History, Philosophy, Political Science or Sociology. A distributed minor in Paleoecology is offered to students majoring in Anthropology, Biology, Chemistry, or Geology.

CERTIFICATION TO TEACH IN HIGH SCHOOL

It is often possible for a student taking a degree in the College of Arts and Sciences to achieve certification as a secondary school teacher in New Mexico on the same basis as students graduating from the College of Education and without going beyond the 124 semester hours required by the College of Arts and Sciences for graduation. To do this, however, requires careful planning of the program. In certain major-minor combinations a student cannot achieve the B.A. or B.S. degree from the College of Arts and Sciences and also achieve teacher certification without taking more than 124 semester hours. The plan is possible only when the major-minor combination (or double major) is in subject areas usually offered in high school (see p. 178 for approved areas). All students at The University of New Mexico who expect to follow a course of study leading to certification are subject to the requirements for admission to teacher education listed on pp. 161-163 in the College of Education section of this catalog.

In selecting courses to meet group requirements, students seeking both teacher certification and a bachelor's degree in Arts and Sciences must include the following courses:

1. A course in speech and a course in general psychology.
2. Hours offered in laboratory science must be taken in biology, chemistry, geology, physics, or astronomy.
3. At least 6 hours in fine and practical arts, of which one course in art or music history may also be counted toward fulfillment of the A&S requirement in humanities.

Students interested in following this plan should consult the office of the Dean of the College of Arts and Sciences as early as possible, preferably at the beginning of the sophomore year but at least by the beginning of the junior year. Additional time may be required to complete the program if advice is sought too late.

ELECTIVES

A student who has fulfilled all other requirements for graduation may use electives to complete his total of 124 hours for graduation, subject to the restrictions stated below.

Subject to approval by the Dean, a maximum of 24 hours in any combination, earned in courses offered in the Colleges of Business Administration, Engineering,

Law, Education,* Fine Arts,** Nursing, and Pharmacy, or in Naval Science and Aerospace Studies, is acceptable as electives in the College of Arts and Sciences, with the following exceptions:

(1) Courses in typing or in office machines and filing in the College of Business Administration.
(2) Ensemble music in excess of 4 hours.
(3) Shop work in excess of 3 hours.
(4) Courses in health, physical education, and recreation in excess of 7 hours, the 7 permissible hours to be chosen from courses Health Education 171, Physical Education 397, 398, 399, 461, 489, Recreation 303, 374, 452.
(5) Courses in educational methods, supervision, and practice teaching, except 3 hours of high school methods and 6 hours of high school practice teaching. (If the student has taken the full 24 hours in Education plus the additional courses required for certification to teach in a New Mexico high school, these 24 hours will be accepted in the College of Arts and Sciences. See "Certification, etc.," immediately above.)
(6) Courses in elementary education, nursing, and pharmacy which are primarily vocational or directed toward professional practice.

GENERAL RULINGS

1. Students with less than junior standing may not carry more than 8 hours in one department during one semester.

2. Not more than 50 hours in courses open to freshmen may be taken without a penalty of 1 hour for every 3 excessive hours.

Exceptions to these rules may be made only by the Dean.

NORMAL FRESHMAN-SOPHOMORE PROGRAMS

A student wishing ultimately to enter the College of Arts and Sciences should take the following standard program while enrolled as a freshman in the University College. Deviations from this program should be made only with the permission of the University College adviser.

First Semester		Second Semester	
†English 101 (Group I)	3	English 102	3
At least 9 hours from Groups II, III, IV, or V	9–10	At least 9 hours from Groups II, III, IV or V	9–10
Elective	3	Elective	3
Physical Education	1	Physical Education	1
	16–17		16–17

If a student intends to take a degree in the College of Arts and Sciences, his program as a sophomore (whatever college he is enrolled in as a sophomore) should be as follows. Deviations should be made only with the permission of the student's adviser.

First Semester		Second Semester	
At least 12 hours from Groups I, II, III, IV, or V	12–13	At least 12 hours from Groups I, II, III, IV, or V	12–13
Elective	3	Elective	3
Physical Education	1	Physical Education	1
	16–17		16–17

* Except is the case of a Home Economics major, when a maximum of 34 hours will be accepted.

** Except in the case of an Art major, when a maximum of 32 hours will be accepted.

† If the student fails to make a satisfactory score on the ACT, he will be required by his adviser to take remedial work or tutoring.

PRE-PROFESSIONAL AND OTHER CURRICULA

Students are cautioned against assuming that 4-year college courses always prepare for professional work. At least 1 year of specialized graduate work is advisable, even if not actually required.

COMBINED CURRICULUM IN ENGINEERING AND ARTS AND SCIENCES

Degrees in both the College of Arts and Sciences and the College of Engineering may be obtained by following a 5-year curriculum to be outlined in each case, jointly, by the deans of the two colleges. Any student interested in this curriculum should confer with the deans before the end of the sophomore year. For students interested in careers in countries to the south of the United States, attention is called to a major in Latin American Studies along with engineering.

COMBINED 6-YEAR PROGRAM IN LAW AND ARTS AND SCIENCES

It is possible for the properly qualified student to gain admission to a combined 6-year program in Law and Arts and Sciences leading to the Bachelor of Arts or Bachelor of Science degree from the College of Arts and Sciences and to the Juris Doctor degree in the School of Law. Such a student fulfills all requirements of the College of Arts and Sciences by using certain of his Law courses as a minor in the College. See "School of Law," and the **School of Law Bulletin.**

FOR STUDENTS WHO PLAN TO STUDY LAW

See "School of Law."

CURRICULUM PREPARATORY TO MEDICINE

The requirement for admission to medical schools approved by the Association of American Medical Colleges and by the Council on Education of the American Medical Association is ordinarily at least 90 semester hours in a college of arts and sciences. However, because of the large number of applications to medical schools in recent years, it is difficult to gain admission without a bachelor's degree.

Although the requirements for admission to the various medical schools in the United States vary somewhat, there are certain basic minimum science requirements common to all. These include one year of general biology, general chemistry, a year of organic chemistry, a year of physics, and a year of mathematics with calculus. In addition, 27 of the 96 approved schools specifically require quantitative analysis, 11 require embryology, and 18 require qualitative analysis or physical chemistry. A few include specific language requirements and courses in the social and behavioral sciences. Exact requirements for each school are included in **Medical School Admission Requirements, U.S.A. and Canada,** a volume put out each year by the Association of American Medical Colleges. Students interested in a particular school should consult this volume.

In recent years medical schools have increasingly tended to give equal consideration for admission to students majoring in the humanities or social sciences. A liberal background and breadth of education are felt to be desirable for anyone seeking a professional career. Good performance in the minimum science requirements is particularly important for these students, however, since they

must demonstrate that they can handle the quantitative scientific material which is crucial in the modern medical curriculum.

Students interested in medical school generally take the Medical College Admissions Test in the spring of their junior year or the fall of their senior year. Hence it is advisable to complete the minimal basic science requirements by the end of the junior year. Because there are many more applicants for admission than there are places available, there is no assurance that a given student will qualify. Students should, therefore, select their major fields on the basis of their own interests, rather than from the limited viewpoint of specific pre-professional education.

Premedical students expecting to major in biology or chemistry are advised to complete the following course of studies during the first two years. Those majoring in the humanities or social sciences will need to take the same basic science courses before admission to medical school, but they will be able to spread them over a somewhat longer period.

First Year		Second Year	
English 101, 102	3–3	English Lit, Psych 101	3–3
French, German, or Russian	3–3	French, German, or Russian	3–3
Chemistry 101L, 102L	4–4	Chemistry 253L, Biology 371L	4–4
Biology 101L, 102L	4–4	Humanities or Social Science	3–3
Math 120 or 121 or 160 or 162	4–5	Physics 111, 112, 113L, 114L	4–4
Physical Ed	1–1	Physical Ed	1–1

Further information and advice may be obtained from the Premedical Advisory Committee. Professor Martin Fleck, department of Biology, is chairman of the committee.

CURRICULUM PREPARATORY TO DENTISTRY

The minimum requirement for admission to accredited dental schools is 2 years of acceptable academic work with a scholarship index of 2.5.

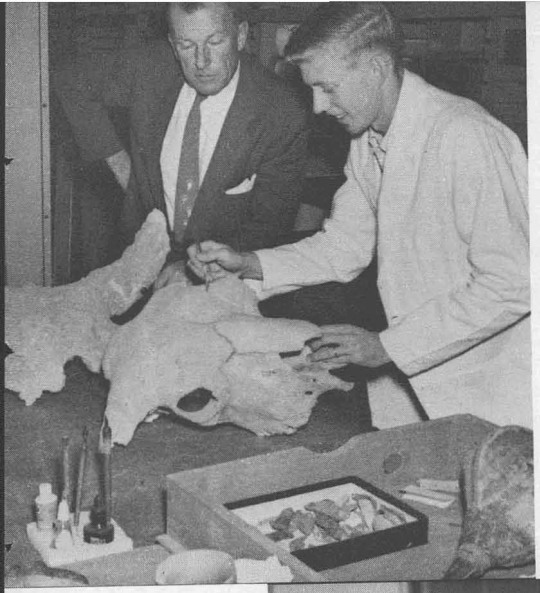
Because of the varying requirements of different dental schools, it is not possible to formulate a definite predental program. However, among the courses required for admission are English, social science, biology, physics, inorganic and organic chemistry.

The student should select the dental school(s) to which he plans to seek admission, and then, with the assistance of the predental adviser, plan a course of study which will meet the admission requirements of the school(s) in which he is interested. A student who plans to do more than 2 years preparatory to entering a dental school should select courses which will give him a broad liberal arts background as well as courses which will prepare him for the more technical requirements of dental school.

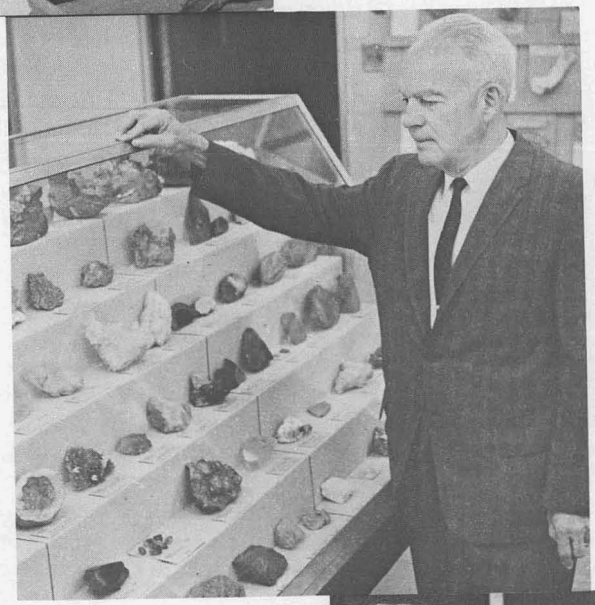
Ordinarily, the student will be expected to plan his academic program in such a manner that, if his plans to go to dental school do not materialize, he will still have made progress towards a baccalaureate degree.

CURRICULUM PREPARATORY TO FORESTRY

Because of the variable admission requirements of different schools of forestry, the student is advised to seek admission information from the Department of Biology. Two years of preforestry are available.



ANTHROPOLOGY LABORATORY



GEOLOGY MUSEUM

ANTHROPOLOGY WORK AREA

MEDICAL TECHNOLOGY CURRICULUM

Certification as Medical Technologist

For requirements relating to certification as a medical technologist without a bachelor's degree, write to Registry of Medical Technologists, Box 44, Muncie, Indiana. Required college academic training, preceding 12 months in an approved School of Medical Technology, is 90 semester hours including 4 semesters of chemistry, 4 semesters of biology, and 1 semester of mathematics, with physics recommended.

Degree of Bachelor of Science in Medical Technology

The curriculum and requirements leading to the degree of Bachelor of Science in Medical Technology are listed below. Following the prescribed academic work, candidates for the degree must satisfactorily complete a 12-month medical technology program at a school of medical technology approved by the American Society of Clinical Pathologists. Before completing the year's work at the school of medical technology, for which 16 hours of credit are allowed, the student must satisfactorily complete a minimum of 108 academic hours, of which at least 45 shall be earned while the student is in residence on the campus of The University of New Mexico. Thirty of these 45 hours shall be earned at The University of New Mexico after the student has attained junior status. Of the 53 hours of specified courses in science and mathematics, not fewer than 21 hours shall be earned in residence on the campus of The University of New Mexico.

The order of courses in the prescribed program should be followed as closely as possible. Only the student's adviser may give permission to vary the order of courses.

Students wishing to follow this program should make their intention known to the Chairman of either the Department of Biology or the Department of Chemistry as early in their student careers as possible.

The program described below meets all Group Requirements and all requirements as to major and minor in the College of Arts and Sciences.

The number of hours from outside the College of Arts and Sciences which can be counted towards this degree is reduced from the usual 24 hours to 12 hours (not counting the 16 hours of credit from the hospital course).

PRESCRIBED PROGRAM—MEDICAL TECHNOLOGY

Freshman Year

First Semester		Second Semester	
Chem 101L Gen	4	Chem 102L Gen	4
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
Foreign Language	3	Foreign Language	3
Math 120 or 121 or 160 or 162	4-5	*Humanities	3
†Soc Sci	3	†Soc Sci	3
Physical Ed	1	Physical Ed	1
	17–18 + PE		16 + PE

* For this particular requirement only, "Humanities" may include courses in the departments of English, History, Modern and Classical Languages, and Philosophy, and in the College of Fine Arts. History courses may be counted as either Humanities or Social Science, but not as both.

† Any course in the social sciences that is allowed in the stated Group Requirements of the College of Arts and Sciences.

	Sophomore Year		
Biol 101L Gen or 121L Princ.	4s	Biol 102L Gen or 122L Princ	4
Chem 301-303L Organic	4	Chem 302-304L Organic	4
English Literature	3	Foreign Language	3
Foreign Language	3	Physics 112-114L Gen	4
Physics 111-113L Gen	4	‡Social Science	3
Physical Ed	1	Physical Ed	1
	18 + PE		18 + PE
	Junior Year		
Biol 429L Cellular Physiol	4	Biol 393L Gen Bact	4
Chem 253L Quant Anal	4	Chem 323 Intro Biol Chem	3
†Soc Sci	3	Chem 324L Intro Biol Chem Lab	1
Electives	3-6	Electives	6-9
	14–17		14–17
	Senior Year		
*Humanities	3	12 months in	
‡Social Science	3	School of Medical	
Electives	7–10	Technology	
	13–16		16

Total Number of Hours Required—124 + PE

The program can be accelerated by completion of two summer sessions and entrance to the school of medical technology in June or September.

After completing the above course program and completion of a 12-months' course in medical technology at an approved school, the student will submit a transcript of his work (to complete his application) for the degree of Bachelor of Science in Medical Technology from The University of New Mexico.

FOR CURRICULA RELATING TO FOREIGN STUDIES

See "Language and Area Center for Latin America," "Division of Inter-American Affairs," "Department of Political Science," "Western European Studies," and "Russian Studies."

LANGUAGE AND AREA CENTER FOR LATIN AMERICA

Marshall R. Nason, Professor of Modern Languages, Director

Committee in Charge: Professors Nason (Chairman), Edwin Lieuwen (History), R. R. MacCurdy (Modern and Classical Languages), Martin C. Needler (Political Science, Inter-American Affairs).

The Language and Area Center for Latin America, partially supported by federal funding under NDEA Title VI, is an administrative unit of the College of Arts and Sciences and the Graduate School. It does not directly offer any degree programs or courses, but it is responsible for coordinating and technical services in connection with the University's total program of academic work

† Any course in the social sciences that is allowed in the stated Group Requirements of the College of Arts and Sciences.

* For this particular requirement only, "Humanities" may include courses in the departments of English, History, Modern and Classical Languages, and Philosophy, and in the College of Fine Arts. History courses may be counted as either Humanities or Social Science, but not as both.

‡ For this particular requirement only, "Social Science" shall include courses in the departments of Anthropology, Economics, Geography, History, Political Science and Sociology. History courses may be counted as either Humanities or Social Science, but not as both. (Of the 9 hours required in the social sciences, not more than 6 may be from one department.)

in the Latin American field. It prepares studies, reports, and proposals, and is concerned with plans for course offerings, staffing needs, coordination of library purchases, the interchange of scholars, and the arrangement of lecture series.

Applications for NDFL Title VI and for Fulbright-Hayes fellowships are also received and processed by the Center.

Students interested in pursuing courses of study related to Latin America should consult the catalog listings under "Division of Inter-American Affairs" (immediately below), "Ibero-American Studies," and the Departments of History and Modern and Classical Languages, as well as offerings in the social-science fields of anthropology, economics, political science, and sociology.

DIVISION OF INTER-AMERICAN AFFAIRS

Martin C. Needler, Associate Professor of Political Science, Director

The Division of Inter-American Affairs is an administrative unit of the College of Arts and Sciences and of the Graduate School. Founded in 1941, the division offers the Bachelor of Arts and Master of Arts degrees in the field of Latin American Studies.

The undergraduate curriculum in Latin American Studies is designed to provide basic training in fundamental subjects and a choice of supplementary courses to meet individual needs and preferences. The emphasis is upon language study and the social sciences, with particular attention to the important countries of the area. Proficiency in Spanish and a reading knowledge of Portuguese are basic requirements for the Latin American major and students are expected to use the languages as tools in various advanced courses in the program. For degree requirements, see course listings under "Latin American Studies."

SCHOLARSHIP AID. Nine tuition scholarships are awarded to students in Latin American Studies; six of these are reserved for undergraduates, with preference given to graduates of New Mexico high schools. Applications should be submitted to the Director of Student Aids. Graduate students are eligible for the remaining three awards, for which application should be made through the Graduate Office.

N.R.O.T.C. CURRICULUM

(Suggested curriculum for the first 2 years.)

First Year		Second Year	
English	3–3	English	3
Foreign Language	3–3	‡Physics	4–4
Social Science	3–3	Foreign Language	3–3
†Math	3–2	*Naval Science§	3–3
*Naval Science	3–3	Social Science	3
Elective	2–3	Electives	6

* One laboratory drill period, at hours indicated in the final Schedule of Classes, must also be reserved in student's program of studies.

† See NROTC adviser.

‡ Required for all NROTC regular students; must include laboratory.

§ Regular and contract midshipmen must take a general psychology course during the spring semester.

DEPARTMENTS OF INSTRUCTION

The College of Arts and Sciences offers work in the fields listed below:

American Studies
Anthropology
Biology
Chemistry
Comparative Literature
Economics
Economics-Philosophy
English
English-Philosophy
Geography
Geology
History
Ibero-American Studies†
Journalism
Latin-American Studies
Mathematics and Statistics
Modern and Classical Languages
Paleoecology
Philosophy
Physics and Astronomy
Political Science
Psychology
Russian Studies
Sociology
Speech
Western European Studies

Major and minor requirements and descriptions of the courses offered will be found, listed by departments, in the catalog section "Courses of Instruction." The student is referred also to the Departments of Art, Dramatic Art, Home Economics, and Music for major or minor studies acceptable in the College of Arts and Sciences.

† Ph.D. program only.

COLLEGE OF BUSINESS ADMINISTRATION

CURRICULA in the College of Business Administration are designed to give broad experience in the liberal arts and applied sciences as preparation for productive living and progress toward executive responsibilities. The student will find his studies spread over diverse disciplines throughout his four years that he may maximize his opportunities to apply wide-ranging facts, opinions, and techniques to the art of decision-making. Whether a student's objective be that of proprietor or partner in a firm, executive in a private corporation, or officer in a public or quasi-public institution, the core work presented is basic to the appreciation and practice of the administrative function.

The program of studies designed to achieve these objectives has three main divisions. The first division includes courses in a number of areas of knowledge outside the fields of economics and business and comprises 40 percent or more of the entire 4-year program; the second division is that of a group of courses in managerial controls, organizational sciences, and operations specifically required of all students in the College; the third division comprises a group of courses in a specialized field (concentration) of the student's own choosing. Thus a student graduating with a degree in the College of Business Administration will have had the opportunity to gain a broad knowledge of the institutions and culture of the society in which he will live and work, a special understanding of the economic institutions with which almost inevitably he will become connected, and a reasonable competence in one or more of the major administrative functions present in the organization and direction of economic activities.

The College would not wish to impart to any student a feeling of security in his path toward executive responsibilities. He may hold confidence in his ability to advance more rapidly toward such goals in consequence of his academic background; yet he should recognize that success in any field of endeavor depends upon many factors. One of these, obviously, is experience gained through diligent work in preparatory jobs.

The College of Business Administration includes within its framework a Bureau of Business Research (see p. 67).

ADMISSION

All freshman students are admitted to the University College. A detailed statement of entrance requirements is in the "Admission" section of this catalog.

ADMISSION FROM THE UNIVERSITY COLLEGE. The minimum requirements for transfer from the University College to the College of Business Administration are:

1. Twenty-six hours of earned credit.
2. (a) A scholarship index of at least 2.0 on all hours attempted;

   or

   (b) A scholarship index of at least 2.0 on all hours attempted in the previous 2 semesters of enrollment; provided that, if fewer than 26 hours were attempted in the previous 2 semesters, a scholarship index of at least 2.0 shall be required on all work attempted in as

many previous consecutive semesters as are necessary to bring the student's total hours attempted to at least 30.

3. A scholarship index of at least 2.0 on all Business Administration and Economics hours attempted.
4. Completion of the English Proficiency Examination (administered by The University of New Mexico) with a satisfactory score, or a grade of C or better in a remedial English course offered on a non-credit basis by The University of New Mexico English Department.
5. The successful completion of Mathematics 122.

TRANSFERS. Students seeking to transfer from other degree-granting colleges of the University must present at least 26 semester hours of acceptable credit with a grade-point average of 2.0 or better on all work attempted. Transfer students must meet the minimum requirements for transfer from the University College (see above) except that qualification **2(b)** under these requirements shall not apply; non-resident transfers must meet the qualitative admission requirement set forth on p. 79 as well as the specified requirements above. Any student admitted to the College of Business Administration lacking mathematics, statistics, or accounting will be required to take certain of these courses the first semester of enrollment.

DEGREES OFFERED

For the degree of Bachelor of Business Administration, the student is required to complete satisfactorily a 4-year course including a chosen field of concentration and to maintain a 2.0 cumulative grade-point average as specified under "Scholastic Regulations" below. To receive the degree, the student must have completed satisfactorily at least 128 semester hours, including 4 semester hours of physical education and to have met all the requirements of the University and of the College of Business Administration.

For the degree of Master of Business Administration, the student should consult the **Graduate Bulletin.**

DEGREES IN COMBINATION WITH OTHER COLLEGES

If a student wishes to secure a degree in another college, he is urged to seek advice early in his college career from the deans of the colleges concerned. With care in selecting his program of studies, it is possible for a student to secure two degrees in one to two extra years, depending on the degrees he seeks.

SCHOLASTIC REGULATIONS

The student should become familiar with the general academic and scholastic rules which apply to all students enrolled in the University (see pp. 126-129). Special attention is called to the rules on probation and suspension. Special rules for the College of Business Administration are as follows:

1. To graduate with the B.B.A. degree a student must have a scholastic index of 2.0 on all his semester hours attempted at The University of New Mexico, except that those University College hours with grade points that had not been certified for entrance to the College of Business Administration may be excluded.

2. To graduate with a B.B.A. degree a student must have a grade-point average of 2.0 on all Business Administration and Economics hours attempted.

3. To graduate with the B.B.A. degree a student must have earned a minimum of 124 hours of degree work.

4. To graduate with a B.B.A. degree a student must have earned a minimum of 54 hours in courses in Business Administration and Economics.

5. The normal load for students in the College of Business Administration shall be 16-17 hours (not counting PE).

6. The following will count as laboratory science: Physics, Chemistry, Biology, and Geology.

7. To graduate with a B.B.A. degree a student must have completed successfully the Proficiency Examination in English or have attained a grade of C in the non-credit remedial English course offered by the University's Department of English.

8. To receive the B.B.A. degree, transfer students must take a minimum of 18 hours in Economics and Business Administration subjects while enrolled in the College of Business Administration.

9. The College of Business Administration will accept as free electives credits earned in other colleges of the University with the following exceptions:

A. All theory and methods courses in Physical Education.
B. All courses in Education in methods and supervision. (Student Teaching will be accepted to the extent of 6 hours.)
C. More than 4 hours in ensemble music.
D. More than 3 hours of shop work.
E. Mathematics 111.

10. Credit is not allowed toward a degree in the College of Business Administration for typewriting.

DEGREE REQUIREMENTS

Requirements for the degree of Bachelor of Business Administration (for description of courses, see section "Courses of Instruction"):

A. GENERAL REQUIREMENTS	Credit
1. English 101 and 102 (6 hrs.); Literature (6 hrs.)*	12
2. History 101, 102 (6 hrs.); Political Science 102	9
3. Behavioral Science (Psychology 102, Sociology 101, and Anthropology 102)	9
4. Option. Either one of the following:	
(a) A single foreign language (12 hrs.)	
(b) An approved 12-hour program outside the College of Bus. Adm.**	12
5. Mathematics 121 and 122	8
6. Philosophy 375 or 255 or History 306 (or 6-8 hrs. of lab science exclusive of Psych)	3
7. Fine Arts elective	3
8. Physical Education	4
Total	60

B. SPECIFIC REQUIREMENTS IN ECONOMICS AND BUSINESS COURSES COMMON TO ALL CONCENTRATIONS	
BA 105, 106, Principles of Accounting	3–3
BA 202, Data Processing	3
BA 225, Managerial Accounting (for non-accountants)	3
BA 289, Statistical Analysis	3
BA 306, 307, Man, Society, and Law; Law of Contracts	3-3
BA 308, Marketing	5
BA 310, Principles of Finance	3
BA 329L, Quantitative Analysis for Mngt	3
BA 330, Organization Theory	5
BA 492, Senior Seminar	3
Ec 200, 201, Prin of Economics	6
Ec 315, Money and Banking	3
Total	49
C. CONCENTRATION REQUIREMENTS (varies with concentration)	10–18
D. FREE ELECTIVES	1–9
Total hours of credit for degree	128

* 3 hrs. of literature must be upper-division.

** Approval by the Dean or his designated representative ordinarily requested at beginning of junior year.

General Studies. Students who accept an invitation to join the General Studies program (see p. 133) may apply their various seminars to satisfying appropriate General Requirements as approved by the Dean of the College.

English. The beginning freshman will take either English 101 or English 102, depending on the scores made on the ACT English area.

Laboratory Science. Laboratory science means laboratory courses in Chemistry, Physics, Geology, and Biology.

Option. If a student chooses option (a) and is admitted with high school language credits and wishes to enter courses above the elementary level, he should consult the Chairman of the Modern and Classical Languages Department (in the College of Arts and Sciences).

Mathematics. During the freshman year the student must take Mathematics 010 (Intermediate Algebra—non-credit) as a prerequisite to Mathematics 121 if his ACT score in Mathematics is not satisfactory.

FRESHMAN PROGRAM (Taken in the University College)

1st Semester		2nd Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
Math 121 Intro Math for the Sci	4	Math 122 Intro Finite Math	4
BA 105 Prin of Acct	3	BA 106 Prin of Acct	3
Foreign Lang (if elected)	3	Foreign Lang (if elected)	3
General Requirements at the 100 level	3-6	General Requirements at the 100 level	3-6
PE	1	PE	1
	16 + PE		16 + PE

SOPHOMORE PROGRAM

1st Semester		2nd Semester	
BA 202 Data Processing	3	BA 289 Statistical Analysis	3
BA 225 Managerial Acct (BA 263 in Acct and in Finance)	3	Econ 201 Prin of	3
Econ 200 Prin of	3	Foreign Lang (if elected)	3
Foreign Lang (if elected)	3	General Requirements at 100 or 200 level	6-9
General Requirements at 100 or 200 level	3-6	PE	1
PE	1		
	15 + PE		15 + PE

JUNIOR AND SENIOR YEARS

During the first semester of the junior year students should file in the Dean's office an application for the B.B.A. degree. This application will include a declaration by the student of his field of concentration. A graduation summary sheet will then be prepared and a copy will be supplied the student. No student will be included on a list of candidates for graduation unless an application for degree has been approved.

During the junior and senior years students in the College of Business Administration must take any of the General Requirements, as listed on p. 156, which were not taken in the first 2 years. General prerequisites to all upper-division courses are Economics 200, 201, BA 105, 106, 202, 225, and 289, but any course may have a specific prerequisite which will be stated in its description.

CONCENTRATIONS

1. ACCOUNTING. Advisers: Mr. Mori, Mr. Christman, Mr. Seaton, Mr. Yeakel.

Those students who are looking toward careers in either private accounting or public accounting should follow the Accounting concentration. Knowledge of accounting principles and

practices is basic to any business venture both for the purpose of internal control and for guiding policy. The proper keeping of records and their analysis, a proper function of the accountant, is especially necessary in tax matters, both federal and local. Those students who aspire to become Public Accountants probably should take more than the minimum number of courses required in the Concentration.

Concentration requirements in addition to specific requirements: BA 321, 384, 447, 449.
NOTE: Students in this concentration probably will have enrolled in BA 263 and BA 264 during their sophomore year. Students who begin accounting in their sophomore year may enroll in BA 264 and BA 384 concurrently in their junior year.
Recommended Electives: BA 265, 327, 328, 422, 487, and 450.

2. FINANCE. Adviser: Mr. Brown

A survey of the courses offered in this concentration will reveal that they have been carefully selected to give the student a sound basic understanding of the principles and practices of both private and public finance. Thus the program serves not only those who plan to enter the banking, insurance, investment security, and similar businesses; it will also provide highly useful training for the average citizen who will almost certainly deal with banks, buy life insurance, make some investments, vote on fiscal proposals, and pay the tax collector. To provide the student with an informed and intelligent approach to such problems is the aim of the concentration.

Concentration requirements in addition to specific requirements: BA 363, 366, 469, Econ. 350.
Note: Student may substitute 263 for 225. Students in this concentration are required to take 3 hrs. from the recommended electives.
Recommended Electives: BA 264, 327; Econ 303.

3. GENERAL BUSINESS. Advisers: Mr. Huber, Mrs. Saner.

If a student has developed no special interest in one of the other concentrations, he should choose General Business. As the title implies, this program gives a student a broader and more diversified training than the other programs but with no less emphasis on the basic knowledge and principles which are common to all good business practices. For those students who plan to take a graduate degree in business administration this concentration is suggested, as a field of specialization may be chosen after receiving the bachelor's degree. Likewise those students planning to enter the School of Law or other professional schools, after graduation, should give careful consideration to choosing this concentration.

Concentration requirements in addition to specific requirements:

a. 12 hours in BA including one advanced course from each of the four functional areas.
b. 6 hours in Economics from the following: Econ 300, 303, 320, 350, 360, 407, and 450.

4. INDUSTRIAL ADMINISTRATION. Advisers: Mr. Finston, Mr. Dillman, Mr. Nolan.

This concentration is designed to foster an understanding of managerial functions and responsibilities in a changing world. Emphasis is upon developing management perspective, improving decision-making ability, and broadening perception of inter-personal and organization relationships. The importance of administration is steadily growing in recognition, whether the enterprise is large or small, and whether it is industrial, commercial, governmental, educational, or philanthropic. Students planning careers in general management, personnel, or labor relations administration should select this concentration.

Concentration requirements in addition to specific requirements: BA 493, 495, 496. Soc 341; Econ 320.

5. MARKETING. Adviser: Mr. Winter, Mr. Slate

Those students who are looking forward to positions in selling, purchasing, advertising, and merchandising, or who are interested in establishing businesses of their own, especially in retailing and wholesaling, should follow the Marketing concentration. Opportunities exist in manufacturing, agriculture, mining, petroleum, building, and other industries, for those trained in the field. The problem of the proper and efficient movement of merchandise from the original producer through various channels to the consumer is often a very complex one in modern society and demands well-trained people all along the line.

Concentration requirements in addition to specific requirements: BA 305, 410, 483, 486; Econ 332.

AIR FORCE AND NAVAL ROTC

Students enrolled in the Air Force ROTC and Naval ROTC may receive the degree of Bachelor of Business Administration and their commissions at the end of 4 years. To do this the student must use his required Naval and Air Force courses as his "free electives." Thus, each student enrolled in the College of Business Administration must be sure he is taking the required courses for the degree. Naval students are not required to take Physical Education; however, the requirement is not automatically waived.

COLLEGE OF EDUCATION

ONE of the most important and urgent responsibilities of The University of New Mexico is the effective preparation of teachers and other school personnel (e.g., principals, counselors, supervisors, and superintendents). In this connection, the University's College of Education plans, develops, coordinates, and evaluates the preparation programs for these teachers and other school personnel. The College of Education is solely responsible for all the courses, seminars, and professional laboratory experiences which constitute the professional education portions of these programs.

The College of Arts and Sciences and the College of Fine Arts work closely with the College of Education both in determining and meeting the educational needs of those expecting to serve, or already serving in elementary and secondary schools. The University of New Mexico Advisory Committee on Teacher Education, a group of faculty members and administrative officers representing these colleges, has agreed upon and now supports the following principles, procedures, and requirements with respect to undergraduate teacher education programs offered by the University.

There shall be at this institution **only one approved** preparation program leading to **any one teaching** objective. (This principle does not preclude flexibility and elective possibilities in a program.)

Every teacher education program at the University shall include at least: 48 semester hours of general (liberal) education; 50 semester hours of subject-matter specialization (subject area or areas in which the person expects to teach); and 24 semester hours of professional education.*

All University of New Mexico students requesting admission to a teacher education program shall be subject to the same admission requirements, irrespective of the college in which enrolled.

Every University of New Mexico student who expects to teach in an elementary or secondary school after receiving the bachelor's degree at this University is required to submit formal application for admission to the teacher education program he wishes to pursue. Admission to such a program is separate from: 1) Admission to the University; and 2) admission to a degree-granting college.

CERTIFICATION

Every University of New Mexico program which leads to teacher certification for New Mexico elementary and secondary schools includes at least four years of college work. The completion of a bachelor's degree in one of these programs at the University makes the person eligible to apply for a **4-year Provisional Certificate** in New Mexico. This certificate entitles the holder initially to teach in the State for four years and with proper renewal allows him to teach an additional four years.

Other teaching and special-field certificates are available in New Mexico, but their specific requirements are not included in this catalog. Persons interested in obtaining one of them should consult their department chairman in the College of Education or the dean of that college.

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*In certain programs, some work may count for both professional education and subject-matter specialization.

CONTINUING CERTIFICATE. Even though the University does not emphasize or encourage students to pursue a program leading to the **Continuing Certificate,** it is possible for a person to work out with the help of his adviser a 30 semester-hour program (not culminating in a master's degree) which when completed will entitle him to apply for and receive this certificate.

PROFESSIONAL CERTIFICATE (Elementary, Secondary, et cetera). Students wishing to qualify for this certificate must complete a master's degree program which meets the requirements for this certificate. Since many master's degree programs offered at The University of New Mexico do not meet such requirements, students interested in obtaining this certificate should consult their advisers in the College of Education **before** pursuing a master's degree program.

ACCREDITATION

The University of New Mexico is **fully** accredited by the National Council for the Accreditation of Teacher Education (NCATE). This full accreditation covers all bachelor's degree programs described in this section of the catalog and **all** graduate programs for teachers and other school personnel listed in the current **Graduate School Bulletin,** including those offered at the master's sixth-year, and doctoral levels.

This **full** accreditation means that graduates of this institution's teacher education programs are eligible not only for appropriate certification to teach in New Mexico, but also for comparable certification (same level and/or same subject field) in all of the 28 states of the United States which have entered voluntarily into a reciprocity agreement for certification based upon NCATE accreditation of institutional programs.

The University is also an active member of the American Association of Colleges for Teacher Education.

UNDERGRADUATE PROGRAMS

All The University of New Mexico undergraduate programs accredited by NCATE are devoted solely to the preparation of regular classroom teachers (elementary or secondary) and of teachers in special areas (e.g., Art Education; Health and Physical Education; Music Education; Industrial Education; Special Education; and Home Economics) who may teach in grades 1 through 12. (See curricula for all these programs in later sections of the catalog.) An undergraduate major is also offered in the field of Recreation.

DEPARTMENTAL HONORS. A departmental honors program is offered in several of the departments of the College of Education. Application for participation in the program must be made during the junior year. The program may consist of any one of the following: (1) a senior thesis, (2) a reading and tutorial program under the major adviser, (3) honors in student teaching. All students permitted to enter the honors program will meet University regulations as described on p. 133. Permission of the major adviser is required for enrollment in course 497, Reading and Research in Honors.

GRADUATE PROGRAMS

The College of Education offers through the Graduate School programs leading to the master's degree, the Doctor of Philosophy degree, and the Doc-

tor of Education degree. Consult the current **Graduate School Bulletin** for details of these programs. Sixth-year graduate programs leading to "Certificate of Education Specialist" are also available. Consult the current **Graduate School Bulletin** and appropriate departments for details of these programs.

TEACHER EDUCATION PROGRAMS

PROGRAMS OFFERED ONLY IN THE COLLEGE OF EDUCATION

The following teacher education programs are available only through the College of Education: a) Business Education; b) Elementary Education; c) Health and Physical Education; d) Home Economics; e) Industrial Education; f) Composite in Science (Secondary level); g) Composite in Social Studies (Secondary level); and, h) Composite in Communication Arts (Secondary level). Also, the bachelor's degree with a major in Recreation is offered only through the College of Education. For admission requirements see **Admission to The College of Education** p. 163.

PROGRAMS OFFERED JOINTLY

Persons wishing to pursue either the Art Education Curriculum or the Music Education Curriculum may enroll in either the College of Education or the College of Fine Arts.

All students expecting to complete teaching majors in general subject areas usually found in the secondary school curriculum (e.g., English, Mathematics, History, Biology, Chemistry, Physics, Foreign Languages, Political Science and Speech) and wishing to be recommended and certified to teach in one or more of these areas at the junior or senior high school level may enroll in either the College of Education or the College of Arts and Sciences. For admission requirements see **Admission to Teacher Education Programs.**

NOTE: It is urged that all University of New Mexico students who are not enrolled in the College of Education but who are expecting to be certified in this State keep in close touch with the College of Education in the planning of programs and in the choice of electives.

ADMISSION TO TEACHER EDUCATION PROGRAMS

It is mandatory for all students wishing to pursue teacher education programs at the University to make formal application and to complete successfully the process required for admission to teacher education. No students will be eligible to enroll in any course numbered 300 or above offered by the College of Education leading to certification, unless they have been admitted to teacher education at The University of New Mexico.

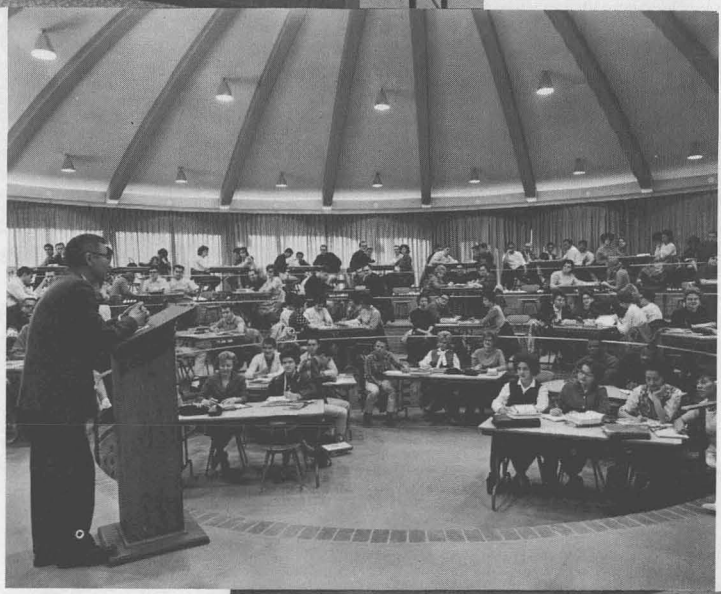
ELIGIBILITY FOR APPLICATION FOR ADMISSION

Students who are not presently enrolled in the College of Education but who wish to be admitted to teacher education programs at the University must fulfill **all** of the requirements listed on p. 163 under **Admission to the College of Education** with the following exception: provision 2(b) does not apply to students enrolled in the College of Arts and Sciences or the College of Fine Arts.

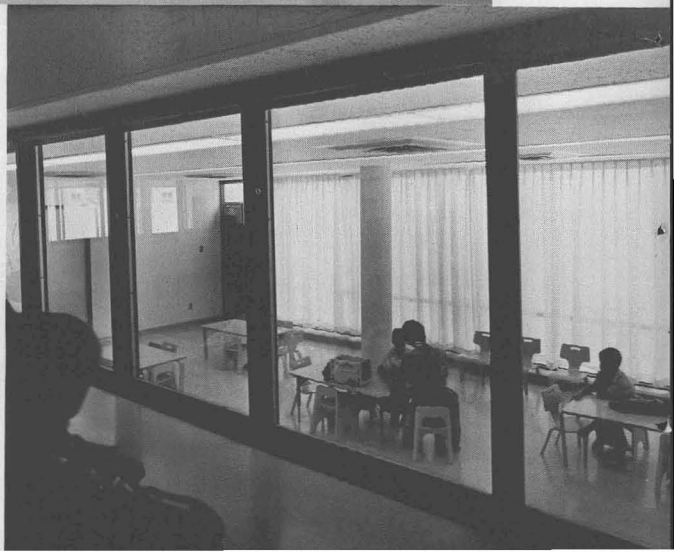
COLLEGE OF EDUCATION

STAINED GLASS WALL

ADMINISTRATIVE UNIT



KIVA LECTURE HALL



OBSERVATION AREA

MANZANITA CENTER

APPLICATION FOR ADMISSION TO TEACHER EDUCATION

As soon as possible after a student has become eligible for application for admission to teacher aducation (see above) and has decided to become a teacher, and **not later** than the semester in which he takes his first **professional** course*, the student should make formal application for admission to teacher education which includes:

(a) Evidence of satisfactory performance on an academic aptitude test (SCAT, ACT or ACE), and selected achievement tests administered by the College of Education.

(b) A successful interview with a College of Education faculty member, in which the student indicates a positive desire and intent to enter the teaching profession; and gives evidence of physical, personal and emotional qualities deemed adequate for successful teaching.

Forms for this purpose may be obtained at the Office of the Dean of the College of Education at the **start** of each semester.

NOTE: Any student admitted to a teacher education program **after the first semester of his junior year,** may be required to spend one or more **additional** semesters beyond the usual four-year period, in order to complete the desired program.

ADMISSION TO THE COLLEGE OF EDUCATION

All freshman students admitted to the University must enroll in the University College. A detailed statement of entrance requirements is in the "Admission" section of this catalog.

ADMISSION FROM UNIVERSITY COLLEGE

Requirements for transfer from the University College to the College of Education are as follows:

1. Twenty-six hours of earned credit.
2. (a) A scholarship index of at least 2.0 on all hours attempted;

   or

   (b) A scholarship index of at least 2.0 on all hours attempted in the previous 2 semesters of enrollment; provided that, if fewer than 26 hours were attempted in the previous 2 semesters, a scholarship index of at least 2.0 shall be required on all work attempted in as many previous consecutive semesters as are necessary to bring the student's total hours attempted to at least 30.
3. Completion of the English Proficiency Examination (administered by The University of New Mexico) with a satisfactory score; or a grade of C or better in a remedial English course offered on a non-credit basis by the University's English Department.
4. Formal application and successful completion of the process required for **Admission to Teacher Education,** (see p. 161).

*Educational Foundations 290 is usually the first professional course taken.

TRANSFERS

A student will be eligible for transfer to the College of Education from other degree-granting colleges of the University if he has a scholarship index of 2.0 or better on all work attempted in the other degree-granting college, and has completed successfully the process for admission to teacher education. (See p. 161).

All students transferring from another accredited institution who have met the University's general qualitative admission requirements for transfer may be **enrolled conditionally for only one semester or summer session** in the College of Education, during which time they must complete all the requirements referred to above. Any such transfer student **not completing these requirements** during his first semester or summer session at this University shall be declared ineligible for further enrollment in the College of Education and in upper-division courses in professional education.

MAXIMUM NUMBER OF HOURS

No student in the College of Education may enroll for more than 17 semester hours during a regular semester or 9 semester hours during a summer session, plus 1 hour of physical education (or military drill in the case of NROTC students), unless his standing for the previous semester was at least B in two thirds of his studies, with no grade below C; and then only by presenting a written petition to the chairman of his department, who may, at his discretion, grant permission to enroll for extra hours, not to exceed 21 including physical education in a regular semester or 11 semester hours in a summer session.

PROFESSIONAL LABORATORY EXPERIENCES

All degree programs offered through the College of Education include organized and sequential experiences with children and youth. These required experiences (usually referred to as **professional laboratory experiences**) include directed observation of pupils at work and at play, guided participation with groups of children, and, the formal student teaching assignment(s).

OBSERVATION AND PARTICIPATION. Selected elementary and secondary schools in the Albuquerque Public Schools, other nearby school systems, and selected community agencies, are used for observation and participation with children and youth. These pre-student teaching experiences are carefully planned and directed cooperatively by University faculty members and representatives of the cooperating school systems and agencies.

STUDENT TEACHING. The student teaching assignment, usually occurring during the senior year*, is the culminating experience of the entire undergraduate preparation program, and is considered one of the most important prerequisites to graduation and certification for teaching. The student teaching assignment is carried on under the personal direction of selected cooperating teachers in the Albuquerque area public and private school systems and professors from the University. The University of New Mexico is indebted to the cooperating

*Most students majoring in elementary education have a junior year student teaching experience also. See the Department of Elementary Education for information.

teachers in Albuquerque who help to supervise the student teachers during their assignments. Because of the importance of this experience, specific requirements are set up for admission to student teaching. Every student must complete these requirements before his admission to student teaching, and it is recommended, therefore, that he read and thoroughly understand them **before** he makes formal application for a student teaching assignment.

Requirements for Admission to Student Teaching

For admission to student teaching the student must have:

1. Been regularly admitted and be in good standing in the college in which enrolled **at the time** of application. This requirement means specifically that the English Proficiency examination must have been passed and that the student is not on probation at the time of application. Also, any stipulations indicated at the time of admission must have been removed.
2. Been admitted to teacher education at the University of New Mexico.
3. Applied for admission to student teaching with the University supervisor of student teaching (elementary or secondary) the **spring** before the actual student teaching begins.
4. Passed a physical examination, including a chest x-ray, as required of regular teachers in the elementary and secondary schools. Evidence of the examination and its findings, completed within three months of the date of application, must be filed with the Directors of Secondary or Elementary School Student Teaching at the time application is made.
5. Achieved a general grade-point average of at least 2.0 (c) in all courses attempted at The University of New Mexico. Graduate students must also meet these requirements and maintain a 3.0 grade-point average.
6. Achieved a grade-point average of at least 2.3 in all courses attempted in the major teaching area. Some departments may and do require a higher grade-point average.
7. Completed Speech 255.
8. Completed satisfactorily all prerequisites for student teaching listed in the current University catalog.
9. Demonstrated ability to use effectively appropriate audio-visual equipment.
10. Planned a total semester schedule of no more than 15 hours of course work, including student teaching. (A course load of 12 hours is highly recommended.) Elementary student teachers must be available between 8:30 a.m. and 12 noon daily during one semester of the junior year and the entire school day during one semester of the senior year. Secondary student teachers must have a block of three hours daily (between 8:30 a.m. and 3:00 p.m.) clear for assignment in the schools.
11. Arranged his personal schedule in order to be available to start an assignment in the fall when public school students report for the start of school (usually late in August or early September). When applying for student teaching assignments in the spring students should carefully check starting dates with an adviser.
12. Filed application for degree in the office of the dean of the college.

Each Elementary Student Teacher Must Also Have:

1. Completed at least one semester or summer session in residence study, including at least one course in the Department of Elementary Education.
2. Attained at least a 2.2 grade-point average overall prior to entering junior level courses in Elementary Education; attained at least a 2.5 grade-point average in all junior level courses in Elementary Education.

Each Secondary Student Teacher Must Also Have:

1. Submitted recommendations from three faculty members indicating that the student is believed ready for student teaching.
2. Completed a major portion of work in his teaching major and minor.
3. Attained at least a 2.5 grade-point average in a major (teaching) concentration and at least a 2.2 grade-point average overall.

Laboratories Located in the College of Education

LEARNING MATERIALS CENTER. Students pursuing undergraduate and graduate programs may make use of the Learning Materials Center which includes: a) samples of all textbooks used in New Mexico elementary and secondary schools, courses of study, curriculum guides, manipulative materials used in the teaching of mathematics and science, globes, charts, tests, and other miscellaneous materials; b) study and work spaces where the students may examine published materials and construct equipment and materials for use in teaching; c) an Audio-Visual Equipment laboratory containing all types of modern equipment which may be used as aids to teaching (e.g., movie projectors, film-strip and slide projectors, overhead and opaque projectors, and reproduction machines).

MANZANITA CENTER. Manzanita Center is a laboratory where both undergraduate and graduate students may, under supervision, observe and participate with children and youth in a variety of educational activities. The College's nursery and kindergarten groups are housed here. Also available for research and study purposes are other special groups of children, as well as selected individual children and youth who have been referred to this Center for diagnosis of educational deficiencies and remedial services.

INDUSTRIAL EDUCATION LABORATORIES. Industrial Education laboratories are maintained for the use of students in various Industrial Education courses in woodworking, sheet metal, and machine shop.

HOME ECONOMICS LABORATORIES. Modern food and clothing laboratories are available to both undergraduate and graduate students.

SCHOLASTIC REQUIREMENTS. See pp. 126-129.

REQUIREMENTS FOR GRADUATION

Upon the completion of all specified requirements, including approval by the general faculty of the University, candidates for degrees in the College of Education who major in business education, elementary education, mathematics, or a science, receive the degree of Bachelor of Science in Education; those

who major in home economics receive the degree of Bachelor of Science in Home Economics Education; those who major in health and physical education receive the degree of Bachelor of Science in Health and Physical Education; those who major in recreation receive the degree of Bachelor of Arts in Recreation; those who major in industrial education receive the degree of Bachelor of Science in Industrial Arts Education; those who major in music education receive the degree of Bachelor of Music Education; and those who major in other subjects receive the degree of Bachelor of Arts in Education.

Specific graduation requirements are as follows:

1. Completion of an application for degree **no later than the last semester of the junior year.** Application can be obtained from the Office of the Dean.
2. Completion of a minimum of 124 semester hours plus physical education (or equivalent NROTC credits). No more than 5 semester hours of credit earned in workshops may be used towards any bachelor's degree. (See course 429 listed with each of the Education departmental offerings).
3. A scholarship index of 2.0 or higher on the 124 semester hours being counted for graduation, at least a 2.0 grade-point average on all work attempted at The University of New Mexico, and at least a 2.3 grade-point average in the major teaching fields.
4. Completion of 40 semester hours in courses numbered 300 or above.
5. Completion of the English Proficiency Examination.
6. Completion of the Graduate Record Examination.
7. Removal of all high school deficiencies.
8. For minimum residence requirements, see p. 132.
9. Registration with the UNM Placement Bureau.
10. Completion of the prescribed curriculum which leads to the desired degree (see CURRICULA, pp. 168-181). **The student is solely responsible for completing all requirements for graduation, as described in this catalog.**

NOTE: Students who plan to teach in the secondary schools must complete a teaching major or minor in subjects usually taught in secondary schools. See description of programs in Secondary Education for details. Students who plan to teach in the elementary schools must complete a major or minor of at least 24 semester hours in a subject area. They must follow the curriculum as outlined on p. 171.

GENERAL (LIBERAL) EDUCATION REQUIREMENTS

All prospective teachers should be broadly educated as a foundation for a successful professional career. It is required, therefore, that each UNM student expecting to teach include in his preparation program a minimum of 48 semester hours of general education. In general, the group requirements as currently listed for the College of Arts and Sciences and for the College of Fine Arts will satisfy the general education requirements for those expecting to teach, but there are some minor exceptions which will be explained by the Dean of the College of Education. The College of Education requires **all** its graduates to complete the general education requirements as follows. Minimum requirements in items # **1, 2, 3, 4, 5,** and **8** below **must** be met. Others are optional, but a total of 52 semester hours is required.

	Semester hours
1. **Humanities and Social Science.** The following fields are accepted in this area: anthropology, economics, geography, history, literature, philosophy, political science, and sociology. At least one course in literature and work in two other areas are required.	9-15
2. **Behavioral Science.** A course in General Psychology is required.	3-6
3. **Biological and/or Physical Science.** At least 8 hours in laboratory sciences are required. Work acceptable for meeting this requirement is offered in the following departments: Biology, Chemistry, Geology, Physics, or Astronomy.	8-12
4. **Communicative Arts.** English 101 and 102 and a course in speech are required.	9-15
5. **Fine and Practical Arts.** Work in art, art education, industrial education, music, architecture, music education, creative dance, dramatic art, business education, and home economics may be taken to meet this requirement. At least one course in history or appreciation (e.g., of music, art, or of architecture) is required.	6-12
6. **Mathematics.**	3-6
7. **Foreign Language.** Two semesters of a language are required if this area is represented.	6
8. **Health, Physical Education, and Recreation.** 4 semesters of activity courses in physical education are required. An additional 4 semester hours of work in courses other than activity courses may be included.	4-8
Total required. . . .	52 sem. hrs.

PROFESSIONAL EDUCATION REQUIREMENTS

All students pursuing teacher education curricula must complete the three professional education courses listed below:

1. **Foundations of Education 290:** Foundations of Education
2. **Foundations of Education 300:** Human Growth and Development*
3. **Foundations of Education 310:** Learning and the Classroom*

In addition to these three courses (the professional core) every student must take other professional education courses as prescribed in the curriculum he is following. A minimum of 24 semester hours in professional education is required.

CURRICULA

Curricula are outlined on the following pages under the respective departments for the purpose of directing students in their chosen fields of work. There

* *Or approved substitute.*

are curricula for students preparing to teach in secondary schools and for students who wish to teach in the elementary schools.

Special curricula are provided for students preparing to teach art, music, physical education, home economics, business subjects, or industrial arts in elementary or secondary schools.

NROTC students may substitute required naval science courses for courses in required Physical Education. The courses in naval science may also be substituted for certain courses in several of the curricula when approved by the appropriate department chairman.

Descriptions of the courses offered will be found, listed by departments, in the catalog section "Courses of Instruction."

ART EDUCATION

MAJOR STUDY (TEACHER CERTIFICATION FOR ART AND PROVISIONAL SECONDARY CERTIFICATES)

A student may enroll in either the College of Education or the College of Fine Arts and satisfy requirements for teacher certification at the secondary level.

The candidate for the B.A. in Education must complete at least 40 semester hours in courses numbered 300 or above.

The following curriculum prepares the student to teach art and a second subject area in grades 7-12. The successful completion of this curriculum entitles the graduate to the Provisional Secondary Certificate endorsed for the teaching of art issued by the New Mexico Department of Education.*

CURRICULUM FOR SECONDARY TEACHERS**

Freshman Year

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
†Hum & Soc Sci	3	†Hum & Soc Sci	3
†Biol & Phys Sci	4	†Biol & Phys Sci	4
Art 103 Visual Funda	3	Art 104 Visual Funda	3
Art 105 Funda of Draw	3	Art 270 Hist of Art I	3
PE Activity	1	PE Activity	1
	16 + PE		16 + PE

Sophomore Year

Engl (Lit)	3	Spch 255 Pub Spkg	3
†Hum & Soc Sci	3	Ed Fdns 290 Fdns of Ed	3
Gen Elective	3	Psy 101 Gen Psy I	3
Art Ed 210 Creat Art in Sec Sch	3	Art Ed 211 Creat Art in Sec Sch	3
Art 271 Hist of Art II	3	Art 272 Hist of Art III	3
PE Activity	1	PE Activity	1
	15 + PE		15 + PE

* Students wishing to qualify for a special certificate endorsed for the teaching of art in Grades 1-12 must include in the curriculum outlined on this page Art Education 400 (3 cr.) and Elementary Education 400 (3 cr.). Credits earned in these courses may be substituted for an equal amount of the General Elective credits required. In the case of a student desiring 1-12 certification in art education no minor is required.

** Students enrolled in College of Fine Arts must meet group requirements listed on pp. 197-199.

† Choose from General Education requirement of College of Education, pp. 167-168.

Junior Year

Ed Fdns 300 Hum Grwth & Dev	3	Ed Fdns 310 Learn & Classrm	3
Sec Ed 301 Fdns of	3	Art Ed 434 Tchg Art in Sec Sch	3
Art Ed 320 Pre-Tchg Exp in Art	3	Art, Studio	6
Art, Studio	6	Art Electives (above 300)	2
Art Electives	2	‡Gen Electives	3
	17		17

Senior Year

Ed Fdns 415 Philos of Ed	3	††Sec Ed 461 Student Tchg	6
Art Electives (above 300)	7	‡Gen Electives (above 300)	6
‡Gen Electives	6		
	16		12

MINOR STUDY IN ART EDUCATION

Elementary Education students: Art 103, 104, 105, and 270 or 271; Art Education 110, 115, 400, and 320.

BUSINESS EDUCATION

COMPREHENSIVE CURRICULUM INCLUDING OFFICE EDUCATION

(Leading to the degree of Bachelor of Science in Education)

Freshman Year

Engl 101 Wrtng w/Rdgs in Expos	3
Engl 102 Wrtng w/Rdgs in Lit	3
*Laboratory Science	8
Math 121	4
**Bus Ad 112 Interm Typ	3
Bus Ad 262 Adv Typ	3
Bus Ad 117 Office Mach & Filing	2
Gen Elect or Minor	6
PE Activity	2
	32 + 2 PE

Sophomore Year

Engl (Lit)	3
Spch 255 Pub Spkg	3
Ed Fdns 290 Founda of Ed	3
Psy 101 Gen Psy	3
Econ 200 Princ	3
Bus Ad 105, 106 Prin of Acctg	6
**Bus Ad 113 Shorthand Theory	3
**Bus Ad 114 Begin Dictation	3
Gen Elect or Minor	3
PE Activity	2
	30 + 2 PE

Junior Year

Ed Fdns 300 Hum Grwth & Dev	3
Ed Fdns 310 Learn & Classroom	3
Sec Ed 301 Founda of	3
Sec Ed 310 Mater & Meths of Tchg	3
Sec Ed 439 Tchg of Bus Subjs	3
Bus Ad 202 Data Processing	3
Bus Ad 253 Transcription	3
Bus Ad 257 Sec Office Prac	3
Bus Ad 265 Bus Comm	3
Minor	6
	33

Senior Year

Fine or Prac Arts (not Bus Ed)	3
*Soc Sci	3
Bus Ad 306, 307 Bus Law	6
Econ 330 Consumer Econ	3
Sec Ed 461 Stu Tchg	6
Gen Elect or Minor	9
	30

GENERAL BUSINESS CURRICULUM

(Leading to the degree of Bachelor of Science in Education)

‡ Electives are to be used to meet departmental minor requirements. A minor is required and may be selected from approved list shown on p. 178.

†† Student teaching may be divided between the 2 semesters of the senior year.

* Choose from General Education requirements listed on pp. 167-168.

** Certain elementary courses may be waived if student has had typewriting or shorthand in high school.

Freshman Year	
Engl 101 Wrtng w/Rdgs in Expos	3
Engl 102 Wrtng w/Rdgs in Lit	3
*Laboratory Science	8
Math 121	4
**Bus Ad 112 Interm Typ	3
Bus Ad 262 Adv Typ	3
Psy 101 Gen Psy	3
Gen Elect or Minor	3
PE Activity	2
	30 + 2 PE

Sophomore Year	
Engl (Lit)	3
Spch 255 Pub Spkg	3
Econ 200, 201 Princ	6
Ed Fdns 290 Founda of Ed	3
Bus Ad 105, 106 Prin of Acctg	6
Bus Ad 289 Statistical Anal	3
Bus Ad 202 Data Process	3
Gen Elect or Minor	6
PE Activity	2
	33 + 2 PE

Junior Year	
Ed Fdns 300 Hum Grwth & Dev	3
Ed Fdns 310 Learn & Classroom	3
Sec Ed 301 Founda of	3
Sec Ed 310 Mater & Meths of Tchg	3
Sec Ed 439 Tchg of Bus Subjs	3
Bus Ad 330 Org Theory	5
Bus Ad Electives	6
Gen Elect or Minor	6
	32

Senior Year	
Fine or Prac Arts (Not Bus Ed)	3
*Soc Sci	3
Bus Ad 306, 307 Bus Law	6
Sec Ed 461 Stu Tchg	6
Bus Ad Electives	3
Gen Elect or Minor	9
	30

Majors in any Business Education Curriculum must earn a minor of 18 hours outside the field of business.

MINOR STUDY IN BUSINESS EDUCATION (Comprehensive)

BA 253 and 262 and 15 additional hours in Business Administration courses.

MINOR STUDY IN BUSINESS EDUCATION (General Business)

BA 105 and 106 and 15 additional hours in Business Administration and Economics courses.

GRADUATE COURSES

See course listings under Education, Elementary and Secondary. See Department Chairman for course of study.

EDUCATIONAL AND ADMINISTRATIVE SERVICES

See pp. 268-271 for course descriptions, and the **Graduate Bulletin** for detailed descriptions of all graduate programs.

ELEMENTARY EDUCATION

CURRICULUM FOR STUDENTS PREPARING TO TEACH IN ELEMENTARY SCHOOLS

Freshman Year	
Engl 101 Wrtng w/Rdgs in Expos	3
Engl 102 Wrtng w/Rdgs in Lit	3
Biol 101L, 102L Gen	8
Soc 101 or Econ 100 Intro	3
Math 111 Arith El Sch Tchrs	3
Art Ed 110 Creat Art in El Sch	3
Art Ed 115 Creat Craft in El Sch	3
§§Electives	6
PE Activity	2
	32 + 2 PE

Sophomore Year	
Hist 161, 162 US	6
Phys Sci 261 Intro or Geol 101 Physical	3
Phys Sci 262 Intro or Geol 102 Historical	3
Math 212 Struc of Arith	3
Psy 101 Gen Psy I	3
Spch 255 Pub Spkg	3
Mus Ed 293 Prim Sch Mus	2
Mus Ed 294 Interm Sch Mus	2
Ed Fdns 290 Founda of Ed	3
§§Electives	6
PE Activity	2
	34 + 2 PE

* Choose from General Education requirements listed on p. 167-168.

** Certain elementary courses may be waived if student has had typewriting or shorthand in high school.

§§ See footnote next page.

Junior Year		Senior Year	
Geog 101 or 102 Gen	3	Eng (Lit) elective	3
H Ed 171 Pers & Commun Hlth	3	Pol Sci 303 Probs of Democ	3
El Ed 319 PE in El Sch	2	B El Ed 353 Science in El Sch	3
Ed Fdns 300 Hum Grwth & Dev	3	B El Ed 361 Arith in El Sch	2
B Ed Fdns 310 Learn & Classrm	3	B El Ed 441 Child Lit	2
B El Ed 321 Soc Studies in El Sch	2	B El Ed 400 Stu Tchg in El Sch	6
B El Ed 331 Reading in El Sch	3	§§Electives	9
B El Ed 333 Tchg Oral-Writ Engl	2		28
B El Ed 400 Stu Tchg in El Sch	3		
§§Electives	6		
	30		

B. Methods and Student Teaching Block. (These courses to be taken concurrently.)

GUIDANCE AND SPECIAL EDUCATION

This Department offers graduate programs (Master's) in the fields of Guidance and Counseling and Special Education, the Education Specialist (sixth year) in Guidance and the Doctorate in Pupil Personnel Services. An undergraduate minor is offered in the field of Special Education. Students wishing to pursue any of these programs should consult the Chairman of this Department for details. See pp. 278-280 for course descriptions.

HEALTH, PHYSICAL EDUCATION, & RECREATION

MAJOR STUDY IN HEALTH AND PHYSICAL EDUCATION FOR MEN

(Leading to the degree of Bachelor of Science in Health and Physical Education.)

Freshman Year			
First Semester		Second Semester	
Engl 101 Wrtg w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
†Soc Sci	3	†Soc Sci	3
PE 160 Phys Fitness Prog	2	PE 163 Swim	2
Biol 101L or 112 Gen	4	H Ed 171 Pers & Commun Hlth	3
PE Elective	2	PE Elective	2
H Ed 164 First Aid	2	Fine Arts Elective	2–3
PE Activity	1	PE Activity	1
	16 + PE		15–16 + PE
Sophomore Year			
Engl (Lit)	3	Spch 255 Pub Spkg	3
Sci Elective	3	Sci Elective	3
Biol 136 & 139L Hum Anat & Phys & Lab	5	Psy 101 Gen Psy I	3
PE 201 Gymnastics	2	PE 203 Combatives	2
PE Elective	2	Fine Arts Elective	2–3
PE Activity	1	PE Elective	2–3
		PE Activity	1
	16		15–17 + PE
Junior Year			
Biol 326L Phys of Exercise	3	Ed Fdns 290 Founda of Ed	3
Elective	3	PE 373 Treat of Athl Injuries	2
PE 301 Recrea Sports	2	PE 397 Kinesiology	4
PE 319 PE in El Sch	2	PE 399 Org & Adm of PE	3
H Ed 370 Tchg Hlth Ed in Schs	3	Elective	3
PE 398 Prin of	3	PE 302 Recrea Sports	2
	16		17

§§ Students must use these hours toward a minor of at least 24 sem. hrs. in a subject area approved by the Department of Elementary Education. Students wishing to complete both a major in elementary education and a second major in another field should consult both departments concerned. Students wishing to work with mentally retarded or emotionally disturbed children should consult a staff member in Special Education.

† Choose from General Education requirements listed on p. 167-168.

Senior Year

Ed Fdns 300 Hum Growth & Dev	3	*El Ed 400 Stu Tchg in El Schs or Sec Ed 462 in Sec Schs	3
Sec Ed 461 Stu Tchg	3–6	Recrea 452 Org of Sports Progs	3
H Ed 401 Gen Safety Ed	3	H Ed 410 Adm of a Sch Hlth Prog	3
PE Elective	3	Ed Fdns 310 Learn & Classrm	3
PE 461 Adapt & Corr PE	3	Elective	3–4
	15–18		15–16

MINOR STUDY IN ATHLETIC COACHING FOR MEN

PE 203 Combatives	2	PE 161 Th & Prac of Bskball	2
PE 162 Th & Prac of Football	2	PE 202 Th & Prac of Baseball	2
PE 204 Th & Prac of Tr & Fld	2	PE 397 Kinesiology	4
PE 373 Treat of Ath Injuries	2	Recrea 452 Org of Sports Progs	3
PE 398 Prin of	3		
PE 160 Phys Fitness Prog	2		24

MINOR STUDY IN PHYSICAL EDUCATION FOR MEN

H Ed 171 Pers & Commun Hlth	3	PE 301 Recrea Sports	2
PE 163 Swimming	2	PE 399 Org & Adm of	3
H Ed 164 First Aid	2	PE 397 Kinesiology	4
PE 201 Gymnastics	2	PE 398 Prin of	3
PE 160 Phys Fitness Prog	2		
PE 203 Combatives	2		25

MAJOR STUDY IN HEALTH AND PHYSICAL EDUCATION FOR WOMEN

This curriculum leading to a degree of Bachelor of Science in Health and Physical Education is designed to prepare the student to teach health and physical education in the schools and to supervise physical education in the elementary schools.

Freshman Year

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
†Soc Sci	3	†Soc Sci	3
Art	3	Fine Arts Elective	3
Biol 112L Gen Zool	4	PE 152 Team Sports	1
PE 151 Body Mech & Self-Test Activ	1	H Ed 164 First Aid	2
PE Activity	1	H Ed 171 Pers & Commun Hlth	3
		PE Activity	1
	14 + PE		15 + PE

Sophomore Year

Engl (Lit)	3	Math or Science	3
Biol 136 & 139L Hum Anat & Phys & Lab	5	Spch 255 Pub Spkg	3
Psy 101 Gen Psy 1	3	†Soc Sci	3
PE 210 Folk Dance	1	PE 211 Indiv & Dual Sports	1
Elective	3	PE 345 Prof Lab Exp	1
PE Activity	1	Ed Fdns 290 Founda of Ed	3
		Elective	2–3
		PE Activity	1
	15 + PE		16–17 + PE

Junior Year

Biol 326L Phys of Exercise	3	PE 308 Indiv & Dual Sports in Sec Sch	2
PE 307 Team Sports in Sec Sch	2	PE 309 Aqua & Gymnst	2
Ed Fdns 300 Hum Grwth & Dev	3	PE 319 PE in the El Sch	2
PE 360 Officia in Sports or		PE 345 Prof Lab Exp	1
366 Tchg of Contemp Dance	2	PE 397 Kinesiology	4
H Ed 370 Tchg of Hlth Ed in Schs	3	PE 399 Org & Adm of PE	3
PE 345 Prof Lab Exp	1	PE 444 Tchg PE in Sec Schs	3
PE 398 Prin of	3		
	17		17

* Students wishing to be certified on kindergarten through 12 basis must take El Ed 400 (P.E.). For certification at the secondary level, only Sec Ed 461 is required.

† Choose from General Education requirements listed on p. 167-168.

Senior Year

Ed Fdns 310 Learn & Classrm	3	Sec Ed 461 Stu Tchg in Sec Sch	6
El Ed 400 (PE)* Stu Tchg in El Schs	3	H Ed Elective	3
PE 310 Folk Dance in Sch Prog	2	Electives	6
PE 345 Prof Lab Exp	1		
PE 461 Adapt & Corr PE	3		
Recrea 452 Org of Sports Progs	3		
	15		15

MINOR STUDY IN PHYSICAL EDUCATION FOR WOMEN

PE 151, 152, 210, 211	3	PE 398 Prin of	3
H Ed 164 First Aid	2	PE 399 Org & Ad of PE or 319 PE in Elem Sch	3 or 2
PE 345 Prof Lab Exp in H PE & R	2	PE Electives	5–6
PE 310 Folk Dance and PE 309 Aqua & Gymst	4		
Recrea 452 Org of Sports Progs	3		24–26

MINOR STUDY IN HEALTH EDUCATION

This minor in Health Education is designed to prepare the student to teach health education.

H Ed 171 Per & Com Hlth	3	H Ed 164 First Aid	2
H Ed 370 Tchg of Hlth Ed in Schs	3	H Ed Elective	3
Home Ec 325 Nutrition	3	Electives	8
H Ed 401 Gen Safety Ed	3		25

MAJOR STUDY IN RECREATION

(Leading to the degree of Bachelor of Arts in Recreation.)

Freshman Year

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
†Soc Sci	3	†Soc Sci	3
Art, Art Ed, or I Ed	3	†Nat Sci	4
†Nat Sci	4	Art, Art Ed, or I Ed	3
Elective	3	Elective	3
PE Activity	1	PE Activity	1
	16 + PE		16 + PE

Sophomore Year

Engl (Lit)	3	Spch 255 Pub Spkg	3
†Nat Sci	3	Psy Elective	3
Mus 295 Mus in Recrea	2	†Soc Sci	3
†Soc Sci	3	Mus 296 Mus in Recrea	2
Psy 101 Gen Psy I	3	Recrea 290 Social Recreation	2
H Ed 164 First Aid	2	Elective	2–3
PE Activity	1	PE Activity	1
	16 + PE		15–16 + PE

Junior Year

Recrea 303 Prin of Recrea	3	Recrea 331 Prin & Prac of Camp	3
Sociology Elective	3	Ed Fdns 300 Hum Grwth & Dev	3
DA Elective	3	Recrea 301 Recrea Sports or PE 308 Indiv & Dual Sports in Sec Sch	2
PE 160 Phys Fitness Progs	2	Recrea 374 Org of Commun Recrea	3
PE 163 Swim or 360 Officia in Sports	2	PE 201 Gymnastics or Elec	2–3
Elective	3	Elective	2
	16–17		15–16

† Choose from General Education requirements listed on p. 167-168.

* Students wishing to be certified on kindergarten through 12 basis must take El Ed 400 (P.E.). For certification at the secondary level, only Sec Ed 461 is required.

Senior Year

Recrea 475 or 476 Fld Wk in Recrea	3	Recrea 475 or 476 Fld Wk in Recrea	3
Psy Elective	3	Pol Sci (City, State, or Nat'l Govt)	3
Recrea 452 Org of Sports Progs	3	Sociology Elective	3
Electives	7	Recrea 478 Outdoor Recrea	3
		Electives	4
	16		16

MINOR STUDY IN RECREATION

Recrea 290 Social Recrea	2	Supporting Electives for minor from following areas:	
Recrea 303 Prin of Recrea	3	Arts and Crafts	
Recrea 374 Org. of Commun Recrea	3	Dramatics	
Recrea Electives (331, 351, 475, 477, 478)	5-6	Music	
		Sports and Dance	
	13–14		6

HOME ECONOMICS

MAJOR STUDY

See curriculum. For requirements for a major in dietetics in the College of Arts and Sciences, see p. 286.

For a combined major in Home Economics Education and Dietetics, an additional semester of courses is required plus those listed in the "Curriculum for Students Preparing To Teach Home Economics".**

MINOR STUDY

A total of 23 or 24 hours, at least 9 hours numbered above 300, chosen from the following 4 areas and from the following courses:

1. Family Relations and Child Development, 6 hours: H.E. 102L, 408L, 418.
2. Clothing and Textiles, 6 hours: H. E. 150L, 252, 254L, 456L.
3. Foods and Nutrition, 6 hours: H. E. 120L, 222L, 325.
4. Housing, House Furnishings, Home Management and Health, 5-6 hours: H. E. 240, 341, 443.

Any substitutions must be approved by the Chairman of the Department.

CURRICULUM FOR STUDENTS PREPARING TO TEACH HOME ECONOMICS

This curriculum leading to a degree of Bachelor of Science in Home Economics Education is designed to prepare the student to teach Home Economics in junior and senior high schools, for Home Economics Extension work, and for a career in Home Economics in business. The curriculum for students preparing to teach in public schools is approved by the State Department of Vocational Education for positions in the federally-aided schools of the state. Such students must do their student teaching in reimbursed home economics departments and may have to go out of the Albuquerque area to do this for a period of about 6 weeks. Costs for such assignments are to be assumed by students.

At least 36 hours of home economics subject-matter for a major and 18 hours in a teaching minor are required for a 4-year provisional vocational home economics certificate or a 4-year provisional secondary certificate in New Mexico. Some suggested minors are: Art Education, Biology, Business Education, English, Journalism, History, Modern Languages, and Music.

** See adviser for selection of courses to meet the requirements for Plan III, Emphasis I, II, or III and Concentration A or C of the American Dietetic Association.

Freshman Year

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
Art Ed 130 Tech of Design Ed	3	Biol 136 Human Anat & Physiol	3
H Ec 150L Cloth Selec & Constr	3	Art Ed 131 Tech of Design Ed	3
H Ec 102L Infant Growth & Dev	3	H Ec 120L Food Science	3
*Humanities & Soc Sci	3	*Humanities & Soc Sci	3
PE Activity	1	PE Activity	1
	15 + PE		15 + PE

Sophomore Year

Chem 141L Elem of Gen Chem	4	Chem 142L Elem of Org Chem	4
Psy 101 Gen Psy I	3	Spch 255 Pub Spkg	3
H Ec 222L Meal Management	3	H Ec 240 Pers & Fam Hlth	2
H Ec 254L Tailoring	3	Ed Fdns 300 Hum Grwth & Dev	3
Elective	3	Ed Fdns 290 Founda of Ed	3
PE Activity	1	PE Activity	1
	16 + PE		15 + PE

Junior Year

Ed Fdns 310 Learn & Classroom	3	Sec Ed 310 Mater & Meth of Tchg	3
Ec 330 Consumer Ec	3	H Ec Ed 437 Tchg of H Ec	3
H Ec 252 Textiles	3	H Ec 341 House & Its Furniture	3
H Ec 443 Home Management	3	H Ec 325 Nutrition	3
H Ec 418 Family Relationships	3	H Ec 326L Nutrition Lab	1
H Ec 408L Child Growth & Dev	3	Engl (Lit)	3
	18		16

Senior Year

Electives	16	H Ec 445L Home Management & Resid	4
		H Ec 465 H Ec Seminar	2
		Sec Ed 461 Student Teaching	6
	16		12

INDUSTRIAL EDUCATION

CURRICULUM FOR STUDENTS PREPARING TO TEACH INDUSTRIAL ARTS

(Leading to the degree of Bachelor of Science in Industrial Arts Education.)

Freshman Year

Engl 101 Wrtng w/Rdgs in Expos	3
Engl 102 Wrtng w/Rdgs in Lit	3
**Soc Sci	6
I Ed 101 Shop Computation	3
I Ed 105 Intro to I Ed	2
I Ed 110L Machine Woodworking	3
I Ed 111L Drafting I	2
I Ed 112L Drafting II	3
I Ed 120L Machine Metalworking	3
Art Ed 120-121 Tech of Craft Ed	4
PE Activity	2
	32 + 2

Sophomore Year

Engl (Lit)	3
Spch 255 Pub Spkg	3
**Soc Sci	6
Psy 101 Gen Psy I	3
Ed Fdns 290 Founda of Ed	3
I Ed 230L Power Mechanics	3
I Ed 261L Drafting III	2
I Ed 265L Finishing & Maintenance	3
I Ed 280L Gen Elect & Electronics	3
I Ed 285L Welding	3
PE Actiivty	2
	32 + 2

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* Choose from Humanities and Social Science requirement listed on p. 168.

** Choose from General Education requirements listed on pp. 167-168.

Junior Year		Senior Year	
*Science & Lab	8	Sec Ed 461 Student Tchg	3
Ed Fdns 300 Hum Grwth & Dev	3	Sec Ed 462 Student Tchg	3
Ed Fdns 310 Learn & Classrm	3	Ed Elect (over 300)	3
I Ed 315L Pat Mkg & Foundry	2	I Ed 425 Design in IA	2
I Ed 335L Int Power Mechanics	3	I Ed 433 Tchg of IA	3
I Ed 350L Cabinet Making	2	I Ed 462 Carpentry	3
I Ed 362L Drafting IV	3	I Ed 466 Theory & Organization	3
I Ed 365L Adv Machine Metalworking	3	Technical Elective	4
I Ed 386L Metal Fabrication	3	Elective	3
Elective	3		
	33		27

MUSIC EDUCATION

NASM MEMBERSHIP

The University of New Mexico is a member of the National Association of Schools of Music. The requirements for entrance and for graduation as set forth in this catalog are in accordance with the published regulations of the National Association of Schools of Music.

CURRICULUM FOR STUDENTS PREPARING TO TEACH MUSIC IN GRADES 1-12 (133 hours)

(Leading to the degree of Bachelor of Music Education.)

Freshman Year

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
†Science	4	†Science	4
Mus 105 Music Theory I	2	Mus 106 Music Theory II	2
Mus 107 Ear-Training I	2	Mus 108 Ear-Training II	2
Applied Mus Elective	3	Applied Mus Elective	3
Ensemble Elective	1	Ensemble Elective	1
PE Activity	1	PE Activity	1
	15 + PE		15 + PE

Sophomore Year

Engl (Lit)	3	D A 101 Voice and Diction or Spch	3
††Soc Sci	3	††Soc Sci	3
Mus 205 Music Theory III	2	Mus 206 Music Theory IV	2
Mus 207 Ear Training III	2	Mus 208 Ear-Training IV	2
Mus 263 Conducting	1	Mus 264 Choral Cond and Org	1
Applied Mus Elective	3	Applied Music Elective	3
Mus 271 Music Lit I	2	Mus 272 Music Lit II	2
Ensemble Elective	1	Ensemble Elective	1
PE Activity	1	PE Activity	1
	17 + PE		17 + PE

Junior Year

Psy 101 Gen Psy I	3	Ed Fdns 300 Hum Grwth & Dev	3
D A 315 Theatre Prod for Tchrs	3	D A 316 Theatre Prod for Tchrs	3
Mus Ed 293 Prim Sch Mus	2	Mus Ed 294 Interm Sch Mus	2
Mus Ed 445 Jr High Mus	2	Mus Ed 446 Sr High Mus	2
Mus 309 Form and Comp	2	Mus 310 Form and Comp	2
Applied Mus Elective	3	Applied Mus Elective	3
Mus 313 Band Org and Cond	1	Mus 314 Orch Cond and Org	1
Ensemble Elective	1	Ensemble Elective	1
	17		17

* Choose from General Education requirement listed on p. 167-168.

† Choose from General Education requirements on pp. 167-168. At least 6 hours of the Natural Science must be in a laboratory science as described on p. 168.

†† Choose from General Education requirement listed on pp. 167-168. Six of 12 hours required in Social Science should be in music history and literature.

Senior Year

Ed Fdns 290 Found of Ed	3	El Ed 400 (Music) Student Tchg in El Sch	3
Mus 311 Music Lit III	2	Mus 312 Music Lit IV	2
Sec Ed 461 Student Tchg in Sec Sch	3	Sec Ed 462 Student Tchg in Sec Sch	3
Mus 453 Instrumentation	2	Mus 458 Adv Instru Conducting	2
Applied Mus Elective	2	Mus 405, 406, 409, 463 or 467	2
Ensemble Elective	1	Applied Mus Elective	2
Elective or Student Tchg	3	Ensemble Elective	1
	16		15

In addition, Educational Foundations 310 should be scheduled if possible.

All students pursuing the curriculum listed above are also subject to all requirements pertaining to Music Education listed on p. 348.

MINOR IN MUSIC EDUCATION

Mus 105, 106 Mus Theory I and II	4	Mus 263, 264 Cond; Choral Cond	2
Mus 107, 108 Ear-Training I and II	4	Mus Ed 293, 294 Prim and Interm Sch Mus or 445 and 446 Jr & Sr High Mus	4
Mus Apprec or Mus Hist	3–4	Ensemble	2
Music, Piano	4		
Music, Voice	2		

PHYSICAL EDUCATION

See Health, Physical Education, and Recreation, pp. 172-175.

SECONDARY EDUCATION

PROGRAMS FOR TEACHERS IN SECONDARY SCHOOLS

The following curricula, leading to the degrees of Bachelor of Arts in Education and Bachelor of Science in Education, are designed for students preparing for junior and senior high school teaching. Each student should select one of these curricula no later than 4 semesters prior to his expected date of graduation. The general conditions under which students may select these curricula are to be found under "Degree Requirements" of the "General Academic Regulations."

For graduation from the College of Education in Secondary Education the candidate must have successfully completed, in conformity with the regulations prescribed for the several major and minor concentrations, not less than one departmental major concentration and one departmental minor concentration. These concentrations shall total at least 51 semester hours of credit.

Acceptable as major or minor concentrations are: Biology, Chemistry, English, French, Geology, German, Political Science, History, Mathematics, Physics, Spanish, and Speech. Acceptable as minor concentrations **only** are: Naval Science (if the major concentration is an acceptable science), Anthropology, Astronomy, Business Administration, Dramatic Art, Economics, Geography, Journalism, Latin, Library Science, Philosophy, Portuguese, Psychology, and Sociology. All teaching minors must include at least 18 semester hours.

Students who wish to elect teaching major and minor concentrations not listed above will consult the Chairman of the Department of Secondary Education and the department concerned for information as to detailed requirements.

SPECIAL FIELDS FOR TEACHING

1. Art Education: For details see p. 169.
2. Business Education: For details see p. 170.
3. Home Economics: For details see p. 175.
4. Industrial Education: For details see p. 176.
5. Music Education: For details see p. 177.
6. Health and Physical Education for Men: For details see p. 172.
7. Health and Physical Education for Women: For details see p. 173.
8. Health Education: Minor teaching subject only.

GENERAL EDUCATION. The General Education program for students in Secondary Education is the same as that required of other undergraduate students in Education (see pp. 167-168 of this catalog).

DEPARTMENTAL REQUIREMENTS FOR STUDENT TEACHING. Students under jurisdiction of this department must present an over-all grade-point average of at least 2.2 and a grade-point average in a major (teaching) concentration of at least 2.5 at the time of enrollment in student teaching.

PROFESSIONAL EDUCATION

	Semester Credits
Ed Fdns 290 Foundations of Education	3
Ed Fdns 300 Human Growth & Development	3
Ed Fdns 310 Learning & The Classroom	3
Sec Ed 301 Foundations of Sec Ed	3
Sec Ed 310 Materials & Methods of Tchg	3
Sec Ed 430-443 Special Methods of Tch in Sec Schs or Ed Substitute	3
*Sec Ed 461 Student Tchg	6
**Total Professional Education	24

COMPOSITE TEACHING AREAS

The composite teaching major area is designed to enable the prospective teacher to acquire unified learning within a broad field of closely related subject matter disciplines which would not be possible in a single subject-matter major teaching area.

The application of this unified knowledge to the teaching of currently unified or generalized secondary school subjects (e.g., Communication Arts, General Science, Social Studies) is an avowed purpose of this form of preparation.

The composite is also designed to prepare students to teach adequately in several closely related subjects. This type of preparation will be of advantage to novice teachers beginning their careers in small secondary schools in which they must expect multiple rather than single subject teaching assignments.

COMPOSITE IN SOCIAL STUDIES IN SECONDARY EDUCATION. The composite major in general social studies shall consist of at least 54 hours, including freshman courses, of which at least 24 hours must be in the Department of History, including 2 courses in United States and 2 courses in European or World History; 9 hours in the Departments of Political Science or Economics; 12 hours in the Departments of Anthropology, Geography, Philosophy, or Sociology; and 9 hours in electives from these departments. No minor is required with the general social studies major, but one is strongly recommended.

COMPOSITE IN SCIENCE. The composite major in science shall consist of at least 54 hours in the broad fields of science and mathematics. No minor is required, but one is strongly recommended. Three areas of concentration are available in the composite major.

Physical Science: This program requires 8 hours of mathematics above 160, 30 hours selected from the combined areas of physics and chemistry (a mini-

* See p. 165 for admission requirements. Secondary Education 462 may be included as a second experience in student teaching, with the approval of the adviser.

** Ordinarily, students may enroll in not more than 9 hours of work in this kind of course in any one registration period.

mum of 11 hours from each field). Three to four hours of industrial education may be selected from I.E. 115L, 116L, 245, or 280. The balance of the 54 hours may be selected from chemistry, physics, mathematics, geology, astronomy, or biology. Eight hours of biology are recommended.

Earth Science: This program requires 8 hours of mathematics above 160, 3 hours of astronomy, 8 hours of chemistry, 11 hours of physics (including 103), geography 251, and 20 hours of geology. The balance of the 54 hours may be selected from any of the areas above or from biology.

Life Science: This program requires 4 hours of mathematics, 8 hours of chemistry, 24 hours of biology. Six hours may be selected from Anthropology 307L, Psychology 295 and 493, and Health Education 164 and 171. The balance of the 54 hours can be selected from chemistry, biology, physics, or geology.

COMPOSITE IN COMMUNICATION ARTS IN SECONDARY EDUCATION. The composite major in communication arts shall consist of at least 54 hours, including freshman courses, in the Departments of English, Speech, Dramatic Art, and Journalism. At least 24 of these hours must be in English: English 101, 102, 253, 254; 6 hours in upper-division courses in American or World Literature; 3 hours in an upper-division course in British literature; and 3 hours in creative or informative writing. At least 12 hours must be in the Department of Speech: Speech 255 and 9 additional hours or Speech 101 and 102 and 6 additional hours in courses numbered above 200. Nine hours must be in the Departments of Dramatic Art or Journalism. The remaining 9 hours of electives must be in upper division courses from any one or any combination of the departments concerned. No minor is required with the communication arts major, but one is strongly recommended.

SECONDARY EDUCATION CURRICULUM

First Semester		Second Semester	
Freshman Year			
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
*Math or Sci	4	*Math or Sci	4
*Soc Sci	3	*Soc Sci	3
Electives or Major	3–6	Psy 101 Gen Psy I	3
PE Activity	1	Electives or Major	3
		PE Activity	1
	13–16 + PE		16 + PE
Sophomore Year			
Eng (Lit)	3	Spch 255 Pub Spkg	3
Ed Fdns 290 Founda of Ed	3	*Soc Sci	3
Elective	3	‡Fine Arts or Major	3
*Soc Sci	3	Ed Fdns 300 Hum Grwth & Dev	3
‡Fine Arts or Major	3	Electives, Major or Minor	3
PE Activity	1	PE Activity	1
	15 + PE		15 + PE
Junior Year			
Ed Fdns 310 Learn & Classrm	3		
Sec Ed 301 Founda of	3	Sec Ed 310 Mater & Meth of Tchg	3
Electives, Major or Minor	8–11	Electives, Major or Minor	11–14
	14–17		14–17

* Choose from General Education requirement listed on pp. 167-168.

‡ The required 6-12 semester hours in Fine Arts may be taken during any semester of the first 2 years. One course in history or appreciation must be included.

Senior Year

Sec Ed 430-443 Tchg of Sec Sch Subj or Ed Elec	3	Electives, Major or Minor	14–17
**Sec Ed 461 Student Tchg in Sec Sch	6		
Electives	3–6		
	12–15		14–17

** See p. 165 for admission requirements. Student Teaching may be taken during either or both of the semesters in the senior year, but must be arranged not later than the Spring semester of the junior year.

COLLEGE OF ENGINEERING

THE ENGINEER is a creator and a builder. He directs his imagination, ingenuity, resourcefulness, and intelligence to the economical usage of our natural resources. He is beginning to probe the mysteries of cosmic space. Few professions offer the individual greater challenge, stimulation, and satisfaction of creative accomplishment. In these days, when breathtaking technological advances are commonplace, the engineer requires ever greater breadth and depth of mathematical and scientific cognition. Of increasing importance is the ability for clear self-expression and a sympathetic appreciation of the social, economic, and human values of the world in which we live. The engineer is not only an interpreter of science and mathematics to the producers of human material needs, but he is also a manager of men, money, materials, and machines in effecting the satisfaction of these needs.

The continued growth of American industry and technology has created a demand for engineers far in excess of supply. Present and predicted enrollments in schools of engineering indicate that the shortage will continue for many years to come. Certainly, no profession offers greater challenges or a more promising future. Surveys show that the income of the engineer compares very favorably with that of the other professions. American industry and commerce are increasingly utilizing engineers in top administrative positions.

The several curricula of the College of Engineering are designed to give the student suitable education, attitudes, and motivations for his entry into a successful career as a practicing engineer, administrator, researcher, or educator. The undergraduate programs are solidly founded on mathematics and the natural sciences with additional emphasis being placed upon human values and relations. This broad grounding in itself is not sufficient, however, and these curricula strive to develop the beginnings of sound judgment, perspective, and a penetrating curiosity. Many graduates continue their formal education at the postgraduate level and work toward the master's or doctor's degree. The student must realize, however, that education does not stop with the completion of college. More truthfully, this is when education really begins. The true professional engineer never stops learning; he is continually broadening his intellectual horizons. One indication of continued growth and development is registration as a professional engineer. Every state has established criteria of education and experience which must be met before an engineer can enjoy this status.

In the College of Engineering, the student is afforded an opportunity for scholarly study, laboratory exercise, and research participation. He daily rubs shoulders with engineers nationally recognized in their fields. The University of New Mexico strongly believes that engineering teachers must be competent engineers in their own right, and faculty members are encouraged to participate actively in professional practice and research. This experience keeps the faculty informed on new developments, increases their understanding of subjects taught, and gives the student the benefit of their findings and personal experiences. Faculty and students work side by side in research and instructional laboratories.

The College of Engineering maintains a Bureau of Engineering Research. For details of the Bureau's purposes and activities, see p. 69.

HIGH SCHOOL PREPARATION

It is important that the high school student who wishes to pursue professional engineering studies at The University of New Mexico orient his subject selection in the proper directions at the earliest possible moment. The student properly prepared will be able to follow the regular pattern of studies without the necessity of making up scholastic deficiencies. Students inadequately prepared in mathematics or English are required to take remedial work for no credit to remove these subject deficiencies. Students with particularly high scores in the English area of the ACT are excused from English 101 (3 hours); those who are placed in Mathematics 163 are excused from Mathematics 162 (4 hours).

Students intending to study engineering should take in high school all of the mathematics and English possible as well as chemistry and physics. The mathematics should include a minimum of 2 units of algebra, 1 unit of geometry, and ½ unit of trigonometry or college-preparatory mathematics.

ADMISSION

All freshman students are admitted to the University College. A detailed statement of entrance requirements to University College is in the "Admission" section of this catalog. All freshman engineering students, during their residence in University College, take the prescribed freshman engineering course of study as set forth on p. 186. In addition, each freshman engineering student is advised by a faculty member of the student's major engineering department.

ADMISSION FROM UNIVERSITY COLLEGE

To be eligible for transfer to the College of Engineering from the University College, the student must meet the requirements listed below:

1. Completion of 26 semester hours of the freshman engineering program.
2. (a) A scholarship index of at least 2.0 on all hours attempted;

   or

   (b) A scholarship index of at least 2.0 on all hours attempted in the previous 2 semesters of enrollment; provided that, if fewer than 26 hours were attempted in the previous 2 semesters, a scholarship index of at least 2.0 shall be required on all work attempted in as many previous consecutive semesters as are necessary to bring the student's total hours attempted to at least 30.
3. A satisfactory score on the English Proficiency Examination (administered by The University of New Mexico) or a grade of C or better in a remedial English course offered on a non-credit basis by the English Department of The University of New Mexico.

TRANSFERS

A student will be eligible for transfer to the College of Engineering from other degree-granting colleges of the University or from other accredited institutions if he has a grade-point index of 2.0* or better on all work attempted in the other degree-granting colleges or institutions, and if he has completed 26 semester hours of acceptable credit.

* Refer to p. 79 for the qualitative admission requirement for non-resident transfers.

COURSES OF STUDY

The College of Engineering offers 4-year programs of study leading to the degrees of Bachelor of Science in Chemical Engineering, Bachelor of Science in Civil Engineering, Bachelor of Science in Electrical Engineering, and Bachelor of Science in Mechanical Engineering. These 4-year curricula are designed for the student who enters without deficiencies and who is capable of carrying the required scholastic loads indicated under the respective departmental programs. Otherwise, the student should plan on spending more than 8 regular semesters to complete requirements for his degree.

The College of Engineering is a member of the American Society for Engineering Education. The curricula in Civil, Electrical, and Mechanical Engineering are accredited by the Engineers' Council for Professional Development.

SPECIAL FIELDS

In addition to the major fields of study listed above, it is possible for the student to specialize in some degree by choosing appropriate elective courses within the basic curriculum of his major department. A few of the many possibilities are: Aerospace Engineering, Electronic Computers, Fuel Processing, Structural Engineering, and Theoretical and Applied Mechanics. All departments make use of the modern, high-speed electronic computers located in the University of New Mexico Computer Center.

DEGREES IN COMBINATION WITH OTHER COLLEGES

If a student wishes to secure a degree in another college together with his engineering degree, he is urged to seek advice early in his college career from the deans of the colleges concerned. With care in selecting his program of studies, it is possible for a student to secure two degrees in one additional year.

AEROSPACE STUDIES, NAVAL SCIENCE

It is possible for students enrolled in the Air Force ROTC or the Naval ROTC to complete their degree program in 4 years. However, students may need an extra semester to complete the requirements for both a degree and a commission. The student should consult the department chairman concerned in planning his program.

GRADUATE STUDY

A program of graduate studies is offered by the College of Engineering leading to the Master of Science degree with a major in Chemical Engineering, Civil Engineering, Electrical Engineering, Mechanical Engineering and Nuclear Engineering. A fifth year of study leading to the Master's degree is strongly recommended for students of more than usual ability who believe that they can profit from the additional study.

The College of Engineering offers through the Graduate School a program leading to the degree of Doctor of Philosophy in Engineering, under which study concentrations may be pursued in a variety of engineering fields. Consult the current **Graduate School Bulletin** for details of these programs.

SCHOLASTIC REGULATIONS

The student should become familiar with the general academic and scholastic rules which apply to all students enrolled in the University. (See pp. 126-129.) Special attention is called to the rules on probation and suspension.

COURSES NUMBERED 300 OR ABOVE

A student may be admitted to courses numbered 300 or above in the College of Engineering (1) if he is not more than 8 hours short of completing all freshman and sophomore requirements, (2) if he has completed all prerequisites for the course in question, (3) if the remaining lower-division requirements appear on his program, or (4) at the discretion of the Dean of the College. If a student fails a required lower-division course while enrolled in a 300-level course, he will not be eligible to enroll in additional 300-level courses until all required freshman and sophomore courses have been completed.

The College of Engineering will not accept 300 level or above engineering courses which have been taken by extension or correspondence.

MAXIMUM SEMESTER HOUR LOAD

The maximum semester hour load for students in the College of Engineering is 20 hours, including physical education. Only in exceptional cases and with approval of the Dean of the College will a student be permitted to carry 21 hours.

GRADUATION REQUIREMENTS

Specific graduation requirements are as follows:

1. Candidates for the Bachelor of Science in any of the engineering departments must complete all of the work outlined in their respective curricula. The student is solely responsible for completing all requirements for graduation.
2. Each candidate for a degree must have at least a 2.0 grade-point average on work taken at The University of New Mexico which is counted toward his graduation. Three-fourths of the semester hours offered toward a degree must be of C grade or better.
3. Every candidate for graduation must take the Graduate Record Examination.
4. All students in the College of Engineering, including transfer students, must either have passed the English Proficiency Examination (administered by The University of New Mexico) or have earned a grade of C or better in a remedial English course offered on a non-credit basis by the English Department of the University.
5. For minimum residence requirements, see p. 132.
6. If a beginning student is placed in Mathematics 163 because of high ACT test scores in that area and completes the course with a grade of C or better, the hours required for graduation will be reduced by four.

7. If a student is placed in English 102 because of high ACT test scores in that area and completes the course with a grade of C or better, the hours required for graduation will be reduced by three.

CURRICULA OFFERED BY THE COLLEGE OF ENGINEERING

The College of Engineering offers work in the departments listed in alphabetical order on the following pages. Curriculum requirements are set forth under each department. Descriptions of the courses offered will be found, listed by departments, in the catalog section "Courses of Instruction."

COURSE OF STUDY FOR ALL ENGINEERING STUDENTS

Freshman Year

First Semester	Cr.	Hrs. Lect.-Lab.	Second Semester	Cr.	Hrs. Lect.-Lab.
Math 162 Intro Math for Phys Sc	4	(4-0)	Math 163 Intro Math for Phy Sc	4	(4-0)
Engl 101 Wrtng w/Rdgs in Expos	3	(3-0)	Engl 102 Wrtng w/Rdgs in Lit	3	(3-0)
Chem 101L Gen	4	(3-3)	Chem 102L Gen	4	(3-3)
CE 101L Engr Graphics	3	(2-4)	CE 102L Engr Comp Meth	3	(2-4)
CE 103 Engr Lectures	1	(1-0)	Physics 260 Gen	3	(3-0)
	15	(13-7)		17	(15-7)
PE	1		PE	1	

NOTES:

1. High school preparation for Mathematics 162 should include at least 2 units of algebra, 1 of geometry, and ½ of trigonometry or college preparatory mathematics. Students who lack this minimal preparation are urged to remove their mathematics deficiencies in the University's summer session immediately after their high school graduation. Students who do not qualify for Mathematics 162 on the ACT mathematics test will be required to take remedial mathematics.
2. Students with unsatisfactory scores in the ACT English area will be required to take remedial English.
3. For a description of the freshman courses refer to p. 328 for Mathematics; to p. 305 for English; to p. 257 for Chemistry; to p. 291 for Civil Engineering; and to p. 360 for Physics.

CHEMICAL ENGINEERING

Chemical engineering is that branch of engineering concerned with the development and application of manufacturing processes in which chemical or certain physical changes of material are involved.

The course in Chemical Engineering is designed to afford the student broad training in the fundamentals of mathematics, physics, chemistry, and engineering to meet the needs of the chemical or related industries where men competent to design, develop, and operate new processes and to improve existing processes are required. The chemical engineer is not specifically trained for only one industry. The distinctly professional courses of Unit Operations and Unit Processes enable him to apply his knowledge to any chemical or process industry with relatively little difficulty.

The graduate chemical engineer will find many avenues of opportunities in research and development; production, operation, and maintenance; management and administration; design, construction, and installation; technical service and sales; consulting; teaching, and technical writing, etc., in such industries as

industrial chemicals, petroleum, explosives, plastics, rubber products, paper and allied products, synthetic rubber, food products, drugs, insecticides, glass, cement, clay, iron and steel, paints and varnishes, oils, soaps, rayon and synthetics.

CHEMICAL ENGINEERING LABORATORY. The Chemical Engineering building has a floor space of over 8,000 sq. ft. and contains a laboratory adequately equipped with pilot plant equipment for use in the study of Unit Operations of Chemical Engineering such as fluid flow, heat flow, evaporation, distillation, air-conditioning, absorption, filtration, crystallization, etc., and Unit Processes such as nitration, sulfonation, hydrogenation, etc.

The process development laboratory is well equipped for the study of small scale manufacture of chemical products.

Adequate classroom space and design laboratory are available. Shop facilities are in conjunction with the well-equipped Engineering Shop.

CURRICULUM IN CHEMICAL ENGINEERING

Hours required for graduation: 140‡ + 4 PE.

Sophomore Year

First Semester	Cr.	Hrs. Lect.-Lab.	Second Semester	Cr.	Hrs. Lect.-Lab.
Math 264 Calc w/Coord Geom	4	(4-0)	Math 265 Calc w/Coord Geom	4	(4-0)
Physics 261 Gen	3	(3-0)	Physics 262 Gen	3	(3-0)
Physics 263L Gen Lab	1	(0-3)	Physics 264L Gen Lab	1	(0-3)
Chem 301 & 303L Organic	4	(3-3)	Chem 302 & 304L Organic	4	(3-3)
Ch E 251 Chem Calc	3	(3-0)	Ch E 252 Ind Stoichiometry	3	(3-0)
Ec 200 Prin of	3	(3-0)	CE 202L Engr Statics	3	(2-3)
	18	(16-6)		18	(15-9)
PE	1		PE	1	

Junior Year

Ch E 401 Prin of Thermo I	3	(3-0)	Ch E 402 Prin of Thermo II	3	(3-0)
Ch E 411 Unit Oper I	3	(3-0)	Ch E 412 Unit Oper II	3	(3-0)
Chem 311 & 313L Physical	4	(3-3)	Ch E 414L Unit Oper Lab I	2	(0-6)
C E 302 Mech of Mater	3	(3-0)	Chem 312 & 314L Physical	4	(3-3)
†Elective	6	(6-0)	EE 202 Elect Engr II	3	(3-0)
			†Elective	3	(3-0)
	19	(18-3)		18	(15-9)

Senior Year

Ch E 413 Unit Oper III	3	(3-0)	Ch E 398 Field Trip	0	(0-0)
Ch E 415L Unit Oper Lab II	2	(0-6)	Ch E 452 Seminar	1	(1-0)
Ch E 451 Seminar	1	(1-0)	Ch E 472 Ch E Econ	3	(3-0)
Ch E 481L Proc Lab I	2	(0-6)	Ch E 482L Proc Lab II	2	(0-6)
†Elective	3	(3-0)	Ch E 494L Ch E Design	3	(2-3)
*Elective	6	(6-0)	*Elective	9	(9-0)
	17	(13-12)		18	(15-9)

‡Reduced for students placed ahead in freshman mathematics and/or English.

† Technical electives may be chosen from ChE 317, 353, 354L, 361, 362, 454, 470, Chem 253L, Chem 454L. Students enrolled in the ROTC programs may, with the approval of the Department Chairman, substitute Aerospace Studies or Naval Science for up to 6 hours of technical electives.

* Electives are to be chosen from the humanities and social sciences. See Department Chairman for list of approved courses.

CIVIL ENGINEERING

Civil Engineering is the oldest branch of engineering and training in this field continues to provide the student a broad educational background. The civil engineer plans, designs, and constructs the facilities required by man to live in a modern progressive society. These facilities include buildings, bridges, water supply and sewerage systems, irrigation and drainage systems, dams, nuclear and conventional power plants, and transportation systems including highways, railroads, airports, pipelines and waterways. The civil engineer is involved in many aspects of the space program such as the design and construction of launching facilities and space structures.

The graduate civil engineer is prepared for a career in public or private organizations in management and administrative areas as well as in an engineering capacity. The training offered by this Department is designed to give the young engineer a broad background of knowledge to allow him the maximum latitude of choice in his career.

CIVIL ENGINEERING LABORATORIES. The Civil Engineering Laboratories have been especially designed for the experimental verification of the fundamental principles of theories as developed in the lecture courses.

The Mechanics of Materials laboratory is equipped for torsion, bearing, compression, tension, shear, flexure, impact, and hardness testing of engineering materials, and includes mechanical, electrical, photoelastic, and stress-coat strain measuring devices.

The Concrete and Soils laboratories are equipped with a 300,000 lb. testing machine, direct shear machine, tri-axial apparatus, and other modern equipment used for the engineering testing of soils, concrete, masonry, and other construction materials.

The Bituminous laboratory contains equipment for making standard tests on road oils and asphalts, and for designing and testing bituminous mixes for highways, airports, and other pavements.

The Sanitary Engineering laboratory affords the student the opportunity of gaining practical experience in performing customary tests and experiments with municipal and industrial wastes.

The Fluid Mechanics laboratory is equipped for the study of the basic principles of fluid mechanics.

Equipment for classes in Engineering Measurements and Surveying includes transits, levels, alidades, optical theodolites and geodetic instruments of the latest design.

All classes have access to key punch machines and an IBM 360 Computer. The use of this computer is made an integral part of instruction at all levels.

Whenever possible, research projects are carried on in the instructional laboratories. This permits the student to become aware of problems and techniques beyond the scope of usual undergraduate training.

CURRICULUM IN CIVIL ENGINEERING

Hours required for graduation: 139* + 4 PE.

* *Reduced for students placed ahead in freshman mathematics and/or English.*

Sophomore Year

First Semester	Cr.	Hrs. Lect.-Lab.	Second Semester	Cr.	Hrs. Lect.-Lab.
Math 264 Calc w/Coord Geom	4	(4-0)	Math 265 Calc w/Coord Geom	4	(4-0)
Phys 261 Gen	3	(3-0)	Phys 262 Gen	3	(3-0)
Phys 263L Gen Lab	1	(0-3)	Phys 264L Gen Lab	1	(0-3)
CE 202L Engr Statics	3	(2-3)	CE 270L Constr Mater	1	(0-3)
CE 281L Engr Meas	3	(2-3)	CE 282L Engr Surveys	3	(2-3)
Engl 264 Info Writing	3	(3-0)	ME 206L Dynamics	3	(2-3)
or			Econ 200 Prin of	3	(3-0)
Speech 255 Pub Spkg	3	(3-0)			
	17	(14-9)		18	(14-12)
PE	1		PE	1	

Junior Year

Math 311 Engr Math	3	(3-0)	CE 360L Soil Mech	3	(2-3)
CE 302 Mech of Materials	3	(3-0)	CE 306 Struc Anal II	3	(3-0)
CE 303L Mech of Mater Lab	1	(0-3)	CE 332L Water Res & Hydr E I	3	(2-3)
CE 305 Struc Anal I	3	(3-0)	CE 324L Struc Des in Metals	3	(2-3)
CE 330 Fluid Mech	3	(3-0)	ME 301 Thermodynamics	3	(3-0)
CE 382 Transp Engr	2	(2-0)	**Elective	3	(3-0)
**Elective	3	(3-0)			
	18	(17-3)		18	(15-9)

Senior Year

CE 411 Rein Concr Des	3	(3-0)	CE 490 Prof Probs in Engr	3	(3-0)
CE 435L Sanitary Engr I	3	(2-3)	EE 202 Elect Engr II	3	(3-0)
CE 370 Engr Mater Science	3	(3-0)	†Electives	9	(9-0)
†Elective	6	(6-0)	**Elective	3	(3-0)
**Elective	3	(3-0)			
	18	(17-3)		18	(18-0)

ELECTRICAL ENGINEERING

The technology of electrical engineering is changing extremely rapidly. Common practice one year is obsolete the next. To prepare the student for the technology with which he will work, the Electrical Engineering curriculum stresses fundamentals rather than current practice. Thus, the student is prepared to understand future developments with a minimum of background reading.

The increasing complexity of electrical engineering demands more engineers with training beyond the bachelor's degree. Students with fairly high grades should plan to continue at least as far as the master's degree (5 years). Exceptional students should plan to continue formal training through the doctorate.

The curriculum provides considerable freedom in choice of electives. Students planning graduate study should concentrate on mathematics and physics. Those interested in sales and administrative work may take up to 13 hours in business administration. Other possible combinations include "human engineering" (up to 25 hours of psychology) and medical electronics (up to 13 hours of biology).

ELECTRICAL ENGINEERING LABORATORIES. Circuits, electronics, power, solid state, and microwave laboratories are provided. Research laboratories of the

** Electives are to be chosen from the humanities and social sciences. See Department Chairman for list of approved courses.

† See Department Chairman for list of approved technical electives. Students enrolled in the ROTC programs may, with approval of the Department Chairman, substitute Aerospace Studies or Naval Science for up to 6 hours of technical electives.

Bureau of Engineering Research are available for individual projects and employment on research projects is frequently possible.

The circuits and fields laboratory is equipped to acquaint the student with elementary measurements on electric and analogous circuits, and to instruct in the use of a variety of instruments. It also permits a variety of field and traveling-wave experiments.

The electronics laboratory provides an opportunity to design electronic devices, quickly make experimental hook-ups, and test performance with a variety of electronic laboratory instruments. The circuits studied form the basis for radio, radar, television, automatic control, telephone, electronic computer, and other systems.

The power laboratory provides facilities for determining characteristics of various power conversion devices, including dc and ac rotating machines, transformers, rectifiers, and the associated control devices.

The microwave laboratory makes possible the study of tubes and transmission devices at frequencies above 3.0 kmc. Standard microwave power and impedance measurement techniques are taught.

CURRICULUM IN ELECTRICAL ENGINEERING

Hours required for graduation: 138† + 4 PE.

First Semester	Cr.	Hrs. Lect.-Lab.	Second Semester	Cr.	Hrs. Lect.-Lab.
		Sophomore Year			
*EE 201 Elec Engr I	3	(3-0)	EE 205L EE Lab I	1	(0-3)
Math 264 Calc w/Coord Geom	4	(4-0)	*EE 202 Elec Engr II	3	(3-0)
Physics 261 Gen	3	(3-0)	Math 265 Calc w/Coord Geom	4	(4-0)
Physics 263L Gen Lab	1	(0-3)	Physics 262 Gen	3	(3-0)
Ec 200 Prin of	3	(3-0)	Physics 264L Gen Lab	1	(0-3)
Elective	3	(3-0)	CE 202L Engr Statics	3	(2-3)
			Elective	3	(3-0)
	17	(16-3)		18	(15-9)
PE	1		PE	1	
		Junior Year			
EE 361 Electromag Fields I	3	(3-0)	EE 362 Electromag Fields II	3	(3-0)
EE 311 Elec Circ Anal	3	(3-0)	EE 306L Traveling Waves Lab	1	(0-3)
EE 305L EE Lab II	1	(0-3)	EE 312 Elec Circ Anal	3	(3-0)
Math 311 Engr Math	3	(3-0)	EE 321 Electronic Circ I	3	(3-0)
ME 206L Dynamics	3	(2-3)	EE 325L Electronics Lab I	1	(0-3)
Engl 264 Info Writing	3	(3-0)	CE 302 Mech of Materials	3	(3-0)
or			Phys 330 Atomic & Nuclear	3	(3-0)
Spch 255 Public Speaking	3	(3-0)			
Elective	3	(3-0)			
	19	(17-6)		17	(15-6)
		Senior Year			
EE 322 Electronic Circ II	3	(3-0)	EE 482 Prin of Dir Energy Conv	2	(2-0)
EE 326L Electronics Lab II	1	(0-3)	EE 406L Senior Lab	1	(0-3)
EE 481 Electromech Energy Conv Prin	3	(3-0)	EE 498 Seminar	2	(1-3)
			EE 431 Servomechanisms	3	(3-0)
ME 301 Thermodynamics	3	(3-0)	ME 356 Indus Engr	2	(2-0)
EE 470 Electronic Devices	2	(2-0)	Elective	7	(6-3)
Elective	6	(6-0)			
	18	(17-3)		17	(14-9)

† Reduced for students placed ahead in freshman mathematics and/or English.

* 201 and 202 may be taken concurrently in the second semester.

ELECTIVES:

1. At least 12 hours of electives are to be taken in the humanities and social sciences, including modern languages.
2. At least 3 hours of electives are required in other engineering, mathematics, science, or business administration.
3. The remaining electives may be taken in any field, with departmental approval. Students completing the ROTC programs may, with the approval of the Department Chairman, substitute up to 6 hours of Aerospace Studies or Naval Science for free electives.
4. Electives in the senior year shall, in general, be numbered 300 or higher. They must have the approval of the Department.

MECHANICAL ENGINEERING

Mechanical engineering is concerned with engineering research, development, design, production, and operation of mechanical systems, as well as with the management of these activities. Typical mechanical systems include power plants, exemplified by central power stations, jet and rocket engines, and nuclear reactors; environment control systems; automated production plants; all kinds of machines and mechanism for power transmission or motion control; and mechanical structures.

In view of the rapidly expanding and changing technology, the preparation of the engineering student must be broad and hence the program of study is designed to give the engineer not only the tools of his trade, in the narrow sense of the word, but also a general education with built-in flexibility to adapt to the changing needs of his profession. The undergraduate curriculum begins with a thorough preparation in mathematics and physical sciences together with studies in the humanities and social sciences. The basic science courses are followed by the fundamental courses of engineering science: theoretical and applied mechanics; thermodynamics; electricity and magnetism; and materials science. These courses are followed by courses in which the student has an opportunity to analyze and design important engineering systems.

The laboratory content of the curriculum provides instruction in the basis and the techniques of making engineering measurements and the methods of experimental engineering.

In the senior year, students have the opportunity to choose technical electives which apply the principles previously learned. Students may choose electives in preparation for graduate study, to enhance their preparation for a broad career in mechanical engineering, or they may choose sequences of technical electives to gain proficiency in selected areas.

CURRICULUM IN MECHANICAL ENGINEERING

Hours required for graduation: 134‡ + 4 P.E.

‡ Reduced for students placed ahead in freshman mathematics and/or English.

Sophomore Year

First Semester	Cr.	Hrs. Lect.-Lab.	Second Semester	Cr.	Hrs. Lect.-Lab.
Math 264 Calc w/Coord Geom	4	(4-0)	Math 265 Calc w/Coord Geom	4	(4-0)
Phys 261 Gen	3	(3-0)	Phys 262 Gen	3	(3-0)
Phys 263L Gen Lab	1	(0-3)	Phys 264L Gen Lab	1	(0-3)
Econ 200 Prin of	3	(3-0)	ME 206L Dynamics	3	(2-3)
ME 201L Intro to Design	3	(2-3)	EE 201 Elect Engr I	3	(3-0)
CE 202L Engr Statics	3	(2-3)	*Elective	3	(3-0)
	17	(14-9)		17	(15-6)
PE	1		PE	1	

Junior Year

ME 341 Meth of Anal	3	(3-0)	ME 302 Thermochem & Gas Dyn	3	(3-0)
ME 301 Thermodynamics	3	(3-0)	ME 320 Heat Transfer	3	(3-0)
ME 317 Fluid Mech	3	(3-0)	ME 357L Anal of Mech Comp	3	(2-3)
ME 314L Dyn of Mech Sys	3	(2-3)	ME 318L ME Lab I	2	(0-6)
or			ME 370 Engr Mater Science	3	(3-0)
ME 316L Space Flight Dyn	3	(2-3)	*Elective	3	(3-0)
EE 202 Elect Engr II	3	(3-0)			
CE 302 Mech of Materials	3	(3-0)			
	18	(17-3)		17	(14-9)

Senior Year

ME 358L Design of Sol Sys	3	(2-3)	ME 352L ME Lab III	2	(0-6)
ME 363L Anal of Fluid Sys	3	(2-3)	**ME 356 Indus Engr	2	(2-0)
ME 351L ME Lab II	2	(0-6)	*Elective	6	(6-0)
*Elective	3	(3-0)	†Elective	6	(6-0)
†Elective	6	(6-0)			
	17	(13-12)		16	(14-6)

NUCLEAR ENGINEERING

Nuclear engineering is concerned with the release, control and utilization of energy from all types of nuclear processes; and with the control and utilization of radiation interaction with matter. It is a relatively new branch of engineering with rapid changes and frequent breakthroughs which requires men capable of developing new ideas and new concepts.

Graduate nuclear engineers find many challenging opportunities in projects concerned with fission reactors, controlled nuclear fusion, space propulsion, direct energy conversion, water desalination, etc. In these new areas, basic research relating to the end product is equally as important as the development, design and production of the product.

In order to prepare students with sufficient flexibility to develop new ideas and new concepts in accord with the ever changing needs, the nuclear engineering curriculum emphasizes an advanced background in the fundamental areas of mathematics, science and engineering, as opposed to emphasis on current technology.

Elective courses in nuclear engineering are available to all seniors; and graduate programs are available leading to a Master of Science in Engineer-

* Electives are to be chosen from the humanities and social sciences, with the approval of the Department Chairman.

† Technical electives may be chosen from the following courses: ME 350, 355, 359L, 365, 480, 490, 492, 494L and other engineering and science courses, with approval of the Department Chairman. Students enrolled in the ROTC programs may, with approval of the Department Chairman, substitute Aerospace Studies or Naval Science for up to 6 hours of technical electives.

** Student electing both 350 and 355 may substitute a technical elective for 356.

ing and to a Doctor of Philosophy in Engineering. A student expecting to do graduate work in nuclear engineering should concentrate on physics and mathematics in his undergraduate program in addition to acquiring a high competence in one of the other branches of engineering or in science.

NUCLEAR ENGINEERING LABORATORIES. The principal equipment in the nuclear engineering laboratories includes the following: AGN 201 critical reactor; pulsed neutron generators; water moderated, natural uranium, subcritical reactor; reactor simulator; recording gamma-ray spectrometer; multi-channel analyzers; graphite pile; and supporting radiation counting equipment.

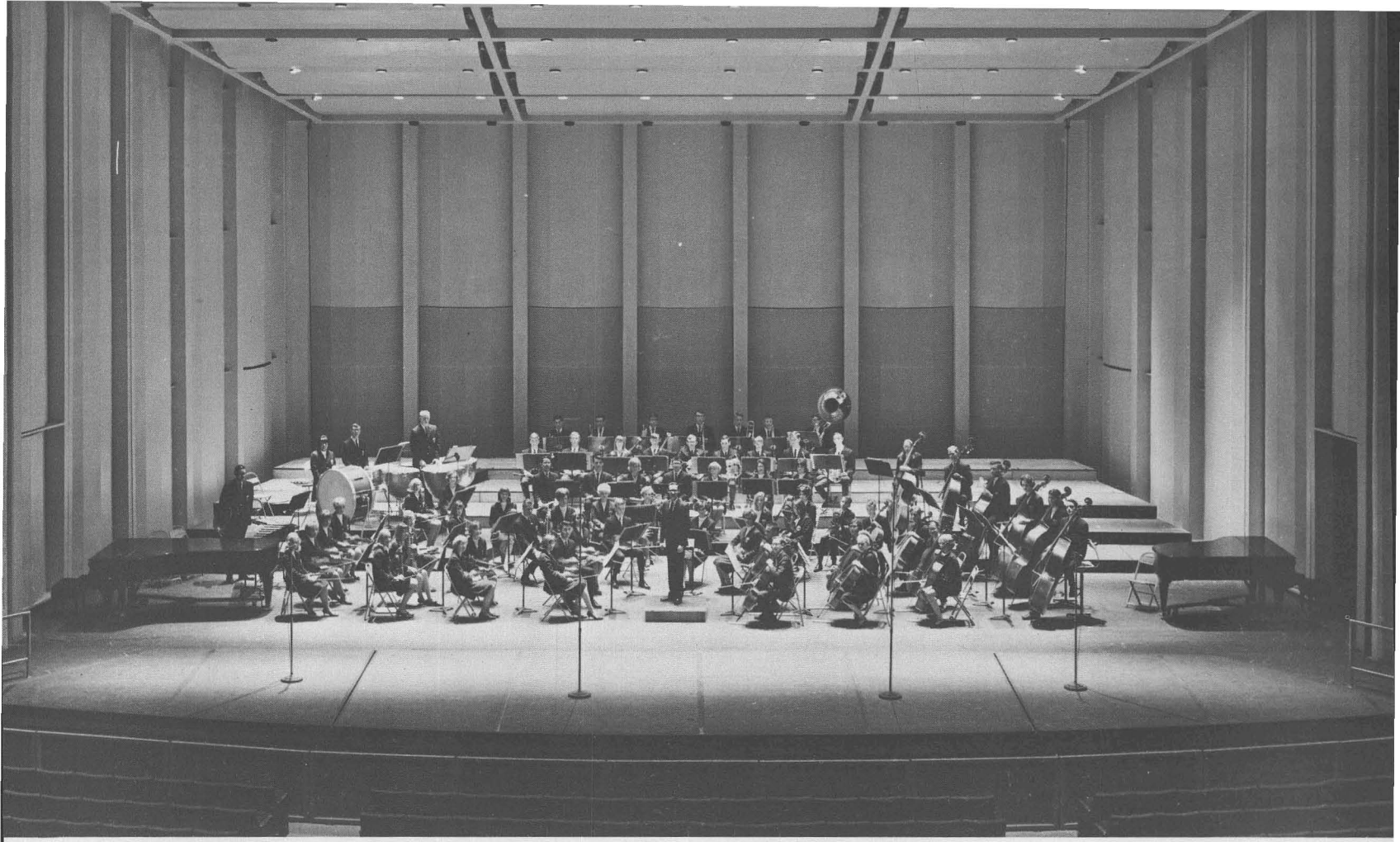
In addition to the well-equipped laboratories on campus, the advanced reactors and radiation equipment of the Sandia Corporation and Los Alamos Scientific Laboratory are utilized for both instruction and research.

UNDERGRADUATE COURSE WORK. Undergraduate course work in the following areas is highly recommended for the student expecting to do graduate work in nuclear engineering:

Atomic and Nuclear Physics
Advanced Calculus
Thermodynamics and Heat Transfer
Fluid Mechanics
Principles of Circuits
Properties of Materials

In addition, it is recommended that senior year electives be chosen from the following:

NE 430 Intro to Nucl Engr
NE 460 Fund of Nucl Engr I
NE 461 Fund of Nucl Engr II
NE 463 Nucl Engr Lab I



Concert Hall in the Fine Arts Center

COLLEGE OF FINE ARTS

THE COLLEGE OF FINE ARTS offers instruction in architecture, art, dance, drama and music. Its courses are designed to advance understanding of the arts as a vital force in civilization, to promote scholarship, and to provide advanced instruction for those who wish to enter professional careers in architecture and in the fine arts.

The general (or liberal arts) curricula place principal emphasis upon the historical and philosophical background of the arts, and are designed for students who seek a liberal education centered upon the arts. Students completing all specified requirements in the general curricula receive the degree of Bachelor of Arts in Fine Arts.

The curricula in art education and music education and the program leading to teacher certification with a major in dramatic art are offered in cooperation with the College of Education. These curricula lead to the degrees of Bachelor of Fine Arts in Art, Bachelor of Fine Arts in Dramatic Art, and Bachelor of Music Education.

The professional curricula are designed for students of high ability who have serious professional intentions in architecture or the fine arts. Admission to these curricula is limited and is separate from: (1) admission to the University; and (2) admission to the College of Fine Arts. Requirements for admission to the professional curricula are stated below. Students completing all specified requirements in the professional curricula receive one of the following degrees:

Architecture:	Bachelor of Arts in Fine Arts, Bachelor of Architecture
Art:	Bachelor of Fine Arts in Art
Dramatic Art:	Bachelor of Fine Arts in Dramatic Art
Music:	Bachelor of Music

For information regarding graduate study in art and music, leading to the degrees of Master of Arts, Master of Fine Arts, Master of Music and Master of Music Education, the **Bulletin** of the Graduate School should be consulted.

ADMISSION

All freshman students are admitted to the University College. A detailed statement of entrance requirements is in the "Admission" section of this catalog.

ADMISSION FROM UNIVERSITY COLLEGE

Any student enrolled in the University College who wishes to transfer to the College of Fine Arts is advised to follow during the freshman year the suggested first-year curriculum in the particular field of his interest. The various curricula are set forth in this section of the catalog.

The requirements for transfer from the University College to the College of Fine Arts are:

1. Twenty-six hours of earned credit.
2. (a) A scholarship index of at least 2.0 on all hours attempted;

   or

(b) A scholarship index of at least 2.0 on all hours attempted in the previous 2 semesters of enrollment; provided that, if fewer than 26 hours were attempted in the previous 2 semesters, a scholarship index of at least 2.0 shall be required on all work attempted in as many previous consecutive semesters as are necessary to bring the student's total hours attempted to at least 30.

3. A satisfactory score on the English Proficiency Examination (administered by The University of New Mexico), or a grade of C or better in English 010, a non-credit course offered by the Department of English.

ADMISSION TO TEACHER EDUCATION PROGRAMS

In addition to the above requirements, students expecting to follow and complete a curriculum leading to certification to teach are subject to the requirements for admission to teacher education listed on p. 161 in the College of Education section of this catalog.

ADMISSION TO THE PROFESSIONAL CURRICULA

The requirements for admission to the professional curricula of the College of Fine Arts are:

1. Completion of a minimum of 12 hours of specified prerequisite courses (see departmental listings below) with a grade average of 2.5.
2. Satisfaction of such additional proficiency requirements as may have been established by the major department.

Applications for admission to the professional curricula must be filed with the Dean of the College of Fine Arts no less than eight weeks prior to the beginning of the semester in which such enrollment is to be effective.

If after a student is admitted to the professional curricula he fails to maintain an average of 2.5 in all courses attempted in his major field of study, or if he is placed on academic probation, the student will be excluded from the program. Upon improvement in his grade average, the student may petition the Scholarship Committee of the College for readmission to the professional curricula.

TRANSFERS

A student will be eligible for transfer to the College of Fine Arts from other degree-granting colleges of the University or from other accredited institutions if he has completed at least 26 hours of acceptable college credit, and has a scholarship index of 2.0* or better on all work attempted in the other degree-granting colleges or institutions. Students wishing to enter the Teacher Education Programs or the Professional Curricula offered by the College of Fine Arts may make application for admission to these programs and curricula during the first semester after admission to the University.

GRADUATION REQUIREMENTS

1. Completion of all course requirements outlined in one of the several curricula offered by the College.

* Refer to p. 79 for the University's qualitative admission requirement for non-resident transfers.

2. Completion of at least 40 hours in courses numbered 300 or above.
3. A scholarship index of 2.0 or higher, except that University College hours not considered for admission to the College of Fine Arts and not used in satisfaction of degree requirements may be excluded.
4. If enrolled in a Teacher Education program, a grade-point average of at least 2.3 in the major teaching field.
5. If enrolled in one of the Professional Curricula, a grade-point average of at least 2.5 in all courses taken in the major field of study.
6. Completion of the English Proficiency Requirement (see item **3** under Admission, above).
7. Completion of the Graduate Record Examination.
8. Completion of the Group Requirements appropriate to the program or curriculum in which the student is enrolled. These are described below.
9. Completion of an application for degree at the beginning of the first semester of the senior year. This application is made in the Office of the Dean.

The student is solely responsible for completing all requirements for graduation.

The College of Fine Arts will not grant two undergraduate degrees to a student unless he has completed a minimum of 30 semester hours in residence subsequent to completion of all requirements for the first such degree.

GROUP REQUIREMENTS

General (liberal arts) curricula

Candidates for graduation in these curricula must have completed no fewer than 60 hours in the following areas:

English 101 and 102	6 hours
Natural Science **or** Mathematics	8
Social Science	9
Humanities	9
Fine Arts	6
Additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech, and social science	18
Physical Education	4
	60

Teacher Education Programs

Candidates for graduation in these programs must have completed no fewer than 48 hours in the following areas:

English 101 and 102	6 hours
Dramatic Art 101 **or** a course in Speech	3
Natural Science (including 3 hours in psychology and 8 hours of laboratory science chosen from courses offered by the Departments of Biology, Chemistry, Geology, and Physics and Astronomy)	11

Humanities **and** Social Science (including 3 hours in English literature)	12
Fine Arts	3
*Additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech and social science	9
Physical Education	4
	48

Professional Curricula

Candidates for graduation in these curricula must have completed no fewer than 48 hours in the following areas:

English 101 and 102	6 hours
Natural Science **or** Mathematics	8
Social Science	6
Humanities **and** Fine Arts (including a minimum of 2 hours in each area)	9
Additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech, and social science	15
Physical Education	4
	48

A student may not take courses numbered 300 or above until he has completed at least 24 hours in satisfaction of the group requirements; a student who has completed more than 24 hours but fewer than 44 hours may take courses numbered 300 or above provided that he is concurrently enrolled in at least one course (excluding P.E.) which will serve to reduce the remaining deficiency. Exception to this rule can be made only with the written permission of the Dean of the College.

The acceptability of transferred work toward fulfilling group requirements will be determined by the Director of Admissions and the Dean of the College. Students who accept an invitation to join in the General Studies program (see p. 133) may apply their various seminars to satisfying appropriate requirements as approved by the Dean of the College.

To clarify these requirements, the following definitions are given:

Natural Science. Astronomy, Biology, Chemistry, Geology, Physics, and Psychology.

Social Science. Anthropology, Economics, Geography, Sociology, and Political Science.

Humanities. English literature, literature courses offered by the Department of Modern and Classical Languages, History, and Philosophy.

* Majors in Music Education may include 6 hours of music history or literature in satisfaction of this requirement.

Fine Arts. Architecture, Art, Dance, Drama, and Music; except that students may not use courses in the field of their major in satisfaction of such requirements.

DEPARTMENTAL HONORS

A departmental honors program is offered in each of the departments of the College of Fine Arts. A student who wishes to enter one of these programs should so inform his department chairman prior to beginning his senior year.

Minimal requirements for graduation with Departmental Honors are as follows: (a) an over-all grade point average of 3.2; (b) completion of Fine Arts 490, an interdepartmental proseminar; and (c) completion of the Senior Thesis course offered by the student's major department.

For general information about departmental honors programs, see p. 135.

SCHOLASTIC REGULATIONS

Students in the College of Fine Arts will be governed by the scholastic regulations given under "General Academic Regulations."

Students wishing to enroll for more than 18 hours in a given semester must first secure the written permission of the department chairman and then the approval of the Dean of the College.

DEPARTMENTS OF INSTRUCTION

The College of Fine Arts offers work in four departments as listed below. Descriptions of the courses will be found, listed by department, in the catalog section, "Courses of Instruction." Courses in Dance are offered in the Department of Music. An interdepartmental seminar is listed under "Fine Arts."

ARCHITECTURE

The professional curriculum described below is designed to meet the academic requirements of a student who is undergoing training to enter the practice of architecture.

The Department of Architecture does not offer a major in architecture under the non-professional curriculum.

Students intending to study architecture should take in high school all of the mathematics and English possible, as well as chemistry and physics. The mathematics should include a minimum of 2 units of algebra, 1 unit of plane geometry, and ½ unit of trigonometry or college-preparatory mathematics.

Students intending to major in architecture are required to take the Architectural School Aptitude Test before being admitted to the College of Fine Arts. Information on the administration of this test may be obtained from the Department office.

CURRICULA IN ARCHITECTURE

The 5-year curriculum leading to the degree of Bachelor of Architecture has been replaced by a 6-year curriculum, described below.

Students enrolled in the 5-year curriculum prior to June 1966, should note carefully the first paragraph under **Degree Requirements,** page 130 in this cata-

log. Students who have completed 10 credits in Arch. 341L may proceed toward graduation under the 5-year curriculum provided that there is no interruption in their studies and provided further that Arch. 441L is scheduled in 1967-68, and Arch. 491L in 1968-69. For degree requirements in the 5-year curriculum, students are referred to the catalog which, in terms of the paragraph cited, governs their graduation.

The Department does not offer a major in architecture under the General (Liberal Arts) Curriculum of the College of Fine Arts. Students enrolled in the Combined Curriculum prior to June 1966, should consult their advisers with respect to degree requirements.

PROFESSIONAL CURRICULUM LEADING TO THE DEGREES OF BACHELOR OF ARTS IN FINE ARTS AND BACHELOR OF ARCHITECTURE

The professional curriculum in Architecture leads to the degrees of Bachelor of Arts in Fine Arts and Bachelor of Architecture. The former degree is granted upon completion of 128 hours in prescribed courses; the latter upon completion of an additional 62 hours, a total of 190 hours.

Freshman Year		Sophomore Year	
*Art 103-104 Visual Fundamentals	6	*Arch 201-202 Fundamentals of Design	6
*Arch 101 Introduction to Architecture	3	*Arch 261 Ancient & Medieval Arch	3
Engl 101 Wrtng w/Readings in Expos	3	*Arch 262 Renaissance & Baroque Arch	3
Engl 102 Wrtg w/Rdgs in Lit	3	*Art 130 Contemporary Art	3
Math 162 Math for Physical Sciences	4	Physics 111 General Physics	3
Math 122 Introduction to Finite Math	4	**Electives	12
**Electives	6	Physical Ed	2
Physical Education	2		
	31		32

Junior Year		Senior Year	
Arch 301-2 Elements of Architecture I & II	8	Arch 401 Architecture of the Community	4
Arch 361 Modern Architecture	2	Arch 402 Systematic Design Methods	4
Arch 362 Contemporary Architecture	2	Arch 461 The City	3
Arch 385-6 Building Technology I & II	4	Arch 485-6 Building Technology III & IV	4
C.E. 211 Architectural Structural Analysis	3	†C.E. 315-16 Architectural Structures II & III	6
C.E. 212 Architectural Structures I	3	Electives	11
Electives	11		
	33		32

Upon completion of the senior year and graduation requirements as listed on pp. 196-199 the student will receive the degree of Bachelor of Arts in Fine Arts. Before entering the fifth and/or sixth year of this curriculum, the student shall have attained a level of proficiency satisfactory to the Architecture faculty.

Fifth Year		Sixth Year	
†Advanced Problems in Architecture	12	Thesis: Specialization in Architecture, Landscape or Planning	14
Planning Studio	3	Seminar	2
Working Drawings	3	Professional Practice	2
Architectural Structures IV	4	Professional Electives	12
Landscape Architecture	4		
Electives	6		
	32		30

* Students applying for admission to the professional curriculum in Architecture must have achieved a grade average of 2.5 or higher in the courses so marked (a total of 24 hours).

** Electives taken during the freshman and sophomore years must include six hours chosen from History 101-102, Philosophy 101-102; and six hours chosen from Anthropology 101-102, Economics 100, 200, 201, and Sociology 101. Electives in these and subsequent years must include courses to satisfy fully the group requirements of the College of Fine Arts.

† Course numbers and content of this and subsequent courses in Architecture will be specified in the 1968-69 catalog.

ART

The majors in art and art education offered by the College of Fine Arts are described below. For a description of the major in art in the College of Arts and Sciences and for minor study requirements, refer to the "Courses of Instruction" section, p. 241.

GENERAL (LIBERAL ARTS) CURRICULUM

A major in the history and criticism of art is offered under the general curriculum. It is also possible under this curriculum to combine study of art history and criticism with a limited specialization in the studio area. Students enrolled in the general curriculum may not use more than 30 hours in studio courses in satisfaction of degree requirements. This curriculum leads to the degree of Bachelor of Arts in Fine Arts.

1. Group requirements, including as many semesters of one foreign language as needed for completion of the intermediate courses (251, 252) in that language. For the student who chooses a language which he has not previously studied, this ordinarily means a minimum of 4 semesters (12 semester hours).	60 hours
2. Major in art, including courses 103, 104, 105, 130, 183, 270, 271, 272; 3 hours chosen from 213, 257, 268, and 287; and a minimum of 12 hours chosen from courses in art history and criticism numbered 300 or above.	48
3. Electives	20
Total	128 hours

PROFESSIONAL CURRICULUM

A studio major is offered under the professional curriculum. The following courses must be completed with a grade average of 2.5 or higher as prerequisites for admission to the professional curriculum: 103, 104, 105, 130, 183, 270, 271; and 6 hours chosen from 213, 257, 268 and 287. This curriculum leads to the degree of Bachelor of Fine Arts in Art.

1. Group requirements, including 6 hours in a single modern or classical language	48 hours
2. Major in art, including the prerequisite courses listed above; 205, 272; 9 hours chosen from courses in art history and criticism numbered 300 or above; a minimum of 6 hours in advanced courses in a single studio field; and 2 hours in courses 493 and/or 498.	60 hours
3. Electives	20
Total	128 hours

CURRICULUM FOR SECONDARY TEACHERS

Freshman Year

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
*Soc Sci	3	*Soc Sci	3
*Natural Science	4	*Natural Science	4
Art 103 Visual Fund	3	Art 104 Visual Fund	3
Art 105 Fund of Drawing	3	Art 270 Hist of Art I	3
Physical Ed	1	Physical Ed	1
	17		17

Sophomore Year

Engl Lit	3	Spch 255 Pub Spkg	3
*Soc Sci	3	Ed Fdns 290 Founda of Ed	3
*Gen Elective	3	*Psy 101 Gen Psy I	3
Art Ed 210 Creat Art in Sec Sch	3	Art Ed 211 Creat Art in Sec Sch	3
Art 271 Hist of Art II	3	Art 272 Hist of Art III	3
Physical Ed	1	Physical Ed	1
	16		16

Junior Year

Ed Fdns 300 Hum Grwth & Dev	3	Ed Fdns 310 Learn & Classrm	3
Sec Ed 301 Founda of	3	*Gen Elective	3
Art Ed 320 Pre-tchg Exp in Art	3	Art Ed 434 Tchg Art in Sec Sch	3
Art, Studio	6	Art, Studio	6
Art Elective	2	Art Elective (above 300)	2
	17		17

Senior Year

Ed Fdns 415 Philos of Ed	3	††Sec Ed 461 Stu Tchg in Sec Sch	6
*Gen Electives	6	*Gen Electives (above 300)	6
Art Electives (above 300)	7		
	16		12

DRAMATIC ART

For curricula leading to the B.F.A. in Dramatic Art and the B.A. in Fine Arts, see below.

For major study in the College of Education, and for minor study requirements, refer to the "Courses of Instruction" section, p. 263.

PROFESSIONAL CURRICULA IN DRAMATIC ART

(Leading to the degree of Bachelor of Fine Arts in Dramatic Art. Hours required for graduation, 132.)

Requirements for admission to the professional curricula: satisfactory completion of all courses specified for the freshman and sophomore years with a grade average of 2.5 in all courses in Dramatic Art.

Freshman Year

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
Soc Sci Elective	3	Soc Sci Elective	3
DA 101 Voice & Diction	3	DA 102 Voice and Diction	3
DA 115 Theatre Appreciation	3	DA 116 Theatre Apprec	3
DA 129 Stagecraft or 140 Makeup	3	DA 129 Stagecraft or 140 Makeup	3
Physical Ed	1	Physical Ed	1
	16		16

* The student enrolled in the College of Fine Arts must satisfy all Group Requirements as listed on p. 197. Electives are also to be used to meet departmental minor requirements. A minor may be selected from approved list shown on p. 178.

†† Student teaching may be divided between the 2 semesters of the senior year.

Sophomore Year

Art Elective	3	Music Elective	3
Math or Nat Sci	4	Math or Nat Sci	4
DA 255 Stage Lighting	3	DA 256 Stage Lighting	3
DA 275 Tech Prod	3	DA 276 Tech Prod	3
DA 285 Acting Tech	3	DA 286 Acting Tech	3
Physical Ed	1	Physical Ed	1
	17		17

Junior Year

Engl Lit Elective	3	Psych 101 Gen Psych I	3
DA 305 Rehearsal & Perform	3	DA 306 Rehearsal & Perform	3
DA 335 Theatre Hist	3	DA 336 Theatre Hist	3
DA 385 Costume Design	3	DA 386 Costume Design	3
Philosophy Elective	3	English Lit Elective	3
		Electives	2
	15		17

Senior Year

DA 375 Scene Design	3	DA 376 Scene Design	3
DA 361 Adv Rehears & Perform	3	DA 362 Adv Rehears & Perform	3
Engl Lit 441 or 442 Shakespeare	3	Engl Lit Elective above 300	3
Electives	8	Electives above 300	4
		Other Electives	4
	17		17

EMPHASIS IN TELEVISION-RADIO

Students who wish the B.F.A. in Dramatic Art with an Emphasis in Television-Radio may substitute the following courses for 18 hours of the required Dramatic Art courses as listed in the above curriculum: Speech 251, 265, and 6 hours selected from 465 or 466, and 480; Dramatic Art 351 and 352. All course substitutions and the sequence in which all courses are to be taken shall follow a curriculum pattern established by the Department of Dramatic Art.

PUBLIC SCHOOL CERTIFICATION

(Curriculum leading to the degree of Bachelor of Fine Arts in Dramatic Art and meeting the requirements for provisional secondary teachers certificate in New Mexico.) In addition to the course requirements listed below, see also requirements for admission to teacher education listed on pp. 161-163 in the College of Education section of this catalog.

Freshman Year

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdngs in Lit	3
Soc Sci Elective	3	Soc Sci Elective	3
DA 101 Voice and Diction	3	DA 102 Voice and Diction	3
DA 115 Theatre Apprec	3	Fine Arts Elective	3
DA 129 Stagecraft or 140 Makeup	3	DA 129 Stagecraft or 140 Makeup	3
Physical Ed	1	Physical Ed	1
	16		16

Sophomore Year

DA 275 Tech Prod	3	DA 276 Tech Prod	3
DA 255 Stage Lighting	3	DA 256 Stage Lighting	3
DA 285 Acting Tech	3	DA 286 Acting Tech	3
Natural Science	4	Natural Science	4
Psych 101 Gen Psych I	3	Ed Fdns 290 Founda of Ed	3
Physical Ed	1	Physical Ed	1
	17		17

Junior Year			
Philos Elective	3	Engl 254 Surv of Engl Lit	3
Ed Fdns 300 Hum Grwth & Dev	3	Engl Lit Elect above 300	3
DA 305 Rehearsal and Perform	3	DA 306 Rehearsal and Perform	3
DA 385 Costume Design	3	DA 335 or 336 Theatre Hist	3
Engl 253 Surv of Engl Lit	3	Ed Fdns 310 Learn & Classroom	3
Engl 264 Inform Writing	3	Sec Ed 301 Founda of Sec Ed	3
	18		18

Senior Year			
DA 361 Adv Rehears & Perform	3	DA 362 Adv Rehears & Perform	3
DA 375 Scene Design	3	Sec Ed 461 Stu Tchg in Sec Sch	6
Sec Ed 310 Mat & Meth of Tch	3	Educ Elective	3
Engl Lit Elective	3	Engl Lit Elective above 300	3
Engl 441 or 442 Shakespeare	3		
	15		15

GENERAL CURRICULUM IN DRAMATIC ART

(Leading to the degree of Bachelor of Arts in Fine Arts. Hours required for graduation, 128.)

College of Fine Arts Group Requirements for General (Liberal Arts) Curriculum	60 hours
Dramatic Art Courses	48
101, 102, 115, 116, 129, 140, 255, 256, 275, 276, 285, 286, 305, 306, 335, 336.	
English Literature Courses	9
To be chosen from: English 339, 437, 441, 442, 448.	
Electives	11
Total	128 hours

It is strongly urged that the student broaden his field of study by choosing electives from the curricula of other colleges of the University, especially courses in the social sciences, so as to gain better insight into the problems of contemporary society.

In addition to the planned course of study, students of the Department are required to participate in all phases of production of three-act and one-act plays. So far as is possible, this work is correlated to class work.

In lieu of courses not offered during certain terms, substitutions made with the advice of the Chairman of the Department will be accepted.

MUSIC

The Department of Music offers professional curricula leading to the degree of Bachelor of Music and a curriculum in music education leading to the degree of Bachelor of Music Education; for requirements in these curricula, see below. The Department does not offer a major in music under the General (Liberal Arts) Curriculum.

For minor study requirements in music and in creative dance and choreography, refer to the "Courses of Instruction" section, p. 346.

NASM MEMBERSHIP

The University of New Mexico is a member of the National Association of Schools of Music. The requirements for entrance and for graduation as set forth

in this catalog are in accordance with the published regulations of the National Association of Schools of Music.

PROGRAM FOR FRESHMAN YEAR IN MUSIC DURING ENROLLMENT IN THE UNIVERSITY COLLEGE

Completion of courses 105, 106, 107, and 108; and 4 hours in Applied Music (a total of 12 hours) with a grade-point average of 2.5 or higher is prerequisite to admission to the professional curricula in music. Freshmen in **all** music curricula, except Music Education, should enroll for the following courses:

Engl 101, 102 Wrtng w/Rdgs in Expos & Lit Mus 105, 106, Music Theory I & II Mus 107, 108, Ear Training I & II Physical Education One of the following: Social Science Language Mathematics or Science	12 hours each Semester

In the following curricula freshmen should enroll for additional courses as indicated:

Applied music, instrumental Music 119, 120 (major instrument) Ensemble	3 hours each semester
Applied music, vocal Music 119, 120 Music 119, 120 (piano)	3 hours each semester
Theory and Composition Music 119, 120 (piano) Music 155 (Orch Instrum) each semester Ensemble each semester	3 hours each semester
Music Literature Music 119, 120 (piano) Music 155 (Orch Instrum) each semester Ensemble each semester	3 hours each semester

Freshmen in Music Education should enroll for the following courses:

CURRICULUM FOR STUDENTS PREPARING TO TEACH MUSIC IN GRADES 1-12

Freshman Year

First Semester		Second Semester	
English 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
Science	4	Science	4
Mus 105 Music Theory I	2	Mus 106 Music Theory II	2
Mus 107 Ear Training I	2	Mus 108 Ear Training II	2
Applied Mus Elective	3	Applied Mus Elective	3
Ensemble Elective	1	Ensemble Elective	1
PE Activity	1	PE Activity	1
	15 + 1 PE		15 + 1 PE

FIELDS OF CONCENTRATION IN MUSIC

(Leading to the degree of Bachelor of Music.)

THEORY AND COMPOSITION (132 hours)

Required subject areas (48 hours): English 101 and 102, 6 hrs.; natural science or mathematics, 8 hrs.; social science, 6 hrs.; humanities and fine arts, 9 hrs.; additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech and social science, 15 hrs.; physical education, 4 hrs.

Applied music (14 hours): Piano, 8 hrs.; orchestra instruments, 155, 4 hrs.; voice, 2 hrs.; and completion of Mus 319.

Theory (32 hours): 105, 106, 107, 108, 205, 206, 207, 208, 309, 310, 405, 406, 409, 410, 453, and 463 or 467.
Conducting (4 hours): 263, 264, and 457 or 458.
History and literature (16 hours): 271, 272, 311, 312, plus 8 additional hrs.
Ensemble: 6 hours.
Elective: 12 hours.

APPLIED MUSIC (PIANO OR ORGAN) (132 hours)

Required subject areas (48 hours): English 101 and 102, 6 hrs.; natural science or mathematics, 8 hrs.; social science, 6 hrs.; humanities and fine arts, 9 hrs.; additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech and social science, 15 hrs.; physical education, 4 hrs.
Applied Music (30 hours): 28 hours in piano (or organ); 2 hours in orchestral instruments (155); and completion of Mus 402.
Theory (26 hours): 105, 106, 107, 108, 205, 206, 207, 208, 309, 310, 405, 406, 453.
Conducting (2 hours): 263, 264.
History and literature (16 hours): 271, 272, 311, 312, 449, plus 6 additional hrs.
Ensemble: 8 hours, including 1 semester of 237 and 2 of 395.
Elective: 2 hours.

APPLIED MUSIC (INSTRUMENTAL, OTHER THAN PIANO OR ORGAN) (132 hours)

Required subject areas (48 hours): English 101 and 102, 6 hrs.; natural science or mathematics, 8 hrs.; social science, 6 hrs.; humanities and fine arts, 9 hrs.; additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech and social science, 15 hrs.; physical education, 4 hrs.
Applied Music (34 hours): 28 hours in major instrument, 4 hours in piano, 2 hours in Music 155; and completion of Mus 402.
Theory (26 hours): 105, 106, 107, 108, 205, 206, 207, 208, 309, 310, 405, 406, 453.
Conducting (2 hours): 263, 264.
History and literature (14 hours): 271, 272, 311, 312, plus 6 additional hours.
Ensemble: 8 hours.

APPLIED MUSIC (VOCAL) (132 hours)

Required subject areas (48 hours): English 101 and 102, 6 hrs.; natural science or mathematics, 8 hrs.; social science, 6 hours.; humanities and fine arts, 9 hrs.; additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech and social science, 15 hrs.†; physical education, 4 hrs.
Applied Music (38 hours): Voice, 28 hours; piano, 4 hrs.; plus 230, 4 hrs.; and 387, 2 hrs.; and completion of Mus 402.
Theory (26 hours): 105, 106, 107, 108, 205, 206, 207, 208, 309, 310, 405, 406, 453.
Conducting (2 hours): 263, 264.
History and literature (12 hours): 271, 272, 311, 312, 447, plus 2 additional hrs.
Ensemble (6 hours): chorus, 6 hrs.

APPLIED MUSIC PEDAGOGY (128 hours)

Required subject areas (48 hours): English 101 and 102, 6 hours; natural science or mathematics, 8 hours; social science, 6 hours; humanities and fine arts, 9 hours; additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech, and social sciences, 15 hours; physical education, 4 hrs.
Applied music (28 hours): completion of Music 402.
Theory (26 hours): 105, 106, 107, 108, 205, 206, 207, 208, 309, 310, 405, 406, 453.
Conducting (2 hours): 263, 264.
History and literature (12 hours): 271, 272, 311, 312; other music literature, 4 hours.
Music Pedagogy (4 hours): 388, 389.
Ensemble: 8 hours

MUSIC LITERATURE (132 hours)

Required subject areas (48 hours): English 101 and 102, 6 hrs.; natural science or mathematics, 8 hrs.; social science, 6 hrs.; humanities and fine arts, 9 hrs.; additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech and social science, 15 hrs.*; physical education, 4 hrs.

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† Student must complete 12 hours (or the equivalent) in any one, or any combination, of these languages: French, German, or Italian.

* Must complete foreign language 252.

Applied Music (8 hours): Piano, 4 hrs.; elective, 4 hrs.; and completion of Mus 319.
Theory (28 hours): 105, 106, 107, 108, 205, 206, 207, 208, 309, 310, 405, 406, 453, 463 or 467.
Conducting (2 hours): 263, 264.
History and literature (24 hours): 271, 272, 311, 312, plus 16 additional hours.
Ensemble: 6 hours.
Electives: 16 hours.

CONCENTRATION IN MUSIC EDUCATION
(Leading to the degree of Bachelor of Music Education.)

CURRICULUM FOR STUDENTS PREPARING TO TEACH
MUSIC IN GRADES 1-12 (133 hours)

(Qualifies the graduate for the Music Certificate.)
Required subject areas (48 hours): English 101 and 102, 6 hrs.; Dramatic Art 101 or a course in speech, 3 hrs.; natural science (including 3 hrs. in psychology and 8 hrs. of laboratory science chosen from courses offered by the Departments of Biology, Chemistry, Geology, and Physics and Astronomy), 11 hrs.; humanities and social science (including 3 hrs. in English literature), 12 hrs.; fine arts, 3 hrs.; †additional hours chosen from fine arts, foreign languages, humanities, mathematics, natural science, speech and social science, 9 hrs.; physical education, 4 hrs.
Professional Education (24 hours): Ed Founda 290, 3 hrs.; Ed Founda 300, 3 hrs.ϕ; Music Ed. 293, 294, 445, 446, 8 hrs.; Music 264, 1 hr.; Elem. Ed. 400, 3 hrs.; Sec. Ed. 461, 462, 6 hrs.
Music (61 hours):
Theory (24 hours): 105, 106, 107, 108, 205, 206, 207, 208, 309, 310, 453, plus 2 hrs. selected from 405, 406, 409, 463, 467.
History and literature (2 hrs. plus 6 hrs. required subjects): 271, 272, 311, 312.
Applied Music: 22 hours; and completion of Mus 319.
Conducting (5 hours): 263, 313, 314, and 457 or 458.
Ensemble: 8 hours.

Students majoring in music education who wish also to obtain general certification in elementary education should inquire of their advisers. To complete requirements for both certificates requires more than a four-year program.

**PIANO PROFICIENCY

Before graduation every candidate for the bachelor's degree must demonstrate proficiency at the piano by successfully passing an examination. This examination should be taken before the junior standing examination, upon written application to the Department Chairman. Students should consult adviser for graduation requirements.

† Majors in Music Education may include 6 hours of music history or literature in satisfaction of this requirement.
ϕ In addition, Ed Founda 310 should be scheduled if possible.
** For Proficiency Examination in Music Education, see p. 348.

THE GRADUATE SCHOOL

GRADUATE WORK leading to the master's degree is offered in the following fields: Anthropology, Art, Art Education, Biology, Business Administration, Chemical Engineering, Chemistry, Civil Engineering, Comparative Literature, Economics, Educational Administration, Electrical Engineering, Elementary Education, English, French, Geology, Government, Guidance and Counseling, History, International Affairs, Latin-American Studies, Mathematics, Mechanical Engineering, Music, Music Education, Nuclear Engineering, Philosophy, Physical Education, Physics, Portuguese, Psychology, Recreation, Secondary Education, Sociology, Spanish, Special Education, Teaching of Home Economics, Teaching of Industrial Subjects, Teaching of Science (or Mathematics), Teaching of Spanish, and Speech.

The degree of Master of Fine Arts is offered.

The degree of Doctor of Philosophy is offered in American Studies, Anthropology, Biology, Chemistry, Economics, Education, Engineering, English, Geology, History, Ibero-American Studies, Mathematics, Medical Sciences, Philosophy, Physics, Psychology, and Spanish. The degree of Doctor of Education is offered in Education.

Prospective applicants should contact the Graduate School and the chairman of the department concerned.

ADMISSION, FELLOWSHIPS, TRAINEESHIPS, AND ASSISTANTSHIPS

Graduates of any recognized college or university may apply for admission to the Graduate School. All communications regarding admission, as well as all inquiries concerning graduate study, should be addressed to the Dean of the Graduate School.

A formal application is required of all students, including graduates of The University of New Mexico, who seek admission to the Graduate School. Application blanks and the **Graduate School Bulletin** may be obtained by writing to the Dean of the Graduate School. Applicants from other institutions must have two transcripts of all undergraduate and graduate work sent **directly to the Graduate Office** from **each** institution previously attended. Even though a master transcript may carry records from other institutions, University regulations require that these records be sent from each institution. **Transcripts in the possession of students will not be accepted for entrance purposes. In order to be assured of consideration for admission, students should have their applications, transcripts, and the $10.00 application fee on file in the Graduate Office at least two months in advance of the beginning date of the session in which they plan to enroll.** The final deadlines for receipt of applications and all required credentials are: for Semester I, July 15; for Semester II, January 1; for the Summer Session, May 1. No student is assured of admission until he has received official notification of admission from the Dean of the Graduate School and from the Director of Admissions.

Although each application is reviewed individually, in general an over-all average of near B and no less than a full B average in the intended major

field are required for admission to degree status and consideration for financial aid. For status categories, consult the **Graduate School Bulletin.**

Fellowships, traineeships, and assistantships are available for well-qualified, degree-seeking graduate students. **Application deadline for financial aid is January 31.** (See also "Research and Fellowship Support Activities.")

The Graduate School reserves the right to refuse admission to any student for scholastic as well as non-scholastic reasons.

GRADUATE CREDIT FOR WORK TAKEN AS AN UNDERGRADUATE OR IN EXTENSION AND CORRESPONDENCE COURSES

The University accepts no correspondence credit toward its advanced degrees. A minimum of extension credit from The University of New Mexico is acceptable, but no extension credit may be transferred from other institutions.

Graduate credit for work taken as a senior may be granted, provided the applicant (1) is within ten hours of the baccalaureate degree, (2) is taking sufficient work to complete the requirements for the degree during that semester. Requests for obtaining graduate credit for 300- and 400-level courses ordinarily will not be considered unless the student has an over-all grade-point average of not less than 2.8 on a 4-point scale. In order to be admitted to a 500-level course, the student must have an average of not less than 3.0. Generally, the total amount of graduate work is not permitted to exceed 6 hours per semester, or 3 hours in the summer session. A student wishing to take graduate work on this basis must obtain **in advance** the approval of the major department and of the Dean of the Graduate School for the courses in which he desires to receive graduate credit.

INFORMATION

For further information regarding advanced work, the conditions under which higher degrees may be obtained, and fellowships and assistantships, consult the **Graduate School Bulletin** or the Graduate Office.

SCHOOL OF LAW

THE STATE BAR of New Mexico having previously adopted a resolution to that end, and the Legislature of New Mexico having made financial provision, the Regents of The University of New Mexico, on March 31, 1947, as expressly authorized by Laws 1889, Ch. 138, Sec. 15, approved the establishment of a School of Law. The School is fully accredited: it was approved by the American Bar Association on February 24, 1948, and membership in the Association of American Law Schools was granted in December 1948. The School offers a curriculum leading to the degree of Juris Doctor (J.D.).

Information concerning the School is found in the **School of Law Bulletin** which may be obtained by writing to the Dean of the School of Law, 1915 Roma N.E., Albuquerque, New Mexico 87106.

ADMISSION

A formal application of the School of Law must be filed by all students, both beginning and transfer. Beginning students are accepted for the fall semester only.

The School of Law is continually concerned not only with its own curriculum but also with the quality of prelegal education and with the continuing self-education which should be pursued by all members of the profession. In consequence, it is urged that students enter the School with as broad a cultural and educational background as possible. Accordingly, the basic requirement for admission is a baccalaureate degree from an accredited college or university (exceptional students may be permitted to enter upon a 6-year combined course of college and law school study leading to the acquisition of a B.A. or B.S. and the J.D. degrees).

All applicants for admission to the School of Law are required to take the Educational Testing Service's Law School Admission Test (LSAT); to avoid delay on application, the test should be taken no later than February preceding the fall semester for which application is made.

Two transcripts of all work done at other institutions must be sent directly to the Dean of the School of Law.

An evaluation of the applicant's chance of success in the study of law and in the profession is based on the aptitude test, the undergraduate record, and other factors.

STUDENT AIDS

See the **School of Law Bulletin** *for scholarships, prizes, awards, and loans available to law students.*

ADDITIONAL EXPENSES

All students registered in the School of Law become members of The University of New Mexico Student Bar Association and are expected to pay, in addition to the University's tuition and fees for residents or for non-residents, membership dues for the Association. The current dues are $10.00 per year, payable to the School of Law at registration.

SCHOOL OF MEDICINE

A SCHOOL OF MEDICINE for The University of New Mexico was approved in 1960, and a grant for the initial development of the school was made available by the Kellogg Foundation in the same year. The New Mexico Legislature made a token appropriation toward support of the school at its 1961 session and in 1963 provided major support for future development. The School of Medicine enrolled its first entering class in the fall of 1964 and progress to the third year, and subsequent full four-year program was approved in 1966.

FACILITIES

The Medical Sciences Building is now being constructed on the north campus in close approximation to the Bernalillo County-Indian Hospital. This hospital, together with the Albuquerque Veterans Administration Hospital, provides the primary resources for introductory student experience in clinical medicine. The Library of the Medical Sciences is housed in a building immediately north of the Bernalillo County-Indian Hospital and across the street from the site of the Medical Sciences Building. Student laboratories, including the gross anatomy laboratory, lecture room, and faculty offices and laboratories, at present occupy several additional buildings in the same block.

PROGRAM

The School of Medicine is a professional and graduate school of the University. In addition to providing education in the basic and clinical sciences for the Doctor of Medicine degree, opportunities are available for work leading to a Doctor of Philosophy degree. Further resources for medical education at the internship, resident, and post-graduate education levels are offered through hospitals associated with the University program.

The educational program provides a unified experience in the biological science areas basic to medicine: anatomy, biochemistry, physiology, microbiology, pathology, pharmacology, clinical laboratory medicine, and an early introduction to clinical medicine through seminars, history-taking and physical diagnosis. The school program is planned to take advantage of recent advances in medical teaching, early involvement of the student in research, and multi-disciplinary approaches when appropriate. It is designed to provide an environment in which each medical student can develop to the level of his highest potential. The ability to recognize and achieve excellence is considered a primary attribute, whether a student will eventually become a practicing physician, a teacher, or a research scientist.

ADMISSION

The first few entering classes will be limited to 24 students. An eventual class size of 48 students is planned. The requirements for admission parallel those of most approved medical schools in this country. It is probable that a special admission plan will be developed for exceptionally talented students at The University of New Mexico who wish to identify themselves early in college with a career in the area of human biological science or medicine.

In general, the admission requirements include a bachelor's degree from an accredited institution with a major field of concentration in an academic discipline within the arts and science college. Students who major in the humanities or social sciences are given equal consideration with those who major in the sciences, providing, of course, they have shown the ability to handle scientific material effectively.

In addition to the general requirements indicated above, the following specific courses must be taken:

General Chemistry, including laboratory, one year;
Organic Chemistry, including laboratory, one year;
General Biology, including laboratory, one year;
General Physics, including laboratory, one year;
College Mathematics, one year. Mathematics through calculus is strongly recommended.

The courses taken to fulfill the specific requirements listed above should be those required of students majoring in the respective fields.

Applicants are required to take the Medical College Admission Test, preferably in May of their junior year, and in most instances an interview with the Committee on Admissions of the School of Medicine is necessary.

Exceptions to the general requirements outlined above may be made for special program students, for qualified students who wish to enter medical school after only 3 years of college, and at the discretion of the Committee on Admissions.

Preference for admission is given to qualified applicants who are residents of New Mexico or of regional states which do not have their own medical schools and which participate in the Western Interstate Commission for Higher Education student exchange program.

Admission materials may be obtained by writing to the Office of Admissions of the School of Medicine. It is recommended that applications be filed not later than December 1 of the year preceding anticipated enrollment.

FEES

Application Fee $5. Non-refundable.
Tuition—see p. 86.

INFORMATION REQUESTS

Inquiries are welcome and interested students may write or call at the Office of Admissions, School of Medicine.

COLLEGE OF NURSING

THROUGHOUT its interesting history, the importance of nursing became increasingly evident among the health professions. Recently, more prominence was gained when federal health legislation identified nursing as a significant factor in and for the health of society. In New Mexico and throughout the country such enactments have resulted in a far more dramatic need for greater numbers of professional nurses than ever before. Of increased value to the health of society is the professional nurse who is cognizant of medical technology and who is able to participate in today's complex treatment and varieties of health programs.

The faculty of the College of Nursing, as an integral part of The University of New Mexico, believes that education is an organized, expanding and integrative process focused on the learner, by which the student assimilates knowledge, examines values and develops that which is creative and individually distinguished. The faculty is dedicated to the belief that education for professional nursing is a synthesis of particular knowledge drawn from the liberal arts, sciences and research in nursing. The faculty believes that each student must develop awareness of the health situation in our society and be motivated to work toward the solution and prevention of health problems.

PURPOSE

Graduates of the College of Nursing will be prepared as beginning practitioners with the ability to give patient and family-centered nursing care in hospitals and in the greater community. Those graduates of the College of Nursing who seek teaching, supervisory or administrative positions will be qualified to apply for graduate study in Nursing for the special clinical field of their choice.

ACCREDITATION

The basic program in nursing was first accredited by the National League for Nursing in December 1959. The accreditation includes approval of preparation in public health nursing.

LICENSURE OF GRADUATES

Graduates of the College of Nursing are eligible to take the State Board Examinations which provide the legal basis for becoming registered nurses.

ADMISSION

All students seeking admission to the College of Nursing must meet requirements for admission to the University.

Freshman students are admitted to the University College. A detailed statement of entrance requirements is in the "Admission and Registration" section of this catalog.

ADMISSION FROM UNIVERSITY COLLEGE

Students are advised to request transfer to the College of Nursing as early in the program as possible.

Transfer from the University College to the College of Nursing requires:

1. Twenty-six hours of earned credit acceptable toward the nursing degree.
2. (a) A scholarship index of at least 2.0 on all hours attempted;

   or

   (b) A scholarship index of at least 2.0 on all hours attempted in the previous 2 semesters of enrollment; provided that, if fewer than 26 hours were attempted in the previous 2 semesters, a scholarship index of at least 2.0 shall be required on all work attempted in as many previous consecutive semesters as are necessary to bring the student's total hours attempted to at least 30.
3. *Each student must make a satisfactory score on the English Proficiency* Examination (administered by The University of New Mexico), or make a grade of C or better in English 010, a non-credit course offered by the Department of English.

TRANSFERS

Students seeking to be accepted as transfer students must meet requirements for admission to the University.

Students seeking to transfer from other degree-granting colleges in the University must present at least 26 semester hours of acceptable credit with a scholastic index of 2.0 or better on all work attempted while enrolled in the other degree-granting college.

EXAMINATIONS TO ESTABLISH CREDIT

Graduates of National League for Nursing accredited diploma and associate degree programs in nursing may establish credits for courses in nursing in the College of Nursing according to these University and College of Nursing policies:

1. The student must be regularly enrolled in the University.

2. The student must be in good academic standing and have completed at least 26 hours of required courses prescribed for the baccalaureate program in nursing.

3. The student must have completed all prerequisites for a specific course before attempting to establish credits through examinations.

4. The fee per credit hour as required by the University for special examinations must be paid in advance of testing.

5. Senior courses in nursing may not be challenged.

6. Students who plan to establish credit through examination must apply through the Office of the College of Nursing for individual counseling.

GENERAL INFORMATION

Students in the nursing program follow the general policies and procedures described in the appropriate sections of this catalog and the specific regulations included in the section, "College of Nursing." All students are responsible for compliance with rules and regulations set forth in this catalog.

HONORS PROGRAMS

The General Honors Program (leading to graduation with Honors in General Studies) is available to qualified students in the nursing program. For information see p. 133.

A Departmental Honors program is available to qualified students in the College of Nursing.

The purposes of the Departmental Honors program are: (1) to intensify and deepen the student's knowledge in nursing; (2) to put this specialized knowledge into better relationship with knowledge in related fields and in the larger general area of nursing; (3) to bring the student under closer guidance of, and into closer acquaintance with, teachers in nursing. The student enters the program during the junior year. Qualifications include a scholastic index of 3.2 on all work taken and in all nursing courses. Transfer students must have earned at least 15 semester hours at the University.

Minimal requirements for graduation with Departmental Honors are as follows: (a) an over-all scholastic index of 3.2; (b) 3 hours each in Independent Study and in Senior Thesis in addition to the usual requirements for the degree; (c) at least 60 earned credits at the University. The level of honors at which the candidate shall be graduated is at the discretion of the faculty of the College of Nursing.

DEAN'S LIST

At the end of each semester the names of students who have made outstanding academic records are put on the Dean's List, which is made available to University and outside news media. To qualify for the Dean's List in the College of Nursing, a student must have carried at least 12 academic hours and made a grade-point average of 3.2 or better.

SCHOLARSHIPS

Various types of financial aid are available to University students generally. In addition, there are certain scholarships, from local and national organizations and private individuals, which are specifically for students in the College of Nursing (see listing under Financial Aid section of this Catalog). Applications for these scholarships should be made at the Office of the Dean, College of Nursing.

EDUCATIONAL FACILITIES

Zimmerman Library, the general University library, is available to students in nursing.

The Library of the Medical Sciences includes nursing and medical publications.

Classrooms located on the main campus and in the clinical facilities are used for classes in nursing.

CLINICAL FACILITIES

Facilities for clinical instruction located in Albuquerque include: Bernalillo County-Indian Hospital, Bataan Memorial Methodist Hospital, Presbyterian Hospital Center, Nazareth Hospital, Veterans Administration Hospital, Bernalillo County Health Department, and Albuquerque Public Schools.

Selected professional experiences are arranged at The Rehabilitation Center; Public Health Service, Indian Health Division; New Mexico State Hospital at Las Vegas; and New Mexico Department of Public Health in Santa Fe.

STUDENT SERVICES

All services concerned with student welfare and activities are under the coordinating supervision of the Dean of Students. For descriptions of services and programs see "Student Services" section in this catalog.

Athletic, cultural, recreational, religious, and social activities of the University are available to all students. Students in the College of Nursing are eligible for membership in the National Student Nurses' Association through the New Mexico Student Nurses' Association.

Academic advisers assigned for students in the nursing program are from among the faculty in the College of Nursing.

Students are responsible for their living arrangements and costs. Nursing students must comply with the University regulations as stated in the "Student Housing" section of this catalog.

HEALTH PROGRAM

Students in the College of Nursing follow the requirements for medical examinations described in the "Admission and Registration" section of this catalog and use the Health Service described in the "Student Services" section of this catalog. Nursing students are required to carry insurance for hospitalization and medical care. Students who do not have health insurance policies will find an adequate policy available through the University. It may be purchased at the time of registration.

Students are required to present health and immunization records, as specified by the College of Nursing, when they register for nursing practice courses.

Students who are pregnant at the time of registration are not eligible to enroll in nursing courses which include clinical practice.

UNIFORMS

Students are required to purchase the uniforms which are worn in clinical nursing practice periods. Uniforms are available at the Associated Students' Bookstore and may be purchased at the time of registration.

ACADEMIC REGULATIONS

Students in the nursing program are subject to the general regulations of the University (see section, "General Academic Regulations") and to specific academic regulations in the College of Nursing.

Students enrolled in the College of Nursing are expected to be progressing toward the Bachelor of Science in Nursing degree.

Students are required to maintain an average of 2.0 or better for all courses* attempted while registered in the College of Nursing. No student will be permitted to enroll in the upper-division nursing courses in the junior or senior year unless the scholastic index is 2.0 or better. Students are required to maintain an average of at least 2.0 for all nursing courses. A student must have a

* Exclusive of hours in nonprofessional physical education and ensemble music.

grade of C or better in each upper-division clinical nursing course in order to progress to the sequential nursing course.

To enroll in an upper-division nursing course the student must have had the prerequisite nursing course during the year immediately preceding or must give evidence of knowledge of the content in the prerequisite course before being permitted to enroll in the upper-division nursing course.

Maximum credit load for which a student may register is 18 semester hours.

The College of Nursing reserves the right to request a student to withdraw for unprofessional conduct or unsafe nursing practice.

REQUIREMENTS FOR GRADUATION

The degree of Bachelor of Science in Nursing is granted to basic and registered nurse students on fulfillment of the following requirements:

1. Completion of 127 semester hours of course work including the prescribed curriculum.
2. Completion of 4 semester hours of physical education in accord with the University requirement.
3. Completion of at least 60 semester hours of upper-division course work. Such courses are numbered above 300.
4. Completion of the Graduate Record Examination.
5. For minimum residence requirements, see "Degree Requirements" in the section of this catalog entitled "General Academic Regulations."
6. Unanimous recommendation for the degree by the faculty of the College of Nursing.

CURRICULUM

Descriptions of the courses offered will be found, listed by departments, in the catalog section "Courses of Instruction." Prerequisites are included in the course descriptions.

Students who participate in the General Honors program may apply General Studies seminars to satisfy appropriate requirements upon approval by the Dean, College of Nursing.

Students who wish to make substitutions in the program are required to present their plans in writing.

Freshman Year			
First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
Biol 101L Gen Biol	4	Biol 102L Gen Biol	4
Psy 101 Gen Psy I	3	Psy 102 Gen Psy II	3
Chem 141 Elmts Gen Chem	4	Physics 102 Intro to	3
Nurs 101 Intro to	3	Nurs 102L Intro to Nurs Process	3
Physical Education	1	Physical Education	1
	17 + 1 PE		16 + 1 PE
Sophomore Year			
Soc 101 Intro to	3	Phmcol 276 Prin of	3
Biol 233L or 393L	4	Biol 236L Paramed Anat-Phys	4
Chem 281 Org & Biochem	4	Anth 102 Devel of Culture	3
Nurs 250 Nursing Process	2	Nurs 252 Fund Med-Surg	3
Nurs 251L Nursing Process Lab	3	Nurs 253L Fund Med-Surg Lab	2
Physical Education	1	Physical Education	1
	16 + 1 PE		15 + 1 PE

Junior Year

Nurs 303 Adv Med-Surg	4	Nurs 323L Maternal-Child	10
Nurs 304L Adv Med-Surg Lab	6	Nurs 352 Pub Hlth Sci	2
Nurs 351 Psycho-Cult	2	Engl 282 Amer Lit	3
Psy 311 Developmental	3		
Elective	3		
	18		15

Senior Year

Nurs 451L Psychiatric	7	Nurs 452L Public Health	9
Nurs 462 Adv Nurs Proc Seminar	5	Nurs 463L Adv Nurs Proc Practicum	6
Elective	3		
	15		15

Total Completed: 127 hours and 4 P.E.

COLLEGE OF PHARMACY

IT IS the primary purpose of the College of Pharmacy to prepare its students so that they may not only achieve success in the practice of the profession but may also effectively assume their responsibilities as educated citizens. In addition to providing the opportunity to acquire the necessary knowledge, the College also purposes to inculcate in its students those habits of industry and thoroughness and the qualities of loyalty and ethical behavior which the profession demands of its practitioners.

The College of Pharmacy also provides a consultant service to the profession in the State of New Mexico in connection with unusual prescriptions and other aspects of pharmaceutical practice.

In addition, the two-year certificate program in Dental Hygiene is administered by the College of Pharmacy. (See p. 226.)

OPPORTUNITIES IN PHARMACY

The profession of pharmacy offers, to properly trained individuals, a wide variety of opportunities for service in interesting and satisfying positions. Most of the graduates of colleges of pharmacy enter the retail field. Many, however, occupy positions as manufacturing pharmacists, sales representatives, hospital pharmacists in civilian and governmental hospitals, analysts for state and federal food and drug departments, and as pharmacists in the Army, Navy, Air Force, Public Health Service, and Veterans Administration. Limited numbers are engaged in editing or writing for pharmaceutical publications and as managing officers of local, state, and national pharmaceutical organizations. Positions as research workers in manufacturing plants and as teachers in colleges of pharmacy are open to those who prepare themselves by pursuing graduate work toward advanced degrees.

RECOGNITION

The College of Pharmacy is accredited by the American Council on Pharmaceutical Education, the national accrediting agency in pharmaceutical education, and holds membership in the American Association of Colleges of Pharmacy.

SCHOLARSHIPS AND LOANS

The College of Pharmacy annually grants freshman scholarships to a number of deserving graduates of New Mexico high schools who follow the freshman Pharmacy program in the University College. They are normally awarded for one semester but may be renewed for a second semester if the student maintains a satisfactory grade average. Other scholarships and loans are available to those who qualify. For information apply to the Dean, College of Pharmacy.

LAWS RELATING TO LICENSURE AS A PHARMACIST

The laws relating to the requirements for licensure as a registered pharmacist by examination in the State of New Mexico are presented below in simplified form.

Persons of good moral character who have satisfactorily completed not less than 30 semester hours in an approved college of pharmacy shall, upon application and payment of the required fee, be issued a certificate of registration as a pharmacy interne.

An applicant for examination for licensure as a registered pharmacist by the New Mexico State Board of Pharmacy must be a graduate of a recognized college of pharmacy, must be not less than 21 years old, of good moral character, and not addicted to the use of narcotic drugs or alcoholic beverages. However, before he can receive a certificate as a registered pharmacist he must have had not less than 1 year of approved pharmaceutical experience under the direction of a qualified pharmacist. Further information regarding licensure as a pharmacist may be obtained from the Secretary of the New Mexico State Board of Pharmacy whose address is available in the office of the College of Pharmacy.

ADMISSION

All freshman students are admitted to the University College. A detailed statement of entrance requirements is in the "Admission" section of this catalog.

ADMISSION FROM UNIVERSITY COLLEGE. The **minimum** requirements for transfer from the University College to the College of Pharmacy for the study of pharmacy are:

1. Twenty-six hours of earned credit.
2. (a) A scholarship index of at least 2.0 on all hours attempted;

   or

   (b) A scholarship index of at least 2.0 on all hours attempted in the previous 2 semesters of enrollment; provided that, if fewer than 26 hours were attempted in the previous 2 semesters, a scholarship index of at least 2.0 shall be required on all work attempted in as many previous consecutive semesters as are necessary to bring the student's total hours attempted to at least 30.
3. Completion of the English Proficiency Examination (administered by The University of New Mexico) with a satisfactory score or a grade of C or better in the remedial English course offered on a non-credit basis by The University of New Mexico English Department.

In addition to the foregoing **minimum** requirements, the student who wishes to transfer to the College of Pharmacy from the University College should have completed Chemistry 101L and 102L and Biology 101L and 102L with grades of C or better. Students who do not obtain a grade of C or better in each of these courses may be admitted to the College of Pharmacy but will be required to obtain grades of C or better in each of these courses before being allowed to enroll in other courses in these fields or in courses for which these are prerequisite.

Students who do not complete the recommended freshman Pharmacy program in the University College will almost certainly find it necessary to spend more than the normal time to complete the requirements for graduation.

(For admission requirements for students of Dental Hygiene, see p. 225.)

TRANSFERS. Students who wish to transfer to the College of Pharmacy from other degree-granting colleges of the University or New Mexico residents transferring from other accredited non-pharmacy institutions must present at least 26

semester hours of acceptable credit with a grade-point average of at least 2.0 on all hours attempted in the other degree-granting colleges or institutions. (The required grade-point average for non-residents transferring from other institutions is 2.5.) Those who present 2 years of college-level work, including the courses outlined in the preprofessional and first professional years of the Pharmacy curriculum (excepting Pharmacy 231-232, which may be taken in the second professional year), may be admitted to the second professional year.

Admission of those students desiring to transfer from other colleges of pharmacy will be based on the requirements specified above.

All transfer students must satisfactorily complete the English Proficiency Examination or the remedial English course as specified in **3** above.

SCHOLASTIC REGULATIONS

In general, students in the College of Pharmacy will be governed by the scholastic regulations described under "General Academic Regulations." In addition, the faculty of the College of Pharmacy has adopted the following rules and regulations:

1. Deficiencies in grade points incurred while in residence may not be removed by an excess of grade points earned in extension or correspondence courses.

2. Credit will not be transferred for any required course taken in another institution if an unsatisfactory grade has been previously received in the course at The University of New Mexico. For this purpose a grade of F in a non-professional course, or a grade of D in a course in the fields of Pharmacy, Pharmaceutical Chemistry, Pharmacognosy, and Pharmacology, shall be considered to be an unsatisfactory grade.

3. Generally, only work of C quality or better is acceptable as credit toward graduation in the required courses of the major fields of Pharmacy, Pharmaceutical Chemistry, Pharmacognosy, and Pharmacology. However, a student who receives grades of D in no more than a total of three such required courses may, upon written petition to the faculty of the College of Pharmacy, be granted credit toward graduation for the work in such courses. (For the purposes of administering this rule, each semester of a course which runs throughout the year shall be considered as a separate course.)

4. No student will be permitted to enroll in the professional courses of the fifth year if his grade average is less than 2.0.

MAXIMUM NUMBER OF HOURS

Students in the College of Pharmacy may not normally enroll for more than 17 credit hours per semester not including required physical education courses.

ACADEMIC ADVISEMENT

In order to provide proper assistance to students in the election of courses and other academic matters, the College of Pharmacy has established a system of academic advisement. Each student is assigned to a faculty adviser who is authorized to act in all academic matters which do not require the approval of the Dean. The faculty advisers assist students in planning their programs, approve all elections of courses, authorize changes in programs, and furnish advice on

other academic matters. Students are urged to consult with their advisers regularly.

AFROTC AND NROTC

The courses in Aerospace Studies and Naval Science are acceptable as elective courses in the Pharmacy curriculum.

MINIMUM RESIDENCE REQUIREMENT

Students entering the College of Pharmacy with advanced standing from non-pharmacy colleges are required to complete not less than 6 semesters of full-time resident study before they will be recommended for the degree of Bachelor of Science in Pharmacy. Those transferring from other colleges of pharmacy may be given credit for more than 2 years of work provided the courses and credit are applicable to the work outlined in the curriculum of this College.

REQUIREMENTS FOR GRADUATION

The degree of Bachelor of Science in Pharmacy is granted upon completion of all the specified requirements. The candidate for this degree must:

1. Complete all of the work outlined in the pharmacy curriculum. Of the 28 elective hours, the student may not elect more than a total of 13 hours of course work in the professional and/or basic science areas; he must elect at least 15 hours in the humanities, social sciences, and/or fine arts from courses offered in the Colleges of Arts and Sciences, Business Administration, Education, Engineering, Fine Arts, and Nursing, the School of Law, or the Departments of Aerospace Studies or Naval Science. The student, with the approval of his adviser, will be expected to complete logical sequences of courses in the fields he elects.
2. Complete a total of not less than 160 semester hours plus 4 semester hours of physical education or its equivalent.
3. Maintain a grade average of 2.0 on all hours attempted* in satisfying the scholastic requirement of the University for the bachelor's degree.
4. Receive grades of C or better in all the required courses in the fields of Pharmacy, Pharmaceutical Chemistry, Pharmacognosy, and Pharmacology, except that a candidate who has received grades of D in no more than a total of three such required courses may, upon written petition to the faculty of the College of Pharmacy, be granted credit toward graduation for the work in such courses. (For the purposes of administering this exception, each semester of a course which runs throughout the year shall be considered as a separate course.)
5. Satisfy the minimum residence requirement.
6. Complete the English Proficiency Examination (administered by The University of New Mexico) with a satisfactory score or obtain a grade of C or better in the remedial English course offered on a non-credit basis by The University of New Mexico English Department.
7. Be unanimously recommended for the degree by the faculty of the College of Pharmacy.

* Exclusive of hours in nonprofessional physical education and ensemble music.

CURRICULUM LEADING TO THE DEGREE OF
BACHELOR OF SCIENCE IN PHARMACY

(Descriptions of the courses offered will be found, listed by departments, in the catalog section "Courses of Instruction.")

First Year
(Preprofessional Year)
(Program recommended for Freshmen in the University College)

First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
Chem 101L Gen	4	Chem 102L Gen	4
Biol 101L Gen	4	Biol 102L Gen	4
Math 160 or 162	5 or 4	Electives	6
Physical Ed	1	Physical Ed	1
	17 or 16		18

The above is the recommended freshman Pharmacy program for University College students who wish to enter the College of Pharmacy. At the time of their first enrollment, such students will be assigned to an adviser from the College of Pharmacy. See p. 220 for specific requirements for admission to the College of Pharmacy.

PROFESSIONAL CURRICULUM

Second Year
(First Professional Year)

Phm 231 Orientation I	1	Phm 232 Orientation II	1
Chem 301 Organic Chem	3	Chem 302 Organic Chem	3
Chem 303L Organic Lab	1	Chem 304L Organic Lab	1
Physics 111 & 113L Gen	4	Physics 112 & 114L Gen	4
Biol 393L Bacteriology	4	Econ 200 Prin of	3
Elective	3	Elective	3
Physical Ed	1	Physical Ed	1
	17		16

Third Year
(Second Professional Year)

Phm 341L Intro	5	Phmcog 372L Gen	4
Chem 253L Quant Analysis	4	Chem 323 Biol Chem	3
Phm Chem 361 Inorg Phm Ch	2	Biol 430L Verte Physiol	4
Biol 429L Cellular Physiol	4	Spch 255 Pub Spkg	3
		Elective	4
	15		18

Fourth Year
(Third Professional Year)

Phm 443L Operative Phm I	5	Phm 444L Operative Phm II	5
Acct 105 Prin of	3	Phm 420 Pharmaceutical Law	3
Phmcol 475L Phmcol I	4	Phmcol 476L Phmcol II	5
Elective	3	Elective	3
	15		16

Fifth Year
(Fourth Professional Year)

Phm Chem 463L Org Phm Chem I	5	Phm Chem 464L Org Phm Chem II	4
Phm 447L Disp Phm I	5	Phm 448L Disp Phm II	5
Phm 421 Phm Management	2	Phm 434 Hist of Pharmacy	2
Phm 493 Inspection Trip	0	Electives	6
Phmcol 477 Phmcol III	3		
	15		17

DENTAL HYGIENE PROGRAM

The Dental Hygiene Program is a 2-year curriculum leading to a Certificate in Dental Hygiene. It is open to those who meet the admission requirements and

are selected by the Admissions Committee of the Program. The Dental Hygiene Program is accredited by the American Dental Association.

OPPORTUNITIES IN DENTAL HYGIENE

Dental Hygiene is a health service profession with the emphasis on prevention of dental diseases. A dental hygienist is trained and licensed to provide dental services to patients under the supervision of a dentist. These services include: cleaning patients' teeth, teaching patients home care of their mouths, examining patients' teeth and charting findings for the dentists' inspection, taking and developing dental x-rays, applying topical fluorides, assisting the dentist with routine office duties, speaking on dental health to groups, helping in community health programs.

Students receive practical training in a 23-chair clinic in the Dental Programs Building on the University of New Mexico campus.

The demand for the services of dental hygienists is great in private dental office practice, clinics, and institutions. The 2-year curriculum prepares the student for these services. Additional training is required for dental hygienists who choose to teach or serve in public health capacities. The financial rewards vary with the type of employment, community standards, and the hygienist's education but compare favorably with those in similar professions.

QUALIFYING TO PRACTICE

Upon successful completion of the prescribed curriculum, the University confers a Certificate in Dental Hygiene. This certificate entitles the recipient to take the state board licensing examinations in dental hygiene in all 50 states, the District of Columbia, and Puerto Rico. A dental hygienist must have a license in the state in which she practices.

STUDENT LOANS AND SCHOLARSHIPS

Student loans are available from the New Mexico Dental Association. Recipients of loans must have been residents of New Mexico for 10 years and must be enrolled in the Dental Hygiene Program at the time application for loan is made.

SCHOLARSHIPS AND AWARDS

Monica A. Novitski Scholarship in Dental Hygiene. A $100 scholarship loan given by first class of hygienists receiving certificates from The University of New Mexico. It is awarded to a student who has completed 3 semesters in the Dental Hygiene Curriculum and is in need of financial assistance.

Four $800 national scholarships are available to dental hygiene students who have completed their first year of training and have earned a scholarship index of 3.0. Students in all the dental hygiene programs in the United States compete for these four scholarships. Information concerning application for them is available from the Director.

See "Scholarships and Awards" section, pp. 97-115 for other financial assistance.

PRIZES

John K. Phelan Essay Award in Clinical Dental Hygiene. Two cash awards presented annually to graduating dental hygiene students for the best essays submitted on subjects relating to the clinical practice of dental hygiene.

ADMISSION

The total class enrollment in dental hygiene at The University of New Mexico is limited to 24. Students are admitted only in the fall semester. They will be accepted on the basis of scholarship, aptitude, and interest. Dental hygiene students should be capable of maintaining high scholastic standards. If a dental hygiene student withdraws from the program, that place in the class cannot be filled by a transfer student from some other field of study.

Requirements for admission are:

1. Admissibility to The University of New Mexico as described in bulletin (refer to "Admission"); completion of the English Proficiency Examination (administered by The University of New Mexico) with a satisfactory score or a grade of C or better in Remedial English.
2. Personal interview before April 1.
3. Satisfactory scores in Dental Hygiene Aptitude Test.

There is no time during the 2-year period to remove high school deficiencies. Anyone with such a deficiency must remove it before making application to the Dental Hygiene Program.

The American Dental Hygienists' Association, in cooperation with the Council on Dental Education of the American Dental Association, conducts an aptitude testing program for applicants to dental hygiene schools. Testing periods are in May, November, and February of each year. There are various testing centers in the Western States, one of which is Albuquerque. An application for the test can be obtained from the American Dental Hygienists' Association, 304 East 45th Street, New York, New York 10017 or from the office of the Dental Programs. Reports on test scores are sent directly to the dental hygiene schools indicated by the applicant.

The deadline date for receipt of applications and credentials required for the Dental Hygiene Program is **April 1.** All requirements for admission must be fulfilled by this date. Communications **regarding entrance** to the Dental Hygiene Program should be **addresseed to the Director of Admissions** of The University of New Mexico. The applicant should make an appointment directly with the **Director of the Dental Hygiene Program for a personal interview** before the deadline date. The Admissions Committee of the Dental Hygiene Program selects the class for the following September during the month of April. The Office of Admissions of the University notifies the applicant of acceptance or non-acceptance.

Freshman students with no previous college work will be admitted to the University College for the first year's work in dental hygiene. Students with 26 hours or more of acceptable college-level work will be admitted to the College of Pharmacy. No transfers from other schools of dental hygiene can be accepted.

It is advisable for prospective students to complete one year of college work before making application to the Dental Hygiene Program.

EXPENSES

In addition to tuition, housing, and school supplies, students in the Dental Hygiene Program are required to purchase instruments, clinical supplies, and

uniforms. The approximate cost of these expenses is $400 for the 2-year period; most of this expense is in the first year.

The Dental Hygiene Program at The University of New Mexico participates in the Student Exchange Program operated by the Western Interstate Commission for Higher Education, under which legal residents of Western States without a professional school in this field pay the same tuition and fees at this institution as residents of the State of New Mexico. To be certified as eligible for this program, the student must write to the WICHE certifying officer in his home State, who will send the proper application forms. State eligibility requirements vary, and the number of students included from each State depends upon appropriations by the State legislature. For addresses of State certifying officers, write to the Western Interstate Commission for Higher Education, Fleming Law Building, Boulder, Colorado.

Dental hygiene students are eligible for junior membership in the national organization, the American Dental Hygienists' Association.

REQUIREMENTS FOR THE CERTIFICATE IN DENTAL HYGIENE

The candidate for the Certificate in Dental Hygiene must:

1. Complete all of the work outlined in the curriculum in dental hygiene.
2. Maintain a grade average of at least 2.0 in the last 66 hours of college-level work* attempted at The University of New Mexico.
3. Complete the English Proficiency Examination (administered by The University of New Mexico) with a satisfactory score or obtain a grade of C or better in the remedial English course offered on a non-credit basis by The University of New Mexico English Department.
4. Be unanimously recommended by the full-time Dental Hygiene Program staff.

CURRICULUM LEADING TO THE CERTIFICATE IN DENTAL HYGIENE

(Descriptions of the courses offered will be found, listed by departments, in the catalog section "Courses of Instruction.")

First Year			
First Semester		Second Semester	
Engl 101 Wrtng w/Rdgs in Expos	3	Engl 102 Wrtng w/Rdgs in Lit	3
Chem 141L Elem of Gen Chem	4	Chem 142L Elem of Org Chem or Chem 281 Org & Biochem	4
Biol 136 Human Anat & Physiol	3	Speech 101 Fund of Speech	3
Biol 139L Human Anat & Physiol Lab	2	DH 102L Preclin Dental Hyg	3
DH 100 Orientation	2	DH 110 Oral Anatomy	3
DH 101L Orientation Lab	1	DH 112 Oral Radiography	1
DH 111L Dental Anatomy Lab	1	Physical Ed	1
Physical Ed	1		
	17		18
Second Year			
Biol 393L Gen Bacteriology	4	Soc 101 Intro to	3
Psy 101 Gen Psy 1	3	Pharmacology 276 Prin of	3
DH 200L Clin Dental Hyg	3	H Ec 325 Nutrition	3
DH 210L Histology	2	DH 202L Clin Dental Hyg	4
DH 220L Dental Materials	2	DH 212 Pathology	2
DH 230 Oral/Dent Medicine	2	DH 222 Dent & Pub Health Ed	2
DH 240 Dental Hygiene Seminar	0	DH 242 Practice Mgt & Ethics	1
Physical Ed	1	Physical Ed	1
	17		19

DENTAL ASSISTING PROGRAM. Refer to p. 229. (An Extension Division program.)

* Exclusive of hours in nonprofessional physical education and ensemble music.

OTHER DIVISIONS OF THE UNIVERSITY

TELEVISION PROGRAMMING

THE UNIVERSITY offers instruction via television in a number of courses selected from residence offerings. These courses are selected by the University Television Committee and are recommended to the Administration through the office of the Academic Vice President.

Like all other residence course offerings, courses taught via television receive residence credit, applicable to undergraduate degree programs of the University. These telecourses are broadcast over Channel 5—KNME, which is owned and operated jointly by The University of New Mexico and the Albuquerque Public Schools.

The University's academic course offerings in television production are coordinated with Channel 5. Students enrolled in television production courses observe, and participate to a limited degree in, on-the-air broadcast activities of Channel 5.

DIVISION OF EXTENSION, SUMMER SESSION, AND COMMUNITY SERVICES

EXTENSION

The Division of Extension of the University was established as a separate unit with a full-time director in 1928, and has been conducting instruction by correspondence and extension class continuously since that date. On May 7, 1930, the Extension Division of The University of New Mexico became a member of the National University Extension Association, the acknowledged accrediting agency for institutions which offer instruction by correspondence or extension class.

Extension and correspondence courses allow many people who are unable to attend classes in residence to pursue their educational programs. A special correspondence bulletin is issued periodically giving regulations and information concerning courses offered by the Division of Extension. For a copy of the **Correspondence Bulletin** and further information address the Director, Division of Extension, The University of New Mexico, Albuquerque, 87106.

EXTENSION CLASSES. The University is always pleased to arrange extension classes in any community in the State. Any of the regular University courses may be offered by extension provided there is a large enough group in any one center to justify doing so, and as long as the class is not dependent upon the campus library and laboratory facilities. Persons interested in having an extension class offered in a specific community should address their inquiries to the Director, Division of Extension. For questions concerning audit status refer to p. 126.

CORRESPONDENCE COURSES. A number of courses are offered which are carried on entirely by mail and are planned and conducted by qualified university personnel. Credits received in this manner may be applied toward an undergraduate degree to the extent of 30 semester hours, subject to the approval of the dean of the college in which the student is enrolled. (See additional regulations on p. 132.)

SUMMER SESSION

A summer session of 8 weeks is conducted each year on the campus. (For dates, see the Calendar.) Every attempt is made to meet specialized needs of the particular student group of the session. Emphasis is placed on advanced and graduate work. A special program is offered for teachers and school administrators. The summer climate is warm but delightful; nights are cool. The residential halls are regularly operated during the Summer Session. For a copy of the **Summer Session Bulletin** and further information, address the Director, Summer Session, The University of New Mexico, Albuquerque, 87106.

COMMUNITY COLLEGE

The Community College offers a program of late afternoon, evening, and Saturday courses, both credit and non-credit, and supervises the programs of all students enrolled in the University for non-degree work. The Community College has these objectives:

1. To make it possible for adults to supplement their education along general, cultural lines or in the fields of their special interest.
2. To make it possible for employed persons who are unable to attend the regular daytime program of the University to supplement their education through the evening offerings, and thereby become more valuable in their work and as citizens.
3. To assist those mature students who cannot meet the regular admission requirements of the University to obtain some college credit while working off their admission deficiencies.

CREDIT COURSES. The standards and requirements maintained for credit courses taken in non-degree status in the Community College are the same as those required in the 4-year degree-granting colleges of the University. The instruction is carried on by members of the regular University faculty. Credits earned are recorded on the permanent academic record of the student, and subject to the restrictions set forth on p. 81 of this catalog, are applicable in the regular degree programs of the University.

NON-CREDIT COURSES. The only prerequisite necessary for the non-credit offerings is the desire to learn. Classes are open to any adult interested in further training in either professional or vocational fields, or as a means of better enjoying leisure time.

The **Community College Bulletin** listing both credit and non-credit courses offered each semester will be supplied to anyone making a request to the Director, Division of Extension, The University of New Mexico, Albuquerque, 87106.

CONFERENCES, INSTITUTES, AND SHORT COURSES

All conferences and special courses connected with The University of New Mexico are coordinated through the Division of Extension. The development of any conference, institute, or short course is, of necessity, a cooperative process, from initiation and planning through the actual operation, between a specific department of instruction on campus and the special interest group desiring the activity.

Business, professional, or lay groups interested in a series of meetings to discuss topics of special interest should contact the Director, Division of Extension, who will make the necessary arrangements for the meetings.

ADULT EDUCATION PROGRAMS

To any community, club, or organization which wishes help in setting up adult education activities the University will be glad to give all the assistance possible. Such activities as classes for illiterates, club study groups, forums, lecture series, etc., will receive special attention. Upon request, the University will make specific written suggestions for organizing any or all of these activities.

AUDIO-VISUAL CENTER

The purpose of the Audio-Visual Center will be to promote modern methods of teaching through audio-visual materials now in use, to make accessible to the faculty and students the audio-visual equipment and materials now becoming standard, and to serve as an advisory and demonstration center for these teaching aids. Major emphasis is placed on acquiring the best in modern audio-visual equipment and in building up an adequate library of teaching materials for on-campus use.

HARWOOD FOUNDATION

The Harwood Foundation, located at Taos, New Mexico, is operated in connection with the Division of Extension, Summer Session, and Community Services as an extension and field center. Various credit classes are offered by extension during the academic college year whenever demand exists. A library is maintained the year around for the people of the vicinity.

CIVIL DEFENSE PROGRAM

Under contract with the Office of Civil Defense, Department of the Army, courses in various civil defense specialities are offered to the public free of charge. Courses are normally conducted, in cooperation with the State Civil Defense Office, throughout the state where there is a need to increase the civil defense operational capability in the area. Conferences on civil defense subjects are also conducted in various communities in cooperation with municipal and county officials.

DENTAL ASSISTING PROGRAM

The Dental Assisting Program is a 2-semester course which starts each year in the fall semester only. It is open to applicants who meet University admission requirements and are selected by an Admissions Committee of the Program. On satisfactory completion of the 2 semesters' work, the student is awarded a Certificate of Proficiency in Dental Assisting from the Division of Extension of The University of New Mexico.

Communications regarding application to the Dental Assisting Program may be directed to the Director of Dental Programs, The University of New Mexico, Albuquerque.

REQUIREMENTS FOR THE CERTIFICATE IN DENTAL ASSISTING

The Candidate for the certificate must:

1. Complete all work outlined in the curriculum.

2. Maintain a grade average of at least 2.0 in both the credit and non-credit portions of the curriculum.

CURRICULUM LEADING TO THE CERTIFICATE IN DENTAL ASSISTING

First Semester	Cr. Hrs.	Clock Hrs.	Second Semester	Cr. Hrs.	Clock Hrs.
Engl 101 Wrtng w/Rdgs in Expos	3	3	Engl 102 Wrtng w/Rdgs in Lit	3	3
Psy 101, Soc 101 **OR** Spch 101	3	3	DH 110 Oral Anatomy	3	3
DH 100 Orientation	2	2	DH 222 Dent & Pub Health Ed	2	2
DH 111L Dental Anatomy Lab	1	3	Chairside Assisting	0	8
Chairside Assisting	0	7	Dental Office Management	0	4
Dental Materials	0	1	Laboratory Techniques	0	4
Microbiology	0	1	Nutrition	0	1
Sterilization	0	1	Oral Pathology & Anesthesia	0	1
Radiography	0	1	Seminar	0	1
Physical Ed	1	3	Physical Ed	1	3
	10	25		9	30

A student who cannot type is required to take a 1-semester course in typing the first semester.

DENTAL HYGIENE PROGRAM. Refer to p. 223. (An offering of the College of Pharmacy).

AIR FORCE RESERVE OFFICERS TRAINING CORPS

This department is administered by officers of the United States Air Force under rules promulgated by the Department of the Air Force and The University of New Mexico.

The mission of Air Force ROTC is to commission career-oriented second lieutenants in response to Air Force requirements.

Students may enter the Air Force ROTC from any College of the University. However, new students may enter the program only in the fall semester. Transfer students with an ROTC background can receive credit for previous ROTC experience and enter the program in the spring or fall semester as directed by the Professor of Aerospace Studies.

Processing of new students will occur during the first semester of the student's sophomore year. Specifics may be obtained by contacting the Air Force ROTC staff members in Bldg. Y-1. An $8 annual activity fee will be collected at the beginning of the fall semester. This fee makes up an activity fund which is administered by the cadets. (For further information refer to the section on Military Training under "General Information," p. 70 in this bulletin.)

DEPARTMENT OF AEROSPACE STUDIES

Freshman Year

No freshmen or sophomores will be enrolled in Aerospace Studies during the 1967-68 academic year. All interested freshmen are encouraged to visit the AFROTC building and complete a Personnel Questionnaire. When so doing, they will be advised of the procedures for taking the written and physical examinations as well as other processing data.

Sophomore Year

Pre-processing for new students of the 2-year program. (Interested sophomores contact the Professor of Aerospace Studies.)

Junior Year
(Aerospace Studies 3)

Aerosp 300 (3)	Aerosp 301 (3)

Senior Year
(Aerospace Studies 4)

Aerosp 400 (3)	Aerosp 401 (3)

NAVAL RESERVE OFFICERS TRAINING CORPS

This department is administered by officers of the United States Navy and Marine Corps under rules promulgated by the Navy Department.

The mission of the NROTC is to provide, by a permanent system of training and instruction in essential naval subjects at The University of New Mexico, a source from which qualified officers may be obtained for the Navy and Marine Corps, and for the Naval Reserve and Marine Corps Reserve.

DEPARTMENT OF NAVAL SCIENCE

Students enrolled in the NROTC Unit may be enrolled in most colleges in the University. Completion of the Naval Science requirements will constitute completion of a minor study in the College of Arts and Sciences.

Freshman Year

First Semester		Second Semester	
NS 101. Naval Orientation	3	NS 102. Evolution of Sea Power	3

Sophomore Year

NS 201. Naval Weapons	3	Psy 102. General Psy II	3

Junior Year

NS 301. Navigation	3	NS 302. Naval Operations	3

Senior Year

NS 401. Naval Engineering	3	NS 402 Prin and Probs of Leadership	3

Marine Corps subjects, given below, are substituted by Marine Corps applicants during junior and senior years.

Junior Year

First Semester		Second Semester	
NS 333. Evolution of the Art of War Part I	3	NS 334. Evolution of the Art of War Part II, Modern Basic Strategy and Tactics	3

Senior Year

NS 444. Amphibious Warfare Part I	3	NS 445. Amphibious Warfare Part II, Leadership, and Military Justice	3

NROTC students are required to attend 2 hours of Naval Science drill/laboratory per week.

COURSES OF INSTRUCTION

ON THE following pages, under the respective department and division headings, are listed all the courses offered for residence credit by the University as well as requirements for major and minor studies in the various departments.

Courses are numbered from 001 through 699. Courses from 001 to 099, are sub-college level and carry no credit; from 100 to 199, lower division, are normally open to freshmen; from 200 to 299, lower division, normally open to sophomores; from 300 to 499, upper division, normally open to juniors, seniors, fifth-year undergraduates, and graduates; 500 to 699, graduate and professional, normally open to students enrolled in the Graduate School only, The School of Law, or The School of Medicine.

Symbols used in course descriptions:

*—course allowed for graduate credit to students enrolled in the Graduate School. Normally, a Graduate student enrolled in a starred course numbered below 500 is required to do extra work in the course.

[ ]—former course number or title

L—part of the course is laboratory work

F—course is given in field session

SS—course offered in summer session only

Yr—course offered throughout two semesters and credit for the first semester's work is suspended until the entire course is completed

( )—semester hours' credit; credit hours separated by a hyphen (1-3) indicates variable credit in the course.

When a prerequisite course number is not preceded by a department designation, reference is to the department under which the prerequisite statement appears.

A schedule of course offerings, including hours of meeting, is issued at the opening of each session. The University reserves the right to cancel any listed course or to make a substitution in instructors when necessary.

The departments and fields of study are arranged in alphabetical order in accordance with the table below:

Accounting (See Business Administration)
Aerospace Studies
American Studies
Anthropology
Architecture
Art
Art Education (See Education, Art)
Astronomy (See Physics & Astronomy)
Biology
Business Administration
Business Education (see Education, Secondary)
Chemical Engineering (See Engineering, Chemical)
Chemistry
Chemistry, Pharmaceutical (See Pharmacy)
Civil Engineering (See Engineering, Civil)
Classical Languages (See Modern & Classical Languages)
Comparative Literature
Curriculum & Instruction (See Education, Elementary and Secondary)
Dental Hygiene
Dramatic Art
Economics
Economics-Philosophy
Education, Art
Education, Business (See Education, Secondary)
Education, Guidance and Special Education
Education, Health, Physical Education, and Recreation
Education, Home Economics
Education, Industrial Education (See Education, Secondary)
Education, Library Science
Education, Music (See Music Education)
Education, Secondary (See Education, Elementary and Secondary)
Educational Administration (See Educational and Administrative Services)
Educational Foundations (See Educational and Administrative Services)
Electrical Engineering (See Engineering, Electrical)
Elementary Education (See Education, Elementary)
Engineering, Chemical
Engineering, Civil
Engineering, Electrical
Engineering, Mechanical
Engineering, Nuclear

English
English-Philosophy
Fine Arts
Folklore (See Modern & Classical Languages, and Comparative Literature 461)
French (See Modern & Classical Languages)
General Studies
Geography
Geology
German (See Modern & Classical Languages)
Government & Citizenship (See Political Science)
Greek (See Modern & Classical Languages)
Guidance (See Education, Guidance and Special Education)
Health, Physical Education, and Recreation (See Education, Health, Physical Education, and Recreation)
History
Home Economics (See Education, Home Economics)
Ibero-American Studies
Industrial Education (See Education, Secondary)
Italian (See Modern & Classical Languages)
Journalism
Latin (See Modern & Classical Languages)
Latin American Studies
Law
Library Science (See Education, Library Science)
Mathematics & Statistics
Mechanical Engineering (See Engineering, Mechanical)
Medical Sciences
Modern & Classical Languages
Music
Music Education
Naval Science
Nuclear Engineering (See Engineering, Nuclear)
Nursing
Paleoecology
Pharmaceutical Chemistry (See Pharmacy)
Pharmacognosy (See Pharmacy)
Pharmacology (See Pharmacy)
Pharmacy
Philosophy
Philosophy-Economics (See Economics-Philosophy)
Philosophy-English (See English-Philosophy)
Physical Education (See Education, Health, Physical Education & Recreation)
Physical Science
Physics and Astronomy
Political Science
Portuguese (See Modern & Classical Languages)
Psychology
Recreation (See Education, Health, Physical Education & Recreation)
Russian (See Modern & Classical Languages)
Russian Studies
Secondary Education (See Education, Elementary and Secondary)
Secretarial (See Business Administration)
Sociology
Spanish (See Modern & Classical Languages)
Special Education (See Education, Guidance and Special Education)
Speech
Statistics (See Mathematics & Statistics)
Western European Studies

ACCOUNTING

See Business Administration.

AEROSPACE STUDIES

Carl L. Hein, Major, USAF (Chairman), Professor of Aerospace Studies; Associate Professor Richard T. Jones, Captain, USAF.

CURRICULUM

See p. 230.

300-301. Air Science 3—Growth and Development of Aerospace Power. (3, 3)
The nature of war; development of airpower in the United States; mission and organization of the Defense Department; Air Force concepts, doctrine, and employment; astronautics and space operations; and the future development of aerospace power. Includes the U.S. space program, vehicles, systems, and problems in space exploration.

400-401. Air Science 4—The Professional Officer. (3, 3)
Professionalism, leadership, and management. The meaning of professionalism, professional responsibilities, the military justice system, leadership theory, functions, and practices, management principles and functions, problem solving, and management tools, practices, and controls.

AMERICAN STUDIES

Committee in Charge: Professors G. Arms (English), Chairman; Bainbridge Bunting (Art), W. M. Dabney (History), D. B. Hamilton (Economics), P. F.

Schmidt (Philosophy), E. W. Tedlock, Jr. (English), V. D. Coke (Art); Associate Professors Hamlin Hill (English), G. D. Nash (History), Undergraduate Adviser; Assistant Professor J. S. Martin (English).

An American Studies minor may be elected by undergraduate students majoring in the departments of Anthropology, Art History and Criticism, Economics, English, History, Philosophy, Political Science or Sociology. Requirements for the doctor's degree in American Studies are listed in the **Graduate School Bulletin.**

MINOR STUDY

The requirement is 24 hours, including 9 hours in American Studies courses (American Studies 285, 301, 302) and 15 hours in approved courses in literature, history, or social science. With the approval of the chairman of the major department, options within the major may permit the election of additional courses in the American area (normally 9 hours in all within the major). Since courses counted toward a major cannot also be counted toward a minor, requirements vary somewhat according to the student's major department. In addition to 9 hours in American Studies, approved courses are as follows:

For majors in Anthropology, Economics, Political Science, or Sociology:

6 hours in literature or history (normally chosen from English 432, 435, 467, 468, 469, 470; History 361 through 379); 6 hours in a social science other than the major (normally from Anthropology 305, 308, 357, 358, 404; Economics 320, 350, 360; Political Science 306, 368, 375; Sociology 351, 441, 461); 3 hours in Philosophy 332 or Art 472.

For majors in Art History and Criticism or in Philosophy:

6 hours in literature or history (as above); 6 hours in a social science (as above); 3 hours in Philosophy 332 (for majors in Art) or in Art 472 (for majors in Philosophy).

For majors in English:

6 hours in history (as above); 6 hours in a social science (as above); 3 hours in Philosophy 332 or Art 472.

For majors in History:

6 hours in literature (as above); 6 hours in a social science (as above); 3 hours in Philosophy 332 or Art 472.

285. American Life and Thought. (3) Baughman
Important themes and issues of our society (1607 to the present), as reflected in American literature. Prerequisite: English 282, or History 161 or 162.

301-302. Interdepartmental Studies in the Culture of the United States. (3, 3) Baughman, Martin, Sanborn.
Subjects, varying from year to year, will be topical in 301 (as "The City in the American Scene," "American Humor as Social Commentary") and chronological in 302 (as "The Formation of an American View During the Early National Period, 1775-1828," "The Period of Peirce").†

† As the content varies, this course may be repeated with the consent of the American Studies Undergraduate Adviser or of the Chairman of the Department.

***501. Interdepartmental Seminar in the Culture of the United States.** (3) Arms, Tedlock, G. W. Smith
Religious backgrounds in the United States during the 19th century; the influence of radical politics on art and literature, 1918-1939; the Civil War period; American Society and Painting, 1918-1941; and similar topics.

***699. Dissertation.** (3-6 hrs. per semester)
See the **Graduate School Bulletin** for total credit requirements.

ANTHROPOLOGY

Professors H. W. Basehart, F. H. Ellis, F. C. Hibben, S. S. Newman, J. N. Spuhler; Associate Professors P. K. Bock, J. M. Campbell (Chairman), N. L. Gonzalez, G. P. Springer; Assistant Professors J. J. Brody, B. J. Rigsby, K. H. Schwerin, J. M. Sebring, W. T. Stuart.

MAJOR STUDY

Anthropology 101, 102, 201, 493, and 27 additional semester hours in courses numbered from 300 through 499 within the Department. Anthropology courses are offered in four major divisions: archaeology, general ethnology, linguistics, and technical. A student must concentrate in one of the first three, and take a minimum of 12 hours in that division. Six hours must be taken in each of the other two divisions, and 3 hours in the technical division. No more than 3 semester hours of Field courses may be applied toward the fulfillment of the requirements of the appropriate division of concentration. In selecting from general ethnology, a student must take at least 3 hours in courses numbered 305, 306, 310, 314, 321, 336, 347, 357, 358, 382 and 383, and at least 3 hours in courses numbered 301-302, 308, 316, 350, 352, 389, 398, 399, and 404. Upper division courses from other departments, chosen with the approval of the Chairman of this Department are acceptable as electives toward a major in Anthropology.

MINOR STUDY

14 hours in addition to Anthropology 101, 102 and 201, at least 6 hours to be taken in courses numbered above 300. No more than 3 semester hours of Field courses may be applied toward the minor.

DISTRIBUTED MINOR FOR ANTHROPOLOGY MAJORS. With the consent of the Department Chairman, a major may offer an American Studies minor as well as a minor in a single department. For requirements, see American Studies.

General Anthropology:

101. Origin and Antiquity of Man. (3) Staff
Introductory course dealing with the physical origins of man and the development of human culture as revealed by archaeology.

102. Development of Culture. (3) Staff
The concept of culture as exemplified by contemporary peoples.

201. Principles and Fields of Anthropology. (3) Bock, Staff
Introduction to the history, literature, and current problems in the major fields of anthropology. Includes lectures by all members of the department on strategies of research and frontiers of knowledge in their specialties. Prerequisites: 101, 102.

275F. General Field Session. (2-6) Staff
Introductory summer field course in archaeology, linguistics, or general ethnology.

***475F. Advanced Summer Field Session. (2-6)** Staff
For upper-division and graduate students. Field course in archaeology, linguistics, or general ethnology. An advanced course that includes intensive instruction in field techniques and the opportunity for independent research on the part of the student. Prerequisite: 275F or equivalent.

***493. History of Anthropology. (2)** Basehart
The development of anthropological theory from the 19th century to the contemporary period, with major emphasis on cultural anthropology. Limited to majors and minors in anthropology.

***499F. Field Research. (2-6)** Staff
Field research for qualified advanced or graduate students with previous experience in archaeology, linguistics, or general ethnology. Problems are selected on the basis of student-faculty interest and field research opportunities. Students are expected to work under minimal supervision and to produce publishable reports. Prerequisite: permission of staff.

***505. Proseminar: Introduction to Research. (2)** Campbell
Methods and techniques of collecting and analyzing data and of writing scientific reports. Limited to graduate majors.

***509. Seminar: Anthropological Theory. (2)** Basehart, Gonzalez
Intensive analysis of selected problems and theories, both historical and contemporary, in anthropology. Limited to graduate majors.

***511. Advanced Research. (2)** Staff
Individual research projects in Archaeology, General Ethnology, or Linguistics. Limited to graduate majors.

General prerequisite: Anthropology 101 and 102 or equivalent.

Archaeology:

†266F. Archaeological Field Techniques. (2) Brody
An introduction to site surveying, excavation techniques, field conservation, cataloging principles and techniques, field mapping, and site reporting.

***312. European Prehistory. (3)** Hibben
The archaeological backgrounds of Europe and contiguous areas in the Mediterranean, Africa, and Asia from earliest times to the historical period.

***355. Southwestern Archaeology: Mogollon and Hohokam. (3)** Ellis
The development of the various branches of Mogollon and Hohokam cultures, from Southwestern Desert Culture roots; influences from Mexico are examined.

***356. Southwestern Archaeology: Pueblo Area. (3)** Ellis
The development of Basket Maker-Pueblo culture through its periods and regional branches from a combination of Southwestern Desert Culture roots and borrowed traits.

***362. Archaeology of the Old World. (3)** Hibben
Prehistory of Africa, Asia, and Oceania with emphasis on Egypt, Mesopotamia, India, and China. In each area the prehistoric sequence is brought up to historic times.

***384. Archaeology of Mexico, Central America, and the West Indies. (3)** Hibben
Prehistoric beginnings of human culture from the appearance of man in the New World to the Spanish Conquest. Emphasis is on the Valley of Mexico, the Mayan area, and contiguous regions.

***385. American Archaeology: North America. (3)** Hibben
Prehistory of the North American continent from the first appearance of man in America to the European contact period. The American Southwest and Mexico are excluded.

***386. American Archaeology: South America. (3)** Hibben
The archaeology of the continent of South America from the time of the Paleo-Indian to the European period. Emphasis is upon the Andean area.

***391. Classical Archaeology. (3)** Hibben
Cultural beginnings of Greece, Rome, and associated cultures in the Mediterranean area from the Neolithic period to the Byzantine empire.

***507. Seminar: Archaeological Theory and Method. (2)** Staff
The approaches and strategies of the study of archaeology with an emphasis on methodological rather than technical procedures.

† No prerequisite

***514. Seminar: South American Archaeology.** (2) Staff
Readings, group discussions, and presentation of a research paper on aspects of South American prehistory.

***516. Seminar: European Prehistory.** (2) Hibben
Individual and group discussion of the cultural backgrounds of European archaeology, with special reference to recent developments in the field.

***557. Seminar: Early Man in the New World.** (2) Hibben
Special readings and discussion of various aspects of Paleo-Indian problems.

***582. Seminar: American Archaeology.** (2) Campbell, Hibben
Detailed readings and discussion of various aspects of North American archaeology. Special reading by each seminar member will result in a paper presented to the entire group.

***594. Seminar: Southwestern Archaeology.** (2) Ellis
Individual research dealing with a current problem selected for group study.

General Ethnology:

†301-302. Interdepartmental Studies in the Culture of the United States. (3, 3) Baughman, Martin, Sanborn.
(Same as American Studies 301-302).

***305. The American Indian: North America.** (3) Rigsby
Major culture types and selected ethnographic examples of North American Indian cultures.

***306. The American Indian: South America.** (3) Schwerin
Major culture types and selected ethnographic examples of South American Indian cultures.

***308. Psychological Anthropology.** (3) Bock
Materials and concepts useful in understanding the influence of group culture upon personality and of the individual upon his society.

***310. Peasant Cultures of the World.** (3) Bock, Gonzalez
An introduction to the comparative study of peasantry. Focuses on the social and economic organization of peasant societies and the relationships of these groups to the civilizations of which they are a part.

***314. Latin American Culture and Societies.** (3) Gonzalez, Schwerin
Culture patterns common throughout Latin America and their historical antecedents. Analyses of the variations among selected Latin American societies.

***316. Applied Anthropology.** (3) Bock, Stuart
The application of anthropological methods and principles to problems of inter-cultural communication and social change.

***321. Ethnology of Asia.** (3) Sebring
Survey of modern social structures and cultures of Asia with emphasis upon selected areas and problems.

***336. Ethnology of Africa.** (3) Basehart
Cultural and social patterns characteristic of sub-Saharan Africa with special reference to problems of culture history and comparative political organization.

***347. Oceania.** (3) Stuart
Major culture types of Oceania. Selected examples covering Australia, Melanesia, Polynesia, and Micronesia.

***350. Methods in Cultural Anthropology.** (3) Ellis
Methods used in the collection and ordering of anthropological data for historical, scientific, and administrative problems.

***352. Primitive Literature.** (3) Newman
Comparative study of literature as a historical phenomenon, as a reflection of a cultural setting, as a formal expression for aesthetic purposes; examples drawn from oral literature.

***357. Southwestern Ethnology: Non-Pueblo Peoples.** (3) Ellis
The cultures, and relationships of Pima, Papago, Yaqui, Tarahumara, Seri, Yumans, Navajos, and Apaches.

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† No prerequisite.

***358. Southwestern Ethnology: Pueblo Peoples.** (3) Ellis
The origin, social organization, material culture, and relationships of Southwestern Pueblo tribes.

***361. Social Implications of Technological Change.** (3) Gonzalez
(Also offered as Sociology 361.) The impact of technological change on societal institutions with special attention to underdeveloped areas. Prerequisite: Sociology 101 or equivalent.

***365. Urbanization in Latin America.** (3) Gonzalez
(Also offered as Sociology 365.) Analyses of the processes of urbanization, with emphasis on the cultural changes accompanying rural to urban migrations.

***382. Middle American Ethnology.** (3) Schwerin
Emergence of the modern Indian cultures of Mexico and Guatemala. Persistence and change in social institutions and cultural patterns.

***383. Caribbean Ethnology.** (3) Gonzalez
A descriptive and analytic survey of modern West Indian sociocultural systems, taking into consideration their African, European, and East Indian cultural antecedents.

***389. Cultural Evolution.** (3) Schwerin
Nineteenth century theories of cultural evolution and revival of the evolutionary view in contemporary anthropology. Selected cultural examples are analyzed in terms of the modern theories.

***398. Primitive Religion.** (3) Stuart
Selected examples of non-literate religions. Special emphasis on revitalization or nativistic movements which develop in acculturative situations.

***399. Comparative Value Systems.** (3) Sebring
A comparative treatment of values, world views, belief systems of selected societies; basic premises and tenets revealed in a society's interpretation of its experiences; examination of relation between values, world views.

***404. Comparative Social Structure.** (3) Basehart
A systematic comparative analysis based upon the intensive study of a limited number of social systems.

***506. Cultural Ecology.** (2) Campbell, Stuart
Analysis of cultural technological adaptations to environment in cross-cultural perspective.

***508. Processes of Culture Change.** (2) Basehart
Analysis of contemporary anthropological approaches to problems of social and cultural change.

***512. Seminar: Ethnology.** (2) Staff
Specific topics related to problems in the interpretation of ethnological data.

***513. Anthropological Problems in Latin America.** (2) Gonzalez, Schwerin
Analyses of current anthropological problems in the area.

***584. Interdisciplinary Seminar on Problems of Modernization in Latin America.** (3) Liepe, Lieuwen, Needler, Scherwin
(Same as History 584).

***595. Seminar: Southwestern Ethnology.** (2) Ellis
Individual research related to a current problem selected for group study.

***610. Kinship Studies.** (2) Basehart
An introduction to the forms and variations of kinship systems.

Linguistics:

***313L. Linguistic Field Methods.** (3) Newman
Practice in transcribing from oral dictation, phonemic analysis, introduction to problems of morphology. 2 lectures, 2 hrs. lab.

***317L. Phonological Analysis.** [Phonetics and Phonemics] (3) Newman, Rigsby
Phonetic principles and phonological theory, descriptive analysis of phonological systems, transcriptional practice and problems from selected languages. 2 lectures, 2 hrs. lab.

***354. The Nature of Language.** (3) Newman
Introduction to modern descriptive linguistics, principles of comparative linguistics, language as a social and psychological phenomenon.

***359. Language and Culture.** (3) Rigsby
An examination of the interrelations of language and speech with other selected aspects of culture. Prerequisites: 317L, 354, or equivalent.

***418L. Grammatical Analysis.** [Structural Analysis] (3) Newman, Rigsby
A continuation of 317L. Principles of grammatical analysis and the theory of grammar, descriptive analysis of grammatical structures, problems from selected languages. 2 lectures, 2 hrs. lab.

***446. Introduction to Comparative Linguistics.** (3) Newman
The comparative method applied to Indo-European and to unwritten languages; other methods and techniques used in comparing languages. Prerequisites: 313L, 317L, 354 or permission of instructor.

***660. Methods of Comparative Linguistics.** (2) Newman
Evaluation of different methods used in the comparison of languages; current trends in comparative linguistics.

***661. Types of Linguistic Structure.** (2) Newman
Linguistic analysis and synthesis, language as an integrated system, varieties of language structures.

Technical:

†260L. Beginning Museum Techniques and Methods. (3) Brody
An introduction to the history, philosophy, and purpose of museums. Techniques and problems of museum administration, education, collection, exhibition, conservation, and public relations. 2 lectures, 2 hrs. lab.

***303L. Chronology.** (3) Ellis
Methods of dating in relationship to archaeological problems. Prerequisite: permission of instructor. 1 lecture, 4 hrs. lab.

***307L. Physical Anthropology: Osteology.** (3) Basehart
A laboratory course in the identification of human skeletal materials with attention to problems in the evolution of the primates. 2 lectures, 2 hrs. lab.

***311. Material Culture.** (3) Ellis
Materials and techniques of manufacture, with emphasis on analysis and identification of the prehistoric and historic Southwestern tribes.

***360L. Advanced Museum Techniques and Methods.** (3) Brody
Specialized work on a sub-curatorial level in one area of anthropology, art, or folk art. Emphasis on conservation, cataloging, and interpretation of collection materials to the public. 2 lectures, 2 hrs. lab.

***409L. Southwestern Pottery.** (3) Ellis
Prehistoric pottery types of Mogollon and Pueblo cultures: identification and relationships. Prerequisites: 355 and 356 or permission of instructor. 2 lectures, 2 hrs. lab.

Individual Studies:

***551-552. Problems.** **(2 hrs. each semester)** Staff

***599. Master's Thesis.** **(1-3 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

***699. Dissertation.** **(3-6 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

ARCHITECTURE

Professors T. R. Vreeland Jr. (Chairman), J. J. Heimerich, D. P. Schlegel; Associate Professor W. L. Weismantel; Assistant Professors J. R. Jarrett, A. W. Jones; Lecturer R. Eichorn; Lecturer (Part-time) W. A. Gathman.

CURRICULA

See p. 199.

101. Introduction to Architecture. [Architecture and Society] (3) Jarrett
Architectural form and composition as understood through perception and symbolism and as evolved through technology and social requirement.

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† No prerequisite.

201-202. Fundamentals of Design. (3, 3) Eichorn
An analytic and rational approach to design; systems analysis, operational techniques and human behavior as form determinants; application of problem-solving and decision-making techniques to design. Lectures, laboratory and shop work. Prerequisites: Art 103, 104.

261. Ancient and Medieval Architecture. (3) Bunting

262. Renaissance and Baroque Architecture. (3) Bunting

301. Elements of Architecture I. (4) Jones
Problems in the design of simple structures with emphasis on the principles of structural framing and the use of the basic building materials. The development of building programs. Pre-fabrication and integrated building systems. Prerequisite: 202. Corequisite: 385 and C.E. 211. Open only to students who have been admitted to the professional curriculum in Architecture.

302. Elements of Architecture II. (4) Jones
Introduction to architectural elements and the principles of composition through the analysis of existing works. Design of multi-cellular structures and the development of evaluative techniques. Prerequisite: 301. Corequisite: 386 and C.E. 212.

361. Modern Architecture. [The Sources of Modern Architecture] (2) Schlegel
Sources and development from 1750 to 1940.

362. Contemporary Architecture. [Contemporary Architecture in Europe and the Americas] (2) Schlegel
A study of theory and its application.

385. Building Technology I. (2) Gathman
Properties of materials used in construction; simple building assemblies; mechanical and electrical equipment of buildings; simple illumination. Closely related to work done in 301. Prerequisite: 202.

386. Building Technology II. (2) Gathman
Continuation of 385 with the addition of problems directly related to work done in 302. Prerequisite: 385.

401. Architecture of the Community. (4) Weismantel
Building design is studied in terms of the physical, functional, social and aesthetic interrelationship of buildings with each other and with the community. Prerequisite: 302.

402. Systematic Design Methods. (4) Schlegel
The application of a systematic method of design in the study of large-scale architectural problems. Prerequisite: 302.

421. Architecture as Visual Communication. (2) Vreeland
The visual properties of architecture are explored through the science of perception, the theory of signs, and communication theory. Prerequisite: Senior standing.

†429. Workshop. (1-5)
Design work in architecture and planning. Special permission required.

†441L. Architectural Design. (5) Schlegel, Weismantel
Prerequisites: 10 hours credit in 341L, Civil Engineering 312, Art 103, 104, 105, 293; corequisite: Mechanical Engineering 308. **May be repeated to a maximum of 10 hours credit.** 15 hrs. lab.

461. The City. (3) Weismantel
A survey of the city in history. An introduction to the objectives and methods of city planning.

†*462. Seminar (2) Staff
Prerequisite: senior standing.

***471. American Architecture.** [History of American Architecture] (3) Bunting
The history of American architecture from the 17th century to World War II.

†472L. Planning Design (3) Weismantel
Studies of regions, cities or communities. Compilation of the basic data, methods of approach, formulation of a general plan of land use, physical characteristics and circulation. Prerequisite: 271 or 461.

†481. Architectural Programming. (1)
The methods of developing a building program. Prerequisite: 441L.

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† Courses so marked are open to students enrolled in the six-year curriculum **only** with permission of the Department Chairman.

†483L. **Working Drawings.** (3) Heimerich
The preparation of working drawings, showing the quantity and method of construction of a specified type of building. Prerequisite: senior standing. 9 hrs. lab.

†*484. **Office Practice and Specifications.** (3) Heimerich
Duties of the architect, relationships of architect-client-contractor, professional ethics, office management, requirements for licensing, analyses and writing of various specifications. Prerequisite: senior standing.

485. **Building Technology III.** (2) Gathman
Advanced construction materials, building assemblies and mechanical systems, partially related to work done in 401. Advanced illumination and acoustics. Prerequisite: 386.

486. **Building Technology IV.** (2) Gathman
Continuation of 485 with emphasis on problems directly related to work done in 402. Prerequisite: 485.

†490. **Interdepartmental Proseminar.** (3) Honors Staff
(Same as Fine Arts 490.)

†491L. **Architectural Design.** (5) Jarrett
Feasible solution through the collaborative method to a large scale architectural problem. The synthesis of all experiences in a final project. Prerequisites: 10 hours credit in 441L, 472L, Civil Engineering 313, 314; corequisite: 481. Thesis to be taken during last semester. **May be repeated to a maximum of 10 hours credit.** 15 hrs. lab.

†499L. **Architectural Thesis.** (7) Jarrett
A continuation of 491L and the solution of the architectural problem chosen in 481, and a further development of all the components of the problem. Prerequisites: 491L, 472L, Civil Engineering 313, 314, Fine Arts 490. Thesis to be taken during last semester. 21 hrs. lab.

ART

Professors V. D. Coke (Chairman), C. Adams (Dean), B. Bunting, J. Kacere, S. D. Smith, J. Tatschl‡; Associate Professors G. Z. Antreasian, C. E. Paak; Assistant Professors R. Ellis, D. George, R. L. Grow, N. Harrison, R. W. Lewis, M. E. Smith, G. Weisberg, A. Young; Instructors W. Goodman, W. R. Lazorik, J. Pearson; and staff.**

MAJOR STUDY

1. For the student enrolled in the College of Fine Arts, a 60-hour Professional Curriculum is offered leading to the degree of B.F.A. in Art. (See curriculum, p. 201).

2. For the student enrolled in the College of Fine Arts, a 48-hour General (Liberal Arts) Curriculum is offered leading to the degree of B.A. in Fine Arts. (See curriculum, p. 201).

3. For the student enrolled in the College of Arts and Sciences, a 32-hour major may be taken in one of two fields of specialization: Studio or Art History and Criticism.

Of these 32 hours, at least 12 must be in courses numbered above 300. Those specializing in Studio take the following:

6 hours chosen from Art 101, 103, 104, or 105.

8 hours Art History and Criticism including Art 270, 271, or 272.

18 hours additional in the field of specialization.

Those specializing in Art History and Criticism take the following:

12 hours Studio including Art 103 and 105.

20 hours of Art History and Criticism including Art 270, 271, and 272.

‡ On leave, Semester II.

** New appointments to be made, effective July 1, 1967.

† Courses so marked are open to students enrolled in the six-year curriculum **only** with permission of the Department Chairman.

If a student majors in Art in the College of Arts and Sciences, he may not count toward graduation any other hours taken outside that College. An Art adviser shall be appointed by the Art Department, and the program approved by him.

MINOR STUDY

The minor consists of 20 credit hours. The student minoring in Art is expected to specialize in a single field (such as the crafts, history of art, lithography, painting, photography, etc.) but he should also take one or more of the general introductory courses offered by the department. Prerequisite courses shall be taken. The student must consult an Art Department adviser regarding his minor, and the advised program in his minor must be approved by his major department.

MATERIALS AND STUDENT WORK

Students enrolling in Art courses furnish their own material except certain studio equipment provided by the University.

ALL WORK when completed is under the control of the department until after the exhibitions of student work. Each student may be required to leave one or several pieces of original work with the department.

CREDIT

For 1 semester hour of credit it is expected that the student do 3 clock hours work per week through the semester. This includes time spent in recitation, preparation and studio. If full studio hours are not assigned in the schedule, outside assignments will be given by the instructor.

GENERAL

101. Art Appreciation. (3) Ellis, George
Introduction to the visual arts; acquaints the general student with various fields, media, and masterpieces.

490. Interdepartmental Proseminar. (3) Honors Staff
(Same as Fine Arts 490.)

STUDIO

103-104. Visual Fundamentals. (3, 3) Harrison
An introductory course dealing with the problem of visual organization.

105. Fundamentals of Drawing. (3) Young
Pictorial interpretation of form.

183. [263] **Fundamentals of Painting.** (3)
Descriptive painting in the oil medium with emphasis on the still life as subject matter. Prerequisites: 103, 105.

205. Beginning Drawing. (3) Goodman
Understanding of form through a proficiency in drawing. Prerequisite: 105.**

213. Beginning Sculpture. (3) Goodman, Grow
Sculptural techniques in various media. Prerequisites: 103, 104.

257. Beginning Jewelry and Metalwork. (3) Lewis
The handworking of various metals. Prerequisites: 103, 104.**

268. Beginning Ceramics. (3) Paak
Ceramic techniques. Prerequisites: 103, 104.**

283. Beginning Painting. (3)
Composition, form and color in painting. Exploration of the acrylic media. Prerequisites: 104, 183. Corequisite: 205.

287. Photography. (3) Lazorik
Introductory courses in still photography. Prerequisites: 103, or permission of instructor.

293. Beginning Watercolor Painting. (3) Lewis, S. D. Smith
Fundamentals of watercolor painting. Emphasis will be placed on the landscape as a subject. Prerequisites: 103, 105.**

305. Intermediate Drawing. (3)
Drawing as a foundation for painting and sculpture. Prerequisite: 205.**

***343. Advanced Landscape Painting.** (2) S. D. Smith
Landscape painting in various media. Prerequisites: 283, 305.**

357. Intermediate Jewelry and Metalwork. (3) Lewis
Development of metalworking techniques with emphasis on the creative application of various skills. Prerequisite: 257.**

368. Intermediate Ceramics. (3) Grow, Paak
Experimental approaches to ceramic design. Prerequisite: 268.**

373. Intermediate Sculpture. (3) Grow, Tatschl
Relationships of various materials to specific conceptual problems. Prerequisite: 213.**

374. Lithography. (3) Antreasian
Techniques and methods of lithography. Prerequisite: 305.**

383. [323] **Intermediate Painting.** (3)
Development of the concepts and ideas of painting. Both oil and acrylic media will be used. Prerequisite: 283.**

386. Techniques of Photography. (3)
Applications of photography as a recording tool.

387. Intermediate Photography. (3) Lazorik
Practical and historical study of still and cimematic photography with emphasis on the development of different techniques to engender various kinds of content. Prerequisite: 287.**

393. Intermediate Watercolor Painting. (3) S. D. Smith
Watercolor as an expressive medium. Emphasis will be placed on the landscape as a subject. Prerequisites: 183, 205, 293.**

***405. Advanced Drawing.** (3) Kacere
Drawing as an expressive medium. Prerequisite: 305. **May be repeated for credit.†**
Experimental use of metal-working processes. Prerequisite: 357. By permission of instruc-

***457. Advanced Jewelry and Metalwork.** (3) Lewis
tor only. **May be repeated for credit.†**

***468.** [488] **Advanced Ceramics.** (3) Paak
Experimental approach to ceramic design based on a thorough knowledge of processes. Prerequisite: 368. By permission of instructor only. **May be repeated for credit.†**

***473. Advanced Sculpture.** (3) Grow, Tatschl
Investigation of individual problems based on a thorough knowledge of materials and methods. Prerequisite: 373. By permission of instructor only. **May be repeated for credit.†**

***474. Advanced Lithography.** (3) Antreasian
Continuation of 374. Prerequisites: 374, 405. By permission of instructor only. **May be repeated for credit.†**

***483. Advanced Painting.** (3) Kacere, Young, and Visiting Artists
Development of concepts and ideas as related to an individual approach to painting. Prerequisites: 383, 405. By permission of instructor only. **May be repeated for credit.†**

***484. Materials and Techniques of the Artist.** (3) Tatschl
Experimental study and application of traditional and contemporary techniques and materials. Recommended for Art History majors.

***487. Advanced Photography.** (3) Coke, Lazorik
The practice of photography as a creative means of expression with emphasis on various approaches to the development of a personal vision. Prerequisite: 387 or permission of instructor. **May be repeated for credit.†**

***493. Criticism: Painting, Sculpture, Lithography.** (1)
Criticism for advanced and graduate students in painting, sculpture and lithography.

** Instructor and Department Chairman must approve repetition of this course. **May be taken for credit no more than three times.**

† Instructor and Department Chairman must approve all cases of repetition in this course.

May be repeated for credit,† but no more than 2 hrs. of credit may be counted toward a graduate degree.

***498. Criticism: Crafts.** (1)
Criticism for advanced and graduate students in crafts. **May be repeated for credit,† but no more than 2 hrs. of credit may be counted toward a graduate degree.**

499. Senior Thesis. (3)
Directed study in the major field, culminating in a written thesis or exhibition. Open to students by faculty invitation only.

***505.** [565] **Projects in Drawing.** (3) Kacere

***551-552. Problems. (2-3 hrs. each semester)** Staff
Graduate work in projects or fields not covered in the regular catalog courses. **Maximum 6 hours.**

***573.** [563] **Projects in Sculpture.** (3) Grow
Directed Individual assignments.

***574. Projects in Lithography. (3 or 6)** Antreasian
Prerequisite: 474 or permission of instructor.

***583. Projects in Painting.** (3) Kacere
Directed individual assignments.

***587. Projects in Photography.** (3) Coke
Directed individual assignments.

***599. Master's Thesis. (1-3 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

***699. Dissertation. (3-6 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

ART HISTORY AND CRITICISM

130. Contemporary Art. (3) Ellis
Emphasis will be given to the theoretical bases of the major movements since Impressionism.

270. History of Art I. (3) Bunting
Introductory study of Prehistoric, Near Eastern, Egyptian, Greek, Roman, Early Christian, Byzantine and Romanesque Art.

271. History of Art II. (3) Bunting
Introductory study of Western Art from the beginning of the Gothic period to the end of the Renaissance.

272. History of Art III. (3) George
Introductory study of Western Art from the beginning of the Baroque period to 1874.

301-302. Interdepartmental Studies in the Culture of the United States. (3, 3) Staff
(Same as American Studies 301-302.)

***400. Museum Practices.** (3)
Practical and theoretical work in museum practices such as registration, conservation, exhibition and cataloging works of art.

***401. Primitive Art.** (3) M. E. Smith
Art of Africa and Oceania.

***410. American Indian Art.** (3) M .E. Smith
Prehistoric and historic art forms of the Indians of North America.

***411. Pre-Columbian Art.** (3) M. E. Smith
The art of Middle America prior to the 16th century.

***412. Pre-Columbian Art.** (3) M. E. Smith
The Art of South America Prior to the 16th Century.

***420. History of the Graphic Arts.** (3) Tatschl
Drawing and printmaking from the 13th century to the present.

***430. Greek and Roman Art.** (3)
History of painting and sculpture from 1800 B.C. to the 6th century A.D.

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† Instructor and Department Chairman must approve all cases of repitition in this course.

*440. **Medieval Art.** (3) Bunting
A survey of architecture, painting, and sculpture from the dissolution of the Roman empire to the 16th century, with emphasis on the religious art forms of the 12th and 13th centuries.

*450. **Spanish Colonial Art.** (3) M. E. Smith
Architecture, sculpture, and painting in the period of Spanish colonization and the relation of these art forms to both the Spanish and the native Indian traditions.

*451. **Fifteenth Century Art in Italy and Northern Europe.** (3) Bunting
Painting and sculpture from the late 14th century to the end of the 15th century.

*452. **Sixteenth Century Art in Italy and Northern Europe.** (3)
Painting and sculpture during the High Renaissance and Mannerist periods.

*461. **Seventeenth and Eighteenth Century Art in Italy.** (3)
Painting and sculpture during the Baroque and Rococo periods.

*462. **Seventeenth and Eighteenth Century Art in Northern Europe.** (3)
Painting and sculpture in France, Germany, the Low Countries, and England during the Baroque and Rococo periods.

*471. **Hispanic Art.** (3) M. E. Smith
Survey of Hispanic art in Europe and the New World.

*472. **Art of the United States.** (3) George
History of painting and sculpture from colonial times to the Armory Show.

*481. **Nineteenth Century Art.** (3) Coke, Weisberg
History of painting and sculpture from the late Rococo period through Impressionism.

*482. **Foundations of Modern Art.** (3) Coke
History of painting and sculpture from Post-Impressionism to Surrealism.

*491. **Later 20th Century Art.** (3) Adams
History of painting and sculpture from Surrealism to the present day

499. **Senior Thesis.** (3)
Directed study in the major field, culminating in a written thesis. Open to students by faculty invitation only.

*500. [501] **Bibliography and Research.** (2) Bunting, George
Bibliography and research techniques in the study of art history.

*501. **Interdepartmental Seminar in the Culture of the United States.** (3) Staff
(Same as American Studies 501.)

*521. **Seminar: Lithography.** (2) Adams
Consideration of the historical development and aesthetic character of lithography.

*551-552. **Problems.** (2-3 hrs. each semester)
Graduate work in projects or fields not covered in the regular catalog courses. **Maximum 6 hours.**

*560. **Problems in Pre-Columbian and Primitive Art.** (2) M. E. Smith
May be repeated for credit.†

*561. **Problems in Ancient and Medieval Art.** (2)
May be repeated for credit.†

*571. **Problems in Renaissance and Baroque Art.** (2)
May be repeated for credit.†

*572. **Problems in the Art of the United States.** (2) George
May be repeated for credit.†

*581. **Problems in 19th and 20th Century Art.** (2) Adams, Coke
May be repeated for credit.†

*599. **Master's Thesis** (1-3 hrs. per semester)
See the **Graduate School Bulletin** for total credit requirements.

ART EDUCATION

See Education, Art

† Instructor and Department Chairman must approve all cases of repetition in this course.

ASTRONOMY

See Physics and Astronomy

BIOLOGY

Professors L. D. Potter (Chairman), H. J. Dittmer, M. W. Fleck, C. C. Hoff, W. J. Koster; Associate Professors J. S. Findley, W. C. Martin, M. L. Riedesel; Assistant Professors J. W. Beakley, E. W. Bourne, C. S. Crawford, W. G. Degenhardt, G. V. Johnson, W. W. Johnson; Instructor G. L. Traut.

MAJOR STUDY

B.S. Degree: (recommended for professional biologists, those entering graduate programs, and professional fields such as medicine). Biology 121L and 122L; two courses from the three following groups with no two from the same group although additional courses from any of the three groups may be used as electives: botanical 363L or 372L; zoological 371L or 386L; microbiological 393L; 429L or 460L or 478L; 407; 408 and 409L; two hours of 400; plus 8 hours of biology electives. Total biology 37 hours. Mathematics 120 or 121 or 160 or 162 or 180 and 181; Chemistry 101L, 102L or 122L, and 281 or 301-303L; Physics 111 and 112. (For those interested in microbiology, physiology, or medicine Chemistry 301-303L and 302-304L are recommended.) Grades of "C" or better are required of Biology majors in all of the above courses.

B.A. Degree: (available for biology majors in Education or in Arts and Sciences obtaining a teaching certificate and others in a liberal arts program). Biology 121L-122L (or 101L-102L with grades of "B" or better each semester); two courses from the three following groups with no two from the same group although additional courses from any of the three groups may be used as electives: botanical 363L or 372L; zoological 371L or 386L; microbiological 393L; 429L or 460L or 478L; 407; 408 and 409L; plus 12 hours of biology electives. Total biology 39 hours. Mathematics 120 or 121 or 160 or 162 or 180 and 181; Chemistry 101L and 281 or 301-303L. Grades of "C" or better are required of biology majors in all of the above courses.

The mathematics requirement may be met by examination for advanced standing or by taking a higher level course.

A student desiring to concentrate in some special field of biology such as bacteriology, botany, ecology, physiology, or zoology, should consult an appropriate staff member early in his college career.

MINOR STUDY

Biology 101L-102L or 121L-122L and 12 additional hours.

MINOR STUDY IN PALEOECOLOGY

See p. 355.

CURRICULA PREPARATORY TO DENTISTRY, FORESTRY, MEDICAL TECHNOLOGY, OR MEDICINE

See pp. 147-151.

Note: Credit will be allowed for only 112L or 101L-102L or 121L-122L; for only 233L or 393L; for only 136-139L or 429L or 430L; or for only 236L or 429L or 430L.

101L. General Biology. (4) **Yr.** Crawford, Degenhardt, Dittmer, Fleck, Koster
The fundamental structures and functions of higher plants and animals with emphasis on principles and the unity, rather than the diversity, of phenomena. **Credit suspended until 102L is completed.** 3 lectures, 3 hrs. lab.

102L. General Biology. (4) Crawford, Degenhardt, Dittmer, Fleck, Koster
A continuation of 101L. Survey of the plant and animal kingdoms; heredity, environmental relations, and evolution. Prerequisite: 101L. 3 lectures, 3 hrs. lab.

112L. General Zoology. (4) Degenhardt, Fleck, Hoff
The fundamental structures and functions of the vertebrates, and a review of the animal kingdom. Open to majors in P. E. and Home Economics only. 3 lectures, 3 hrs. lab.

121L. Principles of Biology. (4) **Yr.** Staff
Molecular basis of life and cellular processes; physiological coordinations and correlations. **Credit suspended until 122L is completed.** 3 lectures, 3 hrs. lab.

122L. Principles of Biology. (4) Staff
Survey of organic diversity; reproduction, heredity, ecology, and evolution of populations. Prerequisite: 121L. 3 lectures, 3 hrs. lab.

136. Human Anatomy and Physiology. (3) Bourne
The structure and functions of the human body. Lectures emphasize physiology. May be taken with, or independently of, 139L. Not accepted toward a biology major.

139L. Human Anatomy and Physiology Laboratory. (2)
Laboratory work in elementary anatomy and physiology with emphasis on anatomy. Cannot be taken independently of 136. 3 hrs. lab.

233L. [133L] **Paramedical Microbiology.** (4) Beakley
Introduction to microbiology, with emphasis on principles of infection and immunity. Prerequisites: 102L or 122L and Chemistry 101L or 141L. 2 lectures, 6 hrs. lab.

236L. Paramedical Anatomy and Physiology. (4) Bourne
Principles of anatomy and physiology as applied to man. Prerequisites: 102L or 122L; Chemistry 281. Not accepted toward a biology major. 3 lectures, 3 hrs. lab.

***323. Introduction to Biological Chemistry.** (3) West
(Same as Chemistry 323.)

***324L. Introduction to Biological Chemistry Laboratory.** (1) West
(Same as Chemistry 324L.)

326L. Physiology of Exercise. (3) Fleck, Riedesel
Physiological processes and their relation to exercise. Prerequisite: 112L or 102L or 122L. 2 lectures, 3 hrs. lab.

***363L.** [463L] **Flora of New Mexico.** (4) Martin
Identification, classification, and nomenclature of vascular plants. Field trips required. Prerequisite: 102L or 122L. 2 lectures, 4 hrs. lab.

***371L.** [271L] **Invertebrate Zoology.** (4) Hoff
Evolution; morphology; and complementarity of structure, environment, and function of the invertebrates. Prerequisite: 102L or 122L. 2 lectures, 4 hrs. lab.

***372L.** [272L] **Comparative Plant Morphology.** (4) Dittmer
The origin, morphogenesis, and evolution of members of the plant kingdom. Prerequisite: 102L or 122L. 2 lectures, 4 hrs. lab.

***386L.** [286L] **General Vertebrate Zoology.** (4) Findley
Principles of classification; ecology, behavior, and speciation of the vertebrates. Prerequisite: 102L or 122L. 3 lectures, 3 hrs. lab.

***393L. General Bacteriology.** (4) Beakley
Taxonomy, anatomy, physiology, and ecology of bacteria; principles of bacteriological technics, sterilization, and host-parasite relationships. Prerequisites: 102L or 122L. 8 hrs. of Chemistry. Chemistry 301-303L recommended. 2 lectures, 6 hrs. lab.

400. Senior Seminar. (2) Staff
(Offered each semester, cannot be repeated for credit).

***401L. Biometrics.** (4) W. Johnson
Collection, handling, and statistical treatment of biological data. Prerequisites: 20 hrs. of Biology and Mathematics 120 or 121 or 160 or 162 or 180 and 181. 2 lectures, 6 hrs. lab.

***407. Concepts of Ecology.** (3) Potter
Interrelationships of physical and biotic environments. Prerequisites: 16 hrs. of Biology or instructor's permission.

***408. Genetics.** (3) W. Johnson
Structure, function, and transmission of hereditary factors with emphasis on mathematical description. May be taken with, or independently of, 409L. Prerequisite: 102L or 122L.

***409L. Genetics Laboratory.** (1) W. Johnson
Genetic principles using the fruit fly and lower organisms. May not be taken independently of 408 without permission of instructor. 3 hrs. lab.

***410. Evolution.** (3) Martin
History of the principle and theories of evolution. Prerequisite: 408.

***412L. Comparative Embryology of the Vertebrates.** (4) Koster
Prerequisites: 102L or 122L, 371L or 386L. 2 lectures, 6 hrs. lab.

***414L. General Entomology.** (4) Crawford
Biology and classification of the insects. Prerequisite: 102L or 122L. 2 lectures, 4 hrs lab.

***415L. Insect Ecology.** (4) Crawford
Environmental effects limiting activity, distribution, and abundance of terrestrial arthropods with special reference to insects. Prerequisite: 414L; Biology 471L or equivalent recommended. 3 lectures, 3 hrs. lab. (Offered in alternate years.)

***416L. Cytology and Histology.** (4) Bourne
General structure of the animal cell, tissues, and organs. Emphasis on correlation of structure with function. Prerequisite: 12 hours of biology. 2 lectures, 4 hrs. lab.

***421L. Comparative Vertebrate Anatomy.** (5) Findley
Prerequisites: 122L and 371L or 386L. 2 lectures, 6 hrs. lab.

***429L. Cellular Physiology.** (4) Riedesel
Prerequisites: 16 hrs. biology, Chemistry 102L or 281, Mathematics 120 or 121 or 160 or 162 or 180 and 181. Chemistry 301-303L recommended. 3 lectures, 3 hrs. lab.

***430L. Vertebrate Physiology.** (4) Riedesel and Assistant
Functions and structures with emphasis on fundamental physiological processes and mechanisms. Prerequisites: 429L or 478L. 3 lectures, 3 hrs. lab.

***433L-434L. Foundations of Modern Biology.** (4, 4) Fleck and Staff
Analysis of fundamental concepts and a reappraisal of the foundations of biology in light of recent advances. Concept approach supported by detailed laboratory review of form and processes. Prerequisite: permission of instructor. Credit not allowed Biology majors. 3 lectures, 3 hrs. lab.

****435. Teaching of Biology.** (3) Degenhardt
(Same as Secondary Education 435.) Prerequisite: 102L or 122L, Sec. Ed. 310.

***437. Paleobotany.** (3) Read
(Same as Geology 437.)

***443L. Comparative Physiology.** (4) Riedesel
A comparison of physiological processes with emphasis on osmoregulation, nutrition, and metabolism. Prerequisites: 371L, 430L or 478L. Organic chemistry recommended. 3 lectures, 3 hrs. lab. (Offered in alternate years.)

***447. Endocrinology.** (2) Riedesel
The glands of internal secretion with special reference to the vertebrates. Deals primarily with the hormones of reproduction. Prerequisite: 429L or 430L.

***448. Endocrinology.** (2) Riedesel
The glands of internal secretion with special reference to the vertebrates. Emphasis on hormones associated with metabolism. Prerequisite: 429L or 430L.

***454L. Pathogenic Bacteriology.** (4) Beakley
The properties and characteristics of disease-producing bacteria and their relationship to disease. Prerequisites: 393L and Chemistry 281 or 301-303L. 2 lectures, 6 hrs. lab.

***456L. Immunology.** (4) Beakley
Principles of antigen-antibody reaction, hypersensitivity, and auto-immune diseases. Laboratory preparation, detection, and measurement of antibodies. Prerequisites: 393L and Chemistry 302-304L. Chemistry 323 recommended. 2 lectures, 6 hrs. lab. (Offered in alternate years.)

** Graduate credit only for graduates in Education.

***457L. Virology.** (4) Beakley
Structure and function of animal, bacterial, and plant viruses. Prerequisites: 454L or both 393L and Chemistry 323-324L; Mathematics 120 or 121 or 160 or 162 or 180 and 181. 2 lectures, 6 hrs. lab. (Offered in alternate years.)

***460L. Physiology of Bacteria.** (4) Staff
Cytology; growth and reproduction; fermentation, respiration, and other enzymatic activities of bacteria. Prerequisites: 393L and Chemistry 281 or 301-303L. 2 lectures, 6 hrs. lab.

***471L. Terrestrial Ecology and Geography.** (4) Potter
Animals and plants in relation to the environment; a study of biotic communities; problems of plant and animal distribution. Field trips. Prerequisite: 102L. 3 lectures, 3 hrs. lab.

***473L. Mycology and Plant Pathology.** (4) Martin
A taxonomic study of the fungi, with some consideration of the causative factors and economic aspects of plant diseases. Prerequisites: 363L or 372L or 393L. 2 lectures, 4 hrs. lab. (Offered in alternate years.)

***474L. Plant Anatomy.** (4) Martin, Potter
Structure of vascular plants. Prerequisites: 102L or 122L. 2 lectures, 4 hrs. lab. (Offered in alternate years.)

***475L. Pharmacology I.** (4) Ferguson
(Same as Pharmacology 475L.) Not allowed for undergraduate Biology credit.

***476L. Pharmacology II.** (5) Ferguson
(Same as Pharmacology 476L.) Not allowed for undergraduate Biology credit.

***477. Economic Botany.** (3) Dittmer
Plants of economic importance throughout the world, geographic distribution, relation to world economy, and population distribution. Prerequisite: 8 hrs. in Biology. (Offered in alternate years.)

***478L. Plant Physiology.** (4) G. Johnson
General physiology of plant functions, emphasizing photosynthesis, respiration, and transpiration. Prerequisites: 16 hrs. in Biology, Chemistry 281 or 301-303L, Mathematics 120 or 121 or 160 or 162 or 180 and 181. Chemistry 301-303L recommended. 2 lectures, 6 hrs. lab.

***479. Conservation.** (3) Dittmer
Various aspects of conservation including soil, water, mineral, wildlife, forestry, range, and human. Lecture, demonstration, field trips. Prerequisite: 8 hrs. in Biology. (Offered in alternate years.)

***481L. Medical Entomology.** (3) Hoff
The insects and arachnids of importance in human and veterinary medicine. Emphasis in the laboratory on identification. Prerequisite: 102L or 122L and 8 additional hrs. in Biology. 2 lectures, 2 hrs. lab. (Offered in alternate years.)

***482L. Parasitic Protozoa and Helminths.** (4) Hoff
The protozoa and worms important in human and veterinary medicine. Emphasis on the structure and life-cycle of various forms, with practice in laboratory identification. Prerequisite: 371L or 393L. 2 lectures, 4 hrs. lab.

***484L. Limnology.** (4) Koster
Fresh-water habitats and aquatic invertebrates with special reference to problems of productivity. All-day field trips required. Prerequisite: 102L or 122L. 3 lectures, 3 hrs. lab. (Offered in alternate years.)

***485.** [288] **Vertebrate Paleontology.** (3) Findley
A survey of vertebrate faunas of past geologic periods, their evolution and environments. One weekend field trip. Prerequisite: 421L or Geology 102 or 120L. (Offered in alternate years.)

***486L. Ornithology.** (4) Findley
Classification, phylogeny, natural history and literature of birds. Early morning field trips required. Prerequisite: 386L, 421L. 3 lectures, 3 hrs. lab. (Offered in alternate years.)

***487L. Ichthyology.** (4) Koster
Classification, phylogeny, natural history and literature of fishes. All-day field trips required. Prerequisite: 102L or 122L. 3 lectures, 3 hrs. lab. (Offered in alternate years.)

***488L. Herpetology.** (4) Degenhardt
Classification, phylogeny, natural history and literature of reptiles and amphibians. All-day and one or more overnight field trips required. Prerequisite: 102L or 122L. 2 lectures, 6 hrs. lab.

***489L. Mammalogy.** (4) Findley
Classification, phylogeny, natural history and literature of mammals. All-day field trips and one or more overnight field trips required. Prerequisite: 386L, 421L. 3 lectures, 3 hrs. lab.

***490L. Histological Technique.** (3) Degenhardt, Martin, Riedesel
The preparation for microscopic examination of plant and animal structures, tissues, and cells. Additional emphasis on topics of special interest to individual students. Prerequisites: 102L or 122L, and permission of instructor. 1 lecture, 4 hrs. lab. (Offered in alternate years.)

***491L. Radiobiology.** (4) Fleck, G. Johnson
Properties of radiation; principles, theory, and use of detection and counting instruments; visits to installations using radiation in industry, medicine, and research. Prerequisites: 429L or 478L, Physics 111 and 113L, Chem. 281 or 301-303L. One year of organic chemistry recommended. 2 lectures, 6 hrs. lab.

***492L. Radiobiology.** (4) Fleck, G. Johnson
Interaction of radiation with matter; biologic effects of radiation; radiation syndrome; relative radiosensitivity of cells, organs, and organisms; health physics and practical applications of radiation. Prerequisites: 491L; pre- or corequisite: Physics 112-114L. One year of organic chemistry recommended. 3 lectures, 3 hrs. lab.

***493L. Plant Mineral and Water Relations.** (4) G. Johnson
Absorption and utilization of minerals and water with emphasis on problems of semi-arid lands. Prerequisites: 478L or 429L. 2 lectures, 6 hrs. lab. (Alternates with 494L.)

***494L. Plant Metabolism and Growth.** (4) G. Johnson
Advanced treatment of photosynthesis, respiration, and hormonal control of growth. Prerequisites: 478L or 429L. 2 lectures, 6 hrs. lab. (Alternates with 493L.)

***501. Seminar: Current Topics in Biology.** (2) Staff

***503. Research Techniques.** (2) Koster
The basic techniques used in exploring biological literature, in planning experiments, and in making and recording observations. Prerequisite: 16 hrs. in Biology.

***504. Environmental Physiology.** (3) Riedesel
Principles of physiological limits and adaptations in relation to environmental stresses. Prerequisites: 430L; Mathematics 120 or 121 or 160 or 162 or 180 and 181; Physics 111-113L; or permission of instructor.

***508L. Advanced Invertebrate Zoology.** (4) Hoff
Emphasis on the phylogeny of invertebrate groups, principles of comparative morphology and embryology. Prerequisite: 371L. 2 lectures, 4 hrs. lab. (Offered in alternate years.)

***509. Advanced Genetics.** (3) W. Johnson
Detailed consideration of hereditary material, transfer of genetic information, and evolution and integration of genetic systems. Prerequisite: 408.

***510. Genetics of Speciation.** (3) W. Johnson
Factors affecting the genetic composition of populations. Prerequisite: 408.

***511L. Insect Physiology.** (4) Crawford
Physiology of terrestrial arthropods with special reference to insects. Prerequisites: 414L, 429L, and Chemistry 281 or 301-303L. 3 lectures, 3 hrs. lab. (Offered in alternate years.)

***525. Fundamental Concepts of Biology.** (3) Fleck
Trend of scientific thought and method from earliest times to the present; origin and history of important biological principles. Prerequisite: 16 hrs. in biology. (Offered in alternate years.)

***531.** [431] **Radiation Biology.** (5) SS Riedesel
Effects of radiation on biological material and use of radioisotopes as teaching and research tools. Prerequisites: 16 hrs. biology, 4 hours of mathematics, 8 hours of chemistry, 8 hours of physics. 3 lectures, 6 hrs. lab. (Offered only in s.s., principally for NSF-AEC Institute for College teachers.)

***551. Problems.** (2-3) Staff

***554L. Advanced Mammalogy.** [Advanced Vertebrate Zoology] **(4)** Findley
Recent advances and special topics in Mammalogy. Prerequisite: 489L. 3 lectures, 3 hrs. lab. (Offered in alternate years.)

***562. Phylogeny of the Plant Kingdom. (2)** Dittmer
Evolutionary trends with emphasis on the vascular plants. Prerequisite: 16 hrs. in biology.

***563L. Advanced Plant Taxonomy. (4)** Martin
Experimental approach to plant systematics, application of nomenclatural code, and mechanics of monographic studies. Prerequisites: 408 and 363L, Biology 471L, 474L, 478L, and 562 recommended. (Offered in alternate years.) 2 lectures, 6 hrs. lab.

***571L. Physiological Plant Ecology. (4)** Potter
Autecological studies stressing physiological effects of environment. Prerequisites: 471L and 478L. 3 lectures, 3 hrs. lab.

***599. Master's Thesis. (1-3 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

***699. Dissertation. (3-6 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

BUSINESS ADMINISTRATION

Professors H. V. Finston (Dean), E. H. Caplan, R. L. Edgel, W. H. Huber, P. T. Mori, W. G. O'Donnell, K. W. Olm, D. M. Slate, J. Thompson, L. G. Winter; Associate Professors J. E. Brown, J. Matthews, E. G. Nolan, V. Reva; Assistant Professors A. A. Blumenfeld, K. Christman, E. G. Dillman, F. P. Fowler, J. W. Park, L. Seaton, W. Shinnick, C. S. Telly, J. Yeakel; Instructor C. G. Sampley; Lecturers (Part-time) S. Herman, R. B. Kool, J. Perovich.

BUSINESS ADMINISTRATION

CURRICULA AND CONCENTRATIONS

See pp. 157-158.

105-106. Principles of Accounting. (3, 3) Staff
Introductory accounting: statements, accounts, journals, adjusting and closing entries, the worksheet; the voucher system, accounting for proprietorship, partnership, and corporate equities; cost allocation devices, managerial approach to statement analysis and controls. The second semester (106) emphasizes the function of accounting in reporting data for management planning and for general evaluation of the firm. Credit in 105 can be obtained without continuing in 106. Open to students of sophomore status or to freshmen eligible to enroll in Mathematics 120 or 121 or higher level courses, and to Non-degree students with the permission of the Bus. Adm. adviser.

200-201. Principles of Economics. (3, 3)
(Same as Economics 200-201.)

202. Data Processing. (3) Eck, Fowler.
Evolution, language, and media of data processing; the systems concept; function, operation, and control of IBM punch card machinery; the stored program concept; CPU functions; storage and input-output media; programming the IBM 1401 in machine, symbolic, and interpretive languages; data processing applications to In Line, Random Access, and On Line-Real Time systems. 3 class hrs. Prerequisites: 105, Mathematics 122.

225. Managerial Accounting. (3) Christman, Mori, Seaton, Yeakel
Interpretation, use, and analysis of accounting reports and supplementary information for management planning, coordination, and control. Effects of taxation and price levels on administrative decisions. The application of various theories and concepts which underlie cost accounting and budgeting. Prerequisites: 105, 106.

263. Intermediate Accounting I. (3) Christman, Mori, Seaton, Yeakel
An expansion of the fundamentals of accounting; accounting theory; problems relating to control of, and accounting for, current assets. Prerequisites: 105, 106, with minimum grade of C in 106.

264. Intermediate Accounting II. (3) Christman, Mori, Seaton, Yeakel
Continuation of accounting theory; problems relating to control of and accounting for permanent assets, liabilities and reserves; the preparation and interpretation of financial statements. Prerequisite: 263.

265. Business Communications. (3) Reva
Prepares the student to understand terms, policies, and procedures in business relations; letter writing, reports, memoranda, and other media of communication.

289. Statistical Analysis. (3) Fowler, Dillman, Shinnick, Nolan
Introduction to the analysis of numerical data, pertinent to business and economics. Includes descriptive statistics, sampling, inference, index numbers, time series and correlation. Emphasis is on the logic of analysis, application, and interpretation. Prerequisite: Mathematics 120 or 121.

290. Managerial Economics. (3) Blumenfeld, Brown, Slate
Application of economic theory and behavioral science concepts in decision-making by the firm. Focus is upon economizing the use of resources, determining optimal combinations of products, price determination and strategy, analysis of competitive forces, and evaluation of market demand and trends.

305. Introduction to International Business. (3) Winter
Will provide an understanding of international business operations—the managerial and operational problems of a global enterprise and focus on socio-economic differences. Structure and functions of a world-wide organization. Emphasis to global business decision making. Prerequisite: Economics 200.

306. Man, Society, and Law. (3) Huber, Telly
An intensive examination of the nature, functions and ends of law. The major philosophical schools of thought concerning the nature of man, organizations and governments discussed from a conceptual approach. Natural Law concepts beginning with the ancient Greek philosophers through the periods of Hobbes, Locke, Rousseau, Kant to contemporary views of law stressing sociological jurisprudence with emphasis on application of law to specific current business and social problems and the external constraints on man and decision-making which result from laws. Prerequisite: upper-division standing.

307. Law of Contracts. (3) Huber, Telly
An intensive examination emphasizing a conceptual approach through the case method of transactions between men and organizations. Development of an understanding of the elements of agreements, the types of agreements which are legally enforceable, and the legal remedies available to the parties thereto. Prerequisites: 306 and upper-division standing.

308. Principles of Marketing. (5) Slate, Winter
Designed to give the student an understanding and appreciation of the marketing process within the framework of the firm. The central purpose is to develop a comprehension of the increasingly important role of behavioral and quantitative models in developing marketing strategy in domestic and international markets. Prerequisites: Economics 200 & 201.

310. Principles of Finance. (3) Brown, Edgel
The introductory course in finance. Includes sources and uses of short- and long-term funds, internal financial management, problems of capital and cash budgeting, asset management and valuation. Prerequisites: 225 or equivalent, Economics 201.

***315. Money and Banking.** (3) Chung
(Same as Economics 315.)

***320. Economics of Labor Relations.** (3) Cohen
(Same as Economics 320.)

321. Advanced Accounting I. (3) Christman, Mori, Perovich, Seaton, Yeakel
Problems and theory relating to partnership dissolution and liquidation, consignments, installment sales, the statement of affairs, realization and liquidation, estates and trusts, and insurance. Prerequisite: 264.

327. Life Insurance. (3) Mori, Seaton
The economic aspects of risk as exemplified by life insurance; basic actuarial considerations; detailed investigation of provisions and costs of policies and their suitability for various types of buyers; organization of the business.

328. Property and Casualty Insurance. (3) Christman, Mori, Seaton
Basic principles and theories of insurance will be treated generally, followed by a special study of fire, liability, marine, automobile, and aviation insurance. Fidelity and surety bonds will also be included in the study of property insurance.

329L. Quantitative Analysis for Management. (3) Dillman, Fowler
The application of modern quantitative methods to business problems. Includes allocation, inventory, and waiting line models, decision theory, forecasting and advanced statistical techniques. 2 lectures, 2 hrs. lab. Prerequisite: 289.

330. Organization Theory. (5) Dillman, Herman, Nolan
Fundamentals of organization and management which apply not only to industrial organizations but to any enterprise involving sizeable groups of people. Study of the manager's job in setting goals and in utilizing both human and material resources to meet organization objectives. Introduction to human relations case problems.

***332. Government Control of Business.** (3) Parker
(Same as Economics 332.)

340. Transportation. (3) Hufbauer
(Same as Economics 340.)

***350. Public Finance.** (3) Therkildsen
(Same as Economics 350.)

***362. Economic Fluctuations.** (3) Chung, Hamilton
(Same as Economics 362.)

363. Financial Analysis. (3) Brown, Edgel
Tools and techniques useful in the systematic analysis of financial alternatives characterized by uncertainty. Includes security and portfolio analysis, appraisal of capital budgeting procedures, estimating funds flows, and profit-ability analysis. Prerequisite: 310.

***364. Rise of Modern Industry.** (3) Hamilton
(Same as Economics 364.)

366. Financial Management. (3) Brown
Planning, directing, and controlling the uses of an organization's financial resources, both internal and external. Promotion, mergers and consolidations, role of financial intermediaries, and regulation. Prerequisite: 310.

384. Cost Accounting. (3) Mori, Seaton, Yeakel
Industrial and distribution cost accounting principles and techniques; job and process cost systems; standard costs. Prerequisite: 106.

***410. Marketing Communication.** (3) Winter
An investigation of communications theory including market, audience, and individual behavior; relationships of communications in the marketing mix; personal and nonpersonal forms of communications including sales management and advertising; problems of determining advertising appropriations, budgets, campaign strategy, media analysis, and evaluation of the communications effort of the firm. Prerequisite: 308.

***422. Advanced Accounting II.** (3) Christman, Mori, Seaton, Yeakel
Branch accounting; preparing consolidated financial statements; effecting combinations and mergers. Prerequisite: 264.

447. Auditing. (3) Christman, Mori, Seaton, Yeakel
Auditing principles and procedure; preliminary considerations, planning the audit program, classes of audits, audit reports, professional ethics and legal responsibility; case problems. Prerequisite: 321.

***449-450. Income Tax Accounting.** (3, 3) Christman, Mori, Seaton, Yeakel
Federal and state income tax laws and regulations; history and background; sources of tax law; tax services; organization and procedures of the Bureau of Internal Revenue; tax returns, rates and credits; deductions and exclusions; withholding provisions; capital gains and losses; community property clauses. Prerequisite: 105, 106 with minimum grade of C in 106. Credit may be obtained in 449 without continuing in 450.

***469. Financial Policy.** (3) Brown
Formulation and application of long- and short-term policies for working capital management, investment decisions, financial structure, dividend policy, stockholder relations. Emphasis on the development of a policy-making framework suited for decision-making under varying degrees of uncertainty and risk. Prerequisites: 310 and either 363 or 366.

***483. Marketing Research.** (3) Slate, Winter
Research methods and techniques as an aid to marketing management and the application of these tools to the process of obtaining information upon which to base marketing strategy. Prerequisites: 289, 308.

***486. Marketing Logistics.** (3) Slate, Winter
In this course the student considers analysis and development of an integrated distribution network. A systems approach is applied to the problems of marketing logistics.

Economic analysis and quantitative tools are used in decision-making concerning the physical flow of goods. Included are warehousing and inventory planning. Prerequisites: 308, 329L.

*487. **Contemporary Accounting Problems.** (3) Caplan, Mori, Seaton, Yeakel
Comprehensive coverage of current problems related to income determination, asset and equity valuation and statement presentation. Prerequisite: 264.

*490. **Methods Engineering.** (3)
(Same as Mechanical Engineering 490.)

492. **Senior Seminar.** (3) Brown, Dillman
Emphasis is placed on the specific functions of top management. A variety of case studies offers the student an opportunity to develop a habit of administrative thinking as company-wide objectives and policies are formulated, and consistent plans and programs are carried into action. Prerequisite: senior standing.

*493. **Labor Law and Collective Bargaining.** (5) Finston, Kool
Case studies of common, statutory, and administrative law, with emphasis on modern labor legislation and related court and administrative agency decisions affecting labor-management relations. An examination of the game theory approach to collective bargaining strategy and tactics. Intensive analysis of negotiation and arbitration cases involving wages, employee discipline, seniority rights, management prerogatives, and other collective bargaining issues. Prerequisite: 330 or permission of instructor.

*495. **Administrative Theory and Practice I.** (3) Dillman, Finston, Herman, Nolan
Analysis of managerial functions and responsibilities. Extensive case studies involve formal and informal relationships among workers, supervisors, staff and line officers, and top and middle management. Special emphasis is placed upon administrative processes and techniques. Prerequisite: 330 or permission of instructor.

*496. **Advanced Theory in Personnel Management.** (3) Dillman, Finston, Herman, Nolan
An investigation into the behavioral models underlying the instruments, their nature, administration and interpretation as used in personnel management. Implications for interviewing, testing, training, performance evaluation, and wage and salary administration. Prerequisite: 330 or permission of the instructor.

*500. **Quantitative Analysis I.** (3) Dillman, Fowler
Study and application of mathematical techniques in the solution of administrative problems. Primary applications will be made to deterministic models of resource allocation and inventory control.

*501. **Quantitative Analysis II.** (3) Dillman, Fowler
Continuation of 500 with emphasis on stochastic models and the use of statistics in administrative decision making. The computer will be used in depth for data reduction and manipulation. Emphasis will be laid upon simulation models of administrative phenomena. Prerequisite: 500.

*502. **Managerial Accounting and Control.** (3) Caplan, Mori, Seaton, Yeakel
Intensive study of accounting theory, both as a systematic approach to evaluation of the total performance and status of an enterprise, and as an aid to management in making current decisions, planning future activities, and in maintaining operational control.

*504. **Business Economics I.** (3) Blumenfeld, Brown, Slate
Economic systems, institutions, and organization; macro- and micro-economic principles, problems, and analysis.

*505. **Business Economics II.** (3) Blumenfeld, Brown
Application of macro- and micro-economic principles and analysis to managerial and financial problems.

*506. **Organizational Behavior I.** (3) Herman, Nolan
Interpretation of administrative behavior in terms of psychological laws. Analysis of organizational settings as social environments where psychological laws can be tested and generated. Reviews of the basic behavioral science techniques used in organizational studies.

*507 **Organizational Behavior II.** (3) Dillman, Finston
Traditional and contemporary theories of organizations as abstract organisms, especially cybernetic systems of communication and control, and their goals and motivations. Problems generated by the presence of human decision-makers in the organization, and consideration for means for resolving conflict between the goals of the organization and the goals, needs, and sentiments of individuals and groups within it. Emphasis is laid upon

designing a structure consonant with the basic purposes of the enterprise, and in developing an organizational climate conducive to maximum growth and productivity of the individual.

*509. **Law and Society.** (3) Huber, Telly

*511. **Marketing.** (3) Slate, Winter
The purpose of this course is to provide an understanding of the marketing-decision making process and to develop in the student analytical and conceptual abilities as well as problem-solving capacity. Surveys normative models for decision-making in different marketing situations and discusses various analytical tools available to the marketing executive for appraising, diagnosing, organizing, planning and formulating of marketing programs. Marketing problems discussed within the system of the firm in an international setting. Student's attention directed towards an understanding of the economic, social and political forces leading to change in the market place and the development of concepts that are useful in evaluating marketing situations. Emphasis upon the construction of a marketing plan, strategy, and tactics.

*520. **Seminar in Systems Analysis.** (3) Fowler
Information systems, including approaches to the description of those data characteristics relevant to a given problem; approaches to data reduction, storage, and analysis; and schemes of justification for a recommended system. Topics include discussions of general systems theory, cybernetics, value analysis, information retrieval, computer metalanguages, and implementation.

*521. **Seminar in Managerial Economics.** (3) Brown, Slate
Selected topics of current importance in the area of managerial economics; significant books and articles read and discussed. Emphasis given to problems in the area of production and resource allocation.

*522. **Seminar in Marketing.** (3) Slate, Winter
Selected topics of current importance in the field of marketing. Significant books, articles, and research reviewed and discussed. A high degree of participation by seminar members is expected.

*523. **Seminar in Organizational Theory.** (3) Herman, Nolan
Advanced theory of organization structure and behavior with emphasis upon behavioral science research contributions. Advanced cases focus upon management's role in resolving inter-personal, inter-group, and inter-organization problems.

*524. **Seminar in Law and Society.** (3) Huber, Telly

*525. **Seminar in Accounting.** (3) Caplan, Mori, Seaton, Yeakel
Controversial aspects of depreciation, treasury stock, surplus, goodwill, no par capital stock, inventory valuation, fixed assets valuation, overhead costs.

*526. **Seminar in Finance.** (3) Brown
Internal and external financing of business and non-business organizations with special emphasis on determination of capital needs, sources of funds and planning for the effective use of funds.

*527. **Seminar in International Business** (3) Winter
The problems of intense and sophisticated competition in world markets which confront US businessmen. As company activities in foreign business grow, management must acquire better understanding on which to base reasonable decisions. Emphasis to the development of an international business strategy. Considers crucial differences in foreign business such as psychological aspects, sociological structure, as they relate to US business operations abroad.

*528. **Seminar in Administrative Policy.** (3) Brown, Dillman
The functional areas of administration are integrated and their interdependence shown. Emphasis upon (a) the diagnostic procedures necessary to identify relevant quantitative and qualitative decision variables in a particular problem, (b) developing a model of the functional relationships among these variables, and (c) using the foregoing to make specific decisions.

*529. **Seminar in Managerial Accounting and Control.** (3) Caplan, Seaton
An inquiry into the role of accounting and management decision making and control. Selected topics in these include incremental analysis, capital budgeting, standard costs and analysis of variances, responsibility accounting, cost-volume-profit analysis and product costing. Prerequisite: 502 or permission of instructor.

*530. **Mathematical Programming.** (3) Fowler
Extension of linear programming to the integer and quadratic cases; dynamic program-

ming. Although some theory will be necessary, this course is of primarily an applied nature. Problems will be devised to run on the computer: Prerequisite: 501 or permission of instructor.

***535. Advanced Accounting Theory and Practice.** (3) Caplan, Mori, Seaton, Yeakel
The application of advanced accounting principles to practical cases and accounting problems. Prerequisite: permission of instructor.

***551-552. Problems.** (1-2 hrs. each semester) Brown, Caplan, Edgel, Finston, Fowler, Nolan, Telly, Winter
Special permission of the adviser and of the Dean of the College of Business Administration required.

***555. Seminar in Advanced Tax Accounting.** (3) Mori
Case studies in advanced federal income tax problems; federal estate and gift taxes; a study of those New Mexico State taxes which concern the public accountant.

***597. Administrative Research and Problems I. (Non-thesis)** (3) Herman, Nolan, Winter
Designed for MBA students who (1) will be required to deal with questions and problems (make or assist in making decisions), (2) will be required to make investigations and to report their methods and conclusions to superiors, (3) will be expected to make critical evaluations of research reports. The final project in the course is the submission of a complete prospectus of the student's thesis. This prospectus must, at a minimum, explain the background and significance of the problem, state and hypothesis(es) or proposition to be investigated, establish the design and/or method of investigation, and indicate the character and availability of evidence required.

***598. Administrative Research and Problems II. (Non-thesis)** (3) Edgel
Selected short-term research projects involving application of widely varying research approaches and techniques to the various disciplines and functional areas which comprise administration. Enrollment in 598 will not be permitted until the student has satisfactorily completed 597.

***599.** [540, 541] **Administrative Research and Problems I and II. (Thesis)** (3)

SECRETARIAL

CURRICULA

See Two-Year Secretarial Program (p. 139) and Business Education (p. 170).

For Graduate courses in Business Education, see Education, Elementary and Secondary.

‡111. Beginning Typewriting. (2) Park, Reva
The learning of the keyboard by the touch system. **Students who have had typewriting in high school or business school will not receive credit in 111.**

‡112. Intermediate Typewriting. (3) Park, Reva, Sampley
Business forms, correspondence and letter styles, manuscripts, tabulation, speed building with individual goals. Prerequisite: knowledge of typewriter operation and keyboard.

§113-114. Shorthand Theory; Beginning Dictation. (3, 3) Park, Sampley
Gregg theory and essentials of writing; speed goal: **50 wpm minimum.** 114: Review of theory; introduction of transcription; speed goal: **80 wpm minimum. Students who have had shorthand in high school should enroll in 114 or a more advanced class, as they will not receive credit in 113.** Prerequisites for 114: 111, 113, or equivalent.

117. Office Machines and Filing. (2) Reva
Laboratory work in filing, transcription from recorded dictation, mimeograph, direct process duplicators, listing and non-listing calculators. Prerequisite: 112.

§253. Transcription. (3) Sampley
Review of theory; dictation and transcription from shorthand notes correctly and speedily. Mailable letters are required. Prerequisites: 112 and 114 or equivalent. Speed goal: 120 wpm.

257. Secretarial Office Practice. (3) Reva
Development of the ability to apply secretarial skills to office duties and to handle efficiently the responsibilities of a secretarial position. Prerequisites: 112, 114, or equivalent.

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‡ No credit allowed toward degrees in Colleges of Arts and Sciences, and Pharmacy.

§ A maximum of 6 hours credit allowed in shorthand in the College of Arts and Sciences. No credit allowed toward degree in the College of Pharmacy.

262. Advanced Typewriting. (3) Reva, Sampley
Production, with efficiency and accuracy, of business letters, reports, manuscripts, tabulation, rough drafts, corporation reports, legal documents; study of skill performance problems from point of view of teacher and/or office supervisor. Individual speed goals. Prerequisite: 112.

265. Business Communications. (3) Reva
(See Business Administration 265).

439. Teaching of Business Subjects. (3) Rider
(Same as Secondary Education 439.)

CHEMICAL ENGINEERING

See Engineering, Chemical

CHEMISTRY

Professors R. N. Castle (Chairman), G. H. Daub, M. Kahn, S. E. Smith; Associate Professors R. D. Caton, G. A. Crosby; Assistant Professors L. D. Hansen, D. R. McLaughlin, N. E. Vanderborgh, B. D. West; Instructors M. P. Malm and V. V. Searcy.

The program of the Department of Chemistry conforms to the standards prescribed by the American Chemical Society; however, students who wish to be certified to the American Chemical Society should elect Chemistry 431, Inorganic Chemistry.

MAJOR STUDY

For the degree of Bachelor of Arts: Chemistry 121L (or 101L), 122L, 301, 302, 303L, 304L, and at least 11 additional hours selected from courses numbered 305-499; or Chemistry 101L, 102L, 253L, 301, 302, 303L, 304L and at least 8 additional hours selected from courses numbered 305-499.

For the degree of Bachelor of Science: Chemistry 121L (or 101L), 122L, 301, 302, 303L (2 hr.), 304L (2 hr.), 311, 312, 313L, 314L, 350, 352L and at least 10 additional hours selected from courses numbered 305-499; or Chemistry 101L, 102L, 253L, 301, 302, 303L (2 hr.), 304L (2 hr.), 311, 312, 313L, 314L, 350, 352L and at least 10 additional hours selected from courses numbered 305-499. The program must also include Physics 260, 261, 262, 263L, 264L and German equivalent to 252 or 262.

MINOR STUDY

20 hours in Chemistry, including Chemistry 101L, 102L, 253L, and either 301, 302, 303L and 304L or 311, 312, 313L and 314L; or Chemistry 121L (or 101L), 122L, 301, 302, 303L and 304L or 311, 312, 313L, 314L and 3 additional hours selected from courses numbered 305-499. Chemistry 141L, 142L, and 281 do not count toward the minor.

101L. General Chemistry. (4)
Introduction to the chemical and physical behavior of matter. 3 lectures, 3 hrs. lab.

102L. General Chemistry. (4)
Continuation of 101L and including qualitative analysis. Prerequisite: 101L or 121L with grade of C or better. 3 lectures, 3 hrs. lab.

121L. General Chemistry. (4)
A comprehensive study of the chemical and physical behavior of matter with application of these principles to quantitative laboratory techniques and inorganic preparations.

This course is designed for the student intending to major in science. Prerequisites: 1 yr. high school chemistry and qualifying ACT scores. 3 lectures, 3 hrs. lab. **(Credit not allowed for both 121L and 101L.)**

122L. General Chemistry. (5)
Introduction to chemical equilibrium and the periodic properties of the elements. Application of these principles to qualitative and quantitative analysis. Prerequisite: 121L with grade of C or better or 101L with grade of C or better and permission of instructor. 3 lectures, 6 hrs. lab. **(Credit not allowed for both 122L and 102L.)**

141L. Elements of General Chemistry. (4) Searcy
A one-semester course in general chemistry. 3 lectures, 3 hrs. lab.

142L. Elements of Organic Chemistry. (4) Searcy
A brief course in organic chemistry. Prerequisite: 141L or 101L. 3 lectures, 3 hrs. lab.

253L. Quantitative Analysis. (4) Caton, Vanderborgh
Theory and techniques of volumetric and gravimetric analysis. Prerequisite: 102L. 2 lectures, 6 hrs. lab.

281. Integrated Organic Chemistry and Biochemistry. (4) Malm
A survey interrelating the major principles of organic chemistry and biochemistry. Prerequisites: 101L or 141L.

****301-302. Organic Chemistry.** (3, 3) Castle, Daub
The chemistry of the compounds of carbon. Prerequisite: 102L or 122L; it is mandatory that 303L be taken concurrently with 301, and 304L with 302.

****303L. Organic Chemistry Laboratory.** (1-2)
To be taken concurrently with 301. 3 or 6 hrs. lab.

****304L. Organic Chemistry Laboratory.** (1-2)
To be taken concurrently with 302. 3 or 6 hrs. lab.

****311-312. Physical Chemistry.** (3, 3) Crosby, Kahn, McLaughlin
The quantitative principles of chemistry, developed by numerous problems. Prerequisites for 311: 253L or 122L, Mathematics 264; pre- or corequisites: Mathematics 265, Physics 262. Prerequisite for 312: 311.

****313L. Physical Chemistry Laboratory.** (1) Crosby, Kahn, McLaughlin
Experimental study of the subjects discussed in 311-312. Prerequisite: 311. 3 hrs. lab.

****314L. Physical Chemistry Laboratory.** (1) Crosby, Kahn, McLaughlin
Continuation of 313L. Prerequisite: 312. 3 hrs. lab.

****323. Introduction to Biological Chemistry.** (3) West
An introductory course dealing with the chemistry of biological compounds and their transformation in plants and animals. Prerequisite: 302-304L.

****324L. Introduction to Biological Chemistry Laboratory.** (1) West
3 hrs. lab.

****350. Special Methods in Quantitative Analysis.** (3) Caton, Vanderborgh
A lecture survey of the theory and practice of qualitative and quantitative analysis. An introduction to instrumental methods. Prerequisites: 122L, or 253L, 311.

****352L. Special Methods in Quantitative Analysis Laboratory.** (2) Caton, Vanderborgh
Laboratory and conferences. Chemical and instrumental analyses; colorimetry; potentiometric and conductometric titrations. Pre- or corequisite: 350. 6 hrs. lab.

***405L. Qualitative Organic Analysis.** (3-4) Castle, Daub, West
Identification of carbon compounds through the characteristic reactions of the functional groups. Prerequisites: 302-304L and permission of instructor. 1 lecture, 6 hrs. lab. or 1 lecture, 9 hrs. lab.

***406L. Organic Preparations.** (2-4) Castle, Daub, West
The synthesis of organic compounds utilizing the usual reactions such as Grignard, Friedel-Crafts, etc. Prerequisite: 304L and permission of instructor. 6 to 12 hrs. lab.

***407. The Chemistry of the Alkaloids.** (3) Castle
The chemistry involved in the isolation, proof of structure and synthesis of typical representatives of the different classes of alkaloids. Prerequisite: 302 and permission of instructor.

***415. Structure of Matter.** (3) Crosby, McLaughlin
Elements of molecular orbital theory; dipole moments; dissociation energies; quantum mechanical description of chemical bonds; hybridization; chemical consequences of structure. Enrollment only by permission of instructor.

** Available for graduate credit except for graduate majors in Chemistry.

***420. Advanced Organic Chemistry.** (3) Daub
Prerequisite: 302 with grade of B or better or permission of instructor.

***431. Inorganic Chemistry.** (3) Hansen
A systematic study of the chemical properties of the elements and their compounds, including an introduction to coordination chemistry. Prerequisite: 311; pre- or corequisite: 312.

***436L. Inorganic Chemistry Laboratory.** (2-3) Hansen
Techniques used in synthetic inorganic chemistry. Co- or prerequisite: 431 or permission of instructor. 1 lecture, 3 or 6 hrs. lab.

***454L. Instrumental Analysis.** (4) Caton, Vanderborgh
Instrumentation and applications of instrumental methods to chemical analysis, including spectrophotometric and electroanalytical methods. Prerequisite: 352L or permission of instructor. 2 lectures, 6 hrs. lab.

***458. Advanced Analytical Chemistry.** (3) Caton, Vanderborgh
A survey of the principles of analytical chemistry with emphasis on modern methods of chemical analysis. Prerequisites: Chem 350-352L or permission of the instructor.

***460. Advanced Physical Chemistry.** (3) Crosby, Kahn, McLaughlin
Includes the thermodynamics and kinetics of chemical reactions and their relationship to the structure of chemical substances. Prerequisite: 312.

***481-482. Biological Chemistry.** (3, 3) West
Prerequisites: 302, 312.

***483L. Biological Chemistry Laboratory.** (1) West
Pre- or corequisite: 481.

***484L. Biological Chemistry Laboratory.** (1) West
Pre- or corequisite: 482.

497-498. Undergraduate Problems. (2-5 hrs. each semester)

***501-502. The Chemistry of the Heterocyclic Compounds.** (3, 3) Castle, Daub
The chemical properties and synthesis of representative members of the various classes of the heterocyclic compounds. Prerequisite: 302.

***504-505. Theoretical Organic Chemistry.** (3, 3) Daub
The more important theories of organic chemistry. Prerequisites: for 504: 302, 312; for 505: 504.

***506L. X-ray Crystallography.** (4) Rosenzweig
(Also offered as Geology 506L.) Prerequisite: Mathematics 264 or 311, and permission of instructor. 2 lectures, 6 hrs. lab.

***508. Advanced Topics in Organic Chemistry.** (3) Castle, Daub.
May be repeated for credit at discretion of the Department Chairman. Prerequisite: 302.

***509. Advanced Topics in Organic Chemistry.** (3) Castle, Daub
Topics such as carbohydrates, synthesis of polycyclic compounds, relation of chemical structure to physiological activity. **May be repeated for credit at the discretion of the Department Chairman.** Prerequisite: 302.

***511. Advanced Seminar in Physical Chemistry.** (3) Crosby, Kahn, McLaughlin
Prerequisite: 312 or permission of the instructor. **May be repeated for credit at the discretion of the Department Chairman.**

***513. Radiochemistry.** (3) Kahn
Elementary nuclear theory; radiations and their interactions with matter; detection of radiation. Prerequisite: 312.

***514. Advanced Topics in Radiochemistry.** (3) Kahn
Principles, ideas, and tracer techniques in the application of radioactivity to chemistry. Prerequisite: 513 or permission of instructor. **May be repeated for credit at the discretion of the Department Chairman.**

***532. Advanced Topics in Inorganic Chemistry.** (3) Hansen
May be repeated for credit at the discretion of the Department Chairman. Prerequisite: 311, 431.

***534. Advanced Topics in Analytical Chemistry.** (3) Caton, Vanderborgh
May be repeated for credit at the discretion of the Department Chairman. Prerequisite: 312.

***537. Chemistry of the Metals.** (3) Hansen
Descriptive and physical chemistry of the metallic elements and their compounds, including ligand field theory as applied to the group B transition elements. Prerequisite: 431.

***538. Chemistry of the Non-Metals.** (3) Hansen
Descriptive chemistry of the non-metallic elements and their compounds. Prerequisite: 431.

***541. Electroanalytical Chemistry.** (3) Caton, Vanderborgh
Theory and applications of electroanalytical methods including potentiometry, voltammetry at controlled potential and at constant current, coulometry, amperometry, and chronopotentiometry; theory of electrode processes, potentials and kinetics of electrochemical reactions. Prerequisite: 312 or permission of instructor.

***542. Analytical Separation Methods.** (3) Caton, Vanderborgh
Theory and practice of liquid-liquid extraction, precipitation and crystallization, columnar liquid-solid adsorption processes, ion exchange processes, gas chromatography, paper chromatography, and thin layer chromatography. Prerequisite: 312 or permission of instructor.

***561. Quantum Chemistry I.** (3) Crosby
Fundamentals of quantum theory. Observables, operators, eigenvalue problems, one-dimensional systems, simple three-dimensional systems, perturbation theory, variational methods. Prerequisite: 415 or equivalent.

***562. Quantum Chemistry II.** (3) Crosby
Application of quantum theory to atoms and molecules. Many-electron problem, radiation theory. Electronic, vibrational, rotational, and resonance spectroscopy. Matrix methods. Prerequisite: 561.

***563. Statistical Mechanics.** (3) Crosby, McLaughlin
Classical and quantum statistical mechanics with application to thermodynamic systems. Prerequisite: 415 or permission of instructor.

***567. Advanced Thermodynamics.** (3) McLaughlin
Classical thermodynamics with applications in chemistry. Prerequisite: 312.

***568. Kinetics.** (3) McLaughlin
Phenomenological description of chemical reactions in the gas and liquid phases and analysis of mechanisms using classical and modern theories. Prerequisite: 312.

***581. Advanced Topics in Biological Chemistry.** (3) West
Typical subjects: Nucleic Acids, Detoxification Mechanisms, Chemistry of Natural Products, etc. **May be repeated for credit at the discretion of the Department Chairman.** Prerequisites: 323 or 481 and 482.

***599. Master's Thesis. (1-3 hrs. per semester)** Castle, Caton, Crosby, Daub, Hansen, Kahn, McLaughlin, Vanderborgh, West
See the **Graduate School Bulletin** for total credit requirements.

***650. Research. (2-6 to a maximum of 12)**

***699. Dissertation. (3-6 hrs. per semester)** Castle, Caton, Crosby, Daub, Hansen, Kahn, McLaughlin, Vanderborgh, West
See the **Graduate School Bulletin** for total credit requirements.

CHEMISTRY, PHARMACEUTICAL

See Pharmacy

CIVIL ENGINEERING

See Engineering, Civil

CLASSICAL LANGUAGES

See Modern and Classical Languages

COMPARATIVE LITERATURE

Committee in Charge: Assistant Professor J. L. Baltzell (English), Chairwoman; Professors G. W. Arms (English), J. Frank (English), W. D. Jacobs (English),

R. R. MacCurdy (Languages), D. A. McKenzie (Languages); Assistant Professor T. Holzapfel (Languages), J. B. Zavadil (English).

The major in Comparative Literature is an interdepartmental major administered jointly by the Department of English and the Department of Modern and Classical Languages.

MAJOR STUDY

The minimum requirement of 30 hours includes: English 275-276; Greek 339 or Latin 340; Comparative Literature 466; British or American literature (9 hours, including at least 6 in courses numbered above 300); a foreign literature (9 hours from French, German, Portuguese, or Spanish). For descriptions of individual courses see the listings under the two departments. Students may minor in literature (British or American or any foreign language), but courses taken to satisfy the major cannot be used to satisfy the minor requirement. Other minor fields particularly recommended are anthropology, art history, history, and philosophy.

Students planning to major in Comparative Literature are requested to consult with an adviser either in their sophomore year or early in their junior year. Programs will be carefully planned in both the major and the minor.

MINOR STUDY

15 hours including:

Group 1, 6 hours in literature in a foreign language;

Group 2, 6 hours from courses listed under Comparative Literature in this bulletin;

3 additional hours from either Group.

275. World Literature from Homer to Dante. (3) Frank, Jacobs, Kuntz, Staff
(Same as English 275.) Masterpieces of European and Asiatic literature, including the Bible.

276. World Literature from Rabelais to Mann. (3) Jacobs, Kuntz, Staff
(Same as English 276.) Masterpieces of European literature.

***338. Russian Literature in Translation.** (3) T. Holzapfel
(Same as Russian 338.)

***339. Greek Drama in Translation.** (3) Thompson
(Same as Greek 339.)

***340. Latin Literature in Translation.** (3) Thompson
(Same as Latin 340.)

***342. Greek non-Dramatic Literature in Translation.** (3) Baltzell
(Same as Greek 342.)

***437. Contemporary Drama.** (3) Freedman, Jacobs, Staff
(Same as English 437.)

***456. Literature of Medieval Europe.** (3) Baltzell, Zavadil
Selected authors and genres, Augustine to Petrarch.

***461. The Folktale in English.** (3) Baughman
The tradition of folk motifs and themes in the development of the tale as a form of storytelling in English and American literature.

***465. Tragedy.** (3) Dickey, Freedman, MacCurdy, Trowbridge
Selected tragedies from world literature in translation and theories of the tragic form. Prerequisite: 3 hrs. in literature.

***466. Literary Criticism.** (3) Arms, Dickey, Trowbridge
A history of major critical attitudes toward literature. Prerequisite: 6 hrs. in literature.

***475. Dante.** (3) White
Principally the **Vita nuova** and the **Divine Comedy.**

***599. Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

DENTAL HYGIENE

Professor M. Novitski (Director); Assistant Professor M. L. duFault; Instructors L. Keeffe, V. R. Mellott; Part-time Lecturers C. E. Cullen, H. Naeve, R. Sei, R. J. Walpole; Part-time Instructors B. Brabb, T. D. Breshears, P. Clark, I. Navarre; Laboratory Instructor D. Dionne.

CURRICULUM

See p. 226.

100. [100L] **Orientation.** (2) Novitski
Survey of dental hygiene, dentistry, and related professions. Personal and oral health. Introduction to patient education. 2 lectures, 3 hrs. lab.

101L. [100L] **Orientation Laboratory.** (1)
Introduction to the clinical skills of dental hygiene.

102L. Preclinical Dental Hygiene. (3) duFault, Keeffe
Introduction to techniques of oral prophylaxis. Prerequisites: 100L, 111L. 2 lectures, 8 hrs. lab.

110. [110L] **Oral Anatomy.** (3) Novitski
Anatomy of head and neck with emphasis on oral structures and their functions.

111L. [110L] **Dental Anatomy Laboratory.** (1)
Morphology of tooth structure. 3 hrs. lab.

112. Oral Radiography. (1) Naeve
The physics of roentgenology, the operation of the X-ray machine, and the practice of taking and developing dental X-rays.

200L. Clinical Dental Hygiene. (3)
Continuation of 102L. Student gains experience in oral prophylaxis and radiography by providing services for patients in dental clinic. Prerequisite: 102L. 2 lectures, 11 hrs. lab.

202L. Clinical Dental Hygiene. (4)
Continuation of 200L. Prerequisite: completion of satisfactory work in all courses of first 3 semesters of Dental Hygiene Curriculum. 1 lecture, 16 hrs. lab.

210L. Histology. (2) Walpole
Introductory study of cells, tissues, and organic structures of human body with emphasis on oral structures. 1 lecture, 2 hrs. lab.

212. Pathology. (2) Walpole
Introduction to general pathology; pathology of diseases affecting teeth and their supporting structures; oral manifestations of systemic disturbances. Prerequisites: Biology 136, 139L, 393L; DH 210L.

220L. Dental Materials. (2) Sei
A survey of materials used in dentistry; training in common dental laboratory procedures. 1 lecture, 2 hrs. lab.

222. Dental and Public Health Education. (2) duFault
Teaching of dental health; methods and materials to use; theory and practice of preventive dentistry and public health.

230. Oral/Dental Medicine. (2) Cullen
Diagnosis and recognition of the nature and cause of the disease process; principles of treatment; diagnosis, etiology, prevention and control of diseases of teeth, their surrounding and supporting structures. Relation of dental health to total health. Prerequisite: 102L.

240. Dental Hygiene Seminar. (0)
Required for certification. Attendance at one-day dental hygiene seminar presented annually between fall and spring semesters. Prerequisite: 3rd semester standing.

242. Practice Management and Ethics. (1) Novitski
The principles of professional ethics; the laws and regulations related to dentistry and dental hygiene; essentials of office management, record keeping, and practice building.

325. Nutrition. (3) Harris
(Same as Home Economics 325). The relation of nutrition to the health program; normal nutrition for all ages, prenatal through old age.

DRAMATIC ART

Professors E. Snapp (Chairman), J. E. Yell; Associate Professor N. Blackburn; Assistant Professors J. Buckles, T. Calkins.

MAJOR STUDY

For Dramatic Art Curricula in Fine Arts: Professional Curricula (with emphasis in Television or for teachers' certificate) and General Curriculum, see pp. 202-204.

College of Education: Dramatic Art 101, 115, 116, 129, 275, 276, 285, 286, 305, 306, 361, and English 441 or 442 or 465. Total 36 hours.

MINOR STUDY

College of Education: Dramatic Art 101, 115, 116, 129, 285, 286, 305, 306, and English 441 or 442 or 465. Total 27 hours.

College of Arts and Sciences: A minimum of 24 hours including Dramatic Art 115, 116, 305, 335, English 441 or 442 or 465; 3 hours to be chosen from Dramatic Art 129, 306, or 336; 6 additional hours in Dramatic Art numbered above 200.

101. Voice and Diction. (3) Staff
Training for the effective use of the speaking voice: basic principles of voice production, diction, and phonetics. Credit will not be allowed for both Speech 101 and Dramatic Art 101.

102. Voice and Diction. (3) Staff
Specialized training in the use of the voice for interpretation of stage roles and for students preparing to enter speech-oriented careers. Prerequisite: 101 or equivalent.

115-116. Theatre Appreciation. (3, 3) Calkins
An introduction to the theatre in terms of the rewarding experience and personal enjoyment it affords both those who create it and those who appreciate it.

129-130. Stage Craft. (3, 3) Calkins
Methods, materials, and techniques of stage carpentry. Students construct scenery for season's productions. 3 lectures, 3 hrs. lab.

140. Makeup. (3) Blackburn
A practical course on the art of makeup for stage and television, covering both basic principles and specific techniques.

255-256. Stage Lighting. (3, 3) Blackburn
Theory and practice of present-day methods of lighting the stage.

275-276. Technical Production. (3, 3) Calkins
Analysis, planning, and construction of stage scenery and properties; study of the theatre plant. Prerequisite: minimum of 1 semester of stage craft. 3 lectures, 3 hrs. lab.

285-286. Acting Technique. (3, 3) Snapp
Basic methods of interpretation for stage, television, and screen. 3 lectures, 2 hrs. lab.

305-306. Rehearsal and Performance. (3, 3) Yell
Techniques for the director in both rehearsal and performance; a study of acting styles as related to periods of theatre history.

315. Theatre Production for Teachers: Acting and Directing. (3) Snapp
Essentials of acting and directing; rehearsal methods and production organization. May not be taken by drama majors for credit. 3 lectures, 2 hrs. lab.

316. Theatre Production for Teachers: Technical Production. (3) Staff
Essentials of stagecraft, lighting, makeup, scene and costume design; backstage organization and production techniques. May not be taken by drama majors for credit. Students are required to serve on a technical crew for one production. 3 lectures, 2 hrs. lab.

317. Educational Theatre. (3) Snapp
The organizing and teaching of drama and dramatic activities in the junior and senior high schools. Special emphasis given to the uses of educational theatre as an integral part of the school curriculum and the student activities program. Prerequisites: 315 and 316, or equivalent courses.

335-336. Theatre History. (3, 3) Blackburn
The development of dramatic art from the Greeks to the present day, with a study of historical backgrounds of dramatic thought and with special emphasis on production techniques.

350. Theatre Organization and Management. (3)
A practical and correlated study of the university theatre, the civic and community, and the professional theatre; principles of production, organization, programming, house management, budgets, advertising, and box office. Prerequisite: upper-division standing and permission of instructor.

351. Radio-Television Drama Production. (3) Yell
Basic directing techniques for the dramatic radio and television program. Workshop. 3 lectures, 3 hrs. lab.

352. Advanced Radio-Television Drama Production. (3) Yell
Advanced directing techniques, adapting and editing the dramatic radio-television program. Workshop. Prerequisite: 351 or permission of instructor. 3 lectures, 3 hrs. lab.

355-356. Playwriting. (3, 3) Snapp
Writing, reading, and analysis of student plays is supplemented by a critical examination of their playing qualities as revealed in laboratory performances before invited groups. Prerequisite: upper-division standing or permission of instructor. 2 lectures, 2 hrs. lab.

361-362. Advanced Rehearsal and Performance. (3, 3) Snapp
Advanced study of directing techniques; analysis of scripts and methods of interpretation in production. Prerequisite: 305-306.

375-376. Scene Design. (3, 3) Buckles
Materials, techniques, and methods of scene design and scene painting. Student designs compete for season's productions.

385-386. Costume Design. (3, 3) Buckles
Historic, modern, and stylized costume and how to design it for the stage. Students execute costumes for season's productions.

490. Interdepartmental Proseminar. (3) Honors Staff
(Same as Fine Arts 490.)

499. Senior Thesis. (3) Honors Staff
Directed study in any major field of the theatre arts. Open to seniors approved by the departmental honors committee.

ECONOMICS

Professors N. Wollman (Chairman), S. Cohen, D. B. Hamilton; Associate Professors W. Liepe, M. Gisser, P. Jonas, P. T. Therkildsen; Assistant Professors P. Chung, R. D'Arge, G. C. Hufbauer, T. W. Murray, A. L. Parker, K. J. Sato.

MAJOR STUDY

Economics 200, 201, 300, 303, 315 and 18 additional hours in Economics, 15 of which must be upper division, plus Business Administration 289 or equivalent. Mathematics 180-181 or their equivalent is recommended.

DISTRIBUTED MINOR FOR ECONOMICS MAJORS. With the consent of the departmental chairman, a major may offer an American Studies minor as well as a minor in a single department. For requirements, see American Studies.

MINOR STUDY

Economics 200, 201, and 12 hours in upper-division courses in Economics of which at least one course must be either Economics 300 or 303.

100. Introduction to Economics. (3)
Resources, institutions, and problems of the economic system.

200. Principles of Economics. (3)
Modern economic society: role of federal budget, public debt, and money in determining income, employment, and prices; current problems such as inflation, unemployment, poverty, growth and development.

201. Principles of Economics. (3)
Modern economic society: competition and monopoly; allocation of resources among competing uses; wages, interest, rent, and profits; international trade, balance of payments, foreign lending, gold flows; comparisons of communism, socialism and capitalism.

***300. Economic Theory.** (3) Parker, Wollman
Intermediate economic analysis with emphasis on equilibrium models under perfect and imperfect competition. Prerequisite: 201.

301-302. Interdepartmental Studies in the Culture of the U.S. (3, 3)
(Same as American Studies 301-302.) May be taken for departmental credit only with the consent of the chairman.

***303. Macro-economic Theory: National Income Analysis.** [National Income Analysis] (3) Hufbauer, Sato
Composition, fluctuations, growth, and distribution of national income. Prerequisite: 200.

310. Principles of Finance. (3)
(Same as Business Administration 310.)

***315. Money and Banking.** (3) Chung, Parker
Principles of money credit, and banking; organization and operation of the banking system. Prerequisite: 200.

***320. Economics of Labor Relations.** (3) Cohen
Labor force, unions, labor-management relations, legislation, wages, and level of employment. Prerequisite: 201.

***325. Economic Security.** (3) Therkildsen
Public and private annuity, unemployment compensation, workmen's compensation, and medical programs. Prerequisite: 200.

***330. Consumer Economics.** (3) Hamilton
The theory of consumption. Especially recommended for students in Education and Home Economics. Prerequisite: 200.

***332. Government Control of Business.** (3) Parker
Government and social control of business enterprise, including public utilities; the economics of rate making in public utilities. Prerequisite: 201.

340. Transportation. (3)
Principles and problems of transportation. Prerequisite: 201.

***350. Public Finance.** (3) Therkildsen
Taxation, governmental borrowing, financial administration, and public expenditures. Prerequisite: 201.

***355. National Defense.** (3)
Strategies and policies, allocation of resources, economic controls. Prerequisite: 201.

***360. History of Economic Thought.** (3) Therkildsen
Development of the principal economic doctrines and schools of economic thought from the Physiocrats to Keynes. Prerequisite: 201.

***362. Economic Fluctuations.** (3) Chung, Hamilton
The history of the theory of economic fluctuations, including contemporary theory; proposals to increase economic stability. Prerequisite: 201.

*364. **Rise of Modern Industry.** (3) Hamilton
Institutional and technological forces in the evolution of the industrial economy. Prerequisite: 200.

*407. [306] **Introduction to Quantitative Economics.** (3) Murray
The application of elementary mathematical and statistical techniques to economics. Prerequisite: 300 and 303; Mathematics 120 or 121 or equivalent.

*408. [307] **Mathematical Economics.** (3) Murray
The use of mathematics for solving both static and dynamic economic problems. Prerequisite: 300 and 303; Mathematics 161 or 163 or 181 or equivalent.

*409. **Elementary Econometrics.** (3) Sato
Quantitative measurement of economic relationships. Prerequisite: statistics, economic theory.

*415. **Central Banking.** (3) Chung
Major developments in central banking theory and practice and a comparative analysis of central banking in developed and underdeveloped money markets. Prerequisite: 315.

*420. **Economic Problems of Underdeveloped Countries.** (3) Hufbauer, Liepe, Sato
Theories, policies, and practices. Prerequisite: 201 or permission of instructor.

*421. **Latin American Economic Development Problems.** (3) Liepe
Economic analysis of international and domestic development problems and foreign aid programs applying to the area. Prerequisite: 201 or permission of instructor.

*424. **International Economic Relations.** (3) Hufbauer, Liepe
Trade and balance of payments adjustments, theories of the gains from trade, policy issues. Prerequisite: 201 or permission of instructor.

*440. **Regional Analysis.** (3) Sato
Analysis of regional economies, economic models. Prerequisite: 201.

*442. **Natural Resources.** (3) Wollman
Food, water, mineral, energy resources; development, allocation, pricing; productivity and effects on national income and balance of payments. Prerequisite: 201.

*450. **Comparative Economic Systems.** (3) Jonas
A critical analysis of the proposed major reforms of the existing economic system. Prerequisite: 201.

*455. **The Soviet Economic System.** (3) Jonas
Structure, institutions, growth rate, international position, and economic and military potentials of U.S.S.R. economy. Prerequisite: 201.

*485. **Philosophical Foundations of Economic Theory.** (3) Evans, Hamilton
(Same as Economics-Philosophy 485). Prerequisite: 201.

*495-496. **Departmental Seminar.** (3, 3) Staff
Problems in economic theory and their relationship with changing character of economy. Prerequisite: undergraduates require approval of department.

497. **Reading for Honors.** (3)

498. **Reading for Honors.** (3)

499. **Senior Honors Thesis.** (4)

*500. **Micro-economic Theory.** (3) Gisser
Competition and monopoly; value and distribution; general equilibrium; welfare economics. Prerequisite: 300 or equivalent.

*501. **Advanced Micro-Theory.** (3) Gisser
Prerequisite: 500.

*503. **Seminar in Economic Theory and Applied Economics.** (3) Staff
Theoretical components of major applied areas. Prerequisite: 501, 505.

*505. **Macro-economic Theory.** (3) Hufbauer, Sato
Comparative statics, dynamics, and money flows. Prerequisite: 303.

*507. **Mathematical Economics.** (3) Murray
Prerequisite: 408.

*509. **Econometrics.** (3) Sato
Prerequisite: 409.

*515. **Theory of Money and Banking.** (3) Chung
Major developments in monetary and banking theory. Prerequisite: 303 or 315.

*520. **Seminar in Labor Economics.** (3) Cohen
Prerequisite: 320 or equivalent.

*521. **Comparative Labor Movements.** (3) Cohen
Theories of trade union movements. International labor movements. National movements in Western Europe, the Socialist States, and the underdeveloped nations. Prerequisite: 320 or equivalent and graduate standing.

*531. **Standards and Levels of Living.** (3) Hamilton
An analysis of the determinants of levels and standards of living, income distribution, and the use of budget studies and expenditure studies. Prerequisite: graduate status in Economics or permission of the instructor.

*551. **Problems.** (2-3 hrs. per semester) Staff

*560. **Theory of Public Finance.** (3) Therkildsen
Economic theory and its application to the public economy: welfare economics and other theoretical tools applied to taxation, public expenditure, and public debt. Prerequisite: 350 or equivalent.

562. **State and Local Finance. [Seminar in State and Local Finance] (3) Therkildsen
An analysis of the economics of state and local expenditures, taxation and administration of public funds. Particular attention to the problems, policies and practices in New Mexico and neighboring states. Prerequisite: 350 recommended.

*570. **Institutional Economics.** (3) Hamilton
The "American contribution" to economic thought as found in the work of Veblen, Mitchell, Commons, and other institutional economists. Prerequisite: graduate status in Economics or permission of instructor.

*579. **Monetary Aspects of International Economics.** (3) Hufbauer, Liepe.
Price and income mechanisms of balance of payments adjustment, fixed versus flexible exchange rates, capital movements, international monetary institutions and their reform. Prerequisite: 424 or permission of instructor.

*580. **International Trade Theory.** (3) Hufbauer, Liepe
Theory of trade and welfare and its applications. Prerequisite: 424 or permission of instructor.

*582. **Economic Development Theories and Practices.** (3) Hufbauer
Theories and controversies in economic development and their policy implications.

*583. **Seminar in Economic Development with Particular Application to Latin America.** [Seminar in Economic Development] (3) Liepe
Economic theory applied to case studies in development.

*584. **Interdisciplinary Seminar on Problems of Modernization in Latin America.** (3) Liepe, Lieuwen, Needler, Schwerin
(Same as History 584.)

*599. **Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

*699. **Dissertation.** (3-6 hrs. per semester)

ECONOMICS-PHILOSOPHY

The combined major in Economics and Philosophy is an interdepartmental major administered jointly by the two departments. Students interested in this program should consult the chairmen of both departments.

This major is directed toward a deepened and fuller understanding of the theoretical phases of economics and toward the extension of philosophy into one of its traditional areas of interest; namely, that of value theory and its application.

MAJOR STUDY

Students completing an Economics-Philosophy major are not required to have a minor. The minimum requirement is 45 hours, including: Economics 200, 201, 300, 303, 315, 360 or 450, and three hours to be selected from 320, 325, 332, 340, 350 or 424; Philosophy, twenty-one hours selected from courses chosen in consultation with your philosophy adviser.

**Available for graduate credit except for graduate majors in Economics.

MINOR STUDY

Not offered.

***485. Philosophical Foundations of Economic Theory.** (3) Evans, Hamilton
Philosophical backgrounds of classical and neo-classical, socialist and communist, and institutionalist economics. Prerequisite: Economics 201.

EDUCATION, ART

Professor A. S. Masley (Chairman); Instructors R. Piotrowski, W. Rutkowski,[1] J. Srubek.

CURRICULUM

See p. 169.

MINOR STUDY

See p. 170.

110. Creative Art in Elementary School. (3) Rutkowski, Piotrowski
Developing art awareness through comprehension and expression.

115. Creative Craft in Elementary School. (3) Rutkowski, Piotrowski
Developing craft awareness through comprehension and participation.

120-121. Techniques of Craft Education. (2, 2)
Beginning crafts.

130-131. Techniques of Design Education. (3, 3)
Design in everyday life.

210-211. Creative Art in Secondary School. (3, 3) Masley
Fundamentals of art education.

320. Pre-teaching Experience in Art. (3) Masley
Introductory art teaching.

351. Problems. (1-3) Masley, Rutkowski, Piotrowski

***400. Children and Art.** (3) Masley
Pre-school through adolescence.

***410. Creative Paper Crafts.** (3) Masley

***429. Workshop.** (1-4)
Carries graduate credit when specifically approved by the Graduate Committee. For degree restrictions see p. 167 of this catalog or consult the **Graduate School Bulletin.**

434. Teaching Art in Secondary School. (3) Masley
Objectives, motivation, and procedures. Prerequisite: Educational Foundations 310.

***500. Seminar.** (2) Masley, Rutkowski, Piotrowski

***529. Workshop.** (2) Masley
For degree restrictions consult the **Graduate School Bulletin.**

***551-552. Problems.** (1-3 hrs. each semester) Masley, Rutkowski, Piotrowski

***599. Master's Thesis.** (1-3 hrs. per semester) Masley
See the **Graduate School Bulletin** for total credit requirements.

***699. Doctoral Dissertation.** (3-6 hrs. per semester)
See the **Graduate School Bulletin** for total credit requirements.

EDUCATION, BUSINESS

See Education, Elementary and Secondary for graduate courses.

EDUCATION, EDUCATIONAL AND ADMINISTRATIVE SERVICES

Professors C. C. Travelstead (Acting Chairman and Dean), F. Angel, P. V. Petty,[2] D. A. Ryan; Associate Professors J. G. Cooper, H. Lavender, P. D. Lynch,[2]

[1] On leave 1967-68.
[2] On leave 1966-67 and 1967-68.

T. Wiley, W. O. Wilson, J. T. Zepper; Assistant Professors R. L. Holemon, W. Moellenberg, J. C. Moore, H. Ulibarrí, A. W. Vogel.

Two areas are included in this Department: Educational Administration and Educational Foundations. The degree programs in both areas are at the graduate level. Program information concerning master's and doctoral degree plans available is contained in the **Graduate School Bulletin.**

EDUCATIONAL ADMINISTRATION

*410. **Introduction to Educational Administration.** (3) Angel, Petty, Ryan, Wiley
An overview of the field of educational administration including school organization, operational areas, and principles. Required of all school administration majors.

*412. **Public Education in New Mexico.** (2) Angel, Petty, Wiley
A comprehensive survey of the New Mexico public school system and its tax supported system of higher education.

*429. **Workshop.** (1-4) Staff
Carries graduate credit when specifically approved by the Graduate Committee. For degree restrictions see p. 167 of this catalog or consult the **Graduate School Bulletin.**

*510. **School-Community Relations.** (3) Holemon, Petty, Ryan, Travelstead
The underlying principles of satisfactory and constructive relationships between the school and the community along with the development of practices which will implement these principles.

*520. **The School Principalship.** (3) Angel, Drummond, Ivins, Ryan
The organizational, administrative, and supervisory responsibilities of the school principal —elementary and secondary.

*521. **Public School Finance.** (3) Angel, Ryan, Wiley
Basic principles underlying the financing of public schools. Special attention is given to New Mexico.

*522. **School Business Management.** (3) Ryan, Wiley, Wilson
Practices in school budgeting, purchasing, funds accounting, auditing, payroll administration, supply management, and miscellaneous business transactions.

*526. **Educational Planning and the School Plant.** (3) Angel, Ryan, Wilson
The teaching-learning concepts involved in the planning of desirable school plants. Prerequisite: a course in curriculum.

*529. **Workshop in Educational Administration.** (1-4) SS Staff
For degree restrictions consult the **Graduate School Bulletin.**

*531. **Administration of Staff Personnel.** (3) Petty, Wiley
The principles of educational administration applied to the organization and administration of the staff personnel.

*532. **Current Educational Problems.** (3) Staff
A group study of specific problems in education. Usually offered as an off-campus course.

*551-552. **Problems.** (1-3 hrs. each semester) Staff

*560. **Supervision of Instruction (Elementary and Secondary).** (3) Angel, Drummond, Ivins
(Also offered as Curriculum and Instruction 560.) Purposes of supervision in the instructional program; theory and nature of instructional leadership; supervision as group leadership; classroom visitation and conferences as supervisory techniques; and evaluation of supervision. Special attention to role of principal and general supervisor in instructional improvement.

*561. **School Law.** (3) Angel, Petty, Wiley, Wilson
Legislation and court decisions, with special reference to New Mexico school law.

*564. **School and Community Surveys.** (3) Holemon, Lynch, Ryan, Wilson
Practices and techniques in all phases of school and community surveys.

*571. **State and Federal Educational Administration.** (3) Angel, Ryan, Wiley
State school systems; federal and state policy; and forms of control.

*581. **Seminar in Educational Administration.** (2) Angel, Holemon, Lynch, Petty
Advanced reading and problem study in educational administration. Required of majors; others may be admitted upon consultation with instructor.

***612-613. Field Experiences in Educational Administration.** (3, 1-3) Angel, Holemon, Lynch, Petty, Ryan, Travelstead
Planned, practical experiences in connection with the actual administration of a school system. Designed to provide supervised administrative practice for those school administration students who lack actual experience.

***626. Educational Buildings and Equipment.** (3) Angel, Wilson
Problems of building construction and maintenance. Standards and practices. Field trips are included. Prerequisite: 526.

***629. Seminar for Practicing School Administrators.** (1-3) SS Staff
A graduate seminar for practicing school administrators offered only during summer sessions. It provides study of the latest practices and trends in specialized areas of school administration.

***630. Administration in Higher Education.** (3) Lavender, Travelstead, Zepper
An overview of higher education principally for students who are likely to have some administrative as well as teaching responsibilities in higher education. Prerequisite: master's degree or permission of instructor.

***699. Doctoral Dissertation. (3-6 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

EDUCATIONAL FOUNDATIONS

290. Foundations of Education. (3) Vogel, Zepper
An introduction to the philosophical, social, historical and comparative foundations of education.

300. Human Growth and Development. (3) *Doxtator, Loughlin, Moellenberg, Schroeder*
Principles of growth and development and implications for the school curriculum.

310. Learning and the Classroom. (3) Price, Rosenblum
(Also offered as Psychology 210.) The basic principles of learning and their application to classroom situations.

351. Problems. (1-3)

***411. History of American Education.** (3) Vogel, Zepper
The development of American education from the Colonial period to the present. An analysis of the contributions of teachers, statesmen, philanthropists, psychologists, sociologists, and philosophies to educational thought and practice in the U.S.A. Prerequisite: a course in American history.

***412. History of Education.** (3) Vogel, Zepper
The development of education in world civilizations (with the exception of the U.S.A.). An analysis of educational thought and practice in historical perspective. Prerequisite: courses in world history.

***415. Philosophies of Education.** (3) Vogel, Zepper
Prerequisite: 290 or equivalent.

***421. Educational Sociology.** (3) Angel, Ulibarri
Sociological aspects of school problems.

***422. Education and Anthropology.** (3) Staff
An overview of educational implications from the field of anthropology.

***429. Workshop in Foundations of Education.** (1-4) Staff
For degree restrictions see p. 167 of this catalog or consult the **Graduate School Bulletin.**

471. Statistics in Education. (2) Lynch, Wiley
The use of basic statistics in the field of education. Frequency distribution, measure of central tendency, applications of the normal probability curve and linear correlation will be emphasized.

***474. Evaluation in the School Curriculum.** (3) Cooper, Crawford, Holeman, Lynch, Moellenberg
Designed to help the classroom teacher better evaluate the progress of pupils. Major emphasis is placed on constructing teacher-made tests in various subject-matter areas. The use and interpretation of standardized tests are also considered.

***501. Research Methods in Education** (3) Cooper, Lynch, Holemon
Required of candidates for a graduate degree in the College. Methods, techniques, and designs of educational research. Elementary statistics and data processing are taught in assigned laboratory sections as part of this course.

*502. **Research Seminar in Education.** (2) Cooper, Crawford, Lynch, Moellenberg
Application of research techniques to a current educational problem. Required of all candidates for a graduate degree in education under Plan II, with the following exceptions: (1) candidates in Elementary Education; (2) candidates in Educational and Administrative Services may substitute Educational Administration 581. Prerequisite: 501.

*503. **Seminar in Human Growth and Development.** (3) Loughlin, Moellenberg
Research oriented seminar; implications for classroom practices.

*515. **Comparative Philosophies of Education.** (3) Vogel, Zepper
Inquiry into differences of basic outlook and their implications for educational practice of competing philosophical positions. Prerequisite: 290 or equivalent.

*516. **Educational Classics.** (3) Zepper
A philosophical critique of outstanding educational and philosophical works taken from lists of educational classics. Primary source readings are the basis of study. Prerequisite: Ed Fdns 415 or equivalent work in philosophy.

*517. **Educational Ideas in Literature.** (3) Vogel
An investigation into the educational ideas found in works of literature of the world.

*518. **Comparative Education.** (3) Zepper, Vogel
A comparative and evaluative study of the purposes, objectives, organization, and methodology of contemporary educational systems of representative European, Latin American, and Afro-Asian countries. Prerequisite: permission of instructor.

*551-552. **Problems.** (1-3 hrs. each semester) Staff

*581. **Seminar in the Foundations of Education.** (3) Staff
Studies in the foundations of education (historical, philosophical, psychological, sociological, or comparative education). An original project in the area of study is required. Prerequisite: one of the following: Ed Fdns 501, History 301, Psychology 521, or Sociology 481. **May be repeated for credit as different topics are studied.**

*603. **Advanced Statistics in Education.** (3) Cooper, Lynch, Moore
Application of advanced techniques in statistical treatment of education data. These techniques include testing experimental hypotheses, regression and prediction, analysis of variance, non-parametric methods, and partial and multiple correlation. Prerequisite: a course in statistics.

*645. **Advanced Seminar in Education.** (3) Drummond, Ivins, Petty, Travelstead
For doctoral and post master's students in Education. Ideas, concepts, problems, and critical issues facing education today. Designed to help students integrate and synthesize course work taken in Education and cognate fields, as this work may be related to and helpful in the solution of the problems under consideration. Individual student preparation and reports followed by critical reaction from other students and faculty members participating in the seminar.

*699. **Doctoral Dissertation.** (3-6 hrs. per semester)
See the **Graduate School Bulletin** for total credit requirements.

EDUCATION, ELEMENTARY AND SECONDARY DEPARTMENTS

ELEMENTARY EDUCATION

Professors H. D. Drummond** (Chairman), M. V. Zintz; Associate Professors H. J. Carlson, L. R. Condie, L. H. Walters; Assistant Professors K. Auger, D. Gonzales, F. J. Guzak, C. S. Loughlin; Instructor M. A. Howell; Lecturer M. Ulibarrí; and Staff.

SECONDARY EDUCATION

Professors W. H. Ivins** (Chairman), B. M. Crawford, H. O. Ried, W. B. Runge; Associate Professors R. J. Doxtator, P. Prouse; Assistant Professors J. Dettre, R. H. Hanny, A. W. Howard, C. Zweig, and Staff.

BUSINESS EDUCATION

Associate Professor J. Rider

**On leave 1967-68. New chairman to be selected.

INDUSTRIAL EDUCATION

Associate Professor C. R. Brown; Assistant Professors R. D. Nesbitt, R. A. Warner, and Staff.

In these Departments programs are offered for elementary school teachers, secondary school teachers, industrial arts teachers, and general courses in curriculum and instruction for teachers and curriculum specialists.

CURRICULA

Elementary Education, see pp. 171-172.
Secondary Education, see pp. 178-181.
Industrial Education, see pp. 176-177.

CURRICULUM AND INSTRUCTION (GENERAL)

*431. [Ed Fdn. 331] **Audio-Visual Materials and Techniques.** (3)
An interpretation and application of principles and methods from the regular undergraduate programs in teacher education into terms of audio-visual materials and their use in teaching. Prerequisite: Senior standing with minimum of 12 semester hours in professional education.

*432. **Production of Instructional Materials for the Classroom.** (3)
Requires an interpretation of the psychological principles of learning and the application of these principles to the production of instructional materials using a variety of media including graphics, overhead projection, still and motion picture photography, recordings, and television. Prerequisite: 431 or equivalent, or permission of instructor.

*435. **Remedial Reading Problems.** (3) Guszak, Walters, Zintz
Prerequisite: El Ed 331 or permission of instructor.

*481. **Education Across Cultures in the Southwest.** (3) Angel, Condie, Zintz
Educational implications of the Pueblo, Navajo, Apache, and Spanish-American cultures. Research on New Mexico school problems will be reviewed and evaluated.

*482. **Teaching English as a Second Language.** (3) Condie
Pre- or corequisite: English 392 or equivalent.

*515. **Remedial Teaching Techniques.** (3) Guszak, Walters, Zintz
Diagnosis of learning difficulties; developmental and corrective measures for use with individual learners.

*530. [Ed Adm 530] **Adult Education.** (3) Condie, Travelstead, Ulibarrí
Origin, development, philosophy, objectives, methods, and materials.

*535. **Practicum in Learning Disabilities (Reading).** (3) Guszak, Zintz
Tutoring severely disabled readers under supervision. Prerequisites: C&I 435 and El Ed 531 or Sec Ed 520.

*541. **Principles of Curriculum Development.** (3) Angel, Drummond, Ivins
Social, philosophical, and psychological bases related to principles of curriculum development at all levels of education.

*560. **Supervision of Instruction (Elementary and Secondary).** (3) Angel, Drummond, Ivins
(Also offered as Educational Administration 560.)

*581. **Bilingual Education.** (3) Zintz, Condie
Prerequisite: 481.

ELEMENTARY EDUCATION

319. **Physical Education in the Elementary School.** (2) Gugisberg, Hinger
Five class meetings per week.

321. **Social Studies in the Elementary School.** (2) Drummond

331. **Reading in the Elementary School** (3) Walters, Guszak, Auger

333. **Teaching Oral and Written English.** (2) Condie, Walters

351. **Problems.** (1-3)

353. **Science in the Elementary School.** (3) Condie, Zweig
Prerequisites: 1 yr. biological science; 1 yr. physical science.

361. Arithmetic in the Elementary School. (2) Staff
Prerequisites: Mathematics 111, 212.

400. Student Teaching in Elementary Schools. (3, 6, 9)
Prerequisites: 321, 331, 353, 361. See also additional requirements on pp. 165-166.

***405. Curriculum for Early Childhood.** (3) Loughlin
Education of children 2-5 years of age. Prerequisite: Home Economics 408L.

***429. Workshop.** (1-4)
Carries graduate credit when specifically approved by the Graduate Committee. For degree restrictions see p. 167 of this catalog or consult the **Graduate School Bulletin.**

***441. Children's Literature.** (2) Walters
Pre- or corequisite: 331.

497. Reading and Research in Honors. (3-6)
Prerequisite: see p. 160.

***505. Seminar in Early Childhood Education.** (3) Loughlin
Current literature and research in early childhood education and implications for curriculum decisions. Prerequisite: 405.

***511. Curriculum in the Elementary School.** (3) Drummond
Problems of selecting, organizing, and presenting content in the elementary school.

***521. Seminar in the Social Studies.** (3) Drummond
Prerequisite: 321.

***529. Workshop.** (1-4) SS
For degree restrictions consult the **Graduate School Bulletin.**

***531. Seminar in Teaching Reading.** (3) Auger, Walters, Zintz
Prerequisite: 331.

***533. Seminar in the Language Arts.** (3) Walters, Zintz
Prerequisite: 333.

***541. Seminar in Children's Literature.** (3) Walters
Prerequisite: 441.

***551-552. Problems.** (1-3 hrs. each semester) Staff
Prerequisite: Educational Foundations 501.

***553. Seminar in Teaching Elementary Science.** (3) Zweig
Prerequisite: 353.

***561. Seminar in Arithmetic.** (3) Staff
Prerequisite: 361.

***599. Master's Thesis.** (1-3 hrs. per semester) Staff
Prerequisite: Educational Foundations 501. See the **Graduate School Bulletin** for total credit requirements.

***699. Doctoral Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

EDUCATION, SECONDARY

301. Foundations of Secondary Education. (3) Dettre, Ivins, Ried, Runge
Development of the secondary school in the United States, emphasizing its social and philosophical backgrounds. The purposes of secondary education, theories of curriculum and their application in the contemporary program of the secondary school. Includes a study of the secondary school population, the organization of the educational system, and status of the modern secondary school.

310. Materials and Methods of Teaching. (3) Crawford, Dettre, Doxtator, Hanny, Hirshfield, Howard, Prouse, Runge
Special attention given to methods applicable to all secondary teachers, such as socialized procedures, experimental and problems; observation and demonstration; question and answer; lecture; and the project. Examination and analysis of instructional materials used in secondary schools. Observation in the public schools required. Prerequisite: 301 or permission of instructor.

351. Problems. (1-3)

***429. Workshop.** (1-4)
Carries graduate credit when specifically approved by the Graduate Committee. For degree restrictions see p. 167 of this catalog or consult the **Graduate School Bulletin.**

430. Teaching of Communication Arts. (3) Prouse
Prerequisite: Sec. Ed. 310.

431. Teaching of Sciences. (3) Zweig
Prerequisite: Sec. Ed. 310.

432. Teaching of Social Studies. (3) Doxtator
Prerequisite: Sec. Ed. 310.

433. Teaching of Industrial Arts. (3) Brown, Nesbitt, Warner

434. Teaching Art in Secondary School. (3) Masley
(Same as Art Education 434.)

****435. Teaching of Biology.** (3) Degenhardt
Prerequisites: Biology 102L or 122L, Sec. Ed. 310. (Offered in alternate years.)

436. Teaching of English. (3) Staff
Prerequisites: English 102, Sec. Ed. 310. Carries credit both in Education and in English.

***437. Teaching of Home Economics.** (3) Snell

****438. Teaching of Mathematics.** (3) Mitchell
Prerequisite: Sec. Ed. 310.

439. Teaching of Business Subjects. (3) Rider
Prerequisite Sec. Ed. 310. Carries credit both in Education and in Business Administration.

***440. Teaching of French.** (3) T. Book
Prerequisite: Sec. Ed. 310.

***441. Teaching of Spanish.** (3) Lamadrid, Sackett, Ulibarri
Prerequisite: Sec. Ed. 310. (Offered in alternate years.)

***442. Teaching of Reading.** (2) Staff
Prerequisite: Sec. Ed. 310.

***443. Work Experience in Secondary Schools.** (3) Runge
The development of present practices in work experience programs for secondary school students. Special emphasis is given to organization and administration of vocational education cooperative part-time work plans for distributive office and industrial occupations.

444. Teaching of Physical Education. (3) Gugisberg

***445. Teaching of German.** (3) Jocums

461-462. Student Teaching. (3-6, 3-6, maximum total allowed 9)
Observation and teaching in New Mexico schools. May be completed in one or two semesters. Assignments during a second semester will place more emphasis on teaching in an additional subject, or grade level, and will provide fewer hours in observation and participation. Weekly seminar meetings with University staff members are required. Prerequisites: 301, 310; 2.3 grade-point average in teaching major (2.5 for students under jurisdiction of Sec. Ed. Department); minimum of 12 hours in professional education. See also additional requirements on pp. 165-166.

497. Reading and Research in Honors. (3-6).
Prerequisite: see p. 160.

***501. High School Curriculum.** (3) Crawford, Howard, Ivins, Prouse
Setting, development, and present form of the secondary school curriculum. Includes specific attention to problems of development of classroom instruction, guidance and activity programs, and related parts or auxiliaries of the total secondary school program.

***502. The Junior High School.** (3) Crawford, Doxtator, Howard, Ivins
Backgrounds of the junior high school and its purposes related to pupils' characteristics. The fundamental learning program, guidance and exploration, the pupil population, the teacher's role, leadership and organization in the curriculum.

***503. Student Activities in the Secondary School.** (3) Crawford, Ivins, Prouse, Runge
The activity concept in learning; relationship of activities to needs and characteristics of adolescents; and purposes of the activities program. The basic principles and problems in the organization and administration of activities programs, as well as sponsorship and the teacher's role in activities.

***504. Developments in Industrial and Vocational Education.** (3)
(Same as Ind Ed 504)

** Credit for undergraduate teaching majors and graduates in Education only.

***520. Instructional Trends in the Communication Arts.** (3) Prouse, Hirshfield
Analysis of the associative use of the language arts and communication competency, with emphasis upon recent research and instructional trends in the field.

***523. Instructional Trends in the Social Studies.** (3) Doxtator
An analysis of social studies curricula, State and nationwide. Emphasis upon proposals for change and current experiments. Students are expected to develop a proposal for experimentation in their own local situations.

***529. Workshop.** (1-4) SS Staff
For degree restrictions consult the **Graduate School Bulletin.**

***531. The Two Year College Curriculum.** (3) Dettre
The background of the two year college movement, perspectives on its current status, and projections for the future of the two year college. The philosophical, curricular, instructional, administrative, and organizational characteristics of the program will be considered with emphasis on their relationships to foundational structures in education.

***533. Seminar in Supervision of Student Teaching.** (3) Runge, Dettre

***551-552. Problems.** (1-3 hrs. each semester) Staff

***556. Proseminar in Problems of Language Instruction.** (3) Lamadrid
(Same as Spanish 556.)

***590. Seminar.** (3) Staff

***599. Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

***699. Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

BUSINESS EDUCATION

***501. Foundations of Business Education.** (3) Rider
The various phases and functions of Business Education brought into proper perspective as one broad area.

***503. Readings in Business Education.** (3) Rider
Analysis of research and literature and implications of findings for Business Education.

***510. Seminar in Typewriting Education.** (3) Rider
The principles, methods, procedures, and problems in the teaching of typewriting at all levels for all objectives.

***511. Seminar in Shorthand Education.** (3) Rider
The principles, methods, procedures, and problems in the teaching of shorthand and transcription.

***512. Seminar in Bookkeeping and Accounting Education.** (3) Rider
The principles, methods, procedures, and problems in the teaching of bookkeeping and accounting.

***513. Seminar in Socio-Business Education.** (3) Rider.
The principles, methods, procedures, and problems in the teaching of the various classes included in the area of socio-business education such as: General Business, Consumer Economics, Applied Economics, Business Principles, Business Organization, Introduction to Business, Business Law, Business Communications, Business Arithmetic, and Economic Geography.

***514. Seminar in Office and Distributive Education.** (3) Rider, Runge
The principles, methods, procedures, and problems in the teaching and coordinating of office and distributive education classes and programs with emphasis upon advanced skills combines with actual and simulated work experience on or off campus.

***529. Workshop in Business Education.** (1-4) Rider
For degree restrictions see department chairman.

***551-552. Problems in Business Education.** (1-3 hrs. each semester) Rider

INDUSTRIAL EDUCATION

I. Technical

101. Shop Computation. (3) Brown
Practical application of algebra, geometry, and trigonometry in the solution of applied problems found in the industrial arts.

110L. Machine Woodworking. [Wood Area I] **(3)** Brown, Warner
Introduction to the woodworking area. Emphasis on the proper use of hand tools, power machinery, and basic finishing methods. Use of wood turning tools and equipment in spindle, faceplate and special turning processes. 1 lecture, 5 hrs. lab.

111L. [CE 111L] **Drafting I.** **(2)** Brown, Nesbitt
Essentials of drafting, including the use of instruments, lettering, orthographic projections, dimensioning, auxiliary views, pictorials, sections, graphic symbols. 1 lecture, 3 hrs. lab.

112L. [CE 112L] **Drafting II.** **(3)** Brown, Nesbitt
A continuation of 111L, with emphasis on advanced dimensioning, detail and assembly drawings, exploded views, etc. Prerequisite: 111L. 2 lectures, 4 hrs. lab.

115L-116L. General Woodwork. **(2, 2)** Brown, Nesbitt, Warner
Designed to meet the various individual needs of non-majors. Basic instruction in the care and use of hand tools, power machinery, and finishing methods used in the processing of woods. 5 hrs. lab.

117L-118L. General Metalwork. **(2, 2)** Nesbitt, Warner
Designed to meet the various individual needs of non-majors. Basic instruction in the care and use of hand tools and power machinery in the fabrication of metals. 5 hrs. lab.

120L. Machine Metalworking. [Metal Area I] **(3)** Nesbitt, Warner
Introduction to the metalworking area. Emphasis on the proper use of hand tools and the operation of the engine lathe, drill press, grinders, and shapers. 1 lecture, 5 hrs. lab.

230L. Power Mechanics. **(3)** Nesbitt
A basic course pertaining to the internal combustion engines. Experiences in the maintenance and repair, with reference to the consumer level, on the automobile and various other small engines. 1 lecture, 5 hrs. lab.

245. Slide Rule. **(2)** Brown
The use of the various scales for solving technical problems.

261L. [CE 261L] **Drafting III.** **(2)** Nesbitt, Warner
Problems involving the point, line, and plane; and practical problems involving the above principles with emphasis on triangulation, developments, intersections, perspective. Prerequisite: 111L. 1 lecture, 3 hrs. lab.

265L. Finishing and Maintenance. [Wood Area II] **(3)** Brown
Techniques, processes and application of finishes on the various kinds of wood. Practice in tool and machine maintenance and repair, tool fitting and sharpening, and saw filing. 1 lecture, 5 hrs. lab.

280L. General Electricity and Electronics. **(3)** Nesbitt, Warner
An introductory course in electrical theory and its application in the field of lighting, heating, communication, and electronics. Individual and group experiences are derived through experimentation and the construction of electrical projects. 1 lecture, 5 hrs. lab.

285L. Welding. [Metal Area II] **(3)** Nesbitt, Warner
Arc and oxyacetylene welding with some inert welding. Techniques, methods, and processes are considered with emphasis on the welding and cutting of the common metals. 1 lecture, 5 hrs. lab.

315L. Pattern Making and Foundry. [Wood Area III] **(2)** Brown, Nesbitt, Warner
The construction of various patterns and core boxes used in pattern making. Principles and practices involved in the foundry industry. Experiences in the operation, care and maintenance of pattern making and foundry tools and equipment. 5 hrs. lab.

335L. Intermediate Power Mechanics. **(3)** Nesbitt
Hydraulic and mechanical methods of transmitting power. Theory and function of gear and hydraulic transmissions. 1 lecture, 5 hrs. lab.

350L. Cabinet Making. [Wood Area IV] **(2)** Brown
Advanced instruction in the use of power woodworking machinery. Emphasis on cabinet and furniture designing and construction. Basic techniques and processes in upholstery. Prerequisite: 110L or equivalent. 5 hrs. lab.

362L. [CE 362L] **Drafting IV.** **(3)** Brown, Warner
Residential working drawings, with emphasis on construction details. Selected field trips. Prerequisite: 111L. 2 lectures, 4 hrs. lab.

365L. [465L] **Advanced Machine Metalworking.** (3) Nesbitt, Warner
Advanced course in the machine shop. Includes experiences in the various processes and practices of metal machining. Emphasis on work with the engine lathe, shaper, surface grinder, and the horizontal and vertical milling machines. Maintenance and repair of tools and machinery. 1 lecture, 5 hrs. lab.

386L. Metal Fabrication. [Metal Area III] (3) Nesbitt, Warner
An introduction to the various aspects and basic processes in the hot and cold forming of metals. Techniques will be utilized in the use of the tools and equipment for metal fabrication, which includes such areas as sheet metal, metal spinning, forging and ornamental metal. 1 lecture, 5 hrs. lab.

425. [125] **Design in Industrial Arts.** (2) Brown, Warner
Theory and utilization of design principles in the development and use of the various materials of industry.

462L. Carpentry. [Wood Area V] (3) Brown
Plot layouts, foundations, floor and wall framing, roof construction, rafter cutting, inside and outside finishing, and the use of the steel square. A scaled model house is constructed. Prerequisite: 110L or equivalent. 1 lecture, 5 hrs. lab.

475L. Metal Technology. [Metal Area VI] (1-3) Nesbitt, Warner
Advanced hand tool and machine processes in the areas of forging, bench metal, sheet metal, welding, foundry, art metal, and other areas of metal working used in the school shop situation. Students will choose the area or areas in which they desire to concentrate additional experiences. Lab hours arranged.

480L. Wood Technology. [Wood Area VI] (1-3) Brown
Advanced course designed to meet the individual needs of students wishing to concentrate in a specialized area of woodworking. Lab. hours arranged.

II. Professional

105. Introduction to Industrial Education. (2) Brown, Nesbitt, Warner
Orientation of the student to industrial arts and its place in general education.

351. Problems. (1-3)

429. Workshop in Industrial Education. (1-4)
For degree restrictions, see p. 167 of this catalog.

433. Teaching of Industrial Arts. (3) Brown, Nesbitt, Warner
(Same as Secondary Education 433)

466. Theory and Organization of Industrial Education. [Theory and Organization of General Shop] (3) Brown, Nesbitt, Warner
An analysis of organizing and teaching of industrial arts as found in the modern school.

III. Graduate Study

***490. Measurement and Evaluation Techniques.** (3) Brown, Nesbitt, Warner
Methods of measuring achievement in industrial subjects. Emphasis is given to evaluation of manipulative activities and technical knowledge.

***492. Instructional Analysis.** (3) Brown, Nesbitt, Warner
Techniques and methods used to identify content for instruction in the practical and industrial subjects. Analysis of occupations or activities in determining content for instructional purposes.

***504. Developments in Industrial and Vocational Education.** (3) Brown, Ivins, Runge
Includes history, developments, movements motivating the present programs in vocational, distributive, office and secretarial, trade and technical, industrial, home economics, and health education. A through study will be made of the Vocational Education Act of 1963 with implications for new programs, the New Mexico State Plan for Vocational Education, secondary and post-high school program development, apprenticeship training, and technical level courses.

***505. Development, Selection, Use, and Organization of Instructional Materials.** [Instructional Materials in Industrial and Vocational Education] (3) Brown, Nesbitt, Warner
Research in the study of sources, values, limitations, and classification of instructional materials. Emphasizes objectives, theories, and practices underlying the formation, evaluation, and revision of learning materials. Prerequisite: 492 or permission of instructor.

***510. Laboratory Planning and Design.** (3) Brown, Nesbitt, Warner
An appraisal and analysis of current laboratory requirements. Research in the problems associated with the development of modern laboratory facilities. Revision of present facilities to meet current demands. Special attention given to lighting, heating, cooling, ventilation, color, building materials used in construction, location in relation to other educational areas and the selection and placement of equipment for efficient operation and work flow.

***515. Industrial Accident Prevention.** (3) Nesbitt
The principles of accident prevention, philosophies involved, psychology of safety, personal protective devices, machine guarding, occupational diseases and other areas pertinent to industrial safety, industrial and vocational instructors and personnel in industry.

***520. Administration of Industrial and Vocational Programs.** (3) Warner
Problems and procedures in organizing and administering the various types of programs in the practical arts areas. A study of the laws on the federal, state and local levels relating to these arts.

***525. Advanced Technical Knowledge and Skills.** (2) Brown, Nesbitt, Warner
Individual or group study in research and experimentation with advanced industrial subject information, skills, knowledges, attitudes and concepts. Areas of work can be in the woods, metals, drafting, electrical power mechanics, industrial plastics and ceramics, or other related areas. **May be repeated for a total of 6 semester hours** with the adviser's consent.

***529. Workshop.** (1-4) Staff
For degree restrictions consult the **Graduate School Bulletin.**

***551-552. Problems.** (1-3 hrs. each semester) Staff

EDUCATION, GUIDANCE AND SPECIAL EDUCATION

Professor G. L. Keppers (Chairman); Assistant Professors F. K. Adams, L. C. Bernardoni, L. A. Bransford, E. J. Kelly, H. Whiteside, G. A. Zick.

This Department offers graduate programs (Masters) in the fields of Guidance and Counseling and Special Education, the Education Specialist (sixth year) in Guidance and the Doctorate in Pupil Personnel Services. An undergraduate minor is offered in the field of Special Education. Students wishing to pursue any of these programs should consult the Chairman of this Department for details.

GUIDANCE

***415. Guidance: Philosophy, Principles, and Practices.** (3) Bernardoni, Keppers, Zick
To assist the student to develop an adequate philosophy of guidance services and to understand the principles of guidance practice in keeping with this philosophy.

***431. Mental Health.** (3) Bernardoni, Zick
Aims to help classroom teachers, supervisors, principals, deans, advisers of students, and guidance workers to understand the personal problems affecting success and failure of pupils.

***512. Differential Diagnosis.** (3) Bernardoni, Bransford, Kelly, Keppers, Zick
To promote a competancy in the administration, scoring, and diagnostic interpretation of various individual tests of intelligence, achievement, and personality that are commonly used in a school setting. Prerequisite: Ed Fdns 474 or Psychology 331.

***513. Socio-Economic Information in Guidance.** (3) Bernardoni, Keppers, Zick
The essential nature of environmental information in educational, vocational, and personal-social guidance services and of the methods of collecting, organizing, filing, evaluating, and using such information. Prerequisite: 415 or permission of instructor.

***514. Organizing and Supervising Guidance Services.** (3) Bernardoni, Keppers
Includes such topics as sound organization practice and patterns, understanding of the total pupil personnel program, qualifications and acquisition of staff, facilities, budgetary needs, evaluation, and possible ways of initiating a guidance program. Prerequisite: basic guidance courses or permission of instructor.

***516. The Case Study in Guidance.** (3) Bernardoni, Keppers, Zick
The techniques available for understanding an individual, the values and limitations of each technique, and methods of synthesizing the data about an individual. Prerequisite: Educational Foundations 474 or Psychology 331.

***517. Group Techniques in Guidance.** (3) Keppers, Zick
The place and functions of group methods in the guidance program, the values and limitations of each method and the techniques to be utilized. Prerequisite: 431 or Psychology 305.

***518. Techniques of Counseling.** (3) Bernardoni, Keppers, Zick
Various techniques employed in counseling and in developing competence in applying the techniques consistent with the basic personality and philosophy of the individual counselor. Prerequisites: 513, 516; Psychology 305 or permission of instructor.

***519. Practicum in Guidance.** (1-4) Bernardoni, Keppers, Zick
To provide the student experience in the practical application and integration of the principles and methods of guidance which he has studied. Pre- or corequisite: 518.

***529. Workshop.** (1-4) Staff
For degree restrictions consult the **Graduate School Bulletin.**

***550. College Personnel Work.** (3) Bernardoni, Whiteside
Philosophy and principles of college personnel services, as well as the nature and extent of various personnel services on college campuses. Prerequisite: permission of instructor.

***551-552. Problems.** (1-3 hrs. each semester) Staff

***599. Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

***620. Seminar in Guidance.** (3) Bernardoni, Keppers, Zick
Current problems and research in the field of guidance. Prerequisites: experience as a school counselor; basic courses in guidance or permission of instructor.

***621. Client-Centered Counseling.** (3) Bernardoni, Keppers, Zick
An approach to counseling through a consideration of personal problems of the client. Prerequisites: 518, 519.

***622. Multiple Counseling.** (3) Bernardoni, Keppers, Zick
Counseling through various group approaches. Prerequisite: 517.

***623. Play Therapy.** (3) Keppers, Zick
To develop in the student the ability to utilize techniques of play therapy and to provide experiences and applications that will provide insights into the inner world of childhood problems. Prerequisite: 518.

***630. Advanced Practicum in Guidance.** (3-6) Staff
Experience in the practical application and integration of the principles and techniques of counseling in a clinical setting. Prerequisite: 518.

***699. Doctoral Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

SPECIAL EDUCATION

***429. Workshops in Special Education.** (1-3) Staff

***471. Education of the Exceptional Child.** (3) Adams, Bransford, Kelly
Teaching atypical children in the regular classroom. Prerequisite: Psychology 312.

***473. Teaching the Mentally Retarded.** (3) Adams, Bransford
Objectives, curriculum, content, methods, organization of work. Prerequisite: Psychology 313.

***475. Education of Emotionally Disturbed Children.** (3) Kelly
Behavioral characteristics and causes of emotional and social deviancy in children as they affect education. Types of treatment and educational programs which can be provided within a school setting. Prerequisite: 471.

***476. Teaching the Neurologically Impaired.** (3) Adams, Kelly
A study of children who have learning disabilities due to neurological or unknown causes and the techniques required for their education. Prerequisite: 471 and 473.

***551-552. Problems.** (1-3 hrs. each semester) Staff

***571. Curriculum Development in Special Education.** (3) Adams, Bransford, Kelly
The development of curriculum and materials which can be used to teach exceptional children at various maturational levels in the regular class, in special classes and schools. Prerequisites: 471, 476, and 473 or 475, C&I 541.

***573. Seminar in Special Education.** [Seminar in Educating the Mentally Retarded] (3) Adams, Bransford, Kelly

***574. Organization and Supervision of Special Education Programs.** (3) Adams, Bransford, Kelly
Outlines organizational and administrative provisions for exceptional children; screening, identification, placement, and ancillary services within educational setting. Prerequisites: 471, 571 and 473 or 475, and Ed. Adm. 410.

***577. Education of Gifted Children.** (3) Adams, Kelly
Programs for/and principles of teaching the gifted. Prerequisite: 471.

***580. Practicum in Special Education.** (3) Staff
Supervised participation in clinical practice, utilizing individual and group procedure, with exceptional children and their parents. Adaptaton of clnical procedures to public school programs. Prerequisites: 12 hours of Special Education or approval of supervisor.

***599. Master's Thesis.** (1-3 hrs. per semester) Staff

HEALTH, PHYSICAL EDUCATION, AND RECREATION

Professors A. H. Seidler (Chairman), L. R. Burley, E. M. Small (Asst. Chm.); Associate Professors W. A. Bynum, W. W. Clements (Asst. Chm.), M. Gugisberg, F. McGill, J. McCabe, I. L. Shand, W. U. Weeks, A. K. Young; Assistant Professors E. G. Belzer, L. F. Diehm, B. Geba, E. H. Heath, F. J. Hinger, J. Montgomery, F. E. Papcsy, G. T. Petrol, C. Piper, M. Purdy, E. Waters; Lecturers (Part-Time) F. N. Roche, H. L. Kil; Instructors S. Anderson, R. K. Barney, B. Benison, J. Olson, R. Jacobsen, R. Mitchell.

The Department offers a number of programs. The service program in Physical Education (see "Non-Professional Courses") is part of the general education requirement of the University. (See "All-University Requirements.")

The department offers curricula leading to undergraduate and graduate degrees in the preparation of teachers of Health and Physical Education. In addition, it offers undergraduate and graduate degree programs in Recreattion designed to train recreation leaders and administrators. A park and recreation field service of limited scope is operated by the Department.

ALL-UNIVERSITY REQUIREMENTS

Four semester hours of nonprofessional activity physical education shall be completed by all undergraduate students in the University. Veterans, Navy ROTC students, students over 30 years of age, and handicapped students excused by the University physician are exempted from the physical education requirement. ROTC and medical excuse exemption is on a semester-by-semester basis. Not more than 1 hour may be earned in a semester except by physical education majors and minors. Not more than 4 semester hours of required physical education may count toward a degree. Physical education majors and minors may not substitute their participation in sports for the required physical education classes. Men physical education majors must pass a departmental Physical Fitness Test before admission to the College of Education.

The instructor in each course should be consulted concerning proper clothing or uniform.

CURRICULA

See pp. 172-175.

PHYSICAL EDUCATION

NONPROFESSIONAL COURSES—PHYSICAL EDUCATION

101. **Beginning Swimming.** (1) Barney, Olson
102. **Intermediate Swimming.** (Women Only) (1) Piper, McGill
103. ***Advanced Swimming.*** (1) Barney, Piper
Prerequisite: ability to swim.
104. **Lifesaving.** (1) Barney, McGill
Prerequisite: ability to swim.
107. **American Country Dance.** (1) Anderson
108. **Ballroom Dance.** (1) Anderson
109. **Beginning Contemporary Dance.** (1) Waters, Benison
111. **Mexican & New Mexican Dance.** (1) Anderson
112. **International Folk Dance.** (1) Benison, Anderson
115. **Gymnastics.** (1) Benison Olson
116. **Apparatus Stunts.** (1) Mitchell
117. **Individual Tumbling.** (1) Papcsy
118. **Movement Fundamentals.** (1) Benison, Small
119. **Personal Defense.** (Men Only) (1) Seidler
120. **Wrestling.** (Men Only) (1) Bynum
121. **Weight Lifting.** (Men Only) (1) Heath
123. **Outward Bound.** (1) Heath
124. **Developmental Physical Education.** (1) Belzer
125. **Badminton.** (1) McGill, Purdy
126. **Beginning Golf.** (1) Petrol, McGill, Piper
127. **Intermediate Golf.** (Women Only) (1) McGill, Piper
128. **Beginning Tennis.** (1) Geba, Purdy
129. **Intermediate Tennis.** (Women Only) (1) Purdy
130. **Bowling.** (1) Special fee. Olson, Purdy
131. **Horseback Riding.** (1) Special fee. Corbin
134. **Volleyball-Softball.** (1) Olson
135. **Basketball-Softball.** (1) Gruensfelder
136. **Field Hockey.** (1) McGill, Purdy
137. ***Flickerball-Bowling.*** (1) Special fee. Gruensfelder
138. **Speedaway-Basketball.** (1) Purdy, Olson
139. **Soccer.** (1) Barney
140. **Volleyball-Badminton.** (1) Burley
141. ***Ice Skating and Skiing.*** (1) *Special fee* Anderson, Geba
149. **Therapeutic Physical Education.** (1) Papcsy
Prerequisite: Permission of University Health Service.

PROFESSIONAL COURSES—PHYSICAL EDUCATION

Some of the following courses are scheduled to meet more periods per week than indicated by the number of credit hours. These courses, in addition to lectures, include professional activity, laboratory, or field types of class experiences. To identify these courses, the number of class meetings per week is stated after the course description.

151. **Body Mechanics and Self-Testing Activities.** (1) Piper, Benison
Five class meetings per week.

152. Team Sports. (1) Olson, Purdy, McGill
Five class meetings per week.

160. Physical Fitness Programs. (2) Bynum
The professional course in physical fitness programs. 5 class meetings per week.

161. Fundamentals of Basketball. (2) King
The professional course in the coaching of basketball. 5 class meetings per week.

162. Fundamentals of Football. (2) Weeks
The professional course in the coaching of football. 5 class meetings per week.

163. Swimming. (2) Barney
The professional course in swimming. Prerequisite: ability to swim. 5 class meetings per week.

201. Gymnastics. (2) Mitchell
The professional course in gymnastics. Prerequisite: 117. 5 class meetings per week.

202. Theory and Practice of Baseball. (2) Leigh
The professional course in the coaching of baseball. 5 class meetings per week.

203. Combatives. (2) Jacobsen
The professional course in combatives. 5 class meetings per week.

204. Theory and Practice of Track and Field. (2) Hackett
The professional course in the coaching of track and field. 5 class meetings per week.

210. Folk Dance. (1) Anderson, Benison
Five class meetings per week.

211. Individual and Dual Sports. (1) McGill, Olson, Purdy
Five class meetings per week.

301. Recreational Sports. (2) Papcsy
(Also offered as Rec 301.) The professional course in recreational sports. Prerequisite: PE 160 or permission of instructor. 5 class meetings per week.

302. Recreational Sports. (2) Papcsy
(Also offered as Rec 302.) Continuation of 301. Prerequisite: PE 160.

307. Team Sports in the Secondary School. (2) Olson, Purdy
Prerequisite: 152 or permission of instructor. 5 class meetings per week.

308. Individual and Dual Sports in the Secondary School. (2) McGill, Olson
Prerequisite: 211 or permission of instructor. 5 class meetings per week.

309. Aquatics and Gymnastics. (2) Piper, Benison, Olson
Prerequisite: 151 or permission of instructor. 5 class meetings per week.

310. Folk Dance in the School Program. (2) Anderson, Benison
Prerequisite: 210 or permission of instructor. 5 class meetings per week.

319. Physical Education in the Elementary School. (2) Gugisberg, Hinger
(Same as Elementary Education 319.) 5 class meetings per week.

326L. Physiology of Exercise. (3) Fleck, Riedesel and Assistant
(Same as Biology 326L.)

345. Professional Laboratory Experiences in Health, Physical Education, and Recreation. (1-3) Staff
May be repeated to a maximum of 4 semester hours.

351. Problems. (1-3)

360. Officiating in Sports. (2) McGill, Olson
Discussion and practice in officiating techniques in soccer, speedball or field hockey, basketball, etc. Prerequisite: permission of instructor. 4 class meetings per week.

366. Teaching of Contemporary Dance. (2) Waters, Benison
Selection of methods and materials for teaching modern dance. 4 class meetings per week.

373. The Treatment of Athletic Injuries. (2) Diehm

397. Kinesiology. (4) Burley
Prerequisites: Biology 136, 139L.

398. Principles of Physical Education. (3) Seidler
The aims and objectives of physical education: physiological, psychological, and sociological principles which underlie practices in the profession. Prerequisite: permission of instructor.

399. **Organization and Administration of Physical Education.** (3) Gugisberg, Clements
Program building including criteria for the selection of activities and progression, and other factors affecting course of study construction such as facilities, equipment, budget, laws, policies, professional responsibilities. Prerequisite: permission of instructor.

*429. **Workshop.** (1-4)
Carries graduate credit when specifically approved by the Graduate Committee. For degree restrictions see p. 167 of this catalog or consult the **Graduate School Bulletin.**

444. **Teaching of Physical Education.** (3) Gugisberg
(Same as Secondary Education 444.)

452. **Organization of Sports Programs.** (3) Clements, McGill
(Same as Recreation 452.)

461. **Adaptive and Corrective Physical Education.** (3) Papcsy
The field of adaptive and corrective physical education and its relationship to the regular curriculum in P.E. Prerequisite: 397.

463. **Theory of Basketball.** (3) King
To review and enlarge the student's knowledge of the basic techniques of basketball and to acquaint him with the principles, techniques, and strategy of coaching basketball at the jr. high, high school, and college level. Prerequisite: senior standing.

464. **Theory of Football.** (3) Weeks
To review and enlarge the student's knowledge of the basic techniques of football and to acquaint him with the principles, techniques, and strategy of coaching football at the jr. high, high school, and college level. Prerequisite: senior standing.

*489. **Tests and Measurements in Physical Education.** (3) Burley
Techniques to determine abilities, needs, and placement in the physical education program.

*490. **Supervision of Health and Physical Education Programs.** (3) Belzer, Burley, Clements, Gugisberg, Small
(Also offered as Health Education 490.) Supervisory techniques stressing cooperative planning will be applied to city and county programs in New Mexico. Each student will be required to develop a problem in terms of his particular needs and situation. Prerequisite: permission of instructor.

*491. **Administration of Varsity Athletics** (3) Seidler

*492. **History of Physical Education.** (3) Papcsy

*494. **Clinical Program for Corrective Therapy.** (3) Members of the Hospital Staff
Lectures and actual clinical experience in corrective therapy as integrated into the Physical Medicine and Rehabilitation program of a hospital. Prerequisite: Open to Seniors and Graduate Physical Education majors.

497. **Reading and Research in Honors.** (3-6)
Prerequisite: see p. 160.

*505. **Foundations for a Philosophy of Physical Education.** (3) Burley, Seidler
Prerequisite: at least 3 hours in history, principles, or methods of physical education.

*510. **Curriculum Construction in Physical Education.** (3) Burley, Seidler

*514. **The Remedial Program in Physical Education.** (3) Burley, Papcsy

*516. **Seminar in Physical Education.** (3) Burley, Seidler

*523. **Analysis of Physical Education Activities.** (3) Seidler
Analysis of a selected number of physical education activities by application of principles and methods of advanced physiology of exercise, mechanics, and kinesiology.

*529. **Workshop.** (1-4)
For degree restrictions consult the **Graduate School Bulletin.**

*551-552. **Problems in Physical Education.** (1-3 hrs. each semester) Staff

*588. **Psychological Aspects of Sport.** (3) Geba
Examination and utilization of basic psychological concepts and demonstrations within the areas of physical education, recreation, and athletics.

*599. **Master's Thesis.** (1-3 hrs. per semester) Burley, Seidler, Small
See the **Graduate School Bulletin** for total credit requirements.

*699. **Dissertation.** (3-6 hrs. per semester) Burley, Seidler, Small
See the **Graduate School Bulletin** for total credit requirements.

HEALTH EDUCATION

164. **First Aid.** (2) Belzer, Clements
First aid and prevention of the common injuries and accidents occurring in and about the school.

171. **Personal and Community Health.** (3) Belzer, Clements, Hinger, Small

312. **Fundamentals of Human Sex and Sex Education.** (3) Belzer, Cohn
Basic knowledges, attitudes, and issues regarding the biomedical, psycho-social, historical, semantic, and comparative cultural aspects of human sexuality from conception to senility. Consideration is given to adjustment needs and problems of children and adults in contemporary American society and to sex education programs in the schools.

351. **Problems.** (1-3)

370. **Teaching of Health Education in the Schools.** (3) Belzer, Clements, Gugisberg, Small
Responsibilities of the teacher in providing certain health services, desirable environmental conditions, and health instruction in elementary and secondary grades; basic health principles, unit planning, methods, and use of community resources. Prerequisite: 171.

401. **General Safety Education.** (3) Belzer, Clements
Basic principles of safety education. Current safety programs as they apply to school, home, and community.

402. **Traffic Safety Education in Secondary Schools.** (3) Belzer, Clements
Those enrolling must be licensed drivers. Discussion includes improvements of traffic conditions; the school's part in the safety program; the need for high school courses; methods and equipment for skill tests; insurance costs, and records for behind-the-wheel training; classroom teaching methods; and physical tests for drivers.

*410. **Administration of a School Health Program.** (3) Belzer, Clements, Gugisberg, Small
Prerequisite: 370.

*429. **Workshop.** (1-4)
Carries graduate credit when specifically approved by the Graduate Committee. For degree restrictions see p. 167 of this catalog or consult the **Graduate School Bulletin.**

*490. **Supervision of Health and Physical Education Programs.** (3) Belzer, Burley, Clements, Gugisberg, Small
(Also offered as Physical Education 490.) Supervisory techniques stressing cooperative planning will be applied to city and county programs in New Mexico. Each student will be required to develop a problem in terms of his particular needs and situation. Prerequisite: permission of instructor.

*495. **Studies in Community Health.** [Studies in Community Health Problems] (3) Belzer, Clements, Gugisberg, Small

*496. **Investigations in School Health Programs.** (3) Belzer, Clements, Gugisberg, Small

497. **Readings and Research in Honors.** (3-6)
Prerequisite: see p. 160.

*506. **Analysis of Health Concepts and Practices.** (3) Belzer, Small
Prerequisite: minimum of an undergraduate minor in Health Education or permission of the instructor.

*516. **Seminar in Health Education.** (3) Belzer, Burley, Small

*529. **Workshop.** (1-4)
For degree restrictions consult the **Graduate School Bulletin.**

*551-552. **Problems in Health Education.** (1-3 hrs. each semester) Staff

*599. **Master's Thesis.** (1-3 hrs. per semester) Burley, Belzer, Small
See the **Graduate School Bulletin** for total credit requirements.

*699. **Dissertation.** (3-6 hrs. per semester) Burley, Small
See the **Graduate School Bulletin** for total credit requirements.

RECREATION

290. **Social Recreation.** (2) McGill, Montgomery, Piper
Experience in selection of materials, and leadership techniques in group work in social and recreational games, mixers, and dances for use in recreation programs. 5 class meetings per week.

301. Recreational Sports. (2) Papcsy
(Also offered as PE 301.) The professional course in recreational sports. Prerequisite: P.E. 160 or permission of instructor. 5 class meetings per week.

302. Recreational Sports. (2) Papcsy
(Also offered as P.E. 302.) Continuation of 301. Prerequisite: P.E. 160.

303. Principles of Recreation. (3) Heath
History of leisure and recreation; concepts of play and recreation; major recreation agencies.

331. Principles and Practices of Camping. (3) Heath
The objectives of this course are to introduce students to camp experiences, to study needs for camping with emphasis on school-camp programs, and to study organizational and administrative aspects with emphasis on leadership functions. Prerequisite: permission of instructor.

351. Problems. (1-3)

374. Organization of Community Recreation. (3) Montgomery
The organization, administration, and conduct of recreation programs on the community level. Prerequisite: 303.

***429. Workshop.** (1-4)
Carries graduate credit when specifically approved by the Graduate Committee. For degree restrictions see p. 167 of this catalog or consult the **Graduate School Bulletin.**

452. Organization of Sports Programs. (3) Clements, McGill
Organization and administration of games and sports in intramural, interschool, and community recreation programs. Prerequisite: permission of instructor.

475-476. Field Work in Recreation. (3, 3) Heath, Montgomery
Theory and practice in recreation leadership in centers, playgrounds, etc. Prerequisite: 374 or permission of instructor.

***477. Industrial and Institutional Recreation.** (2) Heath, Montgomery
Planning, organizing, and conducting recreation programs in industry, hospitals, commercial settings, private agencies and other types of institutions. Prerequisite: 303 or permission of instructor.

***478. Outdoor Recreation.** (3) Heath
Organization and administration of all types of outdoor recreation-leadership, programming, financing, etc. Includes programs in camps, resorts, ranches, lodges, and state and national parks. Prerequisite: 303 or permission of instructor.

***479. Park Management.** (3) Montgomery
The principles, practices and problems involved in public park management, with emphasis upon facility design, maintenance, finance and administration. Prerequisite: 374 or permission of instructor.

***486. Principles of Therapeutic Recreation.** (3) Heath, Montgomery
Philosophy, principles, relationships and contributions of therapeutic recreation as background for the recreation leader, hospital administrator, and other personnel.

497. Reading and Research in Honors. (3-6)
Prerequisite: see p. 160.

***507. Foundations for a Philosophy of Recreation.** (3) Heath

***508. Recreation Administration.** (3) Montgomery
Organization and administration of public recreation, administrative practices and techniques. Prerequisite: 507 or permission of instructor.

***516. Seminar in Recreation.** (3) Burley, Heath

***524. Evaluation of Recreation Resources and Programs.** (3) Montgomery
Determining recreational needs, interests, and opportunities of individuals and communities through surveys, studies, and appraisals; evaluating and appraising community recreation programs and services; and research in the field of recreation.

***529. Workshop.** (1-4) Staff
For degree restrictions consult the **Graduate School Bulletin.**

***551-552. Problems in Recreation.** (1-3 hrs. each semester) Staff

***555. Socio-Psychological Concepts of Leisure.** (3) Geba, Heath
Basic sociological and psychological concepts of leisure and their impact upon the fields of physical education, recreation, and athletics.

***599. Master's Thesis.** (1-3 hrs. per semester) Burley, Heath, Montgomery
See the **Graduate School Bulletin** for total credit requirements.

EDUCATION, HOME ECONOMICS

Associate Professors E. Snell (Chairman), F. M. Schroeder; Assistant Professors I. H. McMurray, R. B. Harris; Instructors M. K. Huff, M. Lehmer.

CURRICULUM IN EDUCATION

See p. 175.

COMBINED MAJOR IN HOME ECONOMICS EDUCATION AND DIETETICS

See p. 175.

MAJOR STUDY IN ARTS AND SCIENCES

A major study in Home Economics in the College of Arts and Sciences prepares the student for the role of homemaker and for a career in Home Economics in business.

Home Economics 102L, 120L, 150L, 222L, 325, 341, 408L, 418, 431L, 443, and one of the following courses: 252 or 254L. Chemistry 141L and 142L and Biology 112L, 136, and 233L are also required.

If a student majors in Home Economics in the College of Arts and Sciences, she may not have any other hours outside the College.

A special curriculum is planned for those who wish to prepare for a career in dietetics. For requirements for a major in dietetics consult the Home Economics Department Chairman.

MINOR STUDY

See p. 175.

HOME ECONOMICS

102L. Infant Growth and Development. (3) Schroeder
An introduction to the basic needs and growth factors of the child with emphasis on the prenatal period, infancy, and through the second year. 2 lectures, 2 hrs. lab.

120L. Food Science. [Food and Nutrition] (3) Harris
Principles of selection and preparation of food including economic aspects. 1 lecture, 4 hrs. lab.

150L. Clothing Selection and Construction. (3) McMurray
Clothing selection and construction from the standpoint of artistic, economic, and hygienic standards for the individual. 1 lecture, 4 hrs. lab.

222L. Meal Management. [Food and Nutrition] (3) Huff
Principles of selection and preparation of food. Meal planning and service. Prerequisite: 120L or equivalent. 1 lecture, 4 hrs. lab.

240. Personal and Family Health. (2)
Personal and family health, sanitation; prevention and control of communicable diseases; fundamentals of home care of the sick.

252. Textiles. (3) McMurray
Construction, identification, use and care of clothing and household textiles.

254L. Tailoring. (3) McMurray
Construction of a wool suit or coat emphasizing fitting and techniques of finishing. Consumer information in relation to clothing. Prerequisite: permission of instructor. 1 lecture, 4 hrs. lab.

325. Nutrition. (3) Harris
The relation of nutrition to the health program; normal nutrition for all ages, prenatal through old age.

326L. Nutrition Laboratory. (1) Harris
Calculating and visualizing amounts and proportions of nutrients in foods, and analysis of recipes to determine nutritive value. 2 hrs. lab.

341. The House and Its Furnishings. (3) McMurray
Guides in the selection of a house and furnishings with emphasis upon the use of space for function, economy, and beauty.

351. Problems. (1-3)

***408L. Child Growth and Development.** (3) Schroeder
Pre-school through adolescence. For laboratory work, observation, and participation in nursery school and in kindergarten. 2 lectures, 2 hrs. lab.

418. Family Relationships. (3) Schroeder
Family relationships as they affect courtship, marriage, parenthood, old age, and community responsibilities and activities.

427L. Large Quantity Food Production. (3)
Standard methods of food production in quantity; food cost control; standardization of formulas; menu planning and food service. Prerequisites: 120L, 222L, 431L.

428. Diet Therapy. (3) Harris
The adaptation of diets in the treatment of impaired digestive and metabolic conditions. Prerequisites: Chemistry 141L, 142L, 281.

***431L. Experimental Foods.** (3) Huff
Experimental methods applied to food preparation, food marketing and food laws. Prerequisites: 222L; Chemistry 141L, 142L. 2 lectures, 3 hrs. lab.

***433.** [433L] **Advanced Nutrition.** (3) Harris
Nutritive value of foods, analyses of adequate diets for normal individuals of all ages, and the relation of nutrition to the health of the world's populations. Prerequisites: 120L, 222L, or equivalents; Chemistry 141L and 142L, or equivalents; Biology 136.

434. Organization and Management. (3)
Prerequisite: Psychology 102; pre- or corequisite: Psychology 451.

443. Home Management. (3) Huff
Use of money, time, and energy for the satisfaction of family needs. Selection, use, and care of equipment in the home.

445L. Home Management Residence. (4) Huff
Six weeks' residence with supervised planning, buying, preparation, and serving of meals, housekeeping; care of a resident infant. Pre- or corequisites: 102L, 443. Special fee.

***456L. Creative Design in Clothing.** (3) McMurray
To develop some creative ability in dress designing through manipulation of a basic pattern. Prerequisites: 150L, 254L; Art Ed. 130, 131. 1 lecture, 4 hrs. lab.

***509L.** [409L] **Organization and Management of Nursery Schools and Kindergarten.** (3) Schroeder
Organization and administration of nursery schools and kindergartens with emphasis on curriculum, housing, equipment, budget, and staff and with parent and student participation. Practicum in teaching a group of preschool children. Prerequisite: 408L or Ed Fdn. 300.

***520. Family Living in Modern Society.** (3) Staff
Pertinent research in the field of family life and family life education. Prerequisite: 418 or Sociology 225.

***535. Seminar in Nutrition.** (3) Harris
A critical study of recent research in nutrition. Prerequisite: 325 or 433L.

***549. Managing Family Resources.** (3) Staff
Research findings and developments in relation to management in the home and their application to homes in today's society. Prerequisites: 443, Economics 330.

***551-552. Problems. (1-3 hrs. each semester)**

***555. Seminar in Textiles.** (3) McMurray
Recent research and developments in the field of textiles as related to end products in wearing apparel and household textiles. Prerequisite: 252.

HOME ECONOMICS EDUCATION

429. Workshop. (1-4)
For degree restrictions see p. 167 of this catalog.

*437. **Teaching of Home Economics.** (3) Snell
(Same as Secondary Education 437.)

465. **Home Economics Seminar.** (1-2) Snell
History and trends in home economics, professional organization for home economists; Federal and state laws pertaining to, and research facilities available for, home economics.

*475. **Evaluation in Home Economics.** (3) Snell
Newer concepts concerning evaluation and testing instruments and techniques for home economics. The construction and use of evaluative devices for home economics in the classroom and ways of determining their value. Pre- or corequisite: Secondary Ed. 461.

*480. **Curriculum Development for Home Economics.** [Curriculum Development for Gainful Employment] (3) Staff
Curriculum, methods, and facilities for courses for gainful employment which use home economics knowledge and skills. Prerequisite: major in home economics.

497. **Reading and Research in Honors.** (3-6)
Prerequisite: see p. 160.

*570. **Seminar in Home Economics Education.** (3) Snell
Survey of literature related to research in home economics education in elementary and secondary schools, in adult programs, and in programs serving out-of-school youth including those programs for wage earning. Means of improving present curriculum and methods in all types of home economics programs. Prerequisite: major in home economics.

EDUCATION, LIBRARY SCIENCE

Professor D. O. Kelley; Assistant Professor E. McCloskey.

MAJOR STUDY

Not offered.

MINOR STUDY

Library Science 424, 425, 427, 429, 430, 441, and one of the following 426, 428, or 431.

*424. **Fundamentals of Library Science.** (3) McCloskey
A survey of the history of libraries; social forces affecting the objectives and functions of modern libraries; types of library service; the library profession, its philosophy, publications and organizations; major trends and problems.

*425. **Reference and Bibliography.** (3) McCloskey
Introduction to standard works of reference.

*426. **Public Library Administration.** (3)
The place of the library in the community; its organization, financing, and administration.

*427. **Classification and Cataloging.** (3) McCloskey
Principles of classification and the techniques of cataloging.

*428. **The Secondary School Library.** [School Library Administration] (3) McCloskey
Practical study of the management of the secondary school library, including the organization of the book collection, housing, equipment and maintenance. Not open to students who have taken 431.

*429. **Book Selection for Young People.** (3) McCloskey
A survey course covering tools and principles of selection of books.

*430. **Reading Guidance.** (3) McCloskey
Study of research concerning reading with implications for libraries; reading interests and habits and evaluation of books for various purposes; advisory services in relation to the library's general educational function.

*431. **The Elementary School Library.** (3) McCloskey
A survey of principles and problems in organizing and maintaining library programs in elementary schools. Not open to students who have taken 428.

*441. **Children's Literature.** (2) Walters
(Same as Elementary Education 441. See El. Ed. for prerequisite.)

EDUCATION, MUSIC

See Music Education.

EDUCATION, PHYSICAL

See Education, Health, Physical Education and Recreation.

ELECTRICAL ENGINEERING

See Engineering, Electrical.

ELEMENTARY EDUCATION

See Education, Elementary and Secondary Departments, Elementary

ENGINEERING, CHEMICAL

Professor T. T. Castonguay (Chairman); Associate Professor A. A. Armstrong, Jr.; Assistant Professors K. E. Cox, E. J. Nowak, D. D. Phillips.

CURRICULUM

See p. 186.

251. Chemical Calculations. (3)
More extensive problem work in the stoichiometric principles of chemistry, including composition changes; the material balance; units and dimensions. Prerequisite: Chemistry 102L or the equivalent.

252. Industrial Stoichiometry. (3)
The application of the fundamental laws of chemistry, physics, and mathematics to industrial chemical calculations. Prerequisites: 251 or the equivalent, Physics 261, Mathematics 264.

317. Process Calculations. (3)
Numerical and graphical techniques; calculations involving phase equilibria, multistage processes and thermochemistry; application of computers to the solution of material and energy balances. Prerequisite: 252.

353. Advanced Chemical Engineering Calculations. (3)
Prerequisite: Mathematics 265.

****354L. Process Dynamics.** (3) Armstrong, Castonguay, Cox, Phillips
Application of special mathematical techniques to chemical processes; topics in process control and instrumentation. Prerequisite: 353. 2 lectures, 3 hrs. lab.

360. Natural Gas Production and Transmission. (3)
Prerequisite: 411 or ME 301.

****361.** [364] **Chemical Engineering Materials I.** (3) Staff
Introduction to the physical basis of the mechanical, electrical, and magnetic behavior of solids. The relations between the structure and properties of materials; diffusion and phase transformations. Prerequisites: 412, Chemistry 312.

****362. Chemical Engineering Materials II** [Inorganic Unit Processes] (3) Staff
Continuation of 361. Applications to metals, ceramics, and polymers. Corrosion and irradiation phenomena. The use and selection of materials for the chemical process industries. Prerequisite: 361.

398. Field Trip. (0)
Required for graduation. Annual inspection tour to leading chemical plants in different sections of the country. Approximately one week is spent on these visits. Prerequisite: senior standing.

****401. Principles of Thermodynamics I.** (3) Staff
The laws of thermodynamics; irreversible processes; development of the energy properties; applications to chemical and physical systems. Prerequisites: Mathematics 265, Physics 262.

** Available for graduate credit except for graduate majors in Chemical Engineering.

****402. Principles of Thermodynamics II. (3) Staff**
Continuation of 401 with applications to chemical engineering processes; physical and chemical equilibria.

****411. Unit Operations I. (3) Staff**
Transport phenomena. The mechanisms and the related mathematical analysis of heat, mass, and momentum transfer. Macroscopic balances. Prerequisites: 252 or the equivalent, Mathematics 265, Physics 262.

****412. Unit Operations II. (3) Staff**
A continued lecture and recitation of the Unit Operations and their applications to the chemical industries: problems in heat transfer, evaporation, humidification, drying, crystallization, phase separation, and related topics. Prerequisite: 411 or the equivalent.

****413. Unit Operations III. (3) Staff**
A continuation of Unit Operations; problems in mass transfer, phase relationships, extraction, distillation, and related topics. Prerequisite: 414L.

****414L. Unit Operations Laboratory I. (2) Staff**
Laboratory practice and experimental study of Unit Operations covered in 411 and 412. Corequisite: 412. 6 hrs. lab.

****415L. Unit Operations Laboratory II. (2) Staff**
Experimental laboratory study of the Unit Operations covered by 412 and 413. Prerequisite: 414L; corequisite: 413. 6 hrs. lab.

451-452. Seminar. (1, 1)
Senior year. Reports on selected topics and surveys; presentation and discussion of papers from current technical journals, and topics of interest to the chemical engineer.

***454. Process Modeling and Optimization. (3) Staff**
Quantitative description of chemical engineering systems. Optimum process design parameters and operating conditions. Prerequisite: 353 or permission of instructor.

****470. Applied Chemical Kinetics. (3) Staff**
The kinetics of homogeneous and heterogeneous catalytic and non-catalytic reactions for flow and non-flow processes. Elementary principles of chemical reactor design and operation.

472. Chemical Engineering Economics. (3)
Factors other than engineering and chemical which determine the feasibility of putting a chemical on the market. Particular reference to control of raw materials, markets, competition, patent situation, and related topics. Prerequisites: 413, Economics 200 or the equivalent.

481L. Chemical Engineering Process Laboratory I. (2)
Research and development laboratory studies on chemical processes and products. Emphasis on creativity in pursuing research objectives. Literature survey, laboratory notebook and report writing stressed.

482L. Chemical Engineering Process Laboratory II. (2)
Continuation of 481L, but may be taken as an independent unit. Prerequisites: Chemistry 311-313L; corequisite: 361 or 362. 6 hrs. lab.

****494L. Chemical Engineering Design. (3) Staff**
Practice in engineering creativity and decision-making. Selection of the optimum process for making a given product. Process design of equipment. Prerequisites: 401, 413. 2 lectures, 3 hrs. lab.

***501. Chemical Engineering Seminar. (1-3) Staff**
Individual study on advanced phases of chemical engineering and industrial chemistry. Research, reports, and conferences. Offered each semester.

***521. Advanced Transport Phenomena I.** [Advanced Chemical Engineering] **(3) Staff**
Viscosity and velocity distribution in laminar and turbulent flow. Boundary layer theory and modern concepts of turbulence. Temperature distributions and the equations of change for non-ideal systems.

***522. Advanced Transport Phenomena II.** [Advanced Chemical Engineering II] **(3) Staff**
Diffusivity and the mechanisms of mass transport. Concentration profiles in laminar and turbulent flow. Interphase transport in multicomponent systems.

***523. Equilibria and Staged Operations. (3) Staff**
An advanced study of the mass transfer operations of chemical engineering. Equilibria of non-ideal systems. Multicomponent operations.

** Available for graduate credit except for graduate majors in Chemical Engineering.

*531. **Petroleum Process Engineering.** [Refinery Process Engineering] (3) Staff
Oil and natural gas recovery, secondary recovery methods. The processing of petroleum, refinery design methods, and operation. The manufacture of petro-chemicals from petroleum feed stocks.

*532. **Advanced Process Dynamics and Control.** [Gas Process Engineering] (3) Staff
Dynamics of complex processing systems such as packed-bed reactors and mass transfer equipment. Sampled-data control systems involving on-line gas chromatographs and process control computers.

*541. **Catalysis.** [Catalysis and High Pressure] (3) Staff
Rate equations and theories of heterogeneous and homogeneous catalysis. Adsorption phenomena. Physical characterization of catalysts. Catalyst preparation, poisoning and deactivation. Experimental methods and applications to industrial processes.

*542. **Advanced Chemical Engineering Thermodynamics.** (3) Staff
Advanced thermodynamics with reference to its application in chemical engineering.

*543. **Irreversible and Statistical Thermodynamics.** (3) Staff
Application of modern thermodynamic concepts and techniques to chemical engineering.

*551-552. **Problems. (1-3 hrs. each semester)** Staff
Advanced readings, design, or research.

*561. **Kinetics of Chemical Processes.** [Chemical Engineering Calculation and Kinetics] (3) Staff
Rate equations for simple and complex chemical processes, both homogeneous and heterogeneous. Experimental methods and interpretation of kinetic data for use in chemical reactor design and analysis. Application to complex industrial problems.

*591. **Theoretical Physical Metallurgy.** (3) Smith
Electronic structures and the bonding of solids, crystal structures and crystal imperfections. The physical and mechanical behavior of metals. Prerequisite: Physics 430 or EE 471.

*592. **Physical Metallurgy of Alloys.** (3) Smith
Equilibrium and nonequilibrium phase relations in binary and ternary alloys. Interrelations of microstructures and physical and mechanical properties. Control of structures and properties by alloying and by thermal and mechanical treatment. Prerequisites: 591, Chemistry 312.

*593. **Ceramics.** (3) Staff
Properties, applications, and manufacture of electrical ceramics, refractory intermetallic compounds, ceramic-metal and glass-metal composites, and cermets. Sintering and solid state reaction, glassy state, thermodynamics of ceramics. High temperature techniques. Prerequisites: Chemistry 312 and Physics 430 or EE 471.

*594. **Plastics.** (3) Staff
Basic chemistry of resins and polymers. Effect of chemical and physical structure on plastic properties. Selection, testing and evaluation of plastics. Methods of fabrication. Prerequisite: Chem. 101L. Recommended: Chem 122L, 301 and 302.

*595. **Seminar in Materials.** (1-3) Staff

*596L. **Physical Metallurgy Laboratory.** (1) Staff
The techniques and applications of metallography; preparation of metallographic sections; microscopy and photomicrography; physical, chemical, and mechanical evaluation of metal specimens. Pre- or corequisite: 592. 3 hrs. lab.

*597. **Crystalline Defects in Solids.** (3) Staff
Theory of crystalline defects and application to material properties. Defect species such as vacancies, interstitials, impurities, dislocations, stacking faults and grain boundaries. Physical properties: mechanical, kinetic, electrical, and magnetic. Irradiation damages in solids. Direct observation of defects.

*599. **Master's Thesis. (1-3 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

*699. **Dissertation. (3-6 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

ENGINEERING, CIVIL

Professors C. L. Hulsbos (Chairman), R. H. Clough (Dean), W. R. Gafford, R. G. Huzarski, J. E. Martinez, M. C. May, E. M. Zwoyer; Associate Professors M. M. Cottrell, E. J. Rhomberg, G. E. Triandafilidis, J. T. P. Yao; Assistant Profes-

sors W. T. Abbott, J. B. Carney, Jr., W. W. Hakala, R. L. Johnson, Jr., G. W. May, C. Omid'varan, C. C. Patterson; Instructors (part-time) W. C. Hughes, J. C. Jennett, W. J. van der Meer.

CURRICULUM

See p. 188.

101L. Engineering Graphics. (3)
Graphical communications; point, line, and plane relationships; distances, angles, and intersections. 2 lectures, 4 hrs. lab.

102L. Engineering Computational Methods. (3)
Graphical computations, nomography, flow diagramming, digital computer systems and language. Corequisite: Mathematics 160 or 162. 2 lectures, 4 hrs. lab.

103. Engineering Lectures. (1)
A discussion of the engineering profession.

202L. Engineering Statics. (3)
Statics of particles and rigid bodies in two and three dimensions using vector algebra as an analytical tool; centroids; distributed loads; trusses, frames; friction. Prerequisite: Physics 260; corequisite: Mathematics 264. 2 lectures, 3 hrs. lab.

†211. [210] **Introduction to Architectural Structural Analysis.** (3)
Study of loads on architectural structures and their behavior; properties of structural materials and shapes. Determination of reactions and force resultants in structural components. For architecture students only. Prerequisites: Physics 111, Mathematics 160. 2 lectures, 3 hrs. lab.

†212. [311] **Architectural Structures I.** (3)
Study of behavior of structural form; beams, frames, arches, and plates. Deformation analysis of structural members and frames. Elastic and ultimate resistance of structural materials. For architecture students only. Prerequisite: 211. 2 lectures, 3 hrs. lab.

270L. Construction Materials. (1)
A laboratory study of the physical, mechanical, and chemical properties of engineering materials. 3 hrs. lab.

281L. Engineering Measurements. (3)
Principles and theories of physical measurements of spatial quantities; theory of probable error and adjustment of observations; use of measuring instruments and systems using surveying techniques where desirable. Corequisite: Mathematics 161 or 163. 2 lectures, 3 hrs. lab.

282L. *Engineering Surveys.* (3)
Engineering applications of theories and principles developed in 281L; horizontal and vertical control surveys, topography, alignment curve geometrics, modern survey systems, and instruments; introduction to photogrammetry and geodesy. Prerequisite: 281L. 2 lectures, 3 hrs. lab.

302. Mechanics of Materials. (3)
Stresses and strains associated with elastic and plastic behavior of members stressed in tension, compression, torsion, and flexure; Mohr's circle construction; principles of combined stresses and resultant deformation; columns and buckling phenomena; preliminary consideration of statically indeterminate members. Prerequisite: 202L.

303L. Mechanics of Materials Laboratory. (1)
Laboratory practice in the application of strain measuring and indicating devices directed at verification of fundamental principles developed in 302; mechanical, electrical, photoelastic, and stresscoat equipment usage. Corequisite: 302. 3 hrs. lab.

305. Structural Analysis I. (3)
Analysis of determinate structures including beams, frames, roof and bridge trusses subjected to both fixed and moving loads by algebraic and graphical methods; introduction to deflection theory, moment-area, conjugate beams, and virtual work. Corequisite: 302.

****306. Structural Analysis II.** (3) Staff
Statically indeterminate structures; use of *moment-area, conjugate* structure, column analogy, virtual work, slope deflection and moment-distribution methods; sidesway and multi-degree of freedom structures; introduction to structural dynamics. Prerequisite: 305 or permission of instructor.

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† No credit allowed in College of Engineering.
** Available for graduate credit except for graduate majors in Civil Engineering.

†313. **Design of Structures I.** (3)
Qualitative behavior of structural systems; choice and planning of structural systems. Design of truss and frame structures in steel and wood. For architecture students only. Prerequisite: 312.

†314. **Design of Structures II.** (3)
Approximate and simplified methods of proportioning reinforced concrete members. Design of reinforced concrete buildings, including foundations, in accordance with current codes. Qualitative behavior and simplified design of arches, shells, and folded plates. For architecture students only. Prerequisite: 312.

324L. **Structural Design in Metals.** (3)
Methods of design of tension, compression, and flexure members of metal including their connections; the analysis and design of structural elements of metal as consistent with modern practice. Prerequisite: 305. 2 lectures, 3 hrs. lab.

330. **Fluid Mechanics. (3) Carney, Martinez
The mechanics of incompressible and compressible flow; fluids at rest, geometry of fluid motion; general equations of motion; laminar and turbulent flow, boundary layer, lift, form drag; flow through pipes, pipe systems, and open channels. Prerequisite: 202L; corequisite: ME 206L.

332L. **Water Resources and Hydraulic Engineering I. (3) Carney, Martinez
Components of the hydrologic cycle; ground water flow, stream flow, storage requirements, flood routing; dams and spillways; conveyance by canals, flumes, and pipe systems; laboratory study of basic principles of hydraulics. Prerequisite: 330. 2 lectures, 3 hrs. lab.

360L. [460L] **Soil Mechanics.** (3)
Physical, chemical, and mechanical properties of soil as an engineering material; relation of properties to engineering problems. Prerequisite: 302. 2 lectures, 3 hrs. lab.

370. **Engineering Materials Science.** (3)
(Also offered as ME 370.) The structure of matter; phase relations, mechanical, thermal, electrical and magnetic properties of polymers, metals and ceramics; fracture mechanics; corrosion, protective materials, cementing materials and concrete. The use and selection of materials. Prerequisite: 302.

380L. **Cartography.** (3)
Map projection and use of maps to show areal distribution and graphic representation of statistical data. Prerequisite: 101L and permission of instructor. 2 lectures, 3 hrs. lab.

382. **Transportation Engineering.** (2)
The planning, economics, finance, location, geometric design, and administration of transportation systems. Prerequisite: junior standing in Civil Engineering.

*401. **Advanced Mechanics of Materials.** [Advanced Mechanics of Materials I] (3) Cottrell, Hakala
State of stress and strain at a point, stress-strain relations, strain energy, elastic instability, stress concentrations, shear center, bending of curved beams, torsion of prismatic bars, stresses in symmetrical bodies, yield criteria. Prerequisites: 302, Mathematics 311.

*402. **Introduction to Mechanics of a Continuum.** [Advanced Mechanics of Materials II] (3) Cottrell, Hakala
Analysis of stress and deformation in a continuum, equations of motion, applications to solids and fluids. Prerequisites: 302, Mathematics 311.

411. **Reinforced Concrete Design.** (3)
Structural mechanics of concrete beams, slabs, columns, walls, and footings; checking and proportioning of members and connections in accordance with specifications for elastic, ultimate, and prestressed concrete design. Prerequisite: 306.

*416L. **Analysis and Design of Structural Systems.** (3) Staff
Analysis, design, and optimization of various structural systems. Topics to be selected from the following systems: buildings, bridges, aerospace structures, plates, cylindrical shell panels, space frames. Structural model analysis. Prerequisites: 306 and permission of instructor. 2 lectures, 3 hours lab.

*420. **Plastic Design of Framed Structures.** (3) Rhomberg
Basic theorems of plastic collapse, bending moment-curvature relationships, methods of plastic analysis and design, deflection estimates, influence of axial and shear forces on the plastic moment. Prerequisite: 306.

† No credit allowed in College of Engineering.
** Available for graduate credit except for graduate majors in Civil Engineering.

***421L. Introduction to Structural Dynamics.** (3) Cottrell, Yao
Basic theory of structural vibrations; structural response to dynamic loads; laboratory simulation of dynamic response of structures with electrical and mechanical analogies and applications of analog computer. Prerequisites: 306, ME 206L, Mathematics 311. 2 lectures, 3 hrs. lab.

***430. Applied Hydrodynamics.** (3) Carney, Martinez
Principles of dimensional analysis, dynamic similarity, flow nets, irrotational flow, gravity flow, unsteady flow, boundary layer theory, separation, cavitation, drag; pumps and turbines. Prerequisite: 330.

***431. Intermediate Hydrology.** (3) Carney, Martinez
Hydrometeorology, soil moisture, runoff cycle, losses, overland flow, flood routing, run-off routing. Prerequisite: 332L and permission of instructor.

***432.** [441] **Water Resources and Hydraulic Engineering II.** (3) Carney, Martinez
Applied hydrology, hydraulics, and water resources development. Prerequisite: 332L.

****435L. Sanitary Engineering I.** (3) Martinez, Patterson
Quantities of water and waste-water; collection, transmission, and distribution of water; design of drainage systems; water purification; waste-water treatment; examination of water and waste-water. Prerequisite: 330. 2 lectures, 3 hrs. lab.

***436. Sanitary Engineering II.** (3) Martinez, Patterson
The principles of sanitary science as applied to the control of environment; sanitary and economic factors of air and water pollution; collection and disposal of liquid and solid wastes; health aspects of housing and food supplies; industrial hygiene; radiological health aspects of sanitary engineering. Prerequisite: 435L.

***440. Arid Land Engineering.** (3) Huzarski
Engineering studies related to problems of air, water, ground, and culture, relevant to arid and semi-arid regions. Prerequisite: senior standing and permission of instructor.

***450. Introduction to the Probabilistic Methods in Engineering.** (3) Carney, Yao
Applications of the theory of probability and statistics to engineering problems such as measurement errors, traffic flow, sanitary engineering, water resources, hydrology, yield and fracture strength of metals. Prerequisite: Permission of instructor.

***451. Engineering Analysis.** (3) Cottrell
Methods of theoretical analysis of typical engineering systems. Applications of ordinary and partial differential equations, finite differences and matrices to solve engineering problems. Prerequisite: Mathematics 311 or equivalent and permission of instructor.

***462. Engineering Foundations.** (3) Carney, Hakala
Application of principles of soil mechanics to analysis and design of footings, piles, caissons, cofferdams, and other substructures. Prerequisite: 360L.

***463. Intermediate Soil Mechanics.** (3) Carney, Hakala
Detailed study of physical and mechanical properties of soils, shear strength, consolidation, introduction of physico-chemical properties of soils. Prerequisite: 360L.

***464. Soil and Rock Engineering.** [Soil and Rock Engineering in Arid Regions] (3) Hakala
Properties and behavior of soils and rocks, tunneling, stress concentrations, blasting requirements, relation of soil and rock properties to blast damage. Prerequisite: 360L.

***471L. Building Construction.** (3) Gafford
Engineering and architectural details within the framework of a building; floor and roof systems; bearing curtain walls; use and relative costs of materials; building codes; selected field trips. Prerequisite: senior standing in Engineering. 2 lectures, 3 hrs. lab.

***472. Construction Management.** (3) Clough
Management principles as applied to the conduct and control of construction projects; estimating methods, bidding, construction contracts, bonds, insurance, cost accounting, labor law, labor relations, and safety. Prerequisite: senior standing in Engineering.

***475L. Materials Technology.** (3) Martinez, Rhomberg
Theories of concrete-mix proportioning, use of concrete additives; testing of concrete aggregates and cement; asphalts; design of bituminous paving mixtures. Prerequisite: senior standing in Engineering. 2 lectures, 3 hrs. lab.

***476. Highway and Airport Pavements.** (3) Martinez
Principles of highway and airport pavement design. Prerequisite: 360L.

** Available for graduate credit except for graduate majors in Civil Engineering.

*480. **Municipal Engineering.** (3) M. May
Forms of municipal government; municipal functions, organization, and management; city finance; engineering functions of city government; city planning and zoning; public utilities, recreational development. Prerequisite: senior standing in Engineering.

*482. **Traffic Engineering.** (3) M. May
Application of engineering principles to the problems of highway traffic; traffic counts, origin and designation surveys, accident studies, traffic estimates, planning studies; highway and intersection capacities; traffic control; geometric design principles. Prerequisite: senior standing in Engineering.

490. **Professional Problems in Engineering.** (3)
Ethical and professional considerations in the engineer's relationship to other engineers, his clients, and society; contractual agreements common to engineering; professional economics; professional history. Prerequisite: senior standing in Engineering.

*491-492. **Special Topics in Civil Engineering.** (1-3 to a maximum of 6) Staff
Advanced studies in various areas of civil engineering.

*501. **Indeterminate Structural Analysis.** [Advanced Indeterminate Structures] (3) Johnson, Yao
Topics in indeterminate structural analysis using displacement methods and force methods; relaxation and distribution procedures; column analogy. Introduction to the application of matrix algebra in structural analysis. Prerequisite: 306 or permission of instructor.

*502. **Advanced Structural Analysis.** (3) Johnson, Yao
Virtual work, principles of strain energy and complementary energy. Comprehensive presentation of the fundamental principles of structural analysis formulated with matrix algebra. The application of numerical and approximate methods. Analysis of complex structures using digital computers. Prerequisite: 501.

*505. **Advanced Reinforced Concrete.** (3) Hulsbos, Rhomberg
Behavior of reinforced concrete members and structures; ultimate strength design; review of current literature. Prerequisites: 306, 411.

*506. **Prestressed Concrete.** (3) Hulsbos, Rhomberg
Theoretical and practical aspects of behavior and design of prestressed concrete structures. Prerequisite: 411.

*507. **Design of Concrete Plates and Shells.** (3) Hulsbos
Design of slabs, folded plates, and thin shell structures. Principles of ultimate strength, limit design, and yield line theories. Prerequisite: 411.

*510. **Advanced Structural Design in Metals.** (3) Omid'varan, Yao
Advanced structural design in steel and aluminum alloys; relation of code requirements to theoretical and experimental studies of elastic and inelastic structural behavior; analysis and design of light-gage members. Prerequisite: 324L.

*516. **Advanced Structural Mechanics.** (3) Staff
Introduction to the theory of elasticity with application to structural problems; theory, analysis, and design of flat and folded plate structures; membrane and bending theory of shells. Prerequisite: 401 or permission of instructor.

*518. **Elastic Stability.** (3) Cottrell, Omid'varan
Elastic and inelastic bending and buckling of prismatic bars, beams, curved bars, thin shells, and thin plates under axial and lateral loads. Prerequisites: 401, Mathematics 311.

*519. **Theory of Shells.** (3) Cottrell, Omid'varan
Theory of surfaces, general theory of elastic shells with small displacements, shells of revolution, cylindrical shells, various approximate theories and methods of analysis, buckling and vibration. Prerequisites: Mathematics 312 and ME 516 or CE 516.

*520. **Dynamics of Structures.** (3) Cottrell
Principal modes and natural frequencies of discrete and continuous elastic systems. Approximate methods: numerical, Rayleigh-Ritz, Stodolla. Forced motion including arbitrary excitations. Elasto-plastic response. Prerequisites: Mathematics 311 and permission of instructor.

*521. **Design of Structures for Dynamic Loads.** (3) Cottrell
Nature of dynamic loading from earthquakes and bomb blasts; nature of dynamic resistance of structural elements and complete structures; criteria for design of blast- and earthquake-resistant structures; application to actual problems. Prerequisite: 520 or permission of instructor.

***523. [622] Random Vibrations. (3)** Cottrell
(Also offered as ME 523.) Introduction to mathematical description of stochastic processes. Fourier transforms, power spectral density and auto-correlation functions, analysis of response of mechanical systems to random excitation. Properties of narrow band Gaussian distributions. Applications of vibration problems in road vehicles, ships, airplanes, and space vehicles. Prerequisites: CE 520 or ME 494L and permission of instructor.

***531. Advanced Water Treatment and Plant Design. (3-4)** Patterson
The theory and practice of water treatment. Chemistry of coagulation, softening, disinfection, demineralization. Unit processes of flocculation, sedimentation, filtration, and demineralization. Plant hydraulics. A design problem must be completed to receive four hours credit. Prerequisite: Permission of instructor.

***532. Advanced Waste Water Treatment and Plant Design. (3-4)** Patterson
The theory and practice of waste water treatment. Biological waste treatment, unit processes, plant hydraulics, and stream sanitation. A design problem must be completed to receive four hours credit. Prerequisite: Permission of instructor.

***533. Water Resources Engineering. (3)** Patterson
An analysis of river basin development control. Legal and economic factors in water use and reuse. The American experience in political organization for river basin control. Fundamentals of mathematical models for optimizing river basin development. Prerequisite: Permission of instructor.

***535. Open Channel Hydraulics. (3)** Carney, Martinez
Surface curves in open channels; steady and unsteady flow; boundary resistance; standing waves in supercritical flow; hydraulic jump; surges and waves; slowly varied flow involving storage. Prerequisite: 330.

***536. Hydraulic Structures. (3)** Carney, Martinez
Design of hydraulic structures such as spillways, stilling basins, concrete dams, canals, measuring devices, sediment excluders, and other hydraulic devices. Prerequisite: 535.

***551-552. Problems. (1-3 hrs. each semester)** Staff
Advanced reading, analysis, design, or research.

***560. Advanced Soil Mechanics. (3)** Carney, Hakala, Triandafilidis
Selected topics in advanced soil mechanics. Prerequisite: 401 or 402, 463.

***561L. Advanced Soil Mechanics Laboratory. (2)** Carney, Hakala
Advanced soil testing procedures, laboratory study of the mechanical and physical properties of soil, soil-exploration. Corequisite: 463. 1 lecture, 3 hrs. lab.

***562. Advanced Foundation Engineering. (3)** Carney, Hakala, Triandafilidis
Theoretical and practical aspects of various foundation problems; retaining structures, vibration problems in foundation design. Prerequisite: 463.

***563. Earth Structures. (3)** Carney, Hakala
Analysis and design of earth dams, embankments, and excavations; flow nets, slope stability. Prerequisite: 463.

***599. Master's Thesis. (1-3 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

***601. Structural Reliability. (3)** Yao
Application of the theory of probability and statistics in structural engineering; study of probable values of loads and resistances of structural elements; safety analysis and reliability prediction of structural and mechanical systems. Prerequisites: 501 and permission of instructor.

***627-628. Mechanics of a Continuum. (3, 3)** Cottrell
Application of tensor calculus in mechanics, non-linear theory of elasticity, a study of the various assumptions leading from a non-linear theory to the classical theory, mathematical theory of plasticity, fluid mechanics, the mathematical theory of visco-elasticity. Prerequisites: ME 516 and permission of instructor.

***640. Soil Dynamics. (3)** Hakala, Triandafilidis
Behavior of soils subjected to loads, elastic and inelastic wave propagation in soils, ground motion, machine foundations, wave effects on structures, seismic studies, pile driving, nuclear excavation, and dynamic soil testing. Prerequisites: 401 or 402, 463.

***650. Research. (1-6 to a maximum of 12.)** Staff

***691-692. Seminar. (1-3 hrs. each semester)** Staff

***699. Dissertation. (3-6 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

ENGINEERING, ELECTRICAL

Professors A. H. Koschmann (Chairman), A. Erteza, W. W. Grannemann, D. C. Thorn; Associate Professors W. J. Byatt, J. Djuric, F. Janza, S. Karni, R. D. Kelly, H. K. Knudsen, R. R. Mohler, D. P. Petersen, H. D. Southward, R. H. Williams; Assistant Professors L. T. Boatwright, M. D. Bradshaw.

CURRICULUM

See p. 189.

201. Electrical Engineering I. (3)
Electric fields, potentials, dielectrics and capacitors; current density. Ohm's and Kirchhoff's laws; magnetic fields and forces; interaction of electric and magnetic fields; applications to circuits, electron devices and electromechanical devices. Prerequisite: Physics 260; corequisite: Mathematics 264.

202. Electrical Engineering II. (3)
Review of pertinent field concepts, Kirchhoff's laws, free and forced response analysis of circuits, complex algebra, power in circuits, resonance, network equations, polyphase circuits, basic electric instruments. Topics are covered for electric and other circuits. Prerequisite: 201 or junior standing; corequisites: Physics 261, Mathematics 265.

205L. Electrical Engineering Laboratory I. (1)
Fundamentals of electrical measurement, instruments and laboratory techniques. Prerequisite 201; corequisite: 202. 3 hrs. lab.

305L. Electrical Engineering Laboratory II. (1)
Prerequisite: 205L; corequisites: 311, 361. 3 hrs. lab.

306L. Traveling Waves Laboratory. (1)
Prerequisite: 305L; corequisites: 312, 362. 3 hrs. lab.

311-312. Electric Circuit Analysis. (3, 3)
Transient and steady-state behavior of electric networks; introduction to Laplace transform methods, pole-zero plots, and generalized impedance functions; magnetic circuits. Prerequisite: grade of C or better in 202. Corequisite: Mathematics 311.

****321-322. Electronic Circuits I and II. (3, 3) Staff**
Fundamentals of linear and nonlinear transistor and vacuum tube circuits, amplifiers, feedback theory, oscillators modulation and demodulation. Prerequisite: grade of C or higher in 311; corequisites: 325L and 326L respectively.

****325L. Electronics Laboratory I. (1) Staff**
Prerequisite: 305L; corequisite: 321. 3 hrs. lab.

****326L. Electronics Laboratory II. (1) Staff**
Corequisite 322. 3 hrs. lab.

361-362. Electromagnetic Fields and Waves I and II (3, 3)
Static electric and magnetic fields; vector calculus; Maxwell's equations; plane, cylindrical and spherical waves. Applications to transmission lines, wave guides, coaxial lines and antennas. Prerequisite: grade of C or better in 201; corequisite: 311, Mathematics 311.

406L. Senior Laboratory. (1)
Laboratory work in energy conversion and other selected topics. Prerequisite: 481; corequisite: 482. 3 hrs. lab.

***421. Computer and Waveforming Circuits. (3) Grannemann, Kelly**
Theory and design of generators and shapers of nonsinusoidal waves. Includes clampers, clippers, stretchers, selecting circuits, circuits to perform mathematical operations, special digital computing circuits, counters, multivibrators, blocking oscillators, and sweep circuits. Prerequisites: 322 and senior standing or permission of instructor.

***423. Advanced Electronics and Instrumentation. (3) Staff**
Standard measuring techniques and limitations; oscilloscopes, vacuum-tube voltmeters, bridges. Use of electronics instrumentation in obtaining and recording data from various transducers. Corequisite: 322 or permission of instructor.

***425L. Electronics Laboratory III. (1) Staff**
Prerequisite: 326L; corequisites: 421 and permission of instructor. 3 hrs. lab.

** Available for graduate credit except for graduate majors in Electrical Engineering.

***431. Servomechanisms.** (3) Staff
Theory and applications of servomechanisms to control problems. Prerequisite: 312.

***432L. Servomechanisms Laboratory.** (1) Staff
Corequisite: 431. 3 hrs. lab.

***435. Introduction to Digital Computers.** (3) Staff
Computer logic; coding; binary and decimal arithmetic units; computer organization; basic programming. Prerequisites: Mathematics 265 and permission of instructor.

***436L. Introduction to Digital Computer Programming.** (1) Staff
Flow diagramming, machine language programming, assemblers and compilers. Use of computer in problem solution. Prerequisite: permission of instructor. 3 hrs. lab.

***437. Digital Computer Operating Systems.** (2) Staff
Basic functions of operating systems, control cards and system control options. Use of UNM-IBM 360/40 required in the course. Prerequisite: 436L.

***441. Introduction to Communication Systems.** (3) Staff
Principal types of communication systems, including radar systems; amplitude, angle, and pulse modulation; noise; capacity of communication channels. Prerequisites: 312, Mathematics 311.

***442. Principles of Radar Systems.** (3) Staff
Analysis of radar systems using the general principles of communications systems and communication theory.

***445L. Communications Laboratory I.** (1) Staff
Corequisites: 441 and permission of instructor. 3 hrs. lab.

***461. Electromagnetic Propagation.** (3) Staff
Application of Maxwell's equations to the solution of simple wave propagation problems; reflection and refraction of plane waves; Poyntings' vector; radiation from dipoles and loop antennas; ground and tropospheric wave propogation; the role of the ionosphere in propagation. Prerequisite: 362.

***462. Microwave Theory.** (3) Staff
Theoretical and practical considerations associated with microwave devices and circuits. Prerequisites: 362, 306L.

***465L. Microwave Laboratory.** (1) Staff
Laboratory problems in microwave measurements and microwave subsystems. Corequisite: 462. 3 hrs. lab.

470. Electronic Devices. (2)
Physical phenomena in electronic devices with emphasis on solid state devices. Prerequisites: 321, Physics 330.

***471. Solid State Engineering.** (3) Erteza, Grannemann, Southward
Elastic, thermal, electric and magnetic properties of crystals and metals. Magnetostrictive and piezoelectric effects. Conduction in metals and semiconductors with applications. Prerequisite: Physics 330 or equivalent.

***475L. Solid State Engineering Laboratory.** (1) Staff
Co- or prerequisite: 470 or 471. 3 hrs. lab.

***481. Electromechanical Energy Conversion Principles.** (3) Erteza, Thorn
Application of field principles, conservation of energy, linear and non-linear magnetic circuit theory to the study of two-way flow of energy between electrical and mechanical systems. Analysis of selected ac and dc machines and transformers. Prerequisites: 311, 361.

***482. Principles of Direct Energy Conversion.** (2) Erteza, Grannemann
Conversion of various forms of energy into electrical form. Study of use of thermoelectric, electro-chemical, photo-voltaic, thermionic, and magnetohydrodynamic effects for direct energy conversion. Prerequisites: 201, Physics 330; ME 301 or ChE 401.

***484. Active Microwave Devices.** (3) Staff
The construction, operation and application of microwave devices such as magnetrons, klystrons, traveling wave tubes, masers and parametric complifiers. Prerequisite: 322, 462.

491. Undergraduate Problems. (1-3 hrs. per semester)

493. Honors Seminar. (1-3 hrs. per semester)
A special seminar open only to honors students. Registration requires permission of the Department Chairman.

494. Honors Individual Study. (1-6 hrs. per semester)
Open only to honors students. Registration requires permission of the Department Chairman and of the supervising professor.

498-499. Seminar. (1-3 hrs. each semester)
Prerequisite: senior standing and permission of instructor.

All courses following are understood to have the prerequisite of graduate standing in Electrical Engineering or permission of instructor.

****502. Electrical Engineering Principles for Advanced Students.** (3) Staff
Electrostatics, steady currents, magnetostatics, and Maxwell's equations. Lumped circuit approximation. Linear circuits, transforms, transients, and feedback. For students not majoring in Electrical Engineering. Prerequisite: knowledge of differential equations, vector analysis, and elementary electric circuits.

***511. Principles of Network Theory.** (3) Staff
Properties of linear networks in frequency and time domains. Matrix analysis. Network topology; analytic properties of network functions; block diagrams; signal flow graphs; classical filter theory.

***531. Advanced Control Systems.** (3) Staff
Multiple-loop and multiple-input systems; nonlinear and sampling servos; statistical properties of noise and servo-inputs. Prerequisites: 431, 511.

***533. Systems Engineering and Operations Research.** (3) Karni, Koschmann
Analysis of engineering systems using methods of linear programming, dynamic programming, game theory.

***535. Design of Digital Systems.** (3) Erteza, Koschmann
Over-all design of digital systems; basic gating and storage elements, digital control units; arithmetic units; input and output to digital systems; digitalization of analog data. Prerequisite: 435.

***541-542. Communication Theory I and II.** (3, 3) Staff
Statistical theory of communication. Analysis of signal spaces; random processes. Optimum filters. Information in discrete and continuous systems; coding; decision theory.

***561-562. Electromagnetic Waves I and II.** (3, 3) Staff
Electrostatic and magnetostatic problems. Maxwell's equations and their application to plane, cylindrical and spherical electromagnetic waves.

***571. Theory of Solid State Electronic and Magnetic Devices.** (3) Grannemann, Southward
Applications of quantum theory to photoelectric and thermionic emission, and to the conduction of electricity through solids. Transistor theory, transistors, p-n junctions, theory of magnetism and magnetic materials. Prerequisite: 471.

***582. Advanced Direct Energy Conversion.** (3) Erteza
Review of quantum physics, thermostatics and statistical physics, irreversible thermodynamics, and transport theory. Energy conversion techniques utilizing the thermoelectric, thermionic, photovoltaic, electrochemical and magnetohydrodynamic phenomena. Analysis of models of energy conversion devices. Prerequisites: 471, 482 or equivalent.

***599. Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

***611. Network Synthesis.** (3) Karni
Realizability conditions. Synthesis of one- and two-port networks. Approximation techniques. Topics in N-port synthesis and active network synthesis. Prerequisite: 511.

***612. Advanced Transient Analysis.** (3) Staff
Transients in linear distributed systems. Z-transforms and sampled-data systems. Inverse transforms; contour integration. Prerequisite: 511.

***613. Nonlinear Analysis.** (3) Staff
Numerical and graphical methods, singular points, analytical methods, free and forced oscillating systems, time-varying parameters, stability considerations. Prerequisite: 511.

***614. Linear Active Network Theory.** (3) Karni, Kelly, Koschmann
Review of physical principles of transistor action; three-terminal linear non-reciprocal networks, relation to two-ports; characterization of networks over a wide frequency band; high-frequency transistor network representations; power gain and stability in amplifiers; thermal design in transistor amplifiers. Prerequisites: 471, 511.

** Available for graduate credit except for graduate majors in Electrical Engineering.

***619. Seminar in Network Theory.** (3) Staff

***641. Principles of Communication Systems.** (3) Djuric, Koschmann
Analysis of various types of modulation and their relative advantages for communication in the presence of noise; detection systems and their optimization, coding, applications to wire and radio communications; radar, navigation systems and others. Prerequisite: 542.

***651-652. Problems. (1-3 hrs. each semester)** Staff

***661. Antennas.** (3) Williams
Elements in antenna theory; pattern synthesis. Cylindrical antenna theory. Aperture antennas; Babinet's principle. Fundamentals of traveling wave antennas, structures with reflectors, and lenses. Prerequisite: 562.

***662. Microwave Techniques.** (3) Byatt, Thorn
The interactions of electronic currents with microwave fields with applications to magnetrons, klystrons, traveling wave tubes and related physical devices; wave guide circuits. Prerequisite: 562.

***663. Magnetohydrodynamics.** (3) Byatt, Erteza, Grannemann
Particle dynamics in electromagnetic field. Cyclotron and Larmor frequency. Macroscopic viewpoint and Boltzmann equation. Perturbation concepts. Study of pinch phenomena and pinch stability. Current experimental machines. Prerequisite: 562.

***664. Advanced Electromagnetic Propagation.** (3) Williams
Theories dealing with anomalous wave propagation; evaluation of fields considering a spherical earth and the ionosphere; use of geometric-optical and residue series to compute fields; propagation through a non-homogeneous atmosphere. Prerequisite: 562.

***669. Seminar in Electromagnetic Waves.** (3) Staff

***671. Charge Transport Phenomena in Solids.** (3) Byatt, Grannemann
Theory of charge transport in solids involving such topics as band structure, the Fermi surface, scattering by electrons, electron-phonon interaction, scattering by lattice imperfections, grain boundaries, dislocations and electron theory of imperfection resistance, surface and size effects. Prerequisites: 471 and permission of instructor.

***679. Seminar in Solid State Theory.** (3) Staff

***695, 696, 697, 698. Seminar.** (3, 3, 3, 3) Staff

***699. Dissertation. (3-6 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

ENGINEERING, MECHANICAL

Professors R. C. Dove (Chairman), B. Albrecht, C. T. Grace, A. V. Houghton, V. J. Skoglund; Associate Professors W. E. Baker, F. O. Calvert, F. D. Ju, M. W. Wildin; Assistant Professors K. T. Feldman, C. G. Richards, H. L. Schreyer; Instructor J. C. Wambold; Instructors (Part-time) L. W. Christensen, J. D. Gibson.

CURRICULUM

See p. 191.

201L. Introduction to Engineering Design. (3)
Introduction to elementary design theory, including experimental design, of a system, product, or process, for the satisfaction of an observed need. Preparation of drawings, specifications, and reports. Introduction to the general method of engineering design. Case studies of engineering designs. Corequisite: CE 202L. 2 lectures, 3 hrs. lab.

206L. Dynamics. (3)
Principles and applications of dynamics. Prerequisite: CE 202L; corequisite: Mathematics 265. 2 lectures, 3 hrs. lab.

301. Thermodynamics. (3)
Principles of thermodynamics. First and second laws, properties and equations of state, kinetic theory. Prerequisites: Chemistry 102L, Physics 261, 263L; corequisites: Mathematics 265 and junior standing.

****302. Thermochemistry and Gas Dynamics.** (3) Staff
Thermodynamics of reactions and requirements of equilibrium. Isentropic flow, thermodynamics of shock waves, supersonic characteristics of internal and external flow. Prerequisite: 301; corequisite: 317 or permission of instructor.

308. Mechanical Equipment of Buildings. (3)
For architecture students only. Psychrometric principles. Theory and practice of mechanical equipment for heating, cooling, and cleaning air in building air conditioning systems. Heat losses and gains in buildings; plumbing systems; elevator systems. Prerequisite: junior standing.

314L. Dynamics of Mechanical Systems. [Intermediate Dynamics of Solids] (3)
Kinematic and kinetic analysis of machine elements and other mechanical systems composed of rigid bodies, and an introduction to vibration analysis. Prerequisite: 206L. 2 lectures, 3 hrs. lab.

316L. Space Flight Dynamics. (3)
Dynamics of solids, advanced topics of dynamics, vibration and stability, orbital dynamics and rocket dynamics. Prerequisite: 206L; corequisite: Mathematics 311. 2 lectures, 3 hrs. lab.

****317. Fluid Mechanics.** (3) Staff
Kinematics of fluid motion; elements of hydrodynamics; effects of viscosity, compressibility, and drag. Prerequisite: 206L; corequisite: 301.

318L. Mechanical Engineering Laboratory I. (2)
Modern instrumentation techniques; dynamics, vibrations, and thermodynamics experiments. Corequisites: 301, 314L or 316L, 317. 6 hrs. lab.

****320. Heat Transfer.** (3) Staff
Principles and engineering applications of heat transfer by conduction, radiation, and free and forced convection. Prerequisites: 301, 317; corequisite: 302, or permission of instructor.

341. Methods of Analysis of Engineering. (3)
Methods and applications of linear equations, vector analysis and ordinary differential equations including dimensional analysis, similarity and analogs. Prerequisites: 206 and Mathematics 265.

350. Engineering Economy. (3)
A study of methods and techniques used in determining comparative financial desirability of engineering alternatives. Includes time value of money (interest), depreciation methods and modern techniques for analysis of management decisions. Prerequisite: junior standing.

351L. Mechanical Engineering Laboratory II. (2)
Continuation of 318L. Prerequisites: 302, 317, 370. 6 hrs. lab.

352L. Mechanical Engineering Laboratory III. (2)
Experimental projects in heat transfer, thermodynamics, dynamics and analogues. Prerequisites: 320, 351L. 6 hrs. lab.

355. Engineering Statistics and Quality Control. (3)
Statistical methods applied to quality control problems; significance tests; correlation analysis; sequential sampling; analysis of variance; design of experiments. Prerequisite: senior standing.

356. Industrial Engineering. (2)
A survey of Industrial Engineering principles, methods, and techniques used to assist management in making sound operational decisions. Prerequisite: senior standing, or permission of instructor.

357L. Analysis of Mechanical Components. [Analysis of Solid Systems]. (3)
Response of elastic systems to transients, two degree of freedom systems, dynamics of continuous systems, and stress analysis of mechanical components. Prerequisites: 314L, CE 302. 2 lectures, 3 hrs. lab.

358L. Design of Solid Systems. (3)
Application of mechanics of materials and analysis of solid systems to the design of elements and systems. Prerequisite: 357L. 2 lectures, 3 hrs. lab.

** Available for graduate credit except for graduate majors in Mechanical Engineering.

359L. Product Design. [Mechanical Engineering Design] **(3)**
A study of the tools and techniques useful in the conception and design of new products. Each student is required to participate in a semester long product design project. Prerequisites: 358L, 363L. 1 lecture, 6 hrs. lab.

363L. Analysis of Fluid Systems. (3)
Engineering analysis of fluid systems based on the principles of fluid mechanics, heat transfer, and thermodynamics. Prerequisites: 302, 317, 320, or permission of instructor. 2 lectures, 3 hrs. lab.

****365. Environmental Control System Design.** (3) Staff
The design of systems for the conditioning and control of ambient environments for people, processes, equipment, or foods. Prerequisites: 301, 317, 320.

370. Engineering Materials Science. (3)
(Also offered as CE 370.) The structure of matter; phase relations; mechanical, thermal, electrical and magnetic properties of polymers, metals and ceramics; fracture mechanics; corrosion, protective materials, cementing materials and concrete. The use and selection of materials. Prerequisite: CE 302.

***480. Analysis of Mechanical Control Systems.** (3) Staff
Dynamic analysis and design of thermodynamic, hydraulic, and mechanical control systems; concept of feedback; performance and stability of systems; introduction to inertia guidance controls. Prerequisites: 302, 314L or 316L, 317; Mathematics 311 or equivalent.

***482. Energy Conversion Systems.** (3) Staff
Principles and engineering analysis of systems for converting energy into useful work. Review of energy sources, quantum and solid state physics, statistical and irreversible thermodynamics. Study and analysis of energy conversion by electro-mechanical, thermoelectric, electrochemical, photo-voltaic, thermionic and magnetohydrodynamic techniques. Prerequisites: 302, 317, 320, EE 201 or permission of instructor.

***490. Methods Engineering.** (3) Staff
Introduction to problems of work methods and work measurements associated with increasing productivity and decreasing the cost of producing goods and services. Methods used in developing procedures for effective utilization of effort in industrial operations. Analytical study of manufacturing systems. Prerequisites: 355, and senior standing.

491. Undergraduate Problems. (1-3 hrs. per semester)

***492. Design Analysis.** [Design Analysis II] **(3)** Staff
Analysis of more advanced problems encountered in mechanical design, such as unsymmetrical bending in beams, curved beams, buckling, torsion of noncircular cross sections, plates, and shells. Prerequisites: 358L, or permission of instructor.

***494L. Mechanical Vibrations.** (3) Staff
Free vibration and response of single degree of freedom systems to periodic and transient forcing functions; multidegree of freedom systems; introduction to stress wave propagation in solids. Prerequisites: 357L, Mathematics 311; or equivalent. 2 lectures, 3 hrs. lab.

***501. Heat Conduction.** (3) Staff
Formulation of equations and boundary conditions for heat transfer problems involving conduction. Techniques of solution, including: separation of variables, superposition, Laplace transforms, finite differences, and variational methods. Prerequisites: 320, 503, Mathematics 312 or permission of instructor.

****502. Mechanical Engineering Principles for Advanced Students.** (3) Staff
Principles and applications of thermodynamics, fluid mechanics, and heat transfer. For students not majoring in Mechanical Engineering. Prerequisites: 301, 206L, Mathematics 311, or their equivalents.

***503. Advanced Fluid Mechanics I.** (3) Staff
General principles and applications of fluid mechanics. Prerequisites: 301, 206L; Mathematics 311, or their equivalents.

***506. Advanced Thermodynamics I.** (3) Staff
Precise development of thermodynamic definitions, principles, and analytical methods. Prerequisites: 301, 302, or equivalents, Mathematics 311.

***507. Similitude in Engineering.** (3) Staff
Basic theory and applications of similitude. Metrology, similarity, dimensional analysis, and design and interpretation of similar and distorted models. Prerequisites: 501 or 503 or 516.

** Available for graduate credit except for graduate majors in Mechanical Engineering.

***509. Advanced Gas Dynamics.** (3) Staff
Two-dimensional flow of ideal gases including shock waves, friction and heat transfer. Prerequisites: 501, 503.

***510. Boundary Layers.** (3) Staff
Derivation of boundary layer equations, similarity solutions, integral methods and experimental results for laminar boundary layers. Stability of laminar boundary layers. Boundary layer transition. Turbulent fluctuations and transport. Turbulent boundary layers. Prerequisite: 503.

***511. Radiant Heat Transfer.** (3) Staff
Principles of thermal radiation, thermodynamic and electromagnetic bases of material property relations, basic equations of radiative transfer, techniques of analysis, including approximate methods. Prerequisite: 320.

***515L. Experimental Stress Analysis.** (3) Staff
Modern techniques for experimental determination of stresses in complex machine parts; study of mechanical gages, optical gages, electrical gages and circuits, brittle lacquer methods, photoelasticity and strain grids. 2 lectures, 3 hrs. lab.

***516. Applied Elasticity I.** (3) Staff
Fundamental principles of the mechanics of elastic bodies; analyses of stress and strain, basic equations of elasticity, plane problems of elasticity and fundamental boundary value problems; torsion of a prismatic bar and analogy methods. Prerequisites: CE 302 or equivalent, Mathematics 311; corequisite: Mathematics 312.

***518. Advanced Applied Dynamics.** (3) Staff
Fundamental concepts in mechanics; vector analysis and its application in statics and dynamics; Newton's laws of motion; principles of momentum and moment of momentum; energy principles and Lagrange's equations of motion; gyroscopic motion; small oscillation; mechanical transient and operational calculus. Prerequisites: 206L or equivalent, Mathematics 311; corequisite: Mathematics 312.

***519. Applied Elasticity II.** (3) Staff
Muskhelishvili method and boundary value problems of elasticity. Energy principle and variational methods in elasticity. Prerequisite: 516.

***520. Analysis of Thermal Stresses.** (3) Staff
Basic equations of stress and strain, elementary temperature equations, thermal stresses in one and two dimensions, transient thermal stress, special topics on thermal effects on material properties. Prerequisite: 516.

***522. Theory of Shells in Mechanical Engineering.** (3) Staff
Introduction to Riemannian space and differential geometry of a surface, linear theory of shells, membrane and bending theory of shells. Special topics. Prerequisite: 516.

***523.** [622] **Random Vibrations.** (3) Staff
(Also offered as CE 523) Introduction to mathematical description of stochastic processes, Fourier transforms, power spectral density and auto-correlation functions, analysis of response of mechanical systems to random excitation. Properties of narrow band Gaussian distributions. Applications of vibration problems in road vehicles, ships, airplanes, and space vehicles. Prerequisites: CE 520 or ME 494L and permission of instructor.

***541. Tensor Analysis in Mechanics.** (3) Staff
Tensor analysis in the affine and metric space, kinematics of motion, deformation analysis in continuum mechanics, theory of objectivity. Prerequisites: 503, or 516 or equivalent.

***551-552. Problems.** (1-3 hrs. each semester) Staff
Advanced reading, design or research.

***561-562. Special Topics.** (1-3 hrs. each semester) Staff

***591-592. Seminar.** (1-3 hrs. each semester) Staff

***599. Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

***603. Theoretical Fluid Mechanics.** (3) Staff
Theoretical analysis of special fluid systems. Laminor flow and two and three dimensional potential flow. Use of special coordinates, complex variables, conformal mapping, free streamlines, sources and sinks, and numerical analysis. Prerequisites: 501, 503.

***604L. Experimental Methods in Mechanics.** (3) Staff
Modern techniques for vibration and shock testing. An extension of experimental stress analysis to measurement of thermal stresses and of strains at interior points in solids. Prerequisite: 515L. 2 lectures, 3 hrs. lab.

***605. Convection.** (3) Staff
Theory and experimental results for convection of single- and multi-component fluids. Prerequisites: 501, 503.

***606. Kinetic Theory and Statistical Mechanics.** (3) Staff
Principles of kinetic theory and statistical mechanics, and their application to engineering problems. Prerequisites: 506, Mathematics 341.

***607. Hypersonic Flow of Ideal Gases.** (3) Staff
Basic concepts. Hypersonic similarity. Mach number independence. Small perturbation theory. Approximate methods. PLK method. Newtonian Theory. Applications to slender and blunt bodies. Prerequisites: 503, 509 or permission of the instructor.

***608. Hypersonic Flow of Real Gases.** (3) Staff
Equilibrium properties of air to 10,000°K. Compressible boundary layers and their interactions. Non-equilibrium and high temperature effects. Applications to flow over slender and blunt bodies. Prerequisites: 503, 506, 509 or permission of the instructor.

***624. Nonlinear Theory of Elasticity.** (3) Staff
Axioms of mechanics, stress tensors, constitutive equations of Green and Cauchy, hyperelasticity, hypoelasticity. General topics in elastostatics, finite elastic waves and elastic stability. Prerequisite: 541.

***671. Mechanics of Inelastic Continuum.** (3) Staff
Physical aspects of inelastic deformation. Constitutive equations of the inelastic (anelastic, viscoelastic, plastic, and viscoplastic) continuum. One-dimensional problems. General theorems and boundary value problems. Prerequisite: 516, or 503 or equivalent.

***699. Dissertation. (3-6 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

ENGINEERING, NUCLEAR

Professor G. A. Whan (Chairman); Associate Professor W. L. Everett; Assistant Professors R. L. Long, R. D. O'Dell; Part-time Adjunct Professors M. E. Battat, G. E. Hansen, N. G. Nereson, L. D. Posey, J. A. Reuscher, K. J. Touryan.

****430. Introduction to Nuclear Engineering.** (3) Staff
Principally for non-nuclear engineering majors. The nucleus and nuclear properties; fission process and chain reaction; survey of design and operation or reactors and associated equipment; effects, uses, and detection of radiation.

***460.** [461] **Fundamentals of Nuclear Engineering I.** (3) Everett, Southward, Whan
Radioactivity, nuclear reactions and cross-sections, conservation laws, elementary particles and particle distributions, and electromagnetic radiation. Pre- or corequisites: Physics 330, Mathematics 311, or equivalents.

***461.** [460] **Fundamentals of Nuclear Engineering II.** (3) Staff
Radiological health and safety, the biological effects of radiation, radiation shielding, and the detection and analysis of radiation. Prerequisite: 460; pre- or corequisite: Mathematics 312.

***463L. Nuclear Engineering Laboratory I.** (1) Staff
Experiments to demonstrate the properties and analysis of radiation: radioactive decay, counting, scattering, moderation, absorption, activation, cross sections, and health monitoring. Pre- or corequisite 460. 3 hrs. lab.

***464L. Nuclear Engineering Laboratory II.** (1-2) Staff
Laboratory studies to demonstrate neutron and gamma reactions in fuels, moderators, and shields. Experiments to demonstrate the characteristics and operation of nuclear reactors. Prerequisites: 430, 463L or equivalents. 3 or 6 hours lab.

***470L. Materials for Nuclear Applications.** (3) Staff
Selection and fundamental properties of materials for nuclear applications; physical and extractive metallurgy as related to nuclear materials; behavior of materials under irradiation; corrosion of materials. Prerequisite: 430 or equivalent. 2 lectures, 3 hrs. lab.

***476. Reactor Fuel Processing.** (3) Armstrong, Whan
Fuel cycles in nuclear reactors; production of reactor fuels; processing of spent fuels by precipitation, solvent extraction, etc.; and separation of isotopes. Prerequisite: 430 or equivalent.

** Available for graduate credit except for graduate majors in Nuclear Engineering.

***510-511. Nuclear Reactor Theory I & II.** (3, 3) Staff
Basic theory of reactors; multiplication, slowing down, diffusion and transport of neutrons; applications to bare, reflected, homogeneous, heterogeneous, thermal, and fast reactor systems; introduction to reactor dynamics. Prerequisite: 460; pre- or corequisite: Mathematics 312.

***515. Seminar.** (1-3) Staff
Selected topics in nuclear engineering.

***520. Interaction of Radiation and Matter.** (3) Battat, Everett, Posey, Whan
Thompson scattering, elastic collisions, quantum mechanical theories of scatter, ionization of matter by charged particles, radiative collisions, Compton scatter, photoelectric effect and pair production. Prerequisites: 460, Mathematics 312.

***530. Radiation Shielding.** (3) Everett, Whan
Radiation sources; methods of calculating the attenuation of gamma rays, high energy electrons, and fast neutrons; shielding of reactors, accelerators, and radioactive materials. Prerequisite: 460 or equivalent.

***540. Radiation Effects on Materials.** (3) Everett, Posey, Whan
Theory of radiation interaction with matter; application to crystalline lattices, fluids, plastics, and elastomers; radiation chemistry and chemical reactions in intense radiation fields; reactor materials and radiation effects on reactor design. Prerequisite: 460 or equivalent.

***551-552. Problems.** (1-3 hrs. each semester) Staff
Advanced reading, analysis, design, or research.

***560. Control of Nuclear Reactors and Power Plants.** (3) Long, Mohler
Reactor control systems and associated instrumentation; dynamics of integrated nuclear plants; transient and steady state response of feed back systems; use of simulators. Prerequisite: 511. Recommended: EE 431.

***561L. Laboratory in Control of Nuclear Reactors.** (1) Long, Mohler
Pre- or corequisite: 560. 3 hrs. lab.

***580. Controlled Fusion.** (3) Erteza, Everett, Touryan
Basic theory of plasmas; conditions for thermo-nuclear reactions; formation and heating of plasma; diagnostic techniques; stability theory; controlled fusion systems. Prerequisites: Mathematics 312, 313, and permission of instructor.

***590L.** [480L] **Nuclear Systems Design.** (3) Staff
Examination of the main variables in nuclear systems design; nuclear system, heat removal, radiation effects, structure, controls, shields, economics, etc. Design problem. Prerequisites: 430, 460 or equivalents. 2 lectures, 3 hrs. lab.

***599. Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

***610. Advanced Reactor Theory.** (3) Hansen, O'Dell
Development of the theory of reactor systems and description of calculational methods for homogeneous and heterogeneous reactors. Prerequisites: 511, Mathematics 312. 313.

***620. Transport Theory.** (3) O'Dell
The Boltzmann transport equation; legendre polynomial expansions; introduction to Fourier transform techniques and Case's method; energy dependent collision probabilities and thermalization kernels. Prerequisites: 511, Mathematics 312, 313.

***699. Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

ENGLISH

Professors G. W. Arms, E. W. Baughman, N. B. Crowell, F. M. Dickey, J. Frank (Chairman), W. D. Jacobs, G. Ridenour, E. W. Tedlock, Jr., H. Trowbridge (Dean), D. Wynn; Associate Professors E. Buchanan, H. L. Hill, J. M. Kuntz, R. Pickett, K. G. Simons; Assistant Professors J. Baltzell, P. B. Davis, R. Fleming, G. Frumkin, J. Holland, D. Johnson, J. Martin, B. McBride, I. P. Melada, J. J. Power, D. Remley, S. Rodefer, J. L. Ruff, D. B. Thompson, J. Thorson, F. B. Warner, M. B. Whidden, J. B. Zavadil; Instructors J. Cockelreas, W. T. Cotton, C. Glickfield, M. L. Jones, D. Logan, J. Morris; Part-time Instructors D. Bunting, W. Carstens, R. Gillespie, M. Raymond, E. Walker.

MAJOR STUDY

Normally an English major consists of 250, 253 and 254, 441 or 442, 446 or 451, and 18 additional hours of which at least 3 hours must be taken in each of the following groups. Of the total number of hours for the major, 18 should be taken in courses numbered above 300.

I. Writing and Contemporary Literature:
261, 262, 321, 432, 435, 437, 438

II. British Literature:
441, 442, 444, 445, 446, 448, 451, 454, 457, 473, 474, 478, 481, 482, 485, 486

III. American Literature:
282, 285, 467, 468, 469, 470

IV. General and Comparative Literature:
275, 276, 339, 340, 456, 461, 465, 466, 475, 480

V. Linguistics:
392, 403, Anthropology 354.

Course 490 may be used for any one of the 5 groups when applicable. This course may be repeated for credit as its content varies.

Students preparing to teach English in secondary schools are required to take English-Secondary Education 436 (Teaching of English).

Students who wish to substitute writing courses in the Departments of Speech, Journalism, or Dramatic Art may do so with permission from their advisers.

MINOR STUDY

18 hours in English courses numbered above 103, including at least 6 hours numbered above 300.

GROUP REQUIREMENTS

English 101 is a required course for all students except those who are exempted upon the basis of their ACT score in this area. English 102 is required of all students, except transfers who may offer an equivalent course toward the satisfaction of the group requirements. Students in the lowest percentiles of the ACT or students who have twice failed the English Proficiency test, will take English 010 in addition to English 101. Workshop sections are provided for other students weak in English 101 or 102. Additional group requirements are as follows:

College of Arts and Sciences: 3 credit hours in a course in literature numbered above 200. Up to 6 additional hours in literature may be offered in meeting the requirements under Group III: Humanities.

College of Business Administration: 6 credit hours in literature including 3 upper-division hours. (See "General Requirements" of the College of Business Administration.)

College of Education: see Education curricula.

COURSES IN GENERAL LITERATURE FOR GROUP REQUIREMENTS IN ALL COLLEGES

The following courses in the lower division are recommended for students selecting hours for the group requirements or for general reading: 140, 257,

275, 276, 277, 282, 285; not accepted as literature are 250, 255, 261, 262, 264, 321, 392, 403.

DEPARTMENTAL HONORS

Students interested in registering for Honors in English should see the Chairman of the Department for details.

COMPARATIVE LITERATURE

The major in Comparative Literature is an interdepartmental major administered jointly by the Department of English and the Department of Modern and Classical Languages. See p. 260.

I. WRITING

010. English Review. (0)
A non-credit course in grammar, usage, and reading comprehension for students whose native language is English and who need additional background and drill. Especially designed for students preparing for the English Proficiency Examination, though open to others. Special fee of $20.

015. English Tutoring. (0)
Two hours of tutoring for students who need special instruction in the essentials of composition.

101. Writing with Readings in Exposition. (3) Buchanan, Pickett, Staff
Expository writing and reading.

102. Writing with Readings in Literature. (3) Buchanan, Pickett, Staff
Literary genres and critical writing.

103. Fundamentals of English as a Second Language. (3)
A course in speaking, writing, and understanding English, designed for students to whom English is a second language. English 103 precedes, and is not a substitute for, English 101. 5 hours of classroom work.

261. Creative Writing: The Essay. (3)
An intermediate course with emphasis on the types, structure, and style of expository writing.

262. Creative Writing: Description and Narration. (3)
The types, materials, and techniques of descriptive and narrative writing.

264. Informative Writing. (3)
Professional expository composition and the preparation of elementary reports.

320. Advanced Technical Writing. (3)
Practice in the writing and editing of technical, engineering, and scientific reports and articles. Prerequisite: 261, 262, or 264; or permission of instructor.

***321. Advanced Creative Writing. (3)**
An examination of various approaches to advanced writing with frequent writing contributions from the student. Prerequisite: 261, 262, or permission of instructor. **May be repeated once at the discretion of the instructor.**

436. Teaching of English. (3) Simons, Staff
(Same as Secondary Education 436.)

***537-538. Teaching Composition. (1, 1)** Pickett
Required of all teaching assistants in the Department of English who have not had at least one year experience in teaching college composition. 537: Problems in teaching the reading and writing of expository prose. 538: Problems in teaching literary analysis and the critical essay.

II. LITERATURE**

1. British

253-254. Survey of English Literature, Early and Later. (3, 3)
253: From the Old English writings through Neo-classicism. 254: From Romanticism to the present.

** With the exception of English 320, 321, and 466, for which specific prerequisites are listed, all courses in English numbered between 300 and 499 have the same prerequisite: 3 hrs. in literature.

*441. **Shakespeare: Histories and Comedies.** (3) Dickey, Holland, Simons, Whidden

*442. **Shakespeare: Tragedies.** (3) Dickey, Holland, Simons, Whidden

*444. **The Early Seventeenth Century.** (3) Buchanan, Dickey, Frank
Cavalier and metaphysical poets, major prose writers.

*445. **The Later Seventeenth Century, Exclusive of Milton.** (3) Thorson, Staff
Restoration drama and poetry, scientific and philosophical prose, etc.

*446. **Milton.** (3) Buchanan, Frank

*448. **Elizabethan Drama Exclusive of Shakespeare.** (3) Dickey, Simons

*451. **Chaucer.** (3) Baltzell, Zavadil

*454. **Middle-English Literature.** (3) Baltzell, Zavadil
A general survey of 13th- and 14th-century literature.

*457. **Elizabethan Poetry and Prose.** [Elizabethan Non-Dramatic Literature] (3) Dickey, Simons, Whidden

*473. **Age of Swift and Pope, 1700-1744.** (3) McBride, Thorson

*474. **Age of Johnson, 1744-1798.** (3) McBride, Thorson

*478. **The Romantic Period.** (3) Johnson, Ridenour, Staff
The 18th-century background of Romanticism and the major poets, Blake to Keats.

*481. **Victorian Poets.** (3) Crowell, Staff
Representative poets from 1830 to 1890.

*482. **Victorian Prose.** [Nineteenth Century Prose] (3) Crowell, Staff
Representative prose writers from 1830 to 1890.

*485. **Early English Novel.** (3) Davis, Staff
From the beginnings through Jane Austen.

*486. **Later English Novel.** (3) Crowell, Davis
From Scott to 1910.

†*619. **Studies in Middle-English Literature (1100-1500).** (4) Baltzell, Zavadil

†*623. **Studies in the English Renaissance (1500-1616).** (4) Buchanan, Dickey, Staff

†*625. **Studies in the 17th Century.** (4) Buchanan, Dickey, Frank, Thorson

†*633. **Studies in the 18th Century.** (4) McBride, Ridenour, Thorson, Trowbridge

†*643. **Studies in the 19th Century.** (4) Crowell, Ridenour

2. American

277. **Southwestern Literature.** (3) Baughman, Staff
Myth, legend, and song of the Indians; literary values in the Spanish colonial narratives; literature of the Santa Fe trail and the cattle country; contemporary writing.

282. **American Literature.** (3)
A general survey to the present with emphasis on writers of the nineteenth century.

285. **American Life and Thought.** (3) Baughman
(Same as American Studies 285.)

301-302. **Interdepartmental Studies in the Culture of the U.S.** (3, 3)
(Same as American Studies 301-302.) May be taken for departmental credit only with the consent of the Chairman.

*467. **Colonial and Revolutionary Period in American Literature.** (3) Hill, Martin, Tedlock
Leading writers from 1600 to 1800.

*468. **The Romantic Period in American Literature.** (3) Arms, Baughman
Major writers from Irving to Melville.

*469. **The Period of Realism in American Literature.** (3) Arms, Hill, Tedlock
Major writers from Whitman to Henry Adams.

*470. **American Humor.** (3) Baughman, Hill
American humorists from 1830 to the present.

*501. **Interdepartmental Seminar in the Culture of the United States.** (3) Arms, Tedlock, G. W. Smith.
(Same as American Studies 501.)

†*603. **Studies in the Literature of Colonial and Revolutionary America (1600-1800).** (4) Hill, Martin, Tedlock

†*606. **Studies in 19th Century American Literature (1800-1912).** (4) Arms, Hill

† This course may be repeated for credit as its content varies.

3. General and Comparative

140. **Literary Forms and Figures.** (3)
An introduction to literature with variable content, each course treating a major writer or literary type as indicated by subtitle. Open to freshmen and others. Prerequisite: English 101 or exemption.

250. **Approaches to Literature.** (3)
Practical criticism and introduction to scholarly and critical method. A specialized course designed for English majors and students with high aptitude for and interest in literary study.

257. **Masterworks of Later Literature.** (3) Simons, Staff
Selected masterworks of the 19th and 20th centuries.

275. **World Literature from Homer to Dante.** (3) Frank, Jacobs, Kuntz, Staff
Masterpieces of European and Asiatic literature, including the Bible.

276. **World Literature from Rabelais to Mann.** (3) Jacobs, Kuntz, Staff
Masterpieces of European literature.

*338. **Russian Literature in Translation.** (3) T. Holzapfel
(Same as Russian 338.)

*339. **Greek Drama in Translation.** (3) Baltzell, Thompson
(Same as Greek 339.)

*340. **Latin Literature in Translation.** (3) Zavadil, Thompson
(Same as Latin 340.)

*432. **Contemporary Poetry.** (3) Jacobs, Tedlock, Staff

*435. **Contemporary Fiction.** (3) Jacobs, Tedlock, Staff
British, American, and European novelists since 1912.

*437. **Contemporary Drama.** (3) Dickey, Jacobs, Staff
European and American playwrights from Ibsen to the present.

*438. **Literary Movements since 1940.** (3) Frumkin, Jacobs, Tedlock
Significant writers and schools of the post-war period. Specific subject to be designated by the instructor.

*456. **Literature of Medieval Europe.** (3) Baltzell, Zavadil
(Same as Comparative Literature 456.)

*461. **The Folktale in English.** (3) Baughman
(Same as Comparative Literature 461.)

*465. **Tragedy.** (3) Dickey, MacCurdy, Trowbridge
(Same as Comparative Literature 465.)

*466. **Literary Criticism.** (3) Arms, Dickey, Trowbridge
(Same as Comparative Literature 466.)

*475. **Dante.** (3) White
(Same as Comparative Literature 475).

*480. **Philosophy and Literature.** (3) Alexander, Tedlock, Staff
(Same as English-Philosophy 480.)

†*490. **Individual Authors.** (3) Staff
Intensive study of one or more writers, to be designated by the instructor.

†*500. **Introduction to Graduate Study.** (3) Staff
An intensive course in an author, period, or genre designed primarily to prepare students for advanced work.

*528. **Studies in Literature for Secondary Teachers.** (3) SS Staff
Basic approaches to the interpretation, judgment, and teaching of literature, with intensive study of selected British and American writers and works. Examples chosen will be novels, plays, short stories, and poems commonly taught in junior and senior high schools.

*598. **Methods of Literary Study.** (3) Arms, Dickey, Hill
An introduction to scholarly bibliography and basic approaches to the study of literature. Required of doctoral candidates.

†*660. **Studies in Contemporary Literature.** (4) Jacobs, Tedlock, Staff

†*675. **Types, Backgrounds, and Forces.** (4) Staff
Drama, religious perspectives, archetypal patterns, and other subjects not contained within a chronological period.

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† This course may be repeated for credit as its content varies.

III. LINGUISTICS

255. Vocabulary Building. (3)
Latin and Greek word roots; introduction to etymology and semantics.

***303. Phonetics.** (3) Chreist
(Same as Speech 303.)

***392. Introduction to Linguistics.** (3) Pickett, Power
The structure of English.

***403. History of the English Language.** (3) Baltzell, Kuntz
The etymology, morphology, phonetics, and semantics of English; the relation between linguistic and cultural change.

***515. Old English.** (3) Baltzell, Zavadil
Elementary grammar; translation of prose and poetry, exclusive of **Beowulf.**

***516. Beowulf.** (3) Baltzell, Zavadil
Prerequisite: 515 or consent of instructor.

***673. Language Seminar.** (4)
Phonology of English speech; linguistic structure; American dialect and regional vocabulary; or other subjects.

IV. INDIVIDUAL STUDIES

498. Individual Study. (3) Honors Staff
Open to juniors and seniors approved by Honors Committee. **May be repeated once.**

499. Honors Essay. (3) Honors Staff
Open only to seniors enrolled in Departmental Honors.

†***551. Problems for the Master's Degree.** (1-3 hrs. per semester) Staff
Studies in literature and philology.

***599. Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

***651. Problems for the Doctor's Degree.** (1-3 hrs. per semester) Staff

***699. Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

ENGLISH-PHILOSOPHY

The combined major in English and Philosophy is an interdepartmental major administered jointly by the two Departments. Students interested in this program should consult the Chairmen of both departments.

The purpose of the interdepartmental major is to develop an understanding of the history of ideas, ideals, and values; their expression in literature and philosophy; and the relation of these fields. The major will serve the interests of general education, and will also be useful to many preprofessional students.

MAJOR STUDY

Students completing the English-Philosophy major are not required to have a minor. It is recommended that courses in literature and philosophy in related periods be taken concurrently where possible.

The minimum requirement is 45 hours, including: English 275; 253 or 254 or 276; 466; 441 or 442 or 446; 6 additional hours of literature above 300; Philosophy, 18 hours selected from courses chosen in consultation with your philosophy adviser; an additional 6 hours above 300 in English or in Philosophy; and English-Philosophy 480.

MINOR STUDY

Not offered.

***480. Philosophy and Literature.** (3) English and Philosophy Staffs
Selected philosophical movements and their relationship to literary masterpieces. Prerequisites: 6 hours of literature and 3 hours of Philosophy from the courses specified as requirements for the program.

† This course may be repeated for credit as content varies.

FINE ARTS

490. Interdepartmental Proseminar. (3)
Open to juniors and seniors with approval of a Fine Arts departmental honors committee. **May be repeated once for credit.**

FOLKLORE

See Modern and Classical Languages, and Comparative Literature 461.

FRENCH

See Modern and Classical Languages.

GENERAL STUDIES

(The General Honors Program)

Courses listed as "General Studies" are open by invitation or special permission only. With the exceptions noted below in the listing, the courses are designed for students enrolled in the General Honors program. This program is not to be confused with the Departmental Honors program described on p. 135 of this catalog.

Specific information about General Studies and the General Honors program can be obtained from the office of the Director of General Honors.

Courses in General Studies will be given credit towards appropriate Group Requirements of the College of Arts and Sciences and may also satisfy certain general requirements in other colleges. The student should consult his college dean on this point.

101-102. Freshman Reading Seminar. (3, 3)
Rapid, broad general reading for first- and second-semester freshmen.

201-202. Sophomore Seminar in Humanities. (3, 3)

203-204. Sophomore Seminar in Science. (3, 3)

205-206. Sophomore Seminar in Social Science. (3, 3)
Selected seminar topics by staff of various departments. Instructors and topics to be announced semester by semester.

301-302. Junior Seminar in Humanities. (3, 3)

303-304. Junior Seminar in Science. (3, 3)

305-306. Junior Seminar in Social Science. (3, 3)
Selected seminar topics by staff of various departments. Instructors and topics to be announced semester by semester. These Junior Honors seminars may on occasion be opened also to qualified juniors and seniors who are not officially candidates for graduation with Honors in General Studies. (Minimum qualification: average of 3.0 over-all and in major subject.) Applications of such students must be received in General Honors office 5 weeks before beginning of a semester. Right to limit such enrollment is reserved. Certain seminars may on occasion have suspended credit or require first semester as prerequisite to second semester.

401-402. Great Issues (Senior Honors Colloquium.) (3, 3)
Discussion of selected issues based on close reading of relevant texts.

***411-412. Interdisciplinary Seminar in Humanities. (3, 3)**

***413-414. Interdisciplinary Seminar in Science. (3, 3)**

***415-416. Interdisciplinary Seminar in Social Science. (3, 3)**
Although offered from time to time under auspices of the General Honors program, the interdisciplinary seminars are not required of candidates for graduation with Honors in General Studies. Open only to qualified seniors and graduate students who are majoring in a department within the general area indicated or who have the special permission of the General Honors office. (Minimum qualification: average of 3.0 over-all and in major subject.) Right to limit enrollment is reserved. Certain seminars may on occasion have suspended credit or require first semester as prerequisite to second semester.

GEOGRAPHY

Professor R. E. Murphy (Chairman); Associate Professor I. Bennett; Visiting Instructor R. Ayala.

MAJOR STUDY

Geography 101, 102, 263; Anthropology 101 or 102; Geology 101; and 8 upper-division courses (not fewer than 23 hours) including Geography 351 and 401, Civil Engineering 380L (Cartography), and Geology 481 (Geomorphology). One other of the required upper-division courses may be selected, upon approval by the Chairman of the Department, from a related field of study. Mathematics 120 or 121 (or the equivalent) are highly recommended for geography majors contemplating graduate work, particularly those wishing to emphasize climatology or economic geography.

MINOR STUDY

Geography 101, 102, 351 and 12 additional hours. Civil Engineering 380L (Cartography) and Geology 481 (Geomorphology) may be included in the 12 additional hours.

GROUP REQUIREMENTS

Geography 479 is accepted as non-laboratory science in fulfillment of the Science (Group V) requirement of the College of Arts and Sciences; all other Geography courses are accepted toward fulfillment of the Social Science (Group IV) requirement in that College.

I. Introductory Courses

101. General Geography. (3)
World Geography; physical elements. An introduction to the use of maps and globes and to a systematic analysis of world climates, vegetation, soils, and landforms, their distribution, interrelation, and significance to man.

102. General Geography. (3)
World geography; cultural elements. An introduction to human geography comprising a systematic analysis of world population, demographic factors, ethnic groups, predominant economies, and political units, their distribution, interrelation, and the effect upon them of the physical earth.

263. Economic Resources. (3)
A systematic survey of world economic geography with emphasis on the resources of arable land, energy sources, and basic minerals and on the primary crop and manufacturing regions.

II. Regional Courses

Each of the following regional courses involves a description, analysis, and synthesis in spatial association of the physical and human attributes of particular parts of the earth. These attributes include climates, vegetation types, soils, landforms, population, demographic factors, ethnic groups, economic circumstances, and political arrangements. The synthesis of these physical and cultural phenomena is used as the basis for characterizing individual regions and subregions.

***301. South America. (3)**
Regional geography of South America.

***302. Middle America. (3)**
Regional geography of Mexico, Central America, and the West Indies.

***303. North America. (3)**
Regional geography of Canada and the United States.

***330. Southeastern Asia.** (3) Bennett
Regional geography of southeastern Asia including the area from Burma and North Viet Nam southeastward through Malaysia, Indonesia, and the Philippines.

***331. Eastern Asia.** (3)
Regional geography of China, Korea, and Japan.

***332. Western Europe.** (3) Murphy
Regional geography of Europe from the Atlantic eastward through Finland, Germany, Austria, and Italy.

***333. The Soviet Union and Eastern Europe.** (3)
Regional geography of the U.S.S.R. and of eastern Europe from Poland southward through Czechoslovakia, Hungary and the Balkans.

III. Upper-level Systematic Courses, Problems, and Seminars

***351. Systematic Climatology.** (3) Bennett
An analysis of factors affecting climatic variations and types, particularly solar and terrestrial radiation, temperature conditions, atmospheric pressure and wind patterns, and moisture and precipitation characteristics. Prerequisite: 101 or Physics 103 or permission of the instructor.

***352. Regional Climatology.** (3) Bennett
The classification and world distribution of temperature regimes, air mass types, precipitation areas, and climatic regions. Prerequisite: 351.

***381. Political Geography.** (3) Murphy
Study of political areas of the world from a spatial point of view, including problems of size, population, boundaries, location, productivity, ethnic grouping, and political power.

***401. Geographic Writings and Analysis.** (3)
Examination of the work of some principal geographers with emphasis on developments, trends and methodology. Limited to majors and minors in geography.

***479. Conservation.** (3) Dittmer
(Same as Biology 479.)

491-492. Problems. (1-3 hrs. each semester)
Supervised individual study and field work.

***551-552. Problems.** (2-3 hrs. each semester)
Supervised individual study for graduate students.

GEOLOGY

Professors V. C. Kelley (Chairman), S. A. Wengerd, J. P. Fitzsimmons; Research Professor S. A. Northrop; Associate Professors R. Y. Anderson, W. E. Elston, R. C. Murray, A. Rosenzweig; Assistant Professors E. F. Cruft, A. M. Kudo, L. A. Woodward; Faculty Associates C. B. Read, C. V. Theis.

MAJOR STUDY

For the degree of Bachelor of Arts: Geology 101, 102, 105L, 106L, 201L, 302L, 307L, 309L **or** 311L, 319L, 420L, and 4 additional hours in approved courses. Chemistry 101L, 102L; Mathematics 160; English 264; and either Biology 101L and 102L or Physics 111, 112, 113L, 114L are required. With permission of the Chairman, students preparing to teach Earth Sciences in secondary schools will be encouraged to substitute some of all of the following courses in meeting requirements for the Bachelor of Arts degree: Geology 465, 481, Physics 103, Astronomy 101.

For the degree of Bachelor of Science: Geology 101, 102, 105L, 106L **or** 120L, 201L, 307L, 309L **or** 311L, 319L, 420L, 421L, 422L, and 3 additional hours in approved geology options; Mathematics 264; Chemistry 101L, 102L; English

264; Electrical Engineering 436L; Psychology 280. In addition students will take courses to complete one of the options below.

OPTION A: MINERALOGY, PETROLOGY, GEOCHEMISTRY, ECONOMIC GEOLOGY. Chemistry 311, 312; Physics 260, 261, 262; Mathematics 265.

OPTION B: PALEONTOLOGY, STRATIGRAPHY. Chemistry 142L, Biology 101L and 102L, and 9 hours in approved courses from Biology, Paleoecology, Chemistry, or Mathematics courses numbered greater than 200.

OPTION C: ENGINEERING GEOLOGY, STRUCTURAL GEOLOGY. Physics 260, 261; Mathematics 265; and 6 hours from Civil Engineering 281L, 202L, 302, Mechanical Engineering 301 or 206L.

Students interested in Geophysics, Astrogeology, Hydrogeology, or Geomorphology will elect Option A or C; students interested in Petroleum Geology or Sedimentology may select any option.

On completing all required courses for one of the options listed above the student will have a distributed minor.

MINOR STUDY

Geology 101, 102, 105L, 106L, and 12 additional hours.

MINOR STUDY IN PALEOECOLOGY

See p. 355.

101. Physical Geology. (3)
Materials composing the earth, and work of agencies, both external and internal, modifying its surface.†

102. Historical Geology. (3) Anderson, Northrop, Wengerd
History of the earth; rise and succession of the various forms of life. Prerequisite: 101.†

105L. Physical Geology Laboratory. (1)
Minerals, rocks, and topographic maps; occasional field trips. **Credit suspended when credit in Geology 101 is not earned.** Corequisite: 101. 3 hrs. lab.

106L. Historical Geology Laboratory. (1)
Fossils and paleogeographic maps; emphasis on the historical geology of New Mexico. **Credit suspended when credit in 102 is not earned.** Corequisite: 102. 2 hrs. lab.

120L. [120] **General Geology. (5)** Elston
General geology for science, science education, and engineering students. An introductory course in basic principles of physical and historical geology. The relationship of geology to other sciences is emphasized. Recommended for all students intending to major in geology. 4 lectures, 3 hrs. lab. including field trips. Students may receive credit for either the sequence (101, 102, 105L, 106L), or the single course 120L, but not both.

201L. Mineralogy. (4) Rosenzweig
Elementary crystallography; fundamentals of chemical and physical mineralogy; elements of mineral identification. Prerequisite: 105L or 120L; pre- or corequisite: Chemistry 101L. 2 lectures, 6 hrs. lab.

****302L. Petrology. (4)** Elston
Classification, hand-specimen identification, occurrence, and origin of rocks. Prerequisite: 201L; pre- or corequisite: Chemistry 102L. 3 lectures, 3 hrs. lab. Credit not allowed for both 302L and 422L.

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† The sequence 101, 102, 105L, 106L will satisfy prerequisite listed as 120L and vice versa. Students beginning in one sequence must complete that sequence and credit may not be earned in both sequences.

** Available for graduate credit except for graduate majors in Geology.

****304L. Determinative Mineralogy.** (3) Cruft, Rosenzweig
Classification of minerals; mineral associations; methods of mineral identification; laboratory study of minerals and mineral suites. Prerequisite: 302L, Chemistry 102L. 1 lecture, 6 hrs. lab.

****307L. Structural Geology.** (4) Kelley, Woodward
Nature and origin of rock structures and deformation; map and stereographic problems. Prerequisites: 106L or 120L, and Mathematics 160 or 162. IE 101 is strongly recommended. 3 lectures, 3 hrs. lab.

****309L. Principles of Stratigraphy.** (4) Northrop
Prerequisite: 106L or 120L; some biology is strongly recommended. 3 lectures, 3 hrs. lab. (Offered in 1968-69 and alternate years.)

****311L. Paleontology.** (4) Northrop
Fossil plants and invertebrates with emphasis on the common megafossils. Prerequisite: 106L or 120L; some biology is strongly recommended. 2 lectures, 6 hrs. lab. (Offered in 1967-68 and alternate years.)

****319L. Field Geology and Reports.** (4) Woodward
Principles and techniques of field mapping; content and arrangement of reports; layout and preparation of illustrations. Prerequisite: 307L. 1 lecture and 1 full day in field each week.

***420L. Advanced Field Geology.** (3) Kelley, Woodward
Geological mapping with plane table; mine mapping; special field problems. Prerequisite: 319L. 1 full day in field each week.

***421L-422L. Optical Mineralogy and Petrography.** (4, 4) Fitzsimmons
Optical mineralogy; the polarizing microscope; systematic study of rocks with respect to their mineralogy, texture, and genesis. Prerequisite: 201L or permission of instructor. Course 421L may be taken separately, but 421L is prerequisite to 422L. 2 lectures, 6 hrs. lab. Credit not allowed for both 422L and 302L.

***426. Fundamentals of Geophysics.** (3) Fitzsimmons
Physical properties of rocks and their application to instrumental methods of determining subsurface geology. Prerequisites: 307L, Mathematics 160, Physics 111, 112, 113L, 114L (or equivalent).

***428L. Advanced Structural Geology.** (3) Kelley, Woodward
Description and analysis of major structural types; map studies and problems. Prerequisite: 307L. 2 lectures, 3 hrs. lab.

***430L. Advanced Paleontology.** (4) Northrop
Prerequisite: 311L. 2 lectures, 6 hrs. lab.

***432L. Micropaleontology.** (3) Anderson
Foraminifera, ostracods, bryozoans, conodonts, and other microfossils. Laboratory techniques, applications, and ecologic relationships. Prerequisite: 106L or 120L; some biology is strongly recommended. 2 lectures, 3 hrs. lab.

***433L. Palynology.** (3) Anderson
Morphologic, systematic, and ecologic study of pollen, spores, dinoflagellates, etc. Laboratory techniques and applications to related fields. Prerequisite: 106L or 120L; some biology is strongly recommended. 2 lectures, 3 hrs. lab.

***436L. Paleozoic and Mesozoic Stratigraphy.** (4) Northrop
The stratified Paleozoic and Mesozoic rocks of North America, their correlation, stratigraphic relations, and guide fossils. Prerequisite: 309L. 2 lectures, 6 hrs. lab.

***437. Paleobotany.** (3) Read
The fossil floras of the western hemisphere. Prerequisites: Geol. 106L and Biology 102L.

***441L. Sedimentology.** (4) Murray
A study of sedimentary materials, their origin, diagenesis, distribution, and correlation in stratified rocks with emphasis on recent and ancient environments of sedimentation and early diagenesis. Prerequisite: 201L. 2 lectures, 3 hrs. lab.

***442. Petroleum Geology.** (3) Wengerd
An inductive approach to the principles of oil origin, migration, and accumulation. Characteristics of oil and gas reservoirs; techniques of petroleum exploration. Prerequisites: 441L.

** Available for graduate credit except for graduate majors in Geology.

***455L. Air Photogrammetry and Photogeology.** (3) Wengerd
Photogrammetric computations; stereoscopy; preparation of planimetric, topographic, and photogeologic maps. Prerequisites: 106L or 120L, Mathematics 160, or permission of instructor. 1 lecture, 6 hrs. lab.

***462L. Hydrogeology.** (3) Wengerd
Occurrence and development of water with special emphasis on the Southwest. Prerequisites: 106L or 120L, and senior standing. 2 lectures, 3 hrs. lab.

***465. Lunar and Planetary Geology.** (3) Elston
The geology of the moon and planets as deduced from visual and geophysical observations, space probe data, laboratory experiments, meteorites, tektites, and terrestrial analogs of lunar and planetary features. Prerequisites: 101 or 102, or permission of the instructor. Graduate geology majors must take 466L concurrently in order to obtain graduate credit for 465.

***466L. Lunar and Planetary Geology Lab.** (1) Elston
Geologic interpretation of lunar and planetary photographs from terrestrial and space-probe sources, study of USGS lunar geologic maps, petrographic examination of meteorites, tektites, and terrestrial rocks subjected to shock metamorphism. 3 hrs. lab. Must be taken concurrently with 465. Prerequisites: 307L, 422L.

***471-472. Mineral Deposits.** (3, 3) Elston, Kelley
Metalliferous and nonmetalliferous deposits; their occurrence, classification, properties, origin, exploration, mining, beneficiation, and utilization. Prerequisite: 302L or 422L. Course 471 may be taken separately, but 471 is prerequisite to 472.

***481. Geomorphology.** (3) Wengerd
Origin, development, and classification of land forms, with detailed consideration of gradation processes. Prerequisite: 307L.

***482L. Geomorphology of the United States.** (3) Fitzsimmons
Detailed study of the physiographic provinces and sections of the United States; emphasis on Western United States. Prerequisite: 481 or permission of instructor.

***485.** [288] **Vertebrate Paleontology.**
(Same as Biology 485.)

***487L. Morphological Crystallography.** (3) Rosenzweig
The 32 point groups; crystal form and habit; crystal projections; crystal measurement and drawing. Prerequisite: Mathematics 264. Civil Engineering 101L is strongly recommended. 2 lectures, 3 hrs. lab.

491-492. Problems. (2, 2)

***501L.** [439L] **Geochemistry I.** (3) Cruft
Physical chemistry of aqueous solutions at low temperature. Evolution of the atmosphere and hydrosphere. Chemical oceanography, geochemistry of chemical and biogenic sediments. Pre- or corequisite: 302L or 422L. 2 lectures, 3 hrs. lab.

***502L.** [440L] **Geochemistry II.** (3) Cruft, Kudo
Fundamental crystal chemistry. Element distribution in the earth with particular emphasis on igneous and metamorphic rocks. Introduction to phase equilibria in binary and ternary systems, and with the addition of volatile components. Geochemistry of ore formation. Pre- or corequisite: 302L or 422L. 2 lectures, 3 hrs. lab.

***504L. Isotope Geochemistry.** (3) Cruft
Distribution of nuclides; radioactive processes in nature; age-dating techniques; and variation of isotope ratios in natural environments. Prerequisite: 501L or 502L, or permission of instructor. 2 lectures, 3 hrs. lab.

***506L. X-ray Crystallography.** (4) Rosenzweig
(Also offered as Chemistry 506L.) Principles of X-ray diffraction, Deloye-Scherrer, Weissenberg, and precession methods. Space group symmetry and its determination. Prerequisites: Mathematics 264 or 311, and permission of instructor. 2 lectures, 6 hrs. lab.

***512L. Petrography of Opaque Ores.** (2) Kelley
Determination and paragenesis of minerals in polished sections. Prerequisites: 421L, 471. 6 hrs. lab.

***517L. Instrumental Methods in Geochemistry.** (2-4) Cruft, Rosenzweig
An intensive discussion of two major instrumental techniques in current use in geochemistry. Topics will normally be chosen from X-ray methods, DC arc emission spectography, atomic absorption and flame emission spectrography, mass spectrometry, and differential thermal analysis. **With permission of the department chairman, course may be repeated for credit as content varies.** 2 lectures, 6 hrs. lab.

***521L. Metamorphic Petrology.** (3) Fitzsimmons
Recrystallization and metasomatism in the transformation of solid rock masses and the structural modifications attending them. Prerequisite: 422L. 2 lectures, 3 hrs. lab.

***528. Regional Tectonics.** (2) Kelley
Principles of origin of regional structures as illustrated by Cordilleran examples.

***531L. Igneous Petrology.** (3) Kudo
Genesis of magmatic rocks; eruptive mechanisms; tectonic setting and differentiation trends of igneous rocks in continental, oceanic, orogenic, and nonorogenic environments. Prerequisites: 421L and 422L or 302L. 2 lectures, 3 hrs. lab.

***537L. Stratigraphic Analysis.** (3) Wengerd
Quantification of stratal variations on regional bases utilizing statistical approaches to thickness, sediment content, inherent sedimentary structure, and fluid distribution in sedimentary rocks. Prerequisites: 309L, 441L. 2 lectures, 3 hrs. lab.

***542L. Subsurface Geology.** (3) Wengerd
Well-logging and correlation techniques; study of cuttings, drilling-time logs, electric logs, radioactivity logs, and insoluble-residue logs; construction of subsurface-contours, isopach, and isopleth maps, and detailed cross-sections. Pre- or corequisite: 442 or 462L. 1 lecture, 6 hrs. lab.

***544L.** [543L] **Advanced Sedimentology.** (4) Murray
A study of sedimentary materials from origin through lithification; sedimentary processes and environments; methods of studying sedimentary materials—thin section and other techniques used in determining the depositional and diagenetic history of a sedimentary rock. Prerequisites: 421L, 441L, or permission of the instructor. 2 lectures, 3 hrs. lab.

***547-548. Seminar.** (2, 2) Staff

***551-552. Problems.** (2-3 hrs. each semester) Staff

***590. Graduate Conference.** (0) Staff‡

***599. Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

***699. Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

GERMAN

See Modern and Classical Languages.

GREEK

See Modern and Classical Languages.

GUIDANCE

See Education, Guidance and Special Education.

HEALTH, PHYSICAL EDUCATION, AND RECREATION

See Education, Health, Physical Education, and Recreation

HISTORY

Professors F. W. Iklé (Chairman), D. C. Cutter, W. M. Dabney, E. Lieuwen, G. W. Smith; Associate Professors T. S. Floyd, G. D. Nash, G. E. Rothenberg, W. W. Wagar; Assistant Professors B. Beer, R. H. Dolkart, R. R. Dykstra, D. E. Skabelund, P. M. Sonnino, D. D. Sullivan, H. J. Tobias, L. C. Tulga; and Staff.†

MAJOR STUDY

The history program for majors, as outlined below, is designed to provide some of the cultural background necessary for intelligent social living, and also

‡ Required each semester of all graduate students in Geology.
† New appointments to be made, effective Sept. 1, 1967.

to prepare students for such specific activities as careers in law, the civil and diplomatic services, and the teaching profession.

Requirements: Four lower-division courses which must include 101 and 102, and one of the following pairs: 161 and 162, 251 and 252, or 281 and 282. Eight 300- or 400-level courses, including 309 and seven more including two courses each from three of the following areas: European, United States, Hispanic-American, Far Eastern history.

MINOR STUDY

The planned program outlined below is designed to supplement a student's work in his major field. The lower-division requirement includes a minimum of two semester courses to be selected from the following: History 101, 102, 161, 162, 251, 252, 281, 282. The upper-division requirement includes a minimum of five semester courses, at least three of which must be concentrated in European history, American history, Hispanic-American history, or Far Eastern history.

The prerequisites for certain courses may be waived with permission of instructor.

DISTRIBUTED MINOR FOR HISTORY MAJORS

A major may offer an American Studies minor as well as a minor in a single department. For requirements, see American Studies.

101-102. Western Civilization. (3, 3) Beer, Rothenberg, Skabelund, Sonnino, Sullivan, Tobias, Tulga
101—Ancient times to 1500; 102—1500 to the present.

161-162. [261-262] **History of the United States.** (3, 3) Dabney, Nash, Smith
Survey of the economic, political, intellectual, and social development of the United States from 1607 to the present, including the place of the United States in world affairs. History 161 covers the period from the beginning to 1865.

251-252. Eastern Civilizations. (3, 3) Iklé, Tobias
251: The development and interaction of Chinese, Central Asian, Russian, and Japanese societies until the 16th century. 252: From the 16th century until today.

281. [381] **History of Latin America.** (3) Cutter, Floyd
Spanish and Portuguese occupation and colonial control in the Americas.

282. [382] **History of Latin America.** (3) Dolkart, Lieuwen
Emergence of national states in Latin America.

301-302. Interdepartmental Studies in the Culture of the U.S. (3, 3) Baughman, Martin, Sanborn
(Same as American Studies 301-302.) May be taken for departmental credit only with the consent of the chairman.

***303. History of World Communism.** (3) Tobias
From Marx to the present.

***305. History of Science to 1687.** (3) Skabelund
Evolution of scientific ideas and the role of science in the formation of Western civilization from antiquity to the Newtonian synthesis.

***306. History of Science since 1687.** (3) Skabelund
Development of scientific thought from the Newtonian synthesis to the present.

309. Historiography. (3) Sonnino, Tobias, Wagar
Development of historical thought and writing.

***311. Ancient Civilizations of the Near East.** (3) Tulga
Prerequisite: 101.

***313. Greece.** (3) Tulga
A survey of developments in Greek civilization from early times to the reign of Justinian. Prerequisite: 101.

*314. **Rome.** (3) Tulga
Survey of the rise, decline, and fall of Roman power from the Italian expansion to the establishment of the successor states. Prerequisite: 101.

*321. **The Early Middle Ages.** (3) Sullivan
Prerequisite: 101.

*322. **The Late Middle Ages.** (3) Sullivan
Prerequisite: 101.

*323. **The Renaissance.** (3) Sullivan
Prerequisite: 101.

*325. **Early Modern Europe 1500-1648.** (3) Sonnino
The Age of the Reformation. Prerequisite: 102.

*332. **Early Modern Europe, 1648-1763.** (3) Sonnino
Europe under the Old Regimes. Prerequisite: 102.

*333. **French Revolution and Napoleon.** (3) Sonnino
Prerequisite: 102.

*335. **Modern Europe, 1815-1914.** (3) Wagar
Restorations and revolutions; national unification and industrialism; the "generation of materialism" and the origins of the first World War. Prerequisite: 102.

*336. **Europe since 1914.** [Dictatorships and Democracies in Europe since 1914] (3) Wagar
The World Wars and the search for peace; social and economic tensions; Europe in the era of the Cold War and the welfare state. Prerequisite: 102.

*339. **Military History of Europe to 1790.** (3) Rothenberg

*340. **Military History of Europe since 1790.** (3) Rothenberg

*341. **France.** (3) Sonnino
From 1500 to the present.

*343. **History of England to 1603.** (3) Beer

*344. **History of England since 1603.** [History of England from 1603 to the present] (3) Beer

*345. **The British Empire and Commonwealth.** (3) Beer

*347. **Modern Russia, 1500-1917.** (3) Tobias

*349. **Soviet Russia.** (3) Tobias
Emphasis upon domestic developments.

*351. **History of China.** (3) Iklé
Social, political, and economic institutions from historical beginnings to modern times.

*352. **History of Japan.** (3) Iklé
Social, political, and economic institutions from historical beginnings to modern times.

*354. **The Far East in the Contemporary World.** (3) Iklé
Emphasis upon diplomatic relations between Asia and the West.

*356. **History of the Near East.** (3) Iklé
From ancient Mesopotamia to the present.

*357. **History of Africa since 1800.** (3) Beer

360. [160] **History of New Mexico.** (2) Cutter
Survey from Cabeza de Vaca to 1912.

*364. **Political History of the United States.** (3) Smith
From 1789 to the present.

*370-371. [371] **American Diplomacy.** (3, 3)
Diplomatic History of the United States from Independence to 1898; from the Spanish American War to the present.

*372. **Urban History of the United States.** (2) Staff

*373. **History of the American Frontier.** (3) Cutter
Anglo-American expansion from the 17th century to the 1890's.

*374. **The Trans-Mississippi West.** (3) Cutter

*377. **Economic History of the United States.** (3) Nash
Topical study of American economic life—agriculture, industry, labor, and commerce—from the beginning to the present, stressing the relations of government and business.

*378-379. [378] **Constitutional History of the United States.** (3, 3) Dabney
From English origins to 1876; from 1876 to the present day.

***380.** [379] **History of the Southwest.** (3) Cutter
Spanish exploration and occupation of the Southwest; colonial government and missions.

***384. Inter-American Relations.** (3) Dolkart, Floyd, Lieuwen
Relations among the American republics from 1810, with emphasis upon the Pan-American movement and the recent period. 282 strongly recommended as a prerequisite.

***395. Iberian History.** [History of Spain] (3) Floyd
Spanish and Portuguese history to 1700.

***396. Iberian History.** [History and Civilization of Portugal] (3) Floyd
Spanish and Portuguese history since 1700.

***397. Mexico to 1821.** (2) Cutter, Floyd
Prerequisite: 281.

***398. Mexico since 1821.** (2) Dolkart, Floyd, Lieuwen
Prerequisite: 282.

***428.** [328] **European Intellectual History, 1762-1870.** (3) Wagar
The Enlightenment synthesis; its culmination and decline; the romantic era; liberalism and positivism; Darwin and Marx.

***429.** [329] **European Intellectual History, 1870-Present.** (3) Wagar
Science and religion in the post-Darwinian generation; the anti-positivist reaction; the age of anxiety from Spengler to Sartre.

***438.** [338] **European Diplomatic History.** (3) Rothenberg
Since 1815. Prerequisite: 102.

***442.** [342] **Germany.** (3) Rothenberg
From 1815 to present. Prerequisite: 102.

***461.** [361] **The American Colonies, 1607-1763.** (3) Dabney
The settlement of British America and a study of American institutions in their infancy. Prerequisite: 161.

***462.** [362] **The American Revolution and the Federal Republic, 1763 to 1820.** (3) Dabney
Prerequisite: 161.

***465.** [365] **The Era of Sectional Conflict, 1820-1860.** (3) Smith
The impact of nationalism and sectionalism upon American life from the Missouri Compromise to the election of Lincoln. Prerequisite: 161.

***466.** [366] **The Civil War.** (3) Smith
Political, social, economic, military, and diplomatic history of the period 1860-1865. Prerequisite: 161.

***467.** [367] **The United States from Reconstruction to 1898.** (3) Smith
Prerequisite: 162.

***468-469.** [368-369] **Recent History of the United States.** (3, 3) Nash
From 1898 to the time of the great depression; from the time of the great depression to the present day. Prerequisite: 162.

***470. Philosophy of History.** (3) Staff
(Same as Philosophy 370.)

***475.** [375] **Intellectual and Social History of the United States, 1607-1860.** (3) Staff

***476.** [376] **Intellectual and Social History of the United States since 1860.** (3) Staff

***483.** [383] **Modern and Contemporary Latin America.** (2) Lieuwen
Social revolutions in the Latin American area since World War II. Prerequisite: 282.

***486.** [386] **Southern South America.** (3) Dolkart
Argentina, Chile, and Uruguay since 1810. Prerequisite: 282.

***488.** [388] **The Andean Republics.** (3) Dolkart
Peru, Bolivia, and Ecuador since 1810. Prerequisite: 282.

***489.** [394] **History of Brazil.** (3) Floyd
From 1500 to the present. Prerequisite: 281 and 282.

493. Reading and Research in Honors. (3)
Prerequisites: senior standing and permission of major adviser.

494. Senior Thesis. (3)
Prerequisite: 493.

***500. Seminar in Historical Research Methods.** (2) Nash

***501. Interdepartmental Seminar in the Culture of the United States.** (3) Staff
(Same as American Studies 501.)

*504. **Interdepartmental Seminar in Ibero-American Studies.** (3) Staff
(Same as Ibero-American Studies 504.)

*520. **Seminar and Studies in Ancient History.** [Seminar in Ancient History] (3) Tulga

*521. **Seminar and Studies in Medieval History.** [Seminar in Medieval History] (3) Sullivan

*532. **Seminar and Studies in Early Modern European History.** [Seminar in Early Modern European History] (3) Sonnino

*540. **Seminar and Studies in European Intellectual History.** [Seminar in European Social and Intellectual History] (3) Wagar

*542. **Seminar and Studies in Modern European History.** [Seminar in Modern European History] (3) Rothenberg

*545. **Seminar and Studies in British History.** [Seminar in British History] (3) Beer

*547. **Seminar and Studies in Modern Russian History.** [Seminar in Modern Russian History] (3) Tobias
Emphasizes the period 1861-1917.

*548. **Seminar and Studies in Iberian History.** (3) Staff

*551-552. **Problems.** (1-3 hrs. each semester) Staff

*554. **Seminar and Studies in Far Eastern History.** [Seminar in Far Eastern History] (3) Iklé

*562. **Seminar and Studies in Early American History.** [Seminar in Early American History] (3) Dabney
Pre- or corequisite: 462.

*564. **Seminar and Studies in American Intellectual and Social History.** [Seminar in American Intellectual and Social History] (3) Staff

*566. **Seminar and Studies in Civil War Period.** [Seminar in Civil War Period] (3) Smith
Intensive study of bibliography, research in source materials, and the writing of original papers on the period of the Civil War and Reconstruction.

*568. **Seminar and Studies in Recent American History.** [Seminar in Recent American History] (3) Nash
Topical investigation in American history since 1900.

*570. **Seminar and Studies in United States Diplomatic History.** (3)

*579. **Seminar in Southwest History.** (3) Cutter

*581. **Seminar in Colonial Latin American History.** (3) Floyd
Emphasis upon the constitutional and cultural history of the Spanish colonies in America.

*582. **Seminar in Recent Latin American History.** (3) Lieuwen, Dolkart
The national period of Latin America.

*584. **Interdisciplinary Seminar on Problems of Modernization in Latin America.** (3) Liepe, Lieuwen, Needler, Schwerin

*599. **Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

*699. **Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

HOME ECONOMICS

See Education, Home Economics

IBERO-AMERICAN STUDIES

Professor M. R. Nason, Director

An interdepartmental program in the languages, literatures and history of Spanish America and Brazil leading to the degree of Doctor of Philosophy. For details, consult the **Graduate School Bulletin.**

*504. **Interdepartmental Seminar.** (3) Davison, Floyd, Lieuwen, Lopes, Nason
History, literature, and institutions of Latin America.

*584. **Interdisciplinary Seminar on Problems of Modernization in Latin America.** (3) Liepe, Lieuwen, Needler, Schwerin
(Same as History 584.)

*699. **Dissertation.** (3-6 hrs. per semester) Cutter, Davison, Floyd, Lieuwen, Lopes, Nason, Ulibarrí
See the **Graduate School Bulletin** for total credit requirements.

INDUSTRIAL EDUCATION

See Education, Industrial Education.

ITALIAN

See Modern and Classical Languages.

JOURNALISM

Associate Professors A. G. Hillerman (Chairman), L. L. Jermain; Assistant Professors J. P. Crow, R. H. Weber; Lecturers G. M. Hunsley, J. W. Abarr.

MAJOR STUDY

Editorial Sequence—30 hours including Journalism 251, 252, 301, 302, 311, 312, 322, and 475. Six hours may be chosen from the following: English 255, 403, 466; Speech 466; Political Science 305. (Accredited by the American Council on Education for Journalism.) Television-radio Emphasis, required courses: 251, 252, 301, 302, 311, 322 and 475 and Speech 251, 265 and 466. (Total, 30 hours.)

Journalism 100 counts toward the major but is not required. It is recommended for all who plan on a Journalism major.

MINOR STUDY

18 hours including Journalism 251 and 252. Three hours in other departments may be chosen from the lists given under Major Study.

100. Introduction to Journalism. (2) Staff
Lecture two hours a week on the meaning, history, and practices of American journalism, together with some practice in news writing and an introduction to copy-editing.

251. News Writing and Reporting. (3) Staff
2 lectures, 2 hrs. lab.

252. News Writing and Reporting. (3) Staff
Prerequisite: 251. 2 lectures, 2 hrs. lab.

261. News Photography. (3) Crow
Training in the use of the standard news camera, and in the taking, developing, and printing of pictures for newspaper use, together with some study of desk preparation of photographs for the photoengraving process. 1 lecture, 4 hrs. lab. Prerequisite: permission of instructor.

301. History of Journalism in the United States. (3) Jermain
American newspaper and magazine history from the early Colonial periodicals through the present-day streamlined mass-production newspaper.

302. Editorial and Special Writing. (3) Hillerman
Practice and criticism in the writing of the editorial essay and the information editorial, and in the writing of the column, and of other interpretive matter. Prerequisites: 251 and 252.

311. Copy-Editing and Makeup. (3) Jermain, Staff
Practice in the assembling and editing of news copy, in dummying of newspaper pages, in headline writing, and in page makeup. Prerequisites: 251, 252. 2 lectures, 2 hrs. lab.

312. Copy-Editing and Makeup. (3) Jermain, Staff
Continuation of 311, with emphasis on wire copy and problems of typography. Prerequisite: 311. 2 lectures, 2 hrs. lab.

322. Law of the Press. (3) Jermain
Lectures, discussions, and case histories in the law of libel and the Constitutional guarantees, and in laws relating to contempt and injunction proceedings and other checks of law upon the press.

332. Writing the Magazine Article. (3) Hillerman
Writing the longer factual article for professional publication. Prerequisite: permission of instructor.

465. Management of High School Publications. (3) Staff
A survey of the problems in production of high school newspapers and yearbooks, as well as some incidental publications, including approaches to design, advertising content, the news and editorials, circulation and printing, and over-all business administration and staff management. Not open to Journalism majors.

475. Advanced Reporting. (3) Staff
Discussions of, and work in, news and interpretive coverage of matters and events of public concern; visits to, and investigations into, community areas and public bodies, during additional arranged sessions each week; production of a series of newspaper or magazine-type articles by each student, each eventually during the semester to work upon a specific problem, situation, or crusade, of public significance. Prerequisite: permission of instructor.

494. The Press as a Social Force. (3) Hillerman

LATIN

See Modern and Classical Languages.

LATIN AMERICAN STUDIES

This is an inderdepartmental program administered by the Division of Inter-American Affairs. The program itself does not constitute professional training or prepare students for specific careers; however, it provides a solid foundation in language skills and area competence that can be valuable in business, public service, or further professional training.

MAJOR STUDY

Language and literature (31 hours): Spanish 251, 252, 292, 301, 302, 357, 358; Portuguese, 275, 276, 277, 278. Social Sciences (29 hours): History 281, 282, 384, 483; Geography 301, 302; Political Science 355; Economics 200, 201, 421.

(Note: Admission to Spanish 251 requires completion of one year of the language in college or two years in high school. Native speakers of Spanish should follow a slightly different sequence of courses [see course listings under Modern Languages].)

ELECTIVES (12 hours)

These should normally be courses of specifically Latin American content (e.g., Philosophy 323, Hispanic and Latin American Philosophy or Sociology 365, Urbanization in Latin America), but may also be courses of generalized content with applicability to the Latin American field (e.g., Political Science 203, International Politics, or Economics 420, Economic Problems of Underdeveloped Countries). His advisor will help the student plan a coherent program of electives. The following model elective programs are illustrative:

(1) Brazilian emphasis: Portuguese 307, 357, 358; History 489.

(2) Mexican emphasis: Political Science 358; History 397, 398; Spanish 463; Anthropology 382.

(3) Hispanic American literature emphasis: Spanish 347, 463, 464, plus one other 3-hour course.

(4) Political and social development emphasis: Sociology 365, 461; Political Science 351, 356.

(5) Economic development emphasis: Economics 315, 420, 424, plus one other 3-hour course.

MINOR STUDY

Not Offered.

***599. Master's Thesis. (1-3 hours per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

LAW

Professors T. Christopher (Dean), F. Hart, V. Seed, H. Weihofen; Visiting Professors J. Hall†, M. Sharp; Associate Professors W. Barnett, W. Ellis, M. Fink (Librarian), D. Ingram††, L. Kanowitz, A. Liker, C. Sellinger, A. Utton; Assistant Professors R. Desiderio, R. Walker; Director of Legal Services, F. Dewey.

MINOR IN THE COLLEGE OF ARTS AND SCIENCES

Available only to students accepted by the School of Law in the combined six-year program leading to the bachelor's degree in the College of Arts and Sciences and the Juris Doctor in the School of Law. See the **School of Law Bulletin.**

Note: Some courses may not be offered in certain years. An offering sheet and class schedule for a particular year may be obtained from the law school.

FIRST YEAR COURSES

#501. [526] **Constitutional Law I. (2)**
Nature and scope of judicial review; the federal system; national legislative powers; limitations on governmental power for the protection of persons accused of crime.

#502. Contracts and Agency I. [Contracts I] **(3)**
Promises and consideration—the bargain; fairness, duress, and mistake.

#503. Contracts and Agency II. [Contracts II] **(3)**
Supervening events, default as an excuse, damages; an introduction to multiple-party transactions; express, implied, and apparent authority of agent.

#504. Criminal Law. (3)
Criminal law viewed as a means for the prevention of criminal behavior.

#505. International Law I. (3)
A study of the nature and sources of international law and its application to problems relating to international agreements, membership in the international community, nationality, jurisdiction, state responsibility, and force and war.

#506. Legal Research. (1)
Materials and methods of legal research.

#508. Property I. [Real Property I] **(3)**
Personal property; "original" ownership; the evolution of interests in real property, briefly treating feudalism and tenure, freehold estates, future interests, and concurrent ownership; leases.

#509. Property II. [Real Property II] **(3)**
Sales of land, including the real estate contract, the deed, the recording system, and methods of title assurance; the use of land, including easements and licenses, real covenants, and related public controls of land use.

#510. Torts and Master-Servant I. (3)
Tort law examined as a means for compensating harms, discouraging substandard behavior, and allocating losses.

#511. Torts and Master-Servant II. (3)
Continuation of Torts and Master-Servant I.

#512. [501] **Civil Procedure I. (3)**
A brief survey and evaluation of the range of available methods for the resolution of civil disputes: self-help, private settlement, the administrative process, and litigation. A

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† Spring 1967
†† On leave 1967-68
# Required.

consideration of the fundamentals of procedure in litigation from the commencement of an action through appeal, with particular emphasis on procedural devices for raising issues of substantive law.

SECOND AND THIRD YEAR COURSES

Commercial Law

520. Business Associations I. (3)
The fundamental course in the organization and operation of such businesses as partnerships, limited partnerships, business trusts, joint stock companies, other unincorporated associations, and business corporations. Choosing the business form; common law and statutory methods of creation; the duties, powers, and liabilities of management and owners; operational rules; and basic dissolution and merger problems. Major emphasis will be placed upon the closed corporation and partnerships.

521. Business Associations II. (3)
Corporate finance; major problems of finance in other business associations; introduction to state and federal securities regulation; distributions; mergers; sales of assets; consolidation; and amendment of charters and other basic agreements. Major emphasis will be placed upon publicly owned corporations and associations. Prerequisites: Business Associations I and Legal Accounting or pre-law accounting course of not less than 3 hours' credit.

522. Commercial Transactions I. (3)
Problems of sales, commercial paper, and security interests in personal property.

523. Commercial Transactions II. (2)
Continuation of Commercial Transactions I.

528. Creditors' Rights. (3)
Enforcement of judgments, fraudulent conveyances, general assignments, creditors' agreements, bankruptcy, and arrangements.

Procedure

516. [522] **Civil Procedure II.** (3)
An examination of selected topics, including multi-party litigation, the right to a jury trial, former adjudication, and personal and subject matter jurisdiction. A brief survey of the development of legal and equitable remedies. The law governing actions in the federal courts.

517. Civil Procedure III. (1)
Trial practice.

529. Criminal Procedure. (2)
Administration of the criminal process, including legal control of police practices, and procedure before, during, and after trial in the light of constitutional requirements.

531. Equitable Remedies. (2)
Introduction to the forms of judicial remedies, principles governing their scope and availability, and consideration of grounds for choosing between alternative remedies; includes general principles of specific performance, and injunction.

532. Evidence. (3)
Legal, logical, and epistemological problems involved in the trial of contested issues of fact; judicial notice; real proof; testimonial proof, including competency of witnesses, privilege, impeachment, rehabilitation and form of examination; the hearsay rule and its exceptions; circumstantial proof: logical relevance, remoteness, prejudice, both generally and in connection with proof of character and habit; burden of proof and presumptions.

552. Federal Jurisdiction. (3)
Federal judicial power; applicable law in the federal courts; the original jurisdiction of the United States District Court; venue and process; jurisdiction and procedure of the United States Court of Appeals; jurisdiction of the Supreme Court.

Property

519. Public Land Law. (3)
The history of the public domain and its use to effectuate national purposes; Taylor Grazing Act; administration of public lands.

524. Community Property. (1)
The New Mexico community property system, and its relationship to common law property rights.

536. Future Interests. (2)
The classification of future interests, including rights of entry for condition broken, reversions, vested and contingent remainders; rule in Shelley's Case, and future interests in personal property; the construction of limitations in deeds and wills; powers; the rules against perpetuities; and illegal conditions and restraints on alienation.

544. Oil and Gas Law. (3)
Major emphasis on the oil and gas lease; selected additional materials, at instructor's discretion, on conservation of natural resources, taxation of mineral interests, solid mineral mining, and the public domain.

547. Water Law. (2)
Western law of surface and ground water with emphasis on New Mexico administrative procedures; the problems of federalism as they affect water rights.

548. Wills and Trusts. (4)
The law of intestate succession and wills; the nature, creation, and termination of trusts; problems of construction; administration of trusts and decedents' estates.

578. Real Estate Transactions. (3)
Major real estate transactions such as contracts of sale, options, leases, condominiums, syndicates in various legal forms for the economic development of real estate interests, financing arrangements, foreclosures, and related matters concerning major contemporary transactions in real estate.

Public Law

513. Securities Regulation. (3)
Federal and state regulation of the securities industry. Registration processes, exempt transactions and exempt securities, statutory fraud, criminal penalties, procedures, underwriting agreements, preparation of the prospectus, and related matters. Prerequisite: Business Associations II; for 1967-68, the prerequisite is Corporations.

515. Employee's Rights. (2)
Workmen's compensation and federal wage and hour legislation.

518. Administrative Law. (3)
The system of legal control exercised by administering agencies other than the courts; definition and forms of administrative agencies; their functions; their constitutional limitations; their statutory powers and limitations; administrative procedures; agency hearings and decisions; judicial control of administrative agencies.

525. Conflict of Laws. (3)
The concepts of domicile and jurisdiction of courts; the effect of foreign judgments; and the law applied to torts, contracts, and status.

526. Constitutional Law II. (3)
State power to regulate and to tax; intergovernmental immunities; limitations on governmental power for the protection of economic and property interests; freedom of expression and association; freedom of religion; equal protection of law.

535. Food and Drug Law. (2)
A study of the Federal Food, Drug, and Cosmetic Act, and of the work of the Federal Trade Commission in connection with false advertising of food, drugs, and cosmetics. The course includes discussion of the philosophy, history, and application by the courts and administrative tribunals of the laws involved; also the effect of and need for these laws in modern society.

537. Labor Law. (3)
Historical introduction; the negotiation and administration of the collective bargaining agreement; the establishment of the collective bargaining relationship; recourse to economic weapons; the individual and the union.

542. Legal Process. (3)
An examination of the main institutions and processes of the American legal system in the perspective of their everyday working interrelationships. Particular attention is given to legislative jurisdiction and to problems of statutory interpretation.

546. Antitrust Law. (3)
Restraints of trade and monopoly at common law and under the federal antitrust laws, including the Sherman Act, Federal Trade Commission Act, and Clayton Act.

550. Unfair Competition. [Copyright and Unfair Competition] (2)
Public and private remedies for unfair business practices; trademarks.

556. Local Government. (3)
Municipal corporations, counties, special units of local government, and problems relating thereto such as organization, procedures in legislative and other functions, responsibility in tort and contract, finance, and relationships with the state and national government.

583. International Law II. (3)
Problems of doing business abroad.

Taxation

527. Business Planning. (3)
A combination of advanced work in Business Associations and Federal Income Taxation in the context of business planning and counseling. The course will be based upon a series of problems involving common business transactions which present corporate and tax issues for analysis and resolution; topics include the formation of corporations, both closely held and publicly owned, stock redemption, the sale and purchase of businesses, mergers and other forms of acquisition, recapitalization, and division and dissolution of corporations. Prerequisite: Normally, Business Associations II and Federal Income Taxation. In 1967-68, Corporations and Federal Income Taxation will be the prerequisites.

530. Federal Estate and Gift Taxation. (2)
Federal taxation of inter vivos transfers, revocable and incomplete transfers, exclusions, exemptions, and correlation with income and estate taxation. Federal estate taxation of property owned at death, community property, jointly held property, gifts in contemplation of death, revocable transfers, retained life estates, transfers taking effect at death, survivorship annuities, life insurance, and powers of appointment. Federal estate tax credits, deductions, exemptions, valuation problems, procedure, and correlation of estate tax with federal income and gift taxes and with state inheritance and estate taxes. Prerequisite: Federal Income Taxation.

534. Federal Income Taxation. (4)
Income taxation of individual and business taxpayers including items of income, deductions, exemptions, credits; the splitting of income among taxpayers; capital gains and losses; tax practice and procedure; accounting and income taxation; and an introduction to partnership, trust, and corporate income taxation. Normal prerequisite: Legal Accounting or pre-law accounting course of not less than 3 hours' credit.

545. [530] Estate Planning. (3)
The criteria for selecting one or another of the available methods of disposition of property, with particular emphasis upon federal income, estate and gift tax consequences; inter vivos transfers such as revocable and irrevocable trusts; wills; the settlement of life insurance proceeds, social security and employee death benefits; and the disposal of a business interest; the preparation of estate plans and documents in light of tax considerations and the law of future interests and powers of appointment including an investigation of various restrictions upon the freedom of property disposition such as the rule against perpetuities. Prerequisites: Wills and Trusts and Federal Estate and Gift Taxation.

Family Law

533. Family Law. (2)
Marriage, separation, and divorce; economic relations as between husband and wife, parent and child.

Professional Skills and Functions

538-539. Law Journal. (2, 2)
Second-year students with superior academic records are selected to compete for positions as student editors of the **Natural Resources Journal.** During the course of their second year they must perform assigned editorial tasks and write two case comments of publishable quality. Upon successful completion of this work, they are elected to the editorial board and receive 2 credit hours for their work. During their third year as student editors they are assigned greater editorial responsibility under the immediate supervision of the Faculty Editor, and are also required to write one Law Note of publishable quality. Upon successful completion of their editorial duties, they receive an additional 2 hours of ungraded credit.

540. Legal Accounting. (2)
A critical examination of selected issues relating to generally accepted accounting principles and an introduction to corporate financial problems. After an introduction to financial statements and bookkeeping, consideration will be given to the principles

governing recognition of income, the matching of costs against appropriate revenues, and accounting for such proprietary transactions as repurchase of stock, stock dividend, and quasi-reorganization. Emphasis throughout will be laid on the legal contexts in which the lawyer is likely to confront accounting problems.

#541. **Legal Aid.** (0)
Service in the office of the Legal Aid Society of Albuquerque and in neighborhood centers three hours each week during one semester. Required of all senior students. No subject credit.

#543. **Legal Writing.** (2)
Exercises and drills in legal writing and methods to be done independently by each student. Prerequisite: Legal Research, or equivalent.

572. **The Legal Profession.** (3)
The lawyer as counselor, advocate, citizen, and public servant, with emphasis on analysis of the nature of his professional responsibilities; contemporary problems of the organized bar.

Seminars

549. **Comparative Law.** (2)
555. **Jurisprudence.** (2)
559. **Research.** (1)
560. **Women and the Law.** (2)
570. **Law of the Poor.** (2)
571. **Law and Psychiatry.** (2)
573. **Logic and Evaluation in the Law.** (2)
574. **Mining and Public Lands.** (2)
576. **Current Legal Problems.** (2)
577. **Legal Counseling.** (2)
580. **Urban Renewal.** (2)
581. [553] **Insurance.** (3)

LIBRARY SCIENCE

See Education, Library Science.

MATHEMATICS AND STATISTICS

Professors J. R. Blum (Chairman), B. Epstein, M. S. Hendrickson, G. M. Wing; Associate Professors D. W. Dubois, A. Hillman, S. Kao, L. H. Koopmans, J. V. Lewis, J. Mayer, M. Mitchell, H. Renggli, J. Rosenblatt, A. Steger; Assistant Professors H. L. Bentley, R. Bierstedt, J. Davis, W. S. Eberly, R. Entringer, N. Friedman, R. Griego, R. Hersh, R. Metzler, A. Steiner, E. Steiner, H. E. White, Jr.

MAJOR STUDY

264, 265 and 21 hours in courses numbered above 300, approved by the Mathematics Department. A student who wishes to enroll in any course requiring a prerequisite must earn a minimum grade of C in the prerequisite course.

DEPARTMENTAL HONORS

Undergraduates or prospective undergraduates who intend to continue their studies through the Ph.D. degree or who are interested in challenging problems (possibly including intercollegiate competition) should see the Chairman of the Department as early as possible for details of the Mathematics Honors Program.

Required.

COMBINED PROGRAM IN MATHEMATICS AND ENGINEERING

Students interested in the fields of computer design, guided missiles, electronics, or aeronautics are advised to take one of the following engineering minors:

Minor in Electrical Engineering: EE 201, 202, 205L, 311, 321, 361, plus 2 courses selected from EE 312, 362 and 306L, 322, 421, 431.

Minor in Mechanical Engineering, Solids Option: CE 101L, 202L, 302; ME 206L, 314L or 316L, 357L, and 318L.

Minor in Mechanical Engineering, Fluids Option: CE 202L; ME 206L, 301, 302, 317, and 320.

MINOR STUDY

264, 265 and 6 hours in courses numbered above 300. A student who wishes to enroll in any course requiring a prerequisite must earn a minimum grade of C in the prerequisite course.

I. Introductory Courses

010. Intermediate Algebra. (0)
Remedial course. A rapid exposure to high-school algebra with emphasis upon polynomials, equation solving and logarithms. A fee of $20.00 is charged.

120. Elementary Mathematics.[1] **(5)**
Algebra of the basic number systems, trigonometry, elementary functions, and applications. Prerequisite: 010 or an adequate score on the ACT mathematics area.

121. Introduction to Mathematics for the Sciences.[1] **(4)**
Topics in algebra; trigonometry and elementary functions. Prerequisite: 010 or an adequate score on the ACT mathematics area.

122. Introduction to Finite Mathematics. (4)
Mathematical models and their interpretations; game and decision theory; linear and dynamic programming; elementary probability and Markov chains. Prerequisite: one of 120, 121, 160, or 162.

160-161. Elementary Mathematics for the Physical Sciences.[1] **(5, 5)**
Same content as 162-163 with additional work in algebra and trigonometry.

162-163. Introduction to Mathematics for the Physical Sciences.[1] **(4, 4)**
Number systems; coordinate geometry; introductory survey of differential and integral calculus; rigorous and thorough development of the foundations of calculus.

180-181. Mathematical Analysis for the Social and Biological Sciences. (3, 3)
Review of algebra and trigonometry; number systems; coordinate geometry; survey of differential and integral calculus of one and several variables.

241-242. Elementary Probability and Statistics. (3, 3)
An elementary pre-calculus development of the principles and methods of probability and statistics. Prerequisite: one of 120, 121, 160, 162, or permission of instructor. 241 or 341 prerequisite for 242.

264-265. Calculus with Coordinate Geometry. (4, 4)
Rigorous development of integral and differential calculus of one variable with some applications to differential equations. Introduction to calculus of several variables and infinite series. Prerequisite: 161 or 163.

280-281. Topics in Mathematics for the Social Sciences. (3, 3)
Linear algebra and matrices, elementary probability and statistical inference, introduction to differential equations. Prerequisites: 180-181 or equivalent.

II. Courses for Teachers and Education Students

The following courses are intended primarily for undergraduate and graduate students in the College of Education and for participants in Teacher's Institutes. Other persons may be admitted to these courses by permission of the Department Chairman.

[1] Credit may be received for only one of the courses 120, 121, and for only one of the sequences 160-161, or 162-163.

111. Arithmetic for Elementary School Teachers. (3)
The intuitive and logical background of arithmetic; drill in fundamental operations; algorithms of arithmetic in base ten and other bases; problem solving.

200. Fundamental Concepts of Mathematics. (3)
Survey of elementary logic, algebra, trigonometry, analytic geometry, and calculus stressing fundamental concepts and applications.

211. Foundations of Elementary Mathematics. (2)
Topics from elementary arithmetic, algebra, and geometry designed for the in-service teacher.

212. Structure of Arithmetic. (3)
Properties of natural numbers, integers, and rationals and operations therewith; decimal representation and the reals; measurement.

213. Elementary Algebra from a Modern Viewpoint. (3)
Algebraic systems; axiomatic approach to the real number system; functions.

214. Elementary Geometry from a Modern Viewpoint. (3)
Ideas of intuitive geometry; concepts of informal geometry with attention to precise terminology.

†300. Vector Geometry. (3)
A vector treatment of lines, planes, curves, and surfaces.

†301. Introductory Analysis I. [Introduction to Analysis I] (3)
Functions, limits, and derivatives with applications.

†302. Introductory Analysis II. [Introduction to Analysis II] (3)
Definite integrals with applications. Prerequisite: 301.

†303. Sequences and Series. [Introduction to Analysis III] (3)
Convergence and error analysis for sequence and series. Prerequisite: 302.

†304. Foundations of Secondary Mathematics. (3)
Sets, Boolean algebras, applications to logic.

†306-307. [306] **Topics in Geometry.** (3, 3)
Geometric transformations, convex sets, intuitive topology.

†308. Problem Solving in Algebra. (3)
Related topics centering in theory of equations, determinants, and inequalities together with appropriate problem solving techniques.

†309-310. Applications of Mathematics. (3-5, 3)
Introduction to programming, computer-oriented mathematics, and topics in numerical analysis.

III. Engineering Mathematics

The following courses are intended primarily for students of engineering and the physical sciences. 265 is a prerequisite for all of these courses.

****311. Engineering Mathematics.** (3)
Vector algebra and calculus; ordinary differential equations.

****312. Advanced Engineering Mathematics I.** (3)
Infinite sequences and series of functions; uniform convergence; Taylor and Fourier expansions with applications to ordinary and partial differential equations; special functions. Prerequisite: 311.

****313. Advanced Engineering Mathematics II.** (3)
Theory of functions of a complex variable with applications to physical and engineering problems. Prerequisite: 311.

*****314. Linear Algebra with Applications.** (3)
Algebra and analysis of matrices and linear operators. Effective solution of systems of linear equations. Eigenvalues and eigenfunctions of symmetric linear operators. Applications to problems in engineering and mathematical physics.

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† Graduate credit for the degree of Master of Education in Science and Master of Arts in Teaching only.

** Available for graduate credit except for graduate majors in Mathematics.

*** A maximum of 2 of these courses may be used for graduate work in Mathematics. These courses are available for graduate work in fields other than Mathematics.

***315. **Generalized Functions and Operational Methods.** (3)
Theory of integral transforms and generalized functions, with applications to differential and integral equations arising in engineering and mathematical physics. Prerequisite: 313.

IV. *Upper-Level Undergraduate Courses*

265 is a pre- or corequisite for all the following courses.

***319. **Theory of Numbers.** (3)
Divisibility, congruences, primitive roots, quadratic residues.

***321-322. **Introduction to Higher Algebra.** (3, 3)
Vector spaces, linear transformations, systems of linear equations, matrices, similarity; Euclidean and unitary spaces, groups, rings, and fields.

***331-332. [331] **Survey of Geometry.** (3, 3)
Topics from affine, projective, Euclidean, and hyperbolic geometries.

***341-342. **Probability Theory.** (3, 3)
Sample spaces, probability measures, random variables, densities and distribution functions, expectation, Chebyshev's inequality, generating functions, central limit theorems, laws of large numbers, introduction to the theory of stochastic processes.

***343-344. **Mathematical Statistics.** (3, 3)
Elementary decision theory, testing of hypotheses, point and interval estimation, regression and analysis of variance, non-parametric techniques. Prerequisite: 341.

351-352. **Undergraduate Honors Seminar.** (1-3 hrs. each semester)
The use of induction, analogy, generalization, specialization, and other techniques in solving mathematical problems. Permission of instructor required. **May be repeated for credit with permission of instructor.**

***361-362. *Advanced Calculus.* (3, 3)
A rigorous development of the differential and integral calculus of functions of one and several real variables.

*415. **Foundations of Mathematics.** (3)
Peano axioms; ordinal and cardinal numbers, axiom of choice.

*431. **Introduction to Topology.** (3)
Metric spaces, topological spaces, continuity, concepts used in analysis.

*434. [332] **Introduction to Differential Geometry.** (3)
Differential geometry of curves and surfaces in Euclidean 3-space.

*441. **Stochastic Processes for the Physical Sciences.** (3)
Stationary processes and harmonic analysis, renewal theory, discrete and continuous-time Markoff processes. Probability models and applications of importance in the physical sciences. Prerequisite: 341.

*461. **Functions of a Complex Variable.** (3)
Analytic functions, Cauchy theorem and consequences, conformal mapping.

*472. **Fourier Series and Integrals.** (3)
Convergence and summability theory of trigonometric series; Bessel's and Parseval's relations: Fourier integrals and their inversion; expansions in series of orthogonal functions; selected applications. Prerequisite: 361 or consent of instructor.

*473-474. **Integral Equations and Boundary Value Problems.** (3, 3)
Theory of integral equations, eigenfunction expansions, boundary-value problems, conversion into integral equations, variational methods, approximation methods. Prerequisite: 314 or 321; corequisite: 312 or 362.

*475. **Elements of Numerical Analysis.** (3)
Fortran programming. Numerical integration and differentiation, numerical solution of equations and systems of equations, and ordinary differential equations. Prerequisites: 361-362 or 311-312.

*476. **Numerical Applied Mathematics.** (3)
Numerical analysis of problems of wave propagation, vibration. The eigenvalue problem. Existence theorems. Prerequisite: 475.

*** A maximum of 2 of these courses may be used for graduate work in Mathematics. These courses are available for graduate work in fields other than Mathematics.

***481. Linear Spaces.** (3)
Linear spaces, normed linear spaces, Hilbert spaces, applications to differential and integral equations. Prerequisite: 431.

499. Individual Study. (1-3)
Guided study, under the supervision of a faculty member, of selected topics not covered in regular courses. Admission by approval of the Department Chairman. **May be repeated for a maximum total of 6 credits.**

V. Graduate Courses

Satisfactory completion of 321-322 and 361-362, or evidence of equivalent preparation, is required for admission to any of the following courses.

***511-512. Analytic Number Theory.** (3, 3) Entringer
Prime number theorem, twin primes, Dirichlet's theorem, selected topics. Prerequisite: 319.

***513-514. Algebraic Number Theory.** (3, 3) Bierstedt
Arithmetic in number fields, ideals, valuations; class field theory. Prerequisite: 319.

***519. Selected Topics in Number Theory.**[1] (3) Bierstedt, Entringer

***521-522. Modern Algebra.** (3, 3) Dubois, Steger
Topics in groups, rings, and fields.

***523-524. Abelian Groups.** (3, 3) Dubois
Structure of Abelian groups and modules over special rings. Homological and duality theorems. Prerequisite: 521.

***525-526. Lattice Theory.** (3, 3)
Distributive, modular and orthomodular lattices, Boolean algebras. Lattice congruences, products and sums of lattices. Selected topics. Prerequisites: 521-522.

***527-528. Theory of Rings.** (3, 3) Steger
Ideal theory of commutative rings. Special types of rings, representation and structure theory. Prerequisites: 521-522.

***529. Selected Topics in Algebra.**[1] (3) Bierstedt, Dubois, Steger

***531-532. Topology.** (3, 3) Mayer, A. Steiner
Convergence structures, uniform spaces, characterization theorems, selected topics.

***533-534. Algebraic Topology.** (3, 3) Mayer
Homology theory, fundamental theorem, cohomology theory, homotopy.

***536. Differential Geometry.** (3) Renggli
Introduction to the theory of differentiable manifolds.

***539. Selected Topics of Geometry and Topology.**[1] (3) Hillman, Kao, Mayer, Renggli

***541-542. Probability Theory.** (3, 3) Blum, Koopmans, Rosenblatt
Probability spaces, random variables, characteristic functions, conditional probability, limit theorems. Prerequisites: 563-564. Recommended: 341-342.

***543-544. Mathematical Statistics.** (3, 3) Blum, Koopmans
Decision theory, hypotheses testing, point and interval estimation, selected topics. Prerequisite: 343-344 or permission of instructor.

***545-546. Stochastic Processes.** (3, 3) Blum, Friedman
Structure theorems, martingales, Markov processes, stationary processes, selected topics. Prerequisites: 541-542.

***549. Selected Topics in Probability and Statistics.**[1] (3) Blum, Friedman, Koopmans, Rosenblatt

***551-552. Problems.**[1] (1-3 hrs. each semester) Staff

***561-562. Functions of a Complex Variable.** [Theory of Functions of a Complex Variable] (3, 3) Epstein, Davis, Renggli, Hersh
Analyticity, Cauchy theorem and formulas, Taylor and Laurent series, singularities and residues, conformal mapping, selected topics.

***563-564. Functions of a Real Variable, Measure, Integration.** (3, 3) Hersh, Metzler, White
Functions of one and several real variables, measure theory, integration, function spaces.

***565. Classical Harmonic Analysis.** (3) Hersh, Davis
Fourier series and integrals, extensions and generalizations to L^1 and L^2.

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[1] **May be repeated for credit with permission of the Department Chairman.**

***569. Selected Topics in Analysis.**[1] (3) Epstein, Davis, Hersh, Metzler, Renggli

***571-572. Ordinary Differential Equations.** (3, 3) Epstein, Hersh, Wing
Existence and uniqueness theorems, linear systems, stability theory, asymptotic integration, topology of integral curves. Prerequisites: 461 or 561. Recommended: 473-474.

***573-574. Partial Differential Equations.** (3, 3) Hersh, Epstein, Wing
Equations of first order, classification of equations and systems, elliptic equations and introduction to potential theory, hyperbolic equations and systems, parabolic equations. Prerequisites: 473-474.

***575. Calculus of Variations.** (3) Hersh, Lewis, Wing
Classical theory, Euler-Lagrange equations, conditions for a minimum, Hamilton-Jacobi theory, direct methods, applications. Prerequisites: 473-474.

***576. Approximation Theory.** (3) Staff
Chebyshev's approximation, L^{p} approximation, theories of Sard, and Golomb and Weinberger, rational approximation, Jackson's theorem, nonlinear approximation. Prerequisites: 563-564. Recommended: 581-582.

***577-578. Integral Equations.** (3, 3) Epstein, Wing
Non-singular and singular integral equations; Cauchy and Wiener-Hopf type equations, dual equations; applications. Prerequisites: 561-562.

***579. Selected Topics in Applied Mathematics.**[1] (3) Epstein, Hersh, Lewis, Morse

***581-582. Functional Analysis.** (3, 3) Davis, Eberly, E. Steiner
Linear transformations on Banach and Hilbert spaces, integral equations, spectral theory, semi-groups of operators, Banach algebras, topics in nonlinear analysis. Prerequisites: 563-564. Recommended: 473-474.

***583. Linear Topological Spaces.** (3) Eberly, Metzler
Locally convex spaces, separation axioms, duality, generalized functions. Prerequisite: 481.

***584. Banach Algebras and Spectral Theory.** (3) Eberly
Representation of commutative and non-commutative Banach algebras, abstract harmonic analysis, spectral decomposition of linear algebras. Prerequisites: 431, 481. Recommended: 531.

***589. Selected Topics in Functional Analysis.**[1] (3) Davis, Eberly, Metzler

***599. Master's Thesis.** (1-3 hrs. per semester)
See the **Graduate School Bulletin** for total credit requirements.

***619. Seminar in Number Theory.**[1] (1-3) Staff

***621-622. Theory of Groups.** (3, 3) Dubois
Permutation groups, free groups, Abelian groups, Sylow theorems, solvable, supersolvable and nil-potent groups. Prerequisites: 521-522.

***623-624. Multilinear and Homological Algebra.** (3, 3) Dubois
Tensor products, tensor and exterior algebras. Derived functors, homological dimension, cohomology theories. Prerequisites: 521-522.

***629. Seminar in Algebra.**[1] (1-3) Staff

***631-632. Algebraic Geometry.** (3, 3) Kao
General theory of places, algebraic varieties, absolute theory of varieties, products, projections, and correspondence, normal varieties, divisors and linear systems, differential forms.

***639. Seminar in Geometry and Topology.**[1] (1-3) Staff

***649. Seminar in Probability and Statistics.**[1] (1-3) Staff

***650. Reading and Research.**[1] (1-6) Staff

***669. Seminar in Analysis.**[1] (1-3) Staff

***673-674. Theoretical Numerical Analysis.** (3, 3) Staff
Mathematical foundations of interpolation and approximation theory, finite difference methods for ordinary and partial differential equations. Emphasis on convergence proofs and error estimates. Prerequisite: permission of instructor.

***675-676. Differential Operators.** (3, 3) Hersh
Detailed study of linear ordinary differential operators and of various classes of linear partial differential operators, using methods of functional analysis. Prerequisites: 481, 473-474 or 573-574. Recommended: 581-582.

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[1] **May be repeated for credit with permission of the *Department Chairman.***

***679. Seminar in Applied Mathematics.**[1] **(1-3)** Staff

***689. Seminar in Function Analysis.**[1] **(1-3)** Staff

***699. Dissertation. (3-6 hrs. per semester)** Staff
See the **Graduate School Bulletin** for total credit requirements.

MECHANICAL ENGINEERING

See Engineering, Mechanical.

MEDICAL SCIENCES

Anatomy

Professor A. J. Ladman (Chairman); Associate Professor L. M. Napolitano; Assistant Professors S. E. Dietert, T. J. Leppi; Instructor N. J. Adamo.

Biochemistry

Professor R. B. Loftfield (Chairman); Associate Professor F. N. LeBaron; Assistant Professor T. J. Scallen; Visiting Assistant Professor L. F. Smith; Instructor B. M. Woodfin.

Epidemiology

Professor R. O. Oseasohn (Chairman).

Medicine

Professors S. Papper (Chairman), R. H. Fitz (Dean); Associate Professors M. Brandfonbrener, T. N. Finley, A. H. Greenhouse, A. N. Longfield, E. R. Simon, J. S. Trier; Assistant Professors J. Bicknell, G. M. Boyden, R. T. Cauthorne, W. S. Curran, W. G. B. Graham, W. R. Hardy, A. L. Kisch, E. L. Klingler, J. K. Leach, W. S. Lovekin, D. F. Seelinger, S. W. Thompson, C. A. Vaamonde, R. S. Watts, R. Whang; Instructors D. L. Palmer, F. W. Watkins, N. H. Zeller.

Microbiology

Professor L. C. McLaren (Chairman); Associate Professor J. V. Scaletti; Assistant Professors C. E. Cords, Jr., D. Gale, S. Tokuda.

Obstetrics-Gynecology

Professor R. A. Munsick (Chairman); Adjunct Instructors B. Branch, F. Cohn.

Pathology

Professor R. S. Stone (Chairman); Associate Professors W. Hentel, R. E. Anderson; Assistant Professors S. W. Jordan, L. Leonard, M. L. Ovitz; Instructor T. S. McConnell.

Pediatrics

Professor E. A. Mortimer, Jr. (Chairman); Associate Professor R. F. Castle; Adjunct Assistant Professor D. G. Alleyne; Instructors W. K. Castle, A. H. Cushing.

Pharmacology

Professor T. Cooper (Chairman); Instructors T. F. Burks, D. V. Priola.

Physiology

Professor S. Solomon (Chairman); Associate Professor A. Despopoulos; Assistant Professors D. T. Frazier, H. Sonnenberg.

[1] May be repeated for credit with permission of the Department Chairman.

Psychiatry

Professor R. A. Senescu (Chairman); Associate Professor L. M. Libo; Assistant Professors L. Garcia-Bunuel, S. W. Hollingsworth, J. Levy, A. V. Monto, W. W. Winslow; Adjunct Assistant Professor W. Sears; Instructors L. Dilatush, G. D. Otis; Instructors in Social Work A. W. Curran, L. Romero; Adjunct Instructors in Social Work M. E. Springer, R. L. Snyder.

Radiology

Professor B. G. Brogdon (Chairman); Assistant Professor R. W. Papper.

Surgery

Professor J. S. Clarke (Chairman); Assistant Professors W. R. Blakeley, I. C. S. Knight, M. Pollay, D. E. Smith, J. K. Weaver; Adjunct Assistant Professors D. McKay, D. MacPhail; Instructors R. J. Kaplan, J. C. F. Simpson.

CLINICAL SCIENCE

504-505. Clinical Science I. (5, 5)
The basis for and methods of evaluating the patient as a human being. Lectures and seminars, practical demonstrations and experience.

530-531. Clinical Science II. (5, 5)
Continues to emphasize the development of the student's skills in evaluating the numerous factors which influence human behavior in health and disease. Further experience in history-taking and physical examination, coordinated with study of the disease process as it affects the various organ systems of the body. The significance of emotional, environmental, and sociocultural factors in determining the success or failure of the total adaptation of the individual, family, or group. Field trips to take advantage of the special opportunity available in New Mexico to study firsthand the influence of unique cultural and environmental factors in various health problems. Prerequisites: 504-505.

556-557. Clinical Science III. (19, 19)
Will comprise experience with hospitalized and ambulatory patients in the major clinical disciplines, including Internal Medicine, Obstetrics and Gynecology, Pathology, Pediatrics, Psychiatry, and Surgery. Students will be given increasing degrees of responsibility for patient care in the hospital setting under the direct supervision of faculty members who hold key positions on the staffs at the teaching hospitals. Prerequisites: Clinical Science 504-505, 530-531; Medical Biology 500-501, 502L-503L, 526-527, 528L-529L.

MEDICAL BIOLOGY

500-501. Medical Biology I. (13, 13)
A unified and interdisciplinary study of biological principles basic to medicine; selected pertinent material from Anatomy, Biochemistry, Physiology, Microbiology, Pathology, and Pharmacology; biological organization and function from the molecular through cell, tissue, organ system, and whole organism biology. Lectures and seminars. Prerequisites: Mathematics 160 or 162; Chemistry 101L, 102L, 301, 302, 303L, 304L; Biology 101L, 102L; Physics 111, 112, 113L, 114L.

502L-503L. Medical Biology I Laboratory. (6, 6)
Laboratory experience designed to illustrate experimentally those biological principles being considered in 500-501. Prerequisites: same as for 500-501.

526-527. Medical Biology II. (11, 11)
A transdisciplinary study of biological principles, basic to the manifestations of disease in human beings; a unified approach utilizing pertinent material from Microbiology, Immunology, Pharmacology, Preventive Medicine, and Pathology; clinical aspects of disease commonly studied in introductory courses in Medicine, Obstetrics and Gynecology, Pediatrics, and Surgery; the interrelationships between altered structure and function are considered at the several levels of biological organization. Lectures and seminars. Prerequisites: 500-501, 502L-503L.

528L-529L. Medical Biology II Laboratory. (6, 6)
Laboratory experience designed to illustrate experimentally those biological principles being considered in 526 and 527. Prerequisites: 500-501, 502L-503L.

532-533. Elective Project and Tutorial. (2, 2)
Each student is required to develop, under faculty guidance, an independent scholarly project related to studies in progress during the semester.

552-553. Medical Biology III. (6, 6)
Will reenforce, in relation to clinical problems, the principles presented in Medical Biology I and II. Prerequisites: 500-501, 502L-503L, 526-527, 528L-529L.

***590-591. Medical Biology I. (3-13 hrs. each semester)**
Same content as 500-501, except that credit is variable and will be arranged with the instructors. Prerequisites: same as for 500-501.

***592L-593L. Medical Biology I Laboratory. (6, 6)**
Same content as 502L-503L. Prerequisites: same as for 500-501.

***594-595. Medical Biology II. (3-11 hrs. each semester)**
Same content as 526-527, except that credit is variable and will be arranged with the instructors. Prerequisites: 590-591, 592L-593L.

***596L-597L. Medical Biology II Laboratory. (1-6 hrs. each semester)**
Laboratory experience designed to illustrate experimentally those biological principles being considered in 594-595. Prerequisites: same as for 594-595.

***610L. Experimental Cytology. (3-6)** Adamo, Dietert, Ladman, Leppi, Napolitano
Detailed survey of cellular structure as related to function in a variety of tissues and species. Selected laboratory experience with fixatives and staining methods. Prerequisites: 590-591 or equivalents.

***611L. Fine Structure and Electron Microscopy. (6-12)** Dietert, Ladman, Leppi, Napolitano
A consideration of the ultrastructure of various cells and tissues as revealed by the electron microscope. A systematic examination of all the organelles with particular emphasis on the evolution of current thought of structure as related to function. In the laboratory, theory and instruction in the techniques basic to tissue processing, sectioning and use of the electron microscope. Some practical photographic techniques involved in data recording. Prerequisites: 590-591 and 610 or equivalent and approval of Anatomy Department Chairman.

***612L. Histochemistry and Cytochemistry. (4-6)** Dietert, Ladman, Leppi, Napolitano
An exposition of the theory and practice of methods used to elucidate chemical constituents and activities in cells and tissues. Consideration given to methods used in protein, lipid and carbohydrate localizations. Special emphasis directed towards enzyme localization and modification. Selected topics including radio-autography, differential centrifugation, and in vitro cell systems. In the laboratory, opportunities to have experience in several of these areas will be given. Prerequisites: 590-591 and 610 or equivalent.

***613. History of Anatomy. (1-2)** Ladman
A consideration of past and present workers and their impact on the substance of the Anatomical Discipline.

***618. Seminar in Anatomy. (1)** Staff
Weekly or biweekly discussions of pertinent information in the current literature relative to selected topics in morphology.

***620. Advanced Biochemistry. (4)** LeBaron, Loftfield, Scallen, Smith
An exhaustive treatment of one or two broad topics in Biochemistry, the subject being different each year and rotating in a 3 or 4-year cycle. Topics will include: Chemistry and Metabolism of Nucleic Acids and Proteins, Metabolic Control Mechanisms, Chemistry and Metabolism of Macromolecules, Chemistry and Metabolism of Carbohydrates and Complex Polysaccharides. Prerequisites: Chemistry 311-312 and either Chemistry 481-482 or Medical Sciences 590-591. **May be repeated for credit under different topics.**

***621. Biochemistry of Proteins. (3)** Loftfield
In alternate years the structure of proteins or the metabolism of proteins will be covered in depth. The former will cover the physical chemistry and ultrastructure of the protein molecules and determination of amino acid sequences. The alternate course will cover protein biosynthesis and breakdown and the interrelationships of protein synthesis and nucleic acid metabolism. Prerequisites: Chemistry 311-312 and either Chemistry 481-482 or Medical Sciences 590-591. **May be repeated for credit under different topics.**

***622. Biochemistry of Phospholipids. (3)** LeBaron
A detailed discussion of the chemistry and metabolism of phospholipids, their interrelationships with other constituents in macromolecular complexes, their relationships to membranes, and their other possible functions. Prerequisites: Chemistry 323 or 481-482 or Medical Sciences 590-591.

***623. Biochemistry of Steroids.** (3) Scallen
Includes such topics as the isolation, proof of structure, chemical synthesis, stereochemistry and absolute configuration of important steroids; biosynthesis and metabolism of cholesterol, adrenal steroids, androgens and estrogens. Prerequisites: Chemistry 301-302; Chemistry 323 or 481 or Medical Sciences 590-591.

***631L. Introduction to Research Techniques in Microbiology.** (2) Staff
Methods and techniques employed for research in microbial physiology, genetics, virology and immunology; includes independent literature review, laboratory experimentation, interpretation and expression of data in acceptable science writing form. Prerequisite: Approval of Microbiology Department Chairman.

***632. Advanced Microbiology.** (3) Scaletti
Chemical and physical properties of microorganisms; special staining; growth; influence of environment on growth, nutrition, enzymes and metabolism. Prerequisites: biochemistry, general microbiology or equivalent. (Offered in alternate years.)

***633L. Advanced Microbial Physiology and Metabolism.** (4) Scaletti
Advanced treatment of microbial metabolic cycles, enzymes and energy-yielding reactions, electron transport systems in fermentation and oxidative processes; advanced metabolic methods for microbial enzyme studies. Prerequisites: biochemistry, general microbiology or equivalent. (Offered in alternate years.)

***635L. Immunochemistry.** [Advanced Immunology] (3-4) Tokuda
Advanced treatment of the nature of antigens and antibodies; chemical basis of immunologic specificity; qualitative and quantitative aspects of antigen-antibody reactions; hypersensitivity; transplantation and tumor immunity. Prerequisites: biochemistry, general microbiology, immunology and permission of instructor. (Offered in alternate years.)

***636. Advanced Virology.** (3) Cords, McLaren
Advanced treatment of the biology and biochemistry of bacterial and animal viruses. Prerequisites: biochemistry, immunology, virology or equivalent. (Offered in alternate years.)

***637L. Virology Laboratory.** (2) Cords, McLaren
Research techniques related to virology. Prerequisites: biochemistry; pre- or corequisites: immunology and virology. (Offered in alternate years.) 6 hrs. lab.

***638. Microbiology Seminar.** (1) Staff

***650. Translocations in Biological Systems.** (3) Solomon
Survey of mechanisms by which solutes and water move across membranes in biological systems. Theoretical basis of solute movement will first be considered followed by a detailed description of translocation in specific cells and tissues. Prerequisites: 590-591 or Biology 429L, 430L and permission of instructor; pre- or corequisite: Chemistry 311-312.

***651. Integrative Functions of the Endocrine System.** (3) Despopoulos
Advanced seminar emphasizing interactions of the endocrine secretions in tissues of sex and reproduction, growth and intermediary metabolism. Prerequisites: 590-591 or equivalent and permission of instructor.

***652. Advanced Neurophysiology.** (4)
Advanced treatment of some of the principles and problems of neurophysiology. Lecture and laboratory. Prerequisites: 590-591 or its equivalent and permission of the instructor.

***653. Renal Water and Electrolyte Metabolism.** (4) Solomon, Papper, and Physiology and Medicine Staffs
A comprehensive advanced treatment of nephron function followed by a treatment of gross aspects of water and electrolyte metabolism. Prerequisites: 590-591, or Biology 429L, 430L and permission of instructor.

***658. Physiological Techniques.** (3-6) Staff
The student works with individual members of the Physiology staff learning current research techniques. Prerequisites: 590-591 or Biology 429L, 430L.

***659. Seminar in Physiology.** (2) Staff

***690. Research in Medical Sciences.** **(2-6 hrs. per semester to a maximum of 12 hrs.)**

***695. Research.** **(2-6 hrs. per semester to a maximum of 12 hrs.)** Staff

***699. Dissertation.** **(3-6 hrs. per semester)**
See the **Graduate School Bulletin** for *total* credit requirements.

MODERN AND CLASSICAL LANGUAGES

Professors R. R. MacCurdy (Chairman), R. M. Duncan, J. Kolbert, A. R. Lopes†, D. A. McKenzie, M. R. Nason; Associate Professors N. J. Davison, J. E. Tomlins, S. R. Ulibarrí, J. E. White; Assistant Professors C. M. Book, E. T. Book, L. M. Calvert, R. Cobos, P. H. Fernández, R. Holzapfel, T. Holzapfel, R. C. Jespersen, G. A. Jocums, E. E. Lamadrid, T. A. Sackett, A. Salgarello; Lecturer P. Murphy; Instructors L. J. Márquez, L. N. Santa Anna, R. Welsh; Part-time Instructors K. Bierstedt, A. Carmona-Morgan, R. M. Dudney, L. Hoshour, M. Lebron, A. H. Luft, S. Mayer, E. Robert.

GROUP REQUIREMENTS

Portuguese 396, Spanish 345, 346, and courses in the Folklore Division are not accepted toward fulfillment of Foreign Language group requirements (Group II in the College of Arts and Sciences).

LANGUAGE LABORATORY

The Department operates a Language Laboratory where students in beginning languages and conversation and composition classes go for weekly exercises in pronunciation. Any student having special difficulties may be assigned work in the Laboratory. No extra credit is allowed for this work which is done chiefly in connection with regular courses.

NOTE TO FRESHMEN

Students who have had 2 or more years of a foreign language in high school cannot enroll for credit in the beginning semester of the same language without permission from the Course Chairman or the Undergraduate Major Advisor for the language concerned. For further details see statement under the individual language.

MODERN LANGUAGES

No major or minor study offered.

306. Introduction to the Study of Foreign Literatures. (3) Davison
Designed to give students experience in the methods and techniques of literary criticism by means of exercises in various procedures of analysis. Recommended for all undergraduate majors in modern languages. Prerequisites: the intermediate courses or equivalent.

497. Undergraduate Problems in Language. (1-4)
Qualified students may register for the course more than once, **to a maximum of 4 sem. hrs. in any one language.**

CLASSICS

MAJOR STUDY

15 hours of Latin in courses numbered above 250, including 251, 252, or 303, 304; 9 hours of Greek numbered above 250; History 313, 314; and Philosophy 201.

MINOR STUDY

Not offered.

† Sabbatical leave 1967-68.

COMPARATIVE LITERATURE

The major in Comparative Literature is an interdepartmental major administered jointly by the Department of English and the Department of Modern and Classical Languages. See p. 260.

FOLKLORE

No major or minor study offered.

297. Southwestern Hispanic Folklore. (2)

***361. Hispanic Folktales.** (2)

***362. Hispanic Folk Ballads and Songs.** (2)

FRENCH

MAJOR STUDY

24 hours in French courses numbered above 290, including 301, 302, 351, 352, 405; and 2 years of college work in another foreign language (or reading knowledge).

MINOR STUDY

12 hours in French courses numbered above 290 including 301 or 302.

ELEMENTARY AND INTERMEDIATE COURSES

Students with 2 or more years of high school French may not take the first semester French course (101) for credit without permission from the Course Chairman (T. Book).

Normally the student with 2 years high school credit will take a second or third semester course; the student with 3 years will take a third or fourth semester course; the student with 4 years will take a fourth or a fifth semester course.

101-102. Elementary French. (3, 3) Yr. T. Book and Staff
Credit for 101 suspended until 102 (or more advanced course) is completed.

251-252. Intermediate French. (3, 3) Murphy and Staff
Grammar, reading, and translation. Prerequisites: 101-102, or equivalent.

254. French Conversation and Composition. (3) C. Book, Hoshour
Designed to give students of 251-252 extra practice in speaking and writing French. May be taken concurrently with 251 and 252.

General prerequisites for the following courses: French 251, 252, or the equivalent.

***301-302. Advanced Composition and Conversation.** (3, 3) C. Book, Murphy, Kolbert, Hoshour
Prerequisite: 254 or the equivalent.

***351-352. Survey of French Literature.** (3, 3) C. Book, Murphy, White
351: Origins to 1800. 352: 1800 to present.

***401. French Stylistics and "Explication de Textes".** (3) C. Book
Required for the M.A. degree.

***405.** [353] **French Phonology.** (3) T. Book
Phonetic and phonemic system of French. Required for the undergraduate major.

***410.** [366] **French Classical Theatre.** (3) White, T. Book
Corneille, Molière, Racine.

***415.** [375] **French Prose and Non-dramatic Poetry of the 17th Century.** (3) White

***420.** [380] **French Literature of the 18th Century.** (3) Murphy

***430.** [307] **French Prose of the 19th Century.** (3) T. Book, Kolbert

*435. [310] **Modern French Drama.** (3) T. Book
Begins with Romanticism and includes contemporary period.

*440. **Teaching of French.** (3) T. Book
(Same as Secondary Education 440.)

*441. [308] **French Prose of the 20th Century.** (3) T. Book, Kolbert

*460. [360] **Survey of French Poetry.** (3) Kolbert
From the Middle Ages to date.

*470. [370] **French Literature of the 16th Century.** (3) Kolbert
Prerequisite: 15 sem. hrs. of college French numbered above 250.

498. **Reading and Research for Honors.** (3)
Open to juniors and seniors approved by the Honors Committee.

499. **Honors Essay.** (3)
Open only to seniors enrolled for departmental honors.

*501. **History of the French Language.** (3) White
Evolution of Latin to French with selected medieval readings. Required for the M.A. degree.

*502. **Readings in Medieval French Literature.** (3) White

*505. **Introduction to Research Methods.** (1) C. Book, T. Book, Kolbert
Resources available for research and how to use them. Required for the M.A. degree.

*510. **History of French Literary Criticism.** (3) Kolbert
This course or Comparative Literature 466 is required for the M. A. degree.

*520. **French Thought.** (3) Murphy, White

*551-552. **Problems in French Literature.** (1-3 hrs. each semester) T. Book, Kolbert, White

*560. **Seminar in French Literature.** (3)
Topic may deal with individual authors, genres, or periods. **May be repeated for credit as subject matter varies.**

*599. **Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

GERMAN

MAJOR STUDY

24 hours in German courses numbered above 290, including 301-302, 351-352, and 405; and 2 years of college work in another foreign language (or reading knowledge).

MINOR STUDY

12 hours in German courses numbered above 290.

ELEMENTARY AND INTERMEDIATE COURSES

Students with 2 or more years of high school German may not take the first semester German course (101, 103) for credit without permission from the Course Chairman (McKenzie, Jespersen) or the Undergraduate Advisor for German (R. Holzapfel).

Normally the student with two years' high school credit will take a second (102, 104) or third (203, 251) semester course; the student with 3 years will take a third (203, 251) or fourth (204, 252) semester course; the student with 4 years will take a fourth (204, 252) or a fifth (301) semester course.

CHOICE OF READING OR ORAL EMPHASIS

Students have the choice of a four semester sequence with either a reading or an oral emphasis. Those interested in reading and translation should take the reading track (101, 102, 251, 252); those interested in oral comprehension and speaking in addition to reading should take the oral track (103, 104, 203, 204).

Permission of the course instructor is necessary to change tracks. The completion of either 204 or 252 or 262 (Scientific German) satisfies the foreign language requirement of the College of Arts and Sciences.

101-102. Elementary German—Reading Emphasis. (3, 3) **Yr.** McKenzie, Welsh
Credit for 101 suspended until 102 (or more advanced course) is completed. See above for explanation of reading or oral emphasis.

103-104. Elementary German—Oral Emphasis. (3, 3) **Yr.** Jespersen, Jocums
Credit for 103 suspended until 104 (or more advanced course) is completed. See above for explanation of reading or oral emphasis.

203-204. Intermediate German—Oral Emphasis. (3, 3) Jespersen, Jocums
Prerequisites: 103-104, or the equivalent.

251-252. Intermediate German—Reading Emphasis. (3, 3) R. Holzapfel, Welsh
Prerequisites: 101-102, or the equivalent.

254. German Conversation and Composition. (3)
For intermediate students who want to improve speaking and writing skills. With permission of the course instructor, may be taken concurrently with 203-204 or 251-252.

262. Scientific German. (3) Welsh
Prerequisite: 251 or equivalent.

General prerequisites for the following courses: German 204 or 252. Students who have not had an oral preparation are encouraged to take 254.

***301-302. Advanced Conversation and Composition.** (3, 3) Jespersen, Jocums, Welsh

307. Introduction to German Literature. (3) R. Holzapfel
307 is a prerequisite for all literature courses listed below.

345. German Civilization. (3) Welsh

***351-352. Survey of German Literature.** (3, 3) R. Holzapfel, Jespersen

***405. German Phonology.** (3) Jocums
Phonetic and phonemic system of German. Required for the undergraduate major.

***445. Teaching of German.** (3) Jocums
(Same as Secondary Education 445.)

***455.** [355] **Medieval and Renaissance Literature.** (3) McKenzie

***460.** [360] **Classicism.** (3)

***465.** [365] **Romanticism.** (3) Jespersen

***470.** [370] **Realism and Naturalism.** (3) Jespersen

***475.** [375] **Contemporary Literature.** (3) R. Holzapfel

***480.** [380] **The "Novelle".** (3) Jespersen

***485.** [385] **Lyric Poetry.** (3) Jocums

490. [390] **Undergraduate Seminar.** (3) R. Holzapfel, Jespersen, McKenzie

***551-552. Problems.** (1-3 hrs. each semester) R. Holzapfel, Jespersen, McKenzie

GREEK

MAJOR STUDY

Not offered.

MINOR STUDY

A minor may possibly be worked out if sufficient demand arises.

Students who contemplate attending a school of theology requiring an undergraduate degree should plan to take Greek 101 and 102 in the junior year and Greek 301 and 302 in the senior year.

101-102. Elementary Greek. (3, 3) **Yr.** Baltzell
Preparation for work in Classical Greek or in New Testament Greek. **Credit suspended for 101 until 102 (or more advanced course) is completed.** (Alternates annually with Greek 301-302.)

301-302. The Greek New Testament. (3, 3)
Close scrutiny of meanings of words. (Alternates annually with Greek 101-102.)

***339. Greek Drama in Translation.** (3) Baltzell, Thompson

***342. Greek Non-Dramatic Literature in Translation.** (3) Baltzell

***551-552. Problems.** (1-3 hrs. each semester.)

ITALIAN

No major or minor study offered.

275-276. Beginning Italian (Accelerated). (3, 3)
Prerequisite: 6 hours (or equivalent) of another Romance language or Latin. (Offered in alternate years.)

LATIN

MAJOR STUDY

Not offered.

MINOR STUDY

12 hours in courses numbered above 250.

ELEMENTARY AND INTERMEDIATE COURSES

Students with 2 or more years of high school Latin may not take the first semester Latin course (101) for credit without permission from the Course Chairman but may take 102; however, if they made a grade average of B or better they are urged to take Latin 251.

101-102. Elementary Latin. (3, 3) Yr.
Credit suspended for 101 until 102 (or more advanced course) is completed.

251-252. Intermediate Latin. (3, 3)
Prerequisites: 101-102 or the equivalent.

303-304. Readings in Latin Literature. (3, 3)
Designed for students with 3 or 4 years of high school Latin or other students who are capable of work more advanced than Latin 251-252. The readings assigned may vary to fit the needs and interests of the students. Regular consultations with the instructor scheduled. **May be repeated with different authors by approval of the instructor and the Chairman of the Department.**

***340. Latin Literature in Translation.** (3) Zavadil, Thompson

***351-352. Latin for Language Students.** (3, 3) McKenzie
A comparative study of Latin and its relationship to modern languages for upper-division and graduate students; the reading of selected classical and medieval texts.

***551-552. Problems.** (1-3 hrs. each semester)

PORTUGUESE

MAJOR STUDY

30 hours in Portuguese courses including 301, 302, 351, 357, and 2 years college work in another foreign language (or reading knowledge).

MINOR STUDY

18 hours in Portuguese courses.

275-276. Beginning Portuguese (Accelerated). (3, 3)
Prerequisite: 6 hours (or equivalent) of another Romance language or Latin.

277-278. Portuguese Drill. (2, 2) Carmona-Morgan
Corequisite: 275-276.

General prerequisites for the following courses: Portuguese 275-276, or the equivalent.

***301-302. Advanced Composition and Conversation.** (3, 3) Carmona-Morgan, Tomlins

*303. **Portuguese Drill.** (2) Carmona-Morgan
Corequisite: 301 or 302.

307. **Introduction to Portuguese and Brazilian Literature.** (3) Salgarello, Tomlins
Prerequisites: 275-276.

*351. **Survey of Portuguese Literature.** (3) Salgarello, Tomlins

*352. **Contemporary Portuguese Literature.** (3) Salgarello

*357. **Survey of Brazilian Literature.** (3) Salgarello, Tomlins

*358. **Contemporary Brazilian Literature.** (3) Salgarello

*365. **Camões and Gil Vicente.** (3) Tomlins

*396. **Iberian History.** (3)
(Same as History 396.)

*501. **History of the Portuguese Language.** (3)
Evolution of Latin to Portuguese with selected medieval readings. Required for the M.A. degree.

*551-552. **Problems.** (1-3 hrs. each semester) Salgarello, Tomlins
For M.A. candidates.

*560. **Seminar in Portuguese Literature.** (3)
Topic will deal with individual authors, genres, or periods. **May be repeated for credit as subject matter varies.**

*570. **Seminar in Brazilian Literature.** (3)
Topic will deal with individual authors, genres, or periods. **May be repeated for credit as subject matter varies.**

*599. **Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

*651-652. **Problems.** (1-3 hrs. each semester) Salgarello, Tomlins
For Ph.D. candidates.

RUSSIAN

MAJOR STUDY

Not offered.

MINOR STUDY

18 hours in Russian courses numbered above 250, including Russian 254 and 307.

ELEMENTARY AND INTERMEDIATE COURSES

Students with 2 or more years of high school Russian may not take the first semester Russian course (101) without permission from the Course Chairman (T. Holzapfel).

Normally the student with 2 years will take a second (102) or third (251) semester course; the student with 3 years will take the third (251) or the fourth (252) semester course.

101-102. **Elementary Russian.** (3, 3) Yr. T. Holzapfel, A. Luft
Credit for 101 suspended until 102 (or more advanced course) is completed.

251-252. **Intermediate Russian.** (3, 3) Luft
Prerequisites: 101-102, or the equivalent.

254. **Russian Conversation and Composition.** (3)
May be taken concurrently with 251 or 252.

307. **Introduction to Russian Literature.** (3) T. Holzapfel
Prerequisite for 351-352.

*338. **Russian Literature in Translation.** (3) T. Holzapfel

345. **Russian Civilization.** (3) T. Holzapfel
Required for the major in Russian Studies.

*351-352. **Survey of Russian Literature.** (3, 3)
Prerequisite: 307.

SPANISH

MAJOR STUDY

24 hours in Spanish courses numbered above 290, including 301-302, 351-352, and 453; and 2 years of college work in another foreign language (or reading knowledge). (It is recommended that students who do not speak Spanish natively take 254 concurrently with 251 or 252.)

MINOR STUDY

12 hours in Spanish courses numbered above 290.

ELEMENTARY AND INTERMEDIATE COURSES

There are 2 types of elementary Spanish courses: (1) the oral emphasis courses (101, 102)—4 hours per week for 3 hours credit each, with stress on the acquisition of comprehension and oral skills; (2) the reading emphasis courses (103, 104)—4 hours per week for 3 hours credit each, with stress on the grammatical structure of the language and acquisition of reading skill.

Students with 2 or more years of high school Spanish may not take a first semester Spanish course (101, 103) for credit without permission from the Course Chairman (Lamadrid) or the Undergraduate Advisors (Duncan, Ulibarrí).

Normally the student with 2 years' high school credit will take a second (102, 104) or third (251) semester course; the student with 3 years will take a third (251) or fourth (252) semester course; the student with 4 years will take a fourth (252) or a fifth (301) semester course.

New Mexican students who speak Spanish natively are not permitted to take the beginning oral courses (101, 102).

COURSES FOR SPANISH-SPEAKING STUDENTS

New Mexican students who speak Spanish natively and who have had less than 2 years of high school Spanish should take Spanish 201. Those who have had 2 or more years of high school Spanish should take Spanish 255, 256. **Students who take 255, 256 cannot receive credit for 251, 252, or 254.** Spanish 201, 255, 256 are not designed for foreign students whose education has been in Spanish.

101-102. Elementary Spanish—Oral Emphasis. (3, 3) Yr. Lamadrid, Staff
Credit for 101 suspended until 102 (or more advanced course) is completed.

103-104. Elementary Spanish—Reading Emphasis. (3, 3) Yr.
Credit for 103 suspended until 104 (or more advanced course) is completed.

201. Español elemental para estudiantes de habla española. (3) Davison
Exercises in grammar, speech correction and vocabulary building. For New Mexican Spanish-speaking students who have had less than 2 years of high school Spanish.

251-252. Intermediate Spanish. (3, 3) Duncan, MacCurdy, Calvert, Staff
251 and 252 offered every semester.

254. Elementary Spanish Conversation. (3)
Designed primarily to give qualified students of 251-252 extra practice in the oral use of the language; therefore, it is recommended that it be taken concurrently with 251 or 252. Enrollment limited to 15 students.

255-256. Español avanzado para estudiantes de habla española. (3, 3) Cobos
For New Mexican Spanish-speaking students who have had 2 or more years of high school Spanish or Spanish 201.

292. Introduction to Spanish Literature. (3) Calvert, T. Holzapfel, Sackett, Ulibarrí
Assignments of advanced reading material and discussion of principal Spanish literary figures and movements. Prerequisites: 251-252, or the equivalent.

***301-302. Advanced Composition and Conversation.** (3, 3) Cobos, Fernandez, Nason, Ulibarrí
Prerequisite: 254 or 256 or the equivalent.

***303. Patterns of Modern Spanish.** (3) Cobos, Lamadrid
A review of Spanish in terms of structural linguistics with oral pattern drills and written composition.

Spanish 292 or the equivalent is prerequisite for all literature courses listed below.

***345. Hispanic Civilization.** (2) Fernandez, Ulibarrí

***346. Ibero-American Civilization.** (2) Cobos

***347.** [361] **The Spanish-American Novel.** (3) Davison, Nason

***348. The Spanish-American Short Story.** (3) Davison

***350.** [307] **The Spanish Novel.** (3) Fernandez, Sackett, Ulibarrí

***351-352. Survey of Spanish Literature.** (3, 3) Fernandez, MacCurdy

***357-358. Survey of Spanish-American Literature.** (3, 3) Davison, Nason, T. Holzapfel
Required of candidates for a graduate degree.

***401. Expository Writing.** (3) Fernandez
Prerequisites: 301-302.

***421.** [321] **Modern Spanish Drama.** (3)

***441. Teaching of Spanish.** (3) Lamadrid, Sackett, Ulibarrí
(Same as Secondary Education 441.)

***453.** [353] **Spanish Phonology.** (3) Duncan, Nason
Phonetic and phonemic system of Spanish.

***460. Spanish Poetry.** (3) Ulibarrí

***461.** [305] **Contemporary Spanish Literature.** (3) Fernandez

***463.** [363] **Mexican Literature.** (3) Davison

***464.** [364] **The Literature of Argentina, Uruguay, and Chile.** (3) Nason

***465. Special Topics in Spanish-American Literature.** (3) Staff

***466.** [366] **Spanish Drama from the Beginning through the 17th Century.** (3) MacCurdy

***475.** [375] **Cervantes: The Quijote.** (3) MacCurdy
A detailed analysis of the **Quijote** and treatment of its place in world literature.

***476.** [376] **Cervantes: Other Works.** (3) MacCurdy
Works other than the ***Quijote*** *with emphasis on the* **Novelas Ejemplares** and the theatre.

498. Reading and Research for Honors. (3)
Open to juniors and seniors approved by the Honors Committee.

499. Honors Essay. (3)
Open only to seniors enrolled for departmental honors.

***501. History of the Spanish Language.** (3) *Duncan*
Introduction to linguistics and study of the phonological, morphological and semantic evolution from Latin to Spanish; intensive reading of selected Old Spanish texts. Required of all candidates for a graduate degree.

***504. Interdepartmental Seminar.** (3) Staff
(Same as Ibero-American Studies 504.)

***505. Introduction to Research Methods.** (1) Duncan, MacCurdy, T. Holzapfel, Sackett
Required of all candidates for a graduate degree.

***506. Spanish Bibliography.** (1) Duncan, MacCurdy, T. Holzapfel, Sackett
Required of candidates for the Ph.D. degree.

***507. Seminar in the Spanish Novel.** (3) Fernandez, Sackett

***540. Seminar in the Language of Spain or Spanish America.** [Seminar in Spanish Language] (3) Duncan, T. Holzapfel, Nason.
Topic selected according to the specialization of the professor and of the students.

***541. Research Methods for Teachers.** (3) Lamadrid

***551-552. Problems.** (1-3 hrs. each semester) Staff
For M.A. candidates.

*554. **Spanish Linguistics: Theory and Application to Teaching.** [Application of Linguistics to Language Instruction in the Secondary School] (3) Lamadrid
Pre- or corequisite: Spanish 453.

*556. **Proseminar in Problems of Language Instruction.** [Proseminar in Problems of Secondary Language Instruction] (3) Lamadrid
Pre- or corequisites: Spanish 453 and 554.

*557. **Application of Linguistics to Language Instruction in the Elementary School.** (3) Ulibarrí

*558. **Preparation of Language Materials for the Elementary School.** (4) Ulibarrí

*559. **Proseminar in Problems of Language Instruction in the Elementary School.** (4) Ulibarrí

*560. **Seminar in Spanish Literature.** (3) Staff
Topic will deal with individual authors, genres, or periods. **May be repeated for credit as subject matter varies.**

*562. **Seminar in Spanish-American Poetry.** (3) Davison

*563. **Seminar in Spanish-American Prose.** (3) Davison, Nason, T. Holzapfel

*565. **Seminar in the 20th Century Essay.** (3) Fernandez

*566. **Seminar: Golden Age Drama.** (2) MacCurdy

*567. **Seminar in Spanish-American Literature.** (3) Davison, Nason, T. Holzapfel
Topic will deal with individual authors, genres, or periods. **May be repeated for credit as subject matter varies.**

*571. **Spanish Poetry.** (3) Ulibarrí

*578. **Seminar: The Spanish Picaresque Novel.** (2) MacCurdy

*599. **Master's Thesis.** (1-3 hrs. per semester)
See the **Graduate School Bulletin** for total credit requirements.

*651-652. **Problems.** (1-3 hrs. each semester) Staff
For Ph.D. candidates.

*699. **Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

MUSIC

Professors J. Blankenship (Chairman), K. Frederick, W. B. Keller, H. M. Miller, G. Robert, J. Stephenson; Associate Professors J. M. Batcheller, W. E. Rhoads, M. G. Schoenfeld, J. Snow; Assistant Professors D. Kempter, D. R. McEwen, D. C. McRae, W. Seymour, D. Starkey, J. I. Thornton, E. Waters, J. L. Whitlow; Part-time Instructor W. T. Selby.

Applied Music faculty:

Piano	W. Keller, G. Robert, M. Schoenfeld, W. Seymour
Organ	W. T. Selby
Violin and Viola	K. Frederick
Cello and String Bass	D. Kempter, J. Stephenson
Wind Instruments and Percussion	J. Blankenship, D. Kempter, W. Rhoads, W. Seymour, J. Thornton, J. Whitlow
Voice	D. McEwen, D. McRae, J. Snow, D. Starkey

MAJOR STUDY

For curricula leading to the Bachelor of Music, see p. 204.
See below and following page for additional requirements.

MINOR STUDY IN MUSIC

College of Arts and Sciences: 20 hours including Music 105, 106, 107, 108, 139, 140, and 4 hours of applied music.

MINOR STUDY IN DANCE

20 hours, including 9 hours chosen from Music 105 with 107, 106 with 108, 139 and 140, 3 hours in drama elective, and 8 hours in Music 259 and 359. Students working toward a minor in dance are required to present a dance demonstration and to perform with the Dance Workshop.

ENSEMBLE

One credit hour represents from 2 to 4 hours a week of rehearsal.

Course numbers for ensemble are: (vocal) 143, 243; (instrumental) 231, 233, 237, 241, 395.

Every music major undergraduate enrolled for 7 or more hours must be enrolled in band, chorus, or orchestra during every semester of residence, meeting the specific requirements listed below as a minimum:

THEORY AND COMPOSITION CONCENTRATION
6 hours of ensemble, 2 of which must be in chorus

APPLIED MUSIC (PIANO OR ORGAN) CONCENTRATION
8 hours including 1 semester of Music 237, 2 semesters of 395, and 2 semesters of chorus

APPLIED MUSIC (INSTRUMENTAL OTHER THAN PIANO OR ORGAN) CONCENTRATION
8 hours: winds and percussion take band, and strings take orchestra

APPLIED MUSIC (VOCAL) CONCENTRATION
6 hours in chorus

MUSIC LITERATURE CONCENTRATION
6 hours, 2 of which must be in chorus

MUSIC EDUCATION CONCENTRATION
8 hours in chorus, band, or orchestra depending on concentration (area of senior recital)
Piano and organ concentrators (area of senior recital): 8 hours including 1 semester of Music 237, 2 semesters of Music 395, and 3 semesters of chorus.

HISTORICAL MUSIC LITERATURE

Students may be required to attend listening periods of 1 to 3 hours each week at the option of the instructor.

The following courses come under the heading of "Historical Music Literature": 271, 272, 273, 274, 311, 312, 411, 412, 475, 477, 478, 479.

APPLIED MUSIC (PRIVATE INSTRUCTION)

Applied music is offered in the following areas: piano, voice, string instruments, wind instruments, percussion, and organ.

Students registering for Applied Music must file a teacher assignment card in the Department of Music office.

Students studying Applied Music must perform before a faculty jury for grading and course number assignment at the conclusion of each semester of study.

Applied Music courses may be repeated upon recommendation by the faculty.

A student whose field of concentration is applied music is required to give a public recital in the junior year and another in the senior year. Students should consult the appropriate advisers before enrolling for applied music.

In applied music, the Department offers degree courses, and also secondary courses for students desiring a cultural background in music. The student may continue these courses through 4 years.

Students who have had previous training elsewhere will take a placement examination.

The degree courses are 119-120, 201-202, 301-302, 401-402, 501-502 (graduate course); 591-592 (graduate recital). Degree courses carry 2 or 4 hours credit each for 1 or 2 half-hour lessons per week respectively. The secondary courses are 119-120, 219-220, 319-320, 419-420, 519-520, and 569-570 (graduate courses), and carry 1 hour credit each for 1 half-hour lesson a week.

REQUIREMENT FOR JUNIOR STANDING IN MUSIC

Before entering the junior year of study each student majoring in music or music education must appear before the music faculty for approval to pursue a stated degree program. Applicants should have completed or be currently enrolled in Music 206 and 208. Music Education students may not receive student teaching assignments until they have been approved for the degree program.

MUSIC EDUCATION REQUIREMENTS

All music education students must successfully complete before graduation:

1. A proficiency examination in piano, voice, and secondary orchestra instruments. All prospective practice teachers must pass the piano and voice proficiency examinations before being assigned a teaching appointment.
2. All or part of a senior recital in the major area of performance.
3. A senior comprehensive examination in music and music education.

RECITAL AND CONCERT ATTENDANCE REGULATION

All students registered for 5 or more hours in the department are required to attend a specified number of the departmental recitals and concerts each semester as a regular part of their musical education. The number of recitals and concerts required is determined by the department at the beginning of each semester. Fulfillment of this requirement is necessary for graduation.

Applied music fees of $16 per credit hour, in addition to regular tuition, will be charged all full-time University students enrolling for applied music courses beyond their curriculum requirements. Part-time students should consult the Music Department for a schedule of applied music fees.

105. Music Theory I. (2)
Fundamentals of music: scales, key signatures, intervals, triads, simple four-part writing.

106. Music Theory II. (2)
Diatonic part-writing and analysis: inversions, dominant seventh chords, non-harmonic tones, simple modulation. Prerequisite: 105 with grade of C or better.

107. Ear-Training I. (2)
Apprehension through sound of the materials of 105, with special emphasis on melodic, rhythmic and harmonic dictation, and the singing of melodies and intervals.

108. Ear-Training II. (2)
Apprehension through sound of the materials of 106, with more advanced singing and dictation. Prerequisite: 107 with grade of C or better.

109-110. Group Voice. (1, 1) Batcheller, McEwen
Open to all beginners in voice exclusive of voice majors.

111. Group Piano. (1) Seymour
Open to all beginners in piano exclusive of piano majors.

112. Group Piano. (1) Seymour
Prerequisite: Music 111.

119-120. Applied Music. Freshman major, secondary or elective course. **(1 or 2 hrs. each semester)**

139-140. Music Appreciation. (3, 3) McRae, Miller, Whitlow
Introduction to music literature. Listening periods are required. Not open to students majoring in music.

143. University Chorus. (1) McEwen
Open to all University students. **May be repeated for credit.**

155. Orchestral Instruments. (1) Frederick, Kempter, Rhoads, Stephenson, Thornton, Whitlow
Group instruction in the playing of woodwind, brass, percussion, high string instruments and low string instruments. **May be repeated for credit.**

201-202. Applied Music. Major Sophomore Course. **(2 or 4 hours each semester)**

205. Music Theory III. (2)
Chromatic alterations and analysis: secondary dominants, chorale harmonization, remote modulation. Prerequisite: 106 and 108 with grade of C or better.

206. Music Theory IV. (2)
Continued chromatic alterations and analysis. Prerequisite: 205 with grade of C or better.

207. Ear-Training III. (2)
More advanced singing and dictation, correlated with the materials of 205. Prerequisite: 108 with grade of C or better.

208. Ear-Training IV. (2)
Continuation of advanced singing and dictation. Prerequisite: 207 with grade of C or better.

211. Group Piano. (1) Seymour
Open to all students. Prerequisites: Music 112 and permission of instructor.

212. Group Piano. (1) Seymour
Open to all students. Particular attention given to preparation for the piano proficiency examination. Prerequisites: Music 211 and permission of instructor.

219-220. Applied Music. Sophomore Secondary or Elective Course. **(1 or 2 hours each semester)**

†230. Opera Workshop. (2) Frederick, Snow
Designed to give singers the fundamentals in practical operatic experience.

†231. Chamber Music. (1) Frederick, McEwen, Stephenson, Thornton, Whitlow
The practice, performance, and study of chamber music in various ensemble groups.

†233. Symphony Orchestra. (1) Frederick
Study and public performance of symphonic literature.

†237. Piano Ensemble. (1) Keller, Robert, Schoenfeld, Seymour
Study and performance of literature for two pianos selected from all periods including the contemporary. Open to qualified students with permission of instructor.

†241. University Band. (1) Rhoads
Study and performance of marches and concert band literature. Appearance and performance in uniform at football games, Commencement, and other University functions.

243. A Cappella Choir. (1) McEwen
Auditions required. Open to all University students with permission of instructor. **May be repeated for credit.**

259. Modern Dance. (1-2) Waters
Explorations in movement leading into choreography. Open to all University students with permission of instructor. **May be repeated for credit.**

263. Conducting. (1) Blankenship, Frederick, McEwen, Thornton
Basic technique and theory of conducting.

264. Choral Conducting and Organization. (1) McEwen
Execution of choral techniques, score reading, choral interpretation, actual experience in choral conducting with major organization. Study of senior high school choral materials. Prerequisite: 263.

271. Music Literature I. (2) McRae, Miller
Introduction to the study of music history. Survey of music before 1580.

272. Music Literature II. (2) McRae, Miller
Survey of music from 1580 to 1750.

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† Maximum of 8 hours' credit allowed toward degrees in the College of Fine Arts or College of Education, 4 hours in other colleges.

273. Opera. (2) McRae
The history of opera and its principal composers.

274. Concerto. (2) McRae
The form and its principal composers from Bach to the present.

295. Music in Recreation. (2) Batcheller, Stephenson
The social foundations and practices of music in recreation. Stress will be placed on equipping the recreational leader with effective means to deal musically with young children, older children, and adults. Emphasis will be placed on all phases of the public performance from planning to production.

296. Music in Recreation. (2) Batcheller, Stephenson
Designed to prepare the major in recreational leadership for practical supervision of recreational music programs covering appreciation of music, music in the hospital as entertainment and therapy, music in the industrial plant, and music in the community center. Prerequisites: Music 295 or permission of instructor.

301-302. Applied Music. Major Junior Course. **(2 or 4 hrs. each semester)**

309-310. Form and Composition. (2, 2) Keller, Miller
Analysis of the structural elements of music from Gregorian Chant to the present, and the application of standard formal procedures to the creative process of music composition. Prerequisites: 206, 208.

311. Music Literature III. (2)
Survey of music from 1750 to 1900.

312. Music Literature IV. (2)
Survey of music since 1900.

313. Band Organization and Conducting. (1) Rhoads
Band organization, materials, rehearsal techniques, marching band techniques, and laboratory experience in band conducting.

314. Orchestral Conducting and Organization. (1) Frederick, Stephenson
Orchestral organization, materials, string techniques, and laboratory experience in orchestral conducting.

***319-320. Applied Music.** Junior Secondary or Elective Course. **(1 or 2 hours each semester)**
Prerequisite: 4 hrs. credit in the instrument to be studied, or equivalent. **Maximum allowable graduate credit 4 hrs. or equivalent.**

359. Dance Workshop. (1-2) Waters
Rehearsal and production experiences. Open to all University students with permission of instructor. **May be repeated for credit.**

371-372. General History of Music. (3, 3) Miller
From antiquity to the present. Non-technical study of the forms, styles, schools, principal composers, and representative masterpieces of each era. Not open to students majoring in music.

375. [475] **Symphonic Literature.** (2) McRae, Miller
A survey of the developments in orchestral music from Bach to the present.

†387. Vocal Coaching. (1) Robert
One half-hour of private instruction per week. Required of all senior voice majors and open to juniors with permission of instructor.

388-389. Music Pedagogy. (2, 2) Seymour
Designed especially for the music student who plans to teach privately, the course is concerned with preparation in teaching beginners in music at various age levels. Second semester will treat problems in teaching intermediate and moderately advanced students. Prerequisite: junior standing in music.

391-392. Undergraduate Problems. **(1-3 hours each semester)**

††395. Accompanying. (1) Robert
One half-hour of private instruction per week carries one hour credit. Students accompany other students in practice and at recitals as part of the requirement for receiving credit.

401-402. Applied Music. Major Senior Course. **(2 or 4 hours each semester)**

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† **May be repeated to the limit of 4 hours' credit.**

†† Maximum of 8 hours' credit allowed toward degrees in the College of Fine Arts or College of Education, 4 hours in other colleges.

*405. **Counterpoint.** (2) Frederick, McRae, Robert
Analysis and techniques of writing in the contrapuntal forms and styles of the 16th century. Prerequisite: Permission of instructor.

*406. **Counterpoint.** (2) Frederick, McRae, Robert
Analysis and techniques of writing in the contrapuntal forms and styles of the period of Bach. Prerequisite: Permission of instructor.

409-410. **Composition.** (2, 2)
Techniques and procedures in the composition of music in various forms, styles, and media. Prerequisite: 310.

*411. **Contemporary Period.** (2) McRae, Miller
Stylistic innovations and tendencies in the music of the twentieth century and the study of representative works by the principal composers. Prerequisite: Permission of instructor.

*412. **Baroque Period.** (2) Keller, Miller
A study of the music of Western Europe from 1600 to 1750 with emphasis on forms, styles, principal composers, and performance practices. Prerequisite: Permission of instructor.

*419-420. **Applied Music.** Senior Secondary or Elective Course. **(1 or 2 hrs. each semester)**
Prerequisite: 4 hrs. credit in the instrument to be studied, or equivalent. **Maximum allowable graduate credit 4 hrs. or equivalent.**

447. **Vocal Repertory.** (2) Snow
A survey of important and representative literature for solo voice.

449. **Piano Repertory.** (2) Schoenfeld
A survey of important and representative literature for piano.

453. **Instrumentation.** (2) Rhoads, Thornton
Properties and limitations of band and orchestral instruments; detailed score study of instrumental techniques from the past to the present, scoring of works carrying through to completion of projects for actual performance. Prerequisites: 206, 208.

*457. **Advanced Choral Conducting.** (2) Frederick, McEwen
Historical background and advanced techniques of choral organization and conducting. Prerequisites: 263, 310, and piano proficiency to be determined by the instructor.

*458. **Advanced Instrumental Conducting.** (2) Frederick, Rhoads, Thornton
Historical background and advanced techniques for conducting band and orchestra and studying scores. Admission by permission of instructor.

*463. **Advanced Instrumentation.** (2) Rhoads
The scoring of larger works for the major ensembles carrying through to actual performance. Prerequisite: 453.

*467. **Choral Arranging.** (2) Frederick, McEwen, McRae
Techniques and practice in arranging for mixed chorus, men's and women's glee clubs, trios and quartets. Prerequisites: 206, 208.

*471. **The Classical Period.** (2)
The music of the age of Haydn, Mozart, and Beethoven, their immediate forerunners and their contemporaries. Prerequisite: Permission of instructor.

*472. **The Romantic Period.** (2)
Music in the nineteenth century after Beethoven; a study of the leading composers and their works. Prerequisite: Permission of instructor.

*476. **The Medieval Period.** (2)
A study of music from the Early Christian era to the mid fifteenth century. Prerequisite: Permission of instructor.

*477. **The Renaissance Period.** [Medieval and Renaissance Periods] (2)
The music of Western Europe from the middle of the fifteenth century to the close of the sixteenth century; its structure, styles, principal composers, and its place in Renaissance society. Prerequisite: Permission of instructor.

*478. **History of Chamber Music.** (2) Miller
A survey of chamber music literature from the Baroque to the present.

*479. **Choral Literature.** (2) McRae
The principal developments in choral music from Gregorian Chant to the present.

490. **Interdepartmental Proseminar.** (3) Honors Staff
(Same as Fine Arts 490.)

***493. United States Composers.** (2) Keller, McRae
The creative trends in the art music of the United States from the 17th century to the present. Special emphasis upon the style and contributions of the most important composers.

499. Senior Thesis. (3)
Open to seniors approved by the departmental honors committee.

***501-502. Applied Music.** Major Graduate Course. **(2 or 4 hrs. each semester)**

***505. Advanced Composition.** (2) Keller
Individual guidance in composing for various instrumental and vocal ensembles; survey of techniques in appropriate fields; completion of one or more major works for public performance. **May be repeated to the limit of 4 hrs. credit.**

***519-520. Applied Music.** Graduate Secondary or Elective Course. **(1 or 2 hrs. each semester)**

***531. Bibliography and Research.** (3) Miller, Stephenson
The study and application of basic methods in musical bibliography, acquaintance with major reference sources; projects in bibliography. Materials and basic techniques of musical research. Prerequisite: permission of instructor.

***533. Seminar in Music.** (3) Blankenship, Miller, Stephenson
Explorations in various areas of musical research. Prerequisite: permission of instructor. **May be repeated for credit.**

***535. History of Music Theory.** (3)
The historical development of theoretical principles in music, and their application from earliest times up to the present. Study of the relevant documents and texts. Prerequisite: Permission of instructor.

***537. Selected Topics in Music Literature.** (3)
Detailed study of limited areas of music literature selected with respect to composer, medium, or historical period. May be repeated for credit with permission of the Department Chairman. Prerequisite: permission of instructor.

***551-552. Problems. (1-3 hrs. each semester)** Blankenship

***569-570. Applied Music.** Graduate Secondary or Elective Course **(1 or 2 hrs. each semester)**

***591-592. Graduate Recital.** (2, 2)
For the degree of Master of Music in Applied Music the student is required to perform a full-length graduate recital (a) which he has selected and prepared subject to the approval of a committee comparable to a graduate thesis committee and (b) for which he has written comprehensive program annotations (also subject to the approval of the same committee) and which will be printed on the program of the graduate recital. Work in 591, 592, is to be in addition to that done in 501, 502 (performance majors) or in 519-520, 569-570 (music education concentrators). Students may distribute their major applied study over more than one year but in such cases will be subject to the current fee for applied music for each one-half hour lesson after the first year of study has been completed.

***599. Master's Thesis. (1-3 hrs. per semester)** Blankenship, Keller, Miller, Rhoads
See the **Graduate School Bulletin** for total credit requirements.

MUSIC EDUCATION

CURRICULUM

See pp. 177, 207.

293. Primary School Music. (2) Batcheller, Stephenson
The musical needs of children of pre-school age, in kindergarten and grades 1, 2, and 3. Includes the rote song, singing games, rhythm band, and music reading techniques. Children of this age level will be observed in the public schools.

294. Intermediate School Music. (2) Batcheller, Stephenson
The musical needs of children in grades 4, 5, and 6, including harmonic activity, creative experience, and instrumental techniques. Children of this age level will be observed in the public schools. Prerequisite: 293.

***429. Workshop. (1-4)**
Carries graduate credit when specifically approved by the Graduate Committee. For degree restrictions see p. 167 of this catalog or consult the **Graduate School Bulletin.**

***440. Investigations in Music Education.** (3) Batcheller, Stephenson
Philosophy of music education in a self-contained classroom. Advanced study of the child voice. Creative activity and public performance. Guided research in current materials and publications. Prerequisites: 293, 294.

*445. **Junior High Music.** (2) Batcheller, Stephenson
The musical needs of the junior high school student, the position of music in the curricula, and methods and materials for the various music activities. Observation of junior high school music classes will be required.

*446. **Senior High Music.** (2) Batcheller, Stephenson
The musical needs of senior high school students: methods and materials for specialized activities (e.g., band, chorus) and general activities (e.g., appreciation and assembly singing); administration and public relations. Observation of senior high school music classes will be required.

*459. **Advanced Elementary Music Education.** (3) Batcheller, Stephenson
The teaching of music in the elementary classroom: the development of techniques in the teaching of melodic and harmonic music reading; advanced investigations in the use of instrumental and vocal materials; guided research in the current audio-visual aids and the evaluation of music ensemble participation. Prerequisite: permission of instructor.

*550. **Philosophy of Music Education.** (3) Batcheller, Stephenson
Philosophical foundations and principles of music education and their application to practices in school. Prerequisites: 293, 294, 445 or 446.

*551-552. **Problems in Music Education.** (1-3 hrs. each semester) Blankenship

*599. **Master's Thesis.** (1-3 hrs. per semester) Batcheller, Blankenship, Stephenson
See the **Graduate School Bulletin** for total credit requirements.

NAVAL SCIENCE

Captain T. F. Schneider, USN (Chairman), Professor; Associate Professor Lieutenant Colonel J. E. Buynak, USMC; Assistant Professors Lieutenant Commander N. L. Jeter, USN; Major J. T. Bowlin, USMC; Lieutenant J. C. Clarke, USN; Lieutenant R. W. Fugate, USNR; Lieutenant David James, III, USN; and Staff.

CURRICULUM

See p. 231.

101. **Naval Orientation.** (3)
An introduction to basic customs, traditions of the U. S. Navy; organization for national defense; junior officer responsibilities, components of modern Navy; U. S. Naval ships and aircraft; seamanship.

102. **Evolution of Sea Power.** (3)
The roles of navies of the world in shaping world affairs socially, politically, and economically with emphasis on naval strategy and tactics.

201. **Naval Weapons.** (3)
The principles of modern weapons systems, including materials and processes, fluid theory, energetics, mechanics, optics, electronics, physics of underwater sound, and atomic theory, stressing the application of these principles in weapons systems. (Confidential security clearance required.)

301. **Navigation.** (3)
The theory and application of terrestrial and celestial navigation to enable prospective officers to become proficient naval navigators aboard ships and aircraft.

302. **Naval Operations.** (3)
To provide the student with a basic understanding of relative motion, tactical communications and instructions, Rules of the Nautical Road, fleet communications, operational importance of weather and an introduction to electronic countermeasures.

333. **Evolution of the Art of War, Part I.** (3)
A survey of the evolution of warfare from the earliest recorded times to 1865.

334. **Evolution of the Art of War, Part II; Modern Basic Strategy and Tactics.** (3)
Continuation of the evolution of warfare from 1865 including a consideration of U. S. military and foreign policy and the theoretical principles behind modern strategy and tactics.

401. **Naval Engineering.** (3)
Naval engineering plants, machinery and systems, including nuclear propulsion, to provide a basic understanding necessary for all naval officers.

402. Principles and Problems of Leadership. (3)
A study of effective naval leadership based upon three precepts—personal example, good management practices, and moral responsibility.

444. Amphibious Warfare, Part I. (3)
A survey of the development of amphibious warfare doctrine from Gallipoli to the Korean War.

445. Amphibious Warfare, Part II; Leadership and Military Justice. (3)
Continuation of 444. Provides basic indoctrination in the principles of the Uniform Code of Military Justice, military leadership and Marine Corps administration.

NUCLEAR ENGINEERING

See Engineering, Nuclear

NURSING

Professors R. F. Hall (Dean), V. P. Crenshaw; Visiting Professor (Part-time) Bruce D. Storrs, M.D.; Associate Professors K. J. Dawson, M. B. Hicks; Assistant Professors J. Baca, E. Bear, P. F. Weins; Instructors L. Amos, B. Carper, D. Carter, E. Cleary, C. Rhinehart; Clinical Instructors G. Bates, J. Paulson.

CURRICULUM

See p. 217.

101. Introduction to Professional Nursing. (3)
Presentation of the scope and trend of nursing; relation of liberal arts knowledge to nursing; significance of past events to the present and future of nursing practice.

102L. Introduction to Nursing Process. (3)
Development of professional characteristics, communication skills; demonstration of nursing approach to patient care. Prerequisite: 101.

250. Fundamentals of Nursing Process. (2)
Study of basic concepts and examination of nursing role, human growth and development, interpersonal relations in clinical areas and definitions of illness. Prerequisite: Sophomore standing in the College of Nursing. Corequisite 251L.

251L. Nursing Process, Laboratory. (3)
Learning skills in problem-solving, observation, collection and analysis of data and inference systems. Prerequisite: Sophomore standing in the College of Nursing. Corequisite: 250.

252. Fundamentals of Medical-Surgical Nursing. (3)
A continuation of the study of skills in nursing focusing on the application of nursing process in the care of adult patients with basic medical and surgical problems. Prerequisite: Sophomore standing in the College of Nursing. Corequisite: 253L.

253L. Laboratory Practice, Fundamentals of Medical-Surgical Nursing. (2)
An application of the skills and nursing process in the care of patients with medical and surgical problems in the laboratory situation. Prerequisite: Sophomore standing in the College of Nursing. Corequisite: 252.

303. [303L] **Advanced Medical-Surgical Nursing.** (4)
A study of scientific principles in the nursing process for patients with complex medical and surgical conditions; physiological, emotional, cultural components; preventive and therapeutic nursing care including operative surgery. Prerequisite: Junior standing in the College of Nursing. Corequisite: 304L.

304L. [303L] **Laboratory in Advanced Medical-Surgical Nursing.** (6)
Application of the nursing process in the laboratory setting. Prerequisite: Junior standing in the College of Nursing. Corequisite: 303.

323L. Maternal-Child Nursing. (10)
Family-centered approach in the nursing care of mothers in all phases of the maternity cycle, and children through all periods of growth and development; emphasis on maintenance of health, prevention of illness, and therapeutic nursing care; clinical practice

in hospital including labor and delivery rooms, nursery, pediatric unit, out-patient department, and other community agencies. Prerequisite: junior standing in the College of Nursing. 4 lectures, 18 hrs. lab.

351. Psycho-Cultural Aspects of Nursing. (2)
Nursing process approach to the interrelated dynamics of psychological and cultural factors in human behavior and patient care. Prerequisite for Psychiatric Nursing.

352. Fundamentals of Public Health Science. (2)
Health administration, prevention and control of disease, vital statistics, sanitation and health legislation. Not restricted to students in Nursing; open to any juniors interested in the health professions.

451L. Psychiatric Nursing. (7)
Principles and practice of nursing care of patients with psychiatric disorders; interpersonal, physiological, emotional, cultural factors. Prevention and treatment of mental illness; learning experiences in hospital and community agencies. Prerequisites: 351 and senior standing. 3 lectures, 12 hrs. lab.

452L. Public Health Nursing. (9)
Principles and practice of nursing in community programs for promotion of health, prevention and control of disease and disability, rehabilitative and supportive functions; epidemiological, cultural, socio-economic, educational factors influencing community organization for health, nurse-family group relationships in nursing care and health education; experience in homes, health department, and other community agencies. Prerequisite: senior standing. 4 lectures, 15 hrs. lab.

462. Advanced Nursing Process Seminar. (5)
Analysis of problems in professional nursing designed for senior students preparing for beginning practice in professional nursing. Prerequisite: completion of all 300-level nursing courses.

463L. Advanced Nursing Process (Practicum). [Problems in Clinical Nursing] (6)
Analysis of problems in professional nursing designed for senior students preparing for beginning practice in professional nursing, with application. Prerequisite: completion of all 300-level nursing courses.

497. Special Studies in Nursing. (1-3)
Prerequisite: senior standing and permission of the instructor.

498. Independent Study. (3)
Limited to students in Departmental Honors.

499. Senior Thesis. (3)
Limited to students in Departmental Honors.

PALEOECOLOGY

Committee in Charge: Professors F. C. Hibben (Anthropology), S. A. Northrop (Geology), L. D. Potter (Biology); Associate Professors R. Y. Anderson (Geology), Chairman; J. S. Findley (Biology).

Interdepartmental undergraduate and graduate minors in Paleoecology are offered to majors in the Departments of Anthropology, Biology, Chemistry, and Geology.

UNDERGRADUATE MINOR

The minor requires 30-36 hours in courses listed in the "Paleoecology Pool" including Paleoecology 301L. No more than 18 hours may be taken in any one department and courses in the major field may not be used for the minor. The following courses have been approved (see appropriate departmental listings for course descriptions and prerequisites).

Anthropology 266F, *303L, *307L
Biology 101L, 102L, 363L, 371L, *372L, *393L, *408, *410, *471L, *485, *484L, *487L, *489L

Chemistry 101L, 102L or 122L, 253L, **301, **302, **303L, **304L, **311, **312

Geology 101, 102, 105L, 106L, 120L, 201L, **302L, **309L, **311L, *421L, *432L, *433L, *441L, *501L.

Mathematics 241, 242, *341, *342.

GRADUATE MINOR

Requirements are listed in the **Graduate School Bulletin.**

301L. Concepts in Paleoecology. (2) Anderson, Findley
The basic concepts and principles of environmental reconstruction. Limitations and applications of research tools. 1 lecture, 3 hrs. lab. (Offered in alternate years.)

451-452. Problems in Paleoecology. (2, 2)

***551-552. Problems in Paleoecology. (2-3 hrs. each semester)**

PHARMACEUTICAL CHEMISTRY

PHARMACOGNOSY

PHARMACOLOGY

See Pharmacy.

PHARMACY

Professors E. L. Cataline (Dean), G. L. Baker; Associate Professors W. C. Fiedler, K. H. Stahl; Instructor G. G. Ferguson.

CURRICULUM

See p. 223.

231-232. Orientation I, II. (1, 1) Cataline
A survey of the profession of pharmacy. 231 prerequisite to 232.

341L. Introductory Pharmacy. (5) Fiedler
Fundamental principles and processes of pharmacy, including metrology and pharmaceutical calculations. Prerequisites: Chemistry 302, 304L; Biology 393L (or concurrent enrollment); Physics 112, 114L. 2 lectures, 2 recitations, 3 hrs. lab.

420. Pharmaceutical Law. (3) Cataline
Laws and regulations relating to the practice of pharmacy. Prerequisite: 232, 444L (or concurrent enrollment).

421. Pharmacy Management. (2) Cataline
Principles of management of retail pharmacies. Prerequisites: 232, 341L, Business Adm. 105, Economics 200.

434. History of Pharmacy. (2) Fiedler
The historical development of pharmacy with emphasis on its history in North America. Prerequisite: 447L.

443L-444L. Operative Pharmacy I, II. (5, 5) Fiedler
A survey of the preparations of pharmacy; the applications of physical principles to compounding and the manufacture of preparations; technology of pharmacy. Prerequisites: 341L; Pharmacognosy 372L; Pharmaceutical Chemistry 361. 443L is prerequisite to 444L. 3 lectures, 6 hrs. lab each semester.

447L. Dispensing Pharmacy I. (5) Baker
Dispensing pharmacy is broadly defined as the translation of the sciences underlying pharmacy into the art of pharmacy. More specifically it is the application of the scientific and practical knowledge upon which the practice of pharmacy is based to the extemporaneous compounding of drugs and medicines and making these available under proper control. Prerequisite: 444L; Pharmacology 476L. 3 lectures, 6 hrs. lab.

** Graduate credit only if taken outside major department.

448L. Dispensing Pharmacy II. (5) Baker
A continuation of 447L. The compounding and dispensing of prescriptions including incompatibilities. 3 lectures, 6 hrs. lab.

493. Inspection Trip. (0)
Required for graduation. Annual inspection tour to leading pharmaceutical manufacturing plants in various sections of the country. Approximately one week is spent on this tour. Prerequisite: concurrent enrollment in 447L.

497-498. Problems in Pharmacy. (1-3 hrs. each semester)
Experimental and library problems in some phases of pharmacy. Prerequisites: permission of instructor and of the Dean.

PHARMACEUTICAL CHEMISTRY

361. Inorganic Pharmaceutical Chemistry. (2) Baker
The chemical and pharmaceutical properties of the official and non-official inorganic substances used in medicine or in the preparation of medicinal substances. Prerequisite: Pharmacy 341L (or concurrent enrollment).

463L. Organic Pharmaceutical Chemistry I. (5) Stahl
A study, from the chemical viewpoint, of organic substances used in pharmacy and medicine. The laboratory includes work in the synthesis of organic medicinals as well as qualitative and quantitative analytical operations. Prerequisite: Chemistry 253L, 323. 3 lectures, 6 hrs. lab.

464L. Organic Pharmaceutical Chemistry II. (4) Stahl
A continuation of 463L. 2 lectures, 6 hrs. lab.

497-498. Problems in Pharmaceutical Chemistry. (1-3 hrs. each semester) Stahl
Experimental and library problems in some phases of pharmaceutical chemistry. Prerequisite: permission of instructor and of the Dean.

PHARMACOGNOSY

372L. General Pharmacognosy. (4) Stahl
Drugs of plant and animal origin. Prerequisites: Chemistry 253L, 302, 304L; Biology 102L; Pharmacy 341L; 3 lectures, 3 hrs. lab.

497-498. Pharmacognosy Problems. (1-3 hrs. each semester) Stahl
Experimental and library problems in some phases of pharmacognosy. Prerequisite: permission of instructor and of the Dean.

PHARMACOLOGY

276. Principles of Pharmacology. (3) Ferguson
The actions of drugs on living tissue and the basis upon which drugs are classified for their therapeutic usefulness. Includes the subdivisions of pharmacology: pharmacodynamics, posology, toxicology, and pharmacy. Prerequisites: Biology 393L; Chemistry 142L or 281. Pre- or corequisites: Biology 136 and 139L, or 236L. (Open only to students in the College of Nursing and in the Dental Hygiene Program.)

278L. Principles of Pharmacology Laboratory. (1) Fergusan
Instruction and practice in pharmaceutical calculations. The actions of drugs in important pharmacological classes upon living animals will be demonstrated. Pre- or corequisite: 276. (Open only to students in the College of Nursing and the Dental Hygiene Program.) 3 hrs. lab.

***475L. Pharmacology I.** (4) Ferguson
A study of the effects produced by drugs and the mechanisms whereby these effects are produced. Includes the subdivisions of pharmacology, materia medica, therapeutics, posology, toxicology, and biometrics. The actions of the more important drugs are demonstrated upon living animals. Prerequisites: Chemistry 323; Biology 429L, 430L. 3 lectures, 3 hrs. lab.

***476L. Pharmacology II.** (5) Ferguson
A continuation of 475L. 4 lectures, 3 hrs. lab.

477. Pharmacology III. (3) Ferguson
Agents used locally or systemically for the prevention or treatment of microbial and parasitic infections; immunological products, antibacterial, antiviral, antiprotozoal, and antifungal drugs, as well as those used in helminth diseases. Prerequisite: 476L.

497-498. Pharmacology Problems. (1-3 hrs. each semester)
Experimental and library problems in some phases of pharmacology. Prerequisites: permission of instructor and of the Dean.

PHILOSOPHY

Professors P. Schmidt (Chairman), H. Alexander, A. Bahm; Associate Professors M. Evans, J. Hassett; Assistant Professors P. Sanborn, H. Tuttle; Lecturer B. O'Neil.

Philosophical studies are one basic way to focus a liberal education. The philosophy major is designed to meet the needs of several different groups of students: (1) as a central background for a liberal education; (2) as a pre-professional major (for example, pre-law, pre-theological or even pre-medical); (3) as an inter-disciplinary program (for example, English-Philosophy, or Economics-Philosophy, or other courses in the philosophy of some field; and (4) for graduate study in Philosophy. The requirements for the **major** are 24 hours in philosophy courses numbered 200 or above, chosen in consultation with the departmental adviser. The requirements for the **minor** are 12 hours in courses numbered 200 or above, chosen in consultation with the departmental adviser. Combined majors will consult both departments. For departmental honors consult your department adviser.

100. [201] **Introduction to Philosophical Problems. (3)**
Selected problems in values, knowledge and reality. Social, political and religious philosophy.

101-102. Humanities. (3)
Introduction to comparative religions, philosophies, and arts.

145. Thought and Expression. (3)
Processes of communicating, symbolizing, thinking abstractly, imagining, generalizing, defining and inferring.

156. [256] **Introduction to Logic. (3)**
Fallacies of argument; traditional forms of deductive and inductive inference.

201. [301] **Ancient European Philosophy. (3)**
An historical study; especially of Greek philosophy.

202. [302] **Modern European Philosophy. (3)**
An historical study from the Renaissance through Kant.

255. Scientific Method. [Inductive Logic and Scientific Method] **(3)**
Meaning and verification, scientific truth, hypotheses, models, empirical evidence, measurement, induction and probability, statistical knowledge.

263-264. Comparative Religions. (3)
Introduction to the world's religions. 263: Eastern religions; 264: Western religions.

301-302. Interdepartmental Studies in the Culture of the U.S. (3, 3)
(Same as American Studies 301-302.) May be taken for departmental credit only with the consent of the Chairman.

***303. Medieval European Philosophy. (3)**
Major thinkers from Augustine through Ockham.

***323. Hispanic and Latin-American Philosophy.** [Hispanic Thought] **(3)**
Major movements and trends.

***332. North American Philosophy.** [American Philosophy] **(3)**
Early developments, idealism, pragmatism, naturalism, realism, and analysis.

***334. Indian Philosophy. (3)**
Jainism, Buddhism, Samkhya, Yoga, Vedenta, and recent schools.

***336. Chinese Philosophy. (3)**
Confucian, Taoist, Mohist, Legalist schools and their influence on Buddhist and modern developments.

*344. **Recent Philosophy.** (3)
From Kant to mid-Twentieth Century.

*346. [476] **Contemporary Philosophy.** (3)
Post World War II philosophies.

*348. **Comparative Philosophy.** (3)
Examination of conflicting ideals and presuppositions of Hindu, Chinese and Western Philosophies.

*354. **Metaphysics, Ontology and Cosmology.** (3)
Principles and systems of reality, being, existence; origin and structure of the universe.

*356. **Symbolic Logic.** (3)
Methods and techniques of modern logic.

*358. [308] **Ethical Theory.** (3)
Inquiry concerning goodness, rightness, obligation, justice and freedom.

*365. **Philosophy of Religion.** (3)
Inquiry into the nature of religion.

*367. [307] **Philosophy of Art and Aesthetics.** (3)
Concepts and theories about aesthetic experience and judgment; artistic meaning and evaluation.

*370. **Philosophy of History.** (3)
Nature, structure and presuppositions of theories of history and historical method. (Same as History 470.)

*375. [355] **Philosophy of the Natural Sciences.** (3)
Critical examination of methods and concepts of the natural sciences.

*380. **Philosophy of Law and Morals.** (3)
Nature and function of public law and its relation to moral belief.

*385. **Philosophy of Mind and Knowledge.** (3)
Classical and contemporary problems in epistemology.

*390. **Philosophy of the Social Sciences.** (3)
Examination of the structure, methods and presuppositions of social sciences.

*391. **Philosophy of Language.** (3)
Philosophies of meaning with special attention to the relations between language and thought. Prerequisite: 145 or permission of instructor.

*429. **Aesthetics Institute Workshop.** (1) SS
A one-week session in Taos, New Mexico, at the Lawrence Ranch and Harwood Foundation, featuring lectures in general aesthetics, discussions, and gallery talks by Taos artists. Carries graduate credit when specifically approved by the Graduate Committee. **May be repeated to a maximum of 3 hours.**

*441. [541] **Philosophical Movements.** (3)
Topic varies; **course can be repeated.**

*442. [542] **Individual Philosophers.** (3)
Figure varies; **course can be repeated.**

*480. **Philosophy and Literature.** (3)
Selected philosophical movements and their relationship to literary masterpieces. Prerequisites: 6 hours of literature and 3 hours of philosophy from the courses specified as requirements for the program. (Same as English-Philosophy 480.)

*485. **Philosophical Foundations of Economic Theory.** (3)
Philosophical backgrounds of classical and neo-classical socialist and communist, and institutionalist economics. Prerequisite: Economics 201. (Same as Economics-Philosophy 485.)

497. **Honors Seminar.** (3)
For departmental honors in philosophy. **May be repeated.**

498. **Reading and Research.** (3)
May be repeated.

499. **Senior Thesis.** (3)
For departmental honors.

*501. **Interdepartmental Seminar in the Culture of the United States.** (3)
(Same as American Studies 501.)

*516. **Seminar in Historical Problems.** (3)

***526. Seminar in Asian Philosophers. (3)**
***536. Seminar in Interdisciplinary Problems. (3)**
***546. Seminar in Contemporary Problems. (3)**
***551. M.A. Problems. (1-3 hrs. per semester)**
***552. M.A. Seminar. (3)**
***599. M.A. Thesis. (1-3 hrs. per semester)**
***651. Ph.D. Problems. (1-3)**
***652. Ph.D. Seminar. (3)**
***654. Ph.D. Seminar in Metaphysics. (3)**
***655.** [555] **Ph.D. Seminar in Epistemology. (3)**
***656.** [556] **Ph.D. Seminar in Logic. (3)**
***658. Ph.D. Seminar in Value Theory. (3)**
***699. Ph.D. Dissertation. (3-6 hrs. per semester)**

PHILOSOPHY-ECONOMICS

See Economics-Philosophy.

PHILOSOPHY-ENGLISH

See English-Philosophy.

PHYSICAL EDUCATION

See Education, Health, Physical Education, and Recreation

PHYSICAL SCIENCE

No major or minor study offered.

261-262. Introduction to Physical Science. (3, 3)
Prerequisite: permission of instructor.

PHYSICS AND ASTRONOMY

Professors V. H. Regener (Chairman), J. G. Breiland, J. R. Green, C. P. Leavitt, R. Thomas; Associate Professors C. L. Beckel, H. C. Bryant, C. Dean, J. L. Howarth, R. H. Koch; Assistant Professors S. S. Alpert, P. M. Campbell, C. Chandler, C. L. Hyder, D. S. King, D. B. Swinson.

Prerequisite to major and minor study in Physics and in Astrophysics are the basic courses Physics 260, 261, 262, 263L†, 264L†, 267, and Mathematics 264, 265.

MAJOR STUDY IN PHYSICS

Physics 301, 302, 303, 304, 305, 306, 307L, 308L; Mathematics 311, 312; Chemistry 101L, 102L.

MINOR STUDY IN PHYSICS

Four courses selected from Physics 301, 302, 303, 304, 305, 306; Mathematics 264, 265, and 311.

MAJOR STUDY IN ASTROPHYSICS

Physics 301, 302, 303, 304, 305; Astronomy 270, 271, three of the courses 311L, 312L, 421, 423, 424; Mathematics 311.

† Not required for the minor study in Astrophysics.

MINOR STUDY IN ASTROPHYSICS

Physics 302; Astronomy 270, 271, one of the courses 311L, 321, 421, 423, 424; Mathematics 311.

GRADUATE STUDY

Prerequisite for all courses numbered 500 and above: an undergraduate major in Physics equivalent to that outlined above.

PHYSICS

102. Introduction to Physics. (3) Howarth, Hyder
An elementary course, including demonstrations.

103. Meteorology. (3) Breiland
Introduction to the physics of the atmosphere. Weather analysis and forecasting.

111. General Physics. (3) Breiland, Howarth, King, Swinson
Mechanics, sound, heat. The sequence 111, 112, 113L, 114L is required of premedical, predental, and preoptometry students, also of NROTC students in A. & S. and of Pharmacy students. Prerequisites: One of the courses Mathematics 120, 121, 160, 162.

112. General Physics. (3) Breiland, Howarth, King, Swinson
Electricity and magnetism, optics. Prerequisite: 111.

113L. General Physics Laboratory. (1)
Mechanics, sound, heat. Pre- or corequisite: 111. 3 hrs. lab.

114L. General Physics Laboratory. (1)
Electricity, magnetism, optics. Pre- or corequisite: 112. 3 hrs. lab.

260. General Physics. (3) Beckel, Breiland, Bryant, Dean, Green, Howarth, King, Regener, Swinson
Mechanics, sound. The sequence Physics 260, 261, 262, 263L, 264L is required of students planning to major in certain sciences and in engineering. Pre- or corequisite: Mathematics 161 or 163.

261. General Physics. (3) Beckel, Breiland, Bryant, Dean, Green, Howarth, King, Regener, Swinson
Heat, electricity, magnetism. Prerequisite: 260; pre- or corequisite: Mathematics 264.

262. General Physics. (3) Beckel, Breiland, Bryant, Dean, Green, Howarth, King, Regener, Swinson
Optics, modern physics. Prerequisite: 261; pre- or corequisite: Mathematics 265.

263L. General Physics Laboratory. (1)
Mechanics, sound, heat. Pre- or corequisite: 261. 3 hrs. lab.

264L. General Physics Laboratory. (1)
Electricity, magnetism, optics. Pre- or corequisite: 262. 3 hrs. lab.

267. General Physics. (3)
A fourth semester of general physics for science majors. Prerequisite: 262.

****301. Heat and Thermodynamics.** (3) Alpert, Bryant, Dean, Green, Howarth, Thomas
Kinetic theory; specific heats; conduction, convection, radiation; change of state; classical thermodynamics. Pre- or corequisite: Mathematics 311. (Semester I)

****302. Physical Optics.** (3) Alpert, Bryant, Dean, Green, Howarth, Leavitt, Thomas
Wave theory of light; Fresnel and Fraunhofer diffraction; polarization; dispersion, absorption and scattering; black-body radiation. Pre- or corequisite: Mathematics 311. (Semester II).

****303-304. Analytical Mechanics.** (3, 3) Bryant, Chandler, Dean, Green, Leavitt, Thomas
Statics and dynamics of particles and rigid bodies; introduction to Lagrange's method. Pre- or corequisites: Mathematics 311, 312.

****305-306. Electricity and Magnetism.** (3, 3) Bryant, Dean, Green, Howarth, Thomas
Electrostatic and electro-magnetic field theory. Direct and alternating current circuit theory. Pre- or corequisites: Mathematics 311, 312.

****307L-308L. Junior Laboratory.** (2, 2) Alpert
Heat, electricity, electronics, optics. 1 lecture, 3 hrs. lab. each semester.

** Available for graduate credit except for graduate majors in Physics.

****330. Atomic and Nuclear Physics.** (3) Bryant, Dean, Green, Leavitt, Swinson, Thomas
Special relativity, quantum effects, atomic structure, X-rays, nuclear structure and nuclear reactions, instruments of modern physics. Prerequisite: 262 or equivalent.

****351. Introduction to Atomic and Nuclear Physics.** (3) SS
Elementary particles, electro-magnetic radiation, structure of the atom, radioactivity, nuclear reactions. Prerequisite: one year of college physics. (Offered in the summer session primarily for secondary-school teachers.)

***400. Seminar. (1 hr. per semester)** Staff

***430. Physics of Matter.** (3) Dean, Green, Leavitt
An introduction to experiment and theory in the structure of matter: physical properties and mechanics of fluids, binding in solids, mechanical and thermal properties of solids, electrical and magnetic properties of matter, semi-conductors, plasmas. Prerequisite: 330 or equivalent.

***434. Radiological Physics.** (3) Howarth
Radiation dosimetry, applications to diagnostic and therapeutic radiology, the use of radioactive materials in biology and medicine.

***440. Atmospheric Physics.** (3) Breiland
Distribution of gases in the atmosphere; the ozone problem; distribution and variation of temperature; the ionosphere; aurora and the light from the night sky; atmospheric electricity. Pre- or corequisite: Mathematics 311.

***445. Cosmic Radiation.** (3) Swinson
Primary cosmic radiation, the production and detection of secondary radiation, time variations, extensive air showers, applications to high-energy physics.

***461-462. Experimental Research Methods.** (1, 1) Alpert, Bryant, Dean, Green, Howarth, Hyder, Leavitt, Koch, Regener, Swinson
Advanced laboratory work.

***463-464. Experimental Research Methods.** (2, 2) Alpert, Bryant, Dean, Green, Howarth, Hyder, Leavitt, Koch, Regener, Swinson
Advanced laboratory work.

***466. Methods of Theoretical Physics.** (3) Beckel, Dean, Thomas
Problems of diffusion, heat conduction, wave motion, and potential theory.

***491-492. Contemporary Physics.** (3, 3) Bryant, Campbell, Dean, Green, Leavitt, Regener
Theory of special relativity, introduction to quantum mechanics; atomic and nuclear physics, cosmic rays.

***493-494L. Contemporary Physics Laboratory.** (2, 2) Bryant
Spectrographic methods; lasers; atomic structure; natural and artifiicial radioactivity; cosmic rays. 6 hrs. lab. each semester.

***500. Advanced Seminar. (1-3 hrs. per semester)** Staff

***503. Classical Mechanics I.** [Classical Mechanics] (3) Green, Thomas
Lagrangean dynamics, rigid bodies, oscillations, continuous systems.

***504. Classical Mechanics II.** (3) Campbell
Hamiltonian dynamics, canonical transformations, Hamilton-Jacobi theory, applications of mechanics. Prerequisite: 503.

***505. Statistical Mechanics and Thermodynamics.** (3) Thomas
Classical and quantum statistics with applications to molecules and elementary particles.

***511. Electrodynamics I.** [Electrodynamics] (3) Campbell, Green, Thomas
Electrostatics, Maxwellian thory of fields, classical theory of radiation.

***512. Electrodynamics II.** [Advanced Electrodynamics] (3) Green, Thomas
Covariant form of field equations, classical theory of charged particles. Prerequisite: 511.

***521. Quantum Mechanics I.** [Quantum Mechanics] (3) Green, Leavitt, Thomas
Experimental foundation, Schrodinger equation, operator formulation, perturbation theory.

***522. Quantum Mechanics II.** [Advanced Quantum Mechanics] (3) Thomas
Approximation techniques, scattering theory, symmetry properties, semi-classical theory of radiation, introduction to relativistic quantum theory. Prerequisite: 521.

***523. Quantum Mchanics III.** [Topics of Quantum Field Theory] (3) Thomas
Relativistic wave equations, quantum theory of fields. Prerequisite: 522.

** Available for graduate credit except for graduate majors in Physics.

*530. **Selected Topics in Solid State Physics.**[1] (3) Dean
Structure and properties of crystal lattices, insulators and electronic conductors, semiconductors. Prerequisite: 522.

*531. **Atomic Structure.** (3) Beckel
Hydrogen atom, complex atoms, methods of calculating atomic properties. Prerequisite: 522.

*532. **Molecular Structure.** (3) Beckel
Rotational, vibrational, and electronic properties of simple molecules. Prerequisite: 531.

*534. **Selected Topics in Biophysics.**[1] (3) Howarth
Biological and medical applications of physical principles and methods, aspects of radiation dosimetry and radiological physics, physical aspects of radiobiology, the physics of perception.

*537. **Selected Topics in Space Physics.**[1] (3) Leavitt
Particles and fields in space: plasmas and magnetic fields, trapped radiation, solar effects, acceleration mechanisms, origins and composition of galactic radiation, experimental techniques.

*541. **Theoretical Nuclear Physics I.** [Theoretical Nuclear Physics] (3) Chandler, Green, Leavitt, Thomas
Properties of nuclei, decay processes, nuclear reactions, two-nuclon problem. Prerequisite: 522.

*542. **Theoretical Nuclear Physics II.** (3) Chandler
Nuclear Models. Prerequisite: 541.

*543. **Selected Topics in High-Energy Physics.**[1] (3) Leavitt, Thomas
S-matrix theory, field theory, symmetries, weak interactions, electromagnetic interactions, hadron resonances. Prerequisite: 522.

*551-552. **Problems.** (2-4 hrs. each semester) Staff

*566. **Advanced Methods of Theoretical Physics.** (3) Beckel, Thomas

*570. **General Relativity.** (3) Campbell
Generalization of the special theory, Riemannian geometry, the field equations, special topics. Prerequisite: 491.

*599. **Master's Thesis.** (1-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

*650. **Research.** (6-12) Staff

*699. **Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

ASTRONOMY

101. **Introduction to Astronomy.** (3) King, Koch
A non-technical course, including observations with the telescope.

270-271. **General Astronomy.** (3, 3) King, Koch
Prerequisite: Physics 260.

311L. [272L] **Observational Astronomy I. (4) Koch
The photographic process, darkroom procedures, astronomical photography with the equatorial telescope. Prerequisite: 270-271. 3 lectures, 2 hrs. lab.

312L. [321L] **Observational Astronomy II. (4) Koch
Basic precepts of visual observation, photoelectric photometry with the equatorial telescope. Prerequisite: 270-271. 3 lectures, 2 hrs. lab.

*421. **Introduction to Astrophysics.** (3) King
Distances, motions, masses, luminosities, colors, and spectra of stars. Binary stars, interstellar material, stellar photometry and evolution of stars. Prerequisite: Physics 267.

*422. **Solar System.** (3) King, Koch
Configuration of the planets and their satellites, planetary surfaces and atmospheres, the interplanetary medium, solar-terrestrial effects.

*423. **Solar Physics.** (3) Hyder
The sun as a star, photosphere, chromosphere, corona, solar activity, solar emission of matter and radiation, experimntal techniques. Prerequisite: 421.

*424. **Stellar Structure.** (3) King
Chemical composition, temperature, energy sources of the stars. Prerequisite: 421.

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[1] **May be repeated for credit with permission of Department Chairman.**
** Available for graduate credit except for graduate majors in physics.

POLITICAL SCIENCE

Professors C. F. Heady, E. C. Hoyt (Chairman); Associate Professors D. I. Cline, M. C. Needler, M. Neuweld; Assistant Professors H. Ingram, L. Littwin, H. V. Rhodes, H. P. Stumpf, T. P. Wolf and Staff.**

MAJOR STUDY

A total of 36 hours including Political Science 100, 102, 203 and 9 upper division courses in Political Science, including a minimum of one course from each of the following four groups:

Group A (International Relations and Comparative Government): 342, 343, 351, 355, 356, 357, 358, 442, 450, 457, 458, 469, 480.

Group B (Local Government and Public Administration): 301, 302, 304, 308, 321, 422.

Group C (Political Theory): 361, 362, 368.

Group D (National Government and Politics): 305, 306, 311, 375, 412, 475.

Up to 6 hours of the major study requirement may be satisfied by related courses from other departments, chosen with the prior approval of the Department of Political Science.

MINOR STUDY

A total of 21 hours including Political Science 100 and 102 or 203.

DISTRIBUTED MINOR FOR POLITICAL SCIENCE MAJORS

With the consent of the Departmental Chairman, a major may offer an American Studies minor as well as a minor in a single department. For requirements, see American Studies.

100. [201] **American Government.** (3)

102. Comparative Politics. (3)

203. International Politics: Basic Factors. (3)

***301. Municipal Government and Administration.** (3) Cline
The organization, administration, and problems of counties, municipalities, metropolitan areas, and administrative districts. Prerequisite: 100.

***302. State Government in the United States.** (3) Cline
Prerequisite: 100 (Alternates with 304.)

303. Problems of Democracy. (3)
Government problems of special contemporary importance. (No credit toward Political Science major or minor.)

***304. The Government of New Mexico.** (3) Cline
Prerequisite: 100. (Alternates with 302.)

***305. Public Opinion and Propaganda.** (3) Wolf
Public opinion as it affects party alignments and governmental programs, the methods used by special interests in influencing public opinion.

***306. Political Parties.** (3) Wolf
The American party system, national, state, and local.

***308. Politics in Action.** (3) Cline
Current political action: local campaigns, primaries, legislative programs, lobbying. Prerequisite: 100 or 102.

** New appointments to be made, effective September 1, 1967.

*310. **Problems of Communism and the Soviet Union.** (3) Hoyt, Tobias
An interdisciplinary study of Communist ideology and Soviet power, dealing with historical origins and present nature of the Soviet system; the relationships between the Russian Communist leaders and revolutionaries in other countries; the place of communist ideology in world history and world politics and its relation to rival political beliefs and systems. (Special course for secondary school teachers. Not counted toward Political Science major.) Permission of instructor required.

*311. **The Legislative Process.** (3) Ingram
The recruitment, formal and informal procedure, and power structure of legislative bodies; their place in contemporary American Government. Prerequisite: 100.

*321. **Public Administration.** (3)
Introduction to the general problems of public administration in the modern state. Prerequisite: 100.

*342. **American Foreign Policy.** (3) Hoyt

*343. **International Law and Organization.** (3) Hoyt
Prerequisite: 203.

*350. **Public Finance.** (3) Therkildsen
(Same as Economics 350.)

*351. **Comparative Politics: Developing Countries.** (3)

*355. **Governments and Politics of Latin America.** (3) Needler
A survey of the political institutions of representative Latin American states. Recommended preparation: 102 and History 282.

*356. **Governments and Politics of Latin America.** (3) Littwin
Contemporary political problems of Latin America, with emphasis on the problem of revolution and the politics of nationalism, communism, and the non-Communist radical left. Prerequisite: 355.

*357. **Government and Politics of the Soviet Union.** [Comparative Politics: Communist Countries] (3) Hoyt, Neuweld

*358. **Mexican Government and Politics.** (3) Needler
Prerequisite: 355 plus reading knowledge of Spanish. Recommended: History 398.

*361. **Political Theory from Plato to Locke.** (3) Rhodes
Knowledge of ancient and medieval history is recommended.

*362. **Political Theory from the Enlightenment to Today.** (3) Rhodes
Knowledge of modern European history is recommended.

*363. **Latin American Political Theory.** (3)
The development of political philosophy in Latin America with emphasis on contemporary thinkers. Knowledge of modern Latin American history is recommended.

*368. **American Political Theory.** (3) Rhodes
The origin and development of political ideas in the U.S. from colonial times to the present. Prerequisite: History 161, 162, or permission of the instructor.

*375. **Law and Politics I.** (3) Stumpf
The nature of the judicial process and the role of law and courts in the American political system, with emphasis on the United States Supreme Court. Prerequisite: 100 or permission of instructor.

*412. **Congress and the Presidency.** (3) Ingram

*422. **The Administrative Process.** (3)
Policy formulation; problems of decision-making; conflicts of interest in administration; the contribution of administration to social satisfaction. Prerequsite: 321.

*442. **International Politics II.** (3) Hoyt
Contemporary problems of international politics considered on a regional basis; foreign policies of the United States and other powers. Prerequisite: 203.

*450. **Politics and Governments of Modern Asia.** (3)

*457. **Soviet Foreign Policies.** (3) Neuweld
A survey and analysis of goals and methods of Soviet foreign policies toward the West, the uncommitted countries, Communist China and Eastern Europe. Prerequisite: One of the following: 203, 357, 442; History 303, 349, or permission of instructor.

*458. **Government and Politics of Eastern Europe.** (3) Neuweld
A study of the institutional structures and socio-political forces of the Communist countries of Eastern and South-Eastern Europe (exclusive of the USSR). Prerequisite: One of the following: 102, 357, 457; History 303, 349, or permission of instructor.

*469. **Comparative Politics: Industrial Democracies.** (3) Wolf
Recommended preparation: 102.

*475. **Law and Politics II.** (3) Stumpf
Prerequisite: 375 or permission of instructor.

*480. **Comparative Communist Governments.** (3) Neuweld
A comparative study of ideological, organizational and political aspects of the Soviet Union and Eastern European countries. Prerequisite: One of the following: 357, 458; History 303, 349, or permission of instructor.

*498. **Readings in Political Science.** (3)
Seminar open to graduate students and to undergraduates who have had 18 hours of B-level work in Political Science.

499. **Senior Thesis.** (3)

*501. **Interdepartmental Seminar in the Culture of the United States.** (3) Arms, Tedlock, G. W. Smith
(Same as American Studies 501.)

*506. **Seminar in Political Parties.** (3) Wolf

*511. **Seminar in Urban Government.** (3) Cline

*521. **Seminar in Public Administration.** (3)

*541. **Seminar in International Law and Organization.** (3) Hoyt

*551-552. **Problems.** (1-3 hrs. each semester) Staff

*575. **Seminar in Public Law.** (3) Stumpf

*580. **Seminar in Comparative Government.** (3) Neuweld, Needler, Wolf, Littwin

*584. **Interdisciplinary Seminar on Problems of Modernization in Latin America.** (3) Liepe, Lieuwen, Needler Schwerin
(Same as History 584.)

*596. **Methodology and Bibliography.** (3) Stumpf
Required course for M.A. candidates. Also open to qualified Political Science majors.

*599. **Master's Thesis.** (1-3 hrs. per semester)
See the **Graduate School Bulletin** for total credit requirements.

PORTUGUESE

See Modern and Classical Languages.

PSYCHOLOGY

Professors F. A. Logan (Chairman), R. D. Norman; Associate Professors D. T. Benedetti, H. C. Ellis, L. E. Price, J. M. Rhodes, S. Rosenblum; Assistant Professors D. W. Bessemer, D. P. Ferraro, P. J. Johnson, K. P. Koenig, B. Zippel.

The student wanting a complete introduction to Psychology should take both 101 and 102 with their associated laboratories, 103L and 104L. These courses are strongly recommended for all students and are **required** for major and minor programs and for most upper-level courses. However, credit can be obtained for 101 and/or 102 separately. Normally, students should take at least one 200-level course before registering for more advanced courses. Acceptance of transferred credits toward a major or minor in Psychology must be approved by the department.

MAJOR STUDY

The Psychology major is encouraged to broaden his training in related fields, especially Biology, Mathematics, and the Social Sciences. Toward this end, up to 8 hours credit toward the major requirements (if not used toward the minor requirement) may be counted from the following courses: Biology 323, 324L, 371L, 386L; Mathematics 121, 122, 241, 242, 341, 342; Anthropology

354, 308; Economics 300, 407, 408; Sociology 331, 471; and others justified by the student and approved by his adviser.

The Honors major requires 30 hours credit beyond 8 hours General Psychology, including 280, 391, 392, 491, 492, and one laboratory course numbered above 300.

The standard major requires 26 hours credit beyond 8 hours General Psychology, including 280, 470 and one laboratory course numbered above 300.

The degree of Bachelor of Science is conferred if the minor is in or distributed among Biology, Chemistry, Mathematics or Physics. Otherwise, the Bachelor of Arts degree is conferred.

MINOR STUDY

12 hours beyond 8 hours General Psychology.

DEPARTMENTAL HONORS

Superior sophomore students, especially those anticipating graduate study in Psychology or interested in research training, are invited to apply for admission to the undergraduate Honors Program beginning in the junior year.

[NOTE: For convenience in advance planning of curricula, the course numbering system has the following code: course numbers ending in zero typically offered during both semesters; odd course numbers (except those ending in 7) offered first semester only; even course numbers (except those ending in zero) offered second semester only; course numbers ending in 7 offered summer only.]

101. General Psychology I. (3) Logan
An introduction to the areas of learning, motivation, and comparative-physiological psychology.

102. General Psychology II. (3) Norman
An introduction to the areas of testing, perception, and personality-social psychology.

103L. General Psychology I Laboratory. (1) Logan, Staff
Classroom projects and demonstrations. 2 hrs. lab. requiring bi-weekly reports. Pre- or corequisite: 101.

104L. General Psychology II Laboratory. (1) Norman, Staff
Classroom projects and demonstrations. 2 hrs. lab. requiring bi-weekly reports. Pre- or corequisite: 102.

107. Introductory Psychology. (3) SS
A general introductory course for special summer school students.

210. Educational Psychology. (3) Price
(Also offered as Education Foundations 310.) Introduction to the application of psychological principles to the learning and teaching process. Prerequisite: 101 or 102.

221. Psychology of Learning. (3) Ellis
Survey of laboratory learning situations with application of principles to practical situations. Prerequisite: 101.

260. Psychology of Adjustment. (3) Benedetti
A study of adjustive processes, with emphasis upon motivation, frustration and conflict, defensive behaviors, and psychological health. Prerequisite: 102.

262. Interpersonal Relations. (3) Zippel
Structure and processes involved in relationships between individuals. Prerequisite: 102.

280. Psychological Statistics I. (3) Zippel
An introduction to inferential statistics: sampling theory, estimation techniques, evaluation of experimental data. Prerequisite: Mathematics 010 or 120; or eligibility for Mathematics 121.

282. Psychological Research Techniques. (3) Johnson
An introduction to the methods of behavioral research. Individual projects. Prerequisite: 280.

295. Physiological Psychology. (3) Rhodes
Survey of research on the biological bases of behavior. Prerequisite: 101.

***301. Social Psychology.** (3) Zippel
The behavior of individuals as influenced by other humans. Prerequisite: 260 or 221.

***303L. Social Psychology Laboratory.** (2) Zippel
Laboratory study of the role of social factors influencing psychological processes. Prerequisite: 280; corequisite 301. 4 hrs. lab.

***305. Psychology of Personality.** (3) Koenig
Theories, development, and measurement of personality. Prerequisite: 221 or 260.

***308. Abnormal Psychology.** (3) Koenig
An introduction to the field of psychopathology. Prerequisite: 221 or 260.

***311. Developmental Psychology.** (3) Rosenblum
The child from conception through adolescence with emphasis upon experimental analyses of behavioral development. Prerequisite: 102.

***312. Child Clinical Psychology.** (3) Rosenblum
Theories and practices related to the problems of mentally subnormal, gifted, physically disabled, and emotionally disturbed children and adolescents. Prerequisite: 311.

***313. Mental Subnormality.** (3) Rosenblum
Biological and psycho-cultural factors related to mental deficiency and retardation. Prerequisite: 312.

***321. Learning: Human Skills.** [Psychology of Learning] (3) Johnson, Ellis
Methods, principles and theories of human verbal and perceptual-motor learning. Prerequisite: 221.

***322. Psychology of Perception.** (3) Benedetti
Methods, principles and theories of perception. Prerequisites: 101, 102.

***323L. Human Skills Laboratory.** [Psychology of Learning Laboratory] (2) Johnson, Ellis
Laboratory projects. Prerequisite: 280; corequisite: 321. 4 hrs. lab.

***324L. Psychology of Perception Laboratory.** (2) Benedetti
Laboratory projects. Prerequisite: 280; corequisite: 322. 4 hrs. lab.

***325. Learning: Conditioning.** (3) Ferraro
Methods, principles and theories of classical, instrumental and operant conditioning. Prerequisite: 221.

***327L. Conditioning Laboratory.** (2) Ferraro
Laboratory projects. Prerequisite: 282; corequisite: 325. 4 hrs. lab.

***331. Psychological Testing.** (3) Norman
Problems related to mental measurement; review of various types of tests and their practical applications. Prerequisite: 280.

391-392. Junior Honors Seminar. (3, 3) Ferraro
Contemporary viewpoints and issues in historical perspective. Prerequisite: 221 and permission of instructor; pre- or corequisite: 280.

***411. Conceptual Processes in Children.** (3) Johnson
The development of conceptual, intellectual and linguistic behavior *in* children. Prerequisites: 101, 102.

***412. Advanced Educational Psychology.** (3) Rosenblum
Emphasis on the research applications of psychology to education. Prerequisite: 221.

***417. Programmed Learning.** (2) Ferraro, Ellis
Application of principles of learning necessary for the preparation and use of programmed instructional materials, with practice in frame-writing, construction and evaluation of programs. Prerequisite: 221.

***422. Motivation of Behavior.** (3)
Principles and theories of motivation. Prerequisite: 221.

***424L. Motivation Laboratory.** (2)
Laboratory projects. Prerequisite: 280; corequisite: 422. 4 hrs. lab.

***426. Learning: Conceptual Processes.** (3) Johnson
Methods, principles and theories of thinking, concept formation and problem solving. Prerequisite: 221.

***428L. Conceptual Processes Laboratory.** (2) Johnson
Laboratory projects. Prerequisite: 282; corequisite: 426. 4 hrs. lab.

*451. **Industrial Psychology.** (3)
Application of psychological principles to industrial needs. Prerequisite: 102.

*452. **Engineering Psychology.** (3)
Problems arising from man-machine relationships. Prerequisite: 102.

*470. **History of Psychology.** (3) Benedetti
Survey of the major developments and systems in the history of psychology. Prerequisite: 101 or 102.

*473. **Mathematical Psychology.** (3) Bessemer
Survey of mathematical descriptions of behavior. Prerequisite: 280.

*482. **Psychological Statistics II.** (3)
Multiple and partial correlation, multivariate analysis, factor analysis. Prerequisite: 280 or equivalent.

491-492. **Senior Honors Seminar.** (3, 3) Ellis
Experimental methods and laboratory techniques. Senior thesis based on independent research. Prerequisite: 392.

*493. **Advanced Physiological Psychology.** (3) Rhodes
Intensive examination of neurophysiological bases of behavior. Prerequisite: 221.

*494. **Comparative Psychology.** (3) Bessemer
Heredity, maturation, learning, and the higher mental processes as revealed in various animals. Prerequisite: 221.

*495L. **Advanced Physiological Psychology Laboratory.** (2) Rhodes
Laboratory projects. Prerequisite: 280; corequisite: 493. 4 hrs. lab.

*496L. **Comparative Psychology Laboratory.** (2) Bessemer
Laboratory projects. Prerequisite: 280; corequisite: 494. 4 hrs. lab.

499-498. **Undergraduate Problems. (1-3 hrs. each semester; maximum 6.)**

*501. **Advanced Social Psychology.** (3) Zippel
Prerequisite: 301.

*503. **Theories of Personality.** (3) Norman
Prerequisite: 308.

*505. **Research Techniques in Experimental Psychology.** (2) Ferraro
Shop techniques, elementary principles of electric circuits.

*511. **Advanced Developmental Psychology.** (3) Price
Critical survey of current research techniques and problems in the behavior of children and adolescents. Prerequisite: 311.

*512. **Theory in Educational Psychology.** (3) Logan
The relation of theories of learning to educational psychology.

*516. **Learning and Motivation in Children.** (3) Price
Analysis of theoretical and experimental literature on learning and motivation in simple and complex situations with children. Prerequisite: 511.

*521. **Psychological Statistics III.** (3) Bessemer
Probability theory, analysis of variance, nonparametric tests. Prerequisite: 280 or equivalent.

*522. **Design of Experiments.** (3) Bessemer
Examination of problems of design, control and evaluation of experiments. Prerequisite: 521.

*531. **Introduction to Projective Techniques.** (3) Norman
Prerequisite: 308.

*532L. **Individual Mental Testing.** (3) Norman
Practical laboratory study and discussion of Binet and Wechsler tests. Prerequisite: 331.

*551-552. **Graduate Problems. (2-3 hrs. each semester.)**

*558. **Advanced Industrial Psychology.** (3)
Prerequisites: 280, 451.

*568. **Cognitive Processes.** (3) Johnson
A study of thinking, concept formation, judgment, and problem-solving.

*571. **Theories of Learning.** (3) Logan
Systematic examination of the major issues in learning. Prerequisite: 321.

*574. **Experimental Analysis of Operant Behavior.** (3) Ferraro
An advanced study of the experimental literature, methodology, and applications of free-operant conditioning. Prerequisite: permission of instructor.

*578. **Human Learning: Transfer and Retention.** [Human Learning] (3) Ellis
An examination of experimental issues and theoretical interpretations of transfer and retention.

*582. **Perceptual Learning.** (3) Ellis
Analysis of the processes by which conditions of learning modify perceptual behavior.

*591. **Animal Learning: Complex Processes.** (3) Bessemer
Analysis of complex learning processes and problem solving in animals, with emphasis on the primates.

*596. **Seminar in Physiological Psychology.** (3) Rhodes
Examination of current research and issues. Prerequisite: 496L.

*599. **Master's Thesis.** (1-3 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

*615-616. **Experimental Psychotherapy I, II.** (3, 3) Koenig
Application of experimental methods and theories to clinical problems. Prerequisite: permission of instructor.

*699. **Dissertation.** (3-6 hrs. per semester) Staff
See the **Graduate School Bulletin** for total credit requirements.

RECREATION

See Education, Health, Physical Education, and Recreation.

RUSSIAN

See Modern and Classical Languages.

RUSSIAN STUDIES

Committee in Charge: Assistant Professor H. Tobias (History), Chairman; Professor R. Murphy (Geography); Associate Professors M. Neuweld (Political Science), W. Wagar (History); Assistant Professors P. Chung (Economics), R. Holzapfel (Modern Languages).

The combined major in Russian Studies is administered by the interdepartmental committee listed above. The object of the program is to provide the student with a broad knowledge of modern Russia through study of the social sciences, humanities, and language. Study of the Russian language beyond a reading knowledge is required. A minor is also offered in the field.

Major in Russian Studies

FOREIGN LANGUAGE, 18 hours
Russian 101, 102, 251, 252, 307, 345

ECONOMICS, GEOGRAPHY, AND POLITICAL SCIENCE, 18 hours
Economics 200, 201, 450 or 455
Geography 333
Political Science 357, and one of the following, 457, 458, or 480

HISTORY, 12 hours
History 102, 303, 347, 349

ADDITIONAL REQUIREMENTS, 15 hours to be selected following consultation with the adviser
Economics 360
Geography 102, 331
Political Science 203, 361, 362
History 335, 336, 340, 354
Russian 338
Sociology 101, 451, 461

Minor in Russian Studies, 21 hours

FOREIGN LANGUAGE
Russian 101, 102, 251, 252

9 ADDITIONAL HOURS CHOSEN FROM:
Economics 450, 455
Geography 333
Political Science 357, 457, 458, 480
History 303, 347, 349
Russian 307, 338, 345

SECONDARY EDUCATION

See Education, Elementary and Secondary Departments, Secondary.

SOCIOLOGY

(Chairman)†; Associate Professor N. L. S. Gonzalez; Assistant Professors L. C. Dilatush, J. L. Dyer, M. A. Forslund, H. C. Meier, C. E. Woodhouse; and Staff.

MAJOR STUDY

36 hours of course work, including 101, 331 or 431, 351 or 451, 341 or 445, 371 or 471 and 481, and including two courses in Economics and/or Political Science at the 200 level or above.

MINOR STUDY

18 hours in Sociology courses, of which 12 must be above 300, and including 101, 351 or 451, 341 or 445.

DISTRIBUTED MINOR FOR SOCIOLOGY MAJORS

With the consent of the departmental chairman, a major may offer an American Studies minor as well as a minor in a single department. For requirements, see American Studies.

101. Introduction to Sociology. (3) Dilatush, Dyer, Forslund, Meier, Woodhouse
Basic course; prerequisite to most other courses in the department.

211. Social Problems. (3) Forslund
Prerequisite: 101 or 401 or equivalent.

221. The Fields of Social Work. (3) Woodhouse
History and philosophy of social work; an introduction to case work, group work, community organization, and organized social action; professional status of the social worker; analysis of social needs from selected life histories. Prerequisite: 101 or 401 or equivalent.

225. Structure and Functions of the Family. (3) Dyer, Meier
Prerequisite: 101 or 401 or equivalent.

301-302. Interdepartmental Studies in the Culture of the U.S. (3, 3)
(Same as American Studies 301-302.) May be taken for departmental credit only with the consent of the Chairman.

***311. Social Problems of New Mexico.** (3)

***312. Juvenile Delinquency.** (2-3)
Prerequisite: 101 or 401 or equivalent.

***313. Criminology.** (3) Forslund
Crime as a social phenomenon. Prerequisite: 101 or 401 or equivalent.

***314. Probation and Parole.** (2)
Treatment of delinquents and criminals with a major objective of rehabilitation; accumulated experience and studies of results; community interests and responsibilities involved; predictions of success of treatment. Prerequisite: 312 or 313.

***316. Race and Cultural Relations.** (3) Gonzalez
Prerequisite: 101 or 401 or equivalent.

† To be appointed effective 1967 fall semester.

***321. Sociology of Medical Practice.** (3) Dilatush
Analysis of medical care settings like hospitals with special attention on the professional roles of medical practitioners and the role of the patient. Prerequisite: 101 or 401 or equivalent.

***331. Collective Behavior.** (3) Woodhouse
Prerequisite: 101 or 401 or equivalent.

***341. Sociology of Industrial Relations.** (3) Dyer
The influence of progressive industrialization on traditional institutional arrangements. Prerequisite: 101 or 401 or equivalent.

***351. The Urban Community.** (3)
The form and development of the urban community with respect to demographic structure, spatial and temporal patterns, and functional organization. Metropolitan emergence and city-hinterland relations. Prerequisite: 101 or 401 or equivalent.

***361. Social Implications of Technological Change.** (3) Gonzalez
(Also offered as Anthropology 361.) The impact of technological change on societal institutions with special attention to underdeveloped areas. Prerequisite: 101 or 401 or equivalent.

***365. Urbanization in Latin America.** (3) Gonzalez
(Also offered as Anthropology 365.) Analyzes the processes related to urbanization in Latin America, comparing them with developments following industrialization and rural-to-urban migrations elsewhere. Emphasis on social and cultural changes accompanying rural-to-urban migration. Prerequisite: 101 or 401 or equivalent.

***371. History of Social Thought.** (3) Woodhouse
Prerequisite: 101 or 401 or equivalent.

***401. Systematic Sociology.** (3) Meier
Advanced treatment of general and systematic sociology for majors and minors in the field. Also intended for junior, senior, and graduate students who have no sociology background. For such students this course will serve as an introductory prerequisite to other sociology courses.

***411. Deviant Behavior.** (3) Forslund
The nature of deviant behavior as it is revealed through a review of theory and research on deviant behavior. Selective examination of particular types of individual and subcultural deviancy. Prospects for the emergence of a general theory of deviant behavior.

***425. Latin American Institutions.** (3)
A study of selected institutional arrangements in various Latin American societies. Prerequisite: 101 or 401 or equivalent.

***431. Society and Personality Development.** (3)
The interaction of personality, the social structure and ideologies; the integration of contributions from various behavior sciences. Prerequisite: 101 or 401 or equivalent.

***435. Small Group Analysis.** (3) Meier
Behavioral dynamics and emergent structures in small groups and interpersonal networks; the interplay of informal and institutionalized patterns of social relationships. Prerequisite: 101 or 401 or equivalent.

***441. Industry and Society.** (3) Dyer
Prerequisite: 101 or 401 or equivalent.

***445. Occupations and Professions.** (3) Woodhouse
A comparison of occupational subcultures; the patterns of interaction and the social norms which characterize relations among colleagues, and their relations with the people being served; recruitment and mobility within occupations; the process of professionalization. Prerequisite: 101 or 401 or equivalent.

***451. Population Problems.** (3)
Prerequisite: 101 or 401 or equivalent.

***461. Social Change.** (3) Woodhouse
The conditions and processes related to the formation of new social structures and the emergence of new social norms as exemplified by political revolutions, reform movements, and cultural diffusion. Theories of social change will be critically analyzed. Prerequisite: 101 or 401 or equivalent.

***471. Contemporary Sociological Theory.** (3) Woodhouse
Analysis and comparison of major contributions to sociological theory since 1900, considering their continuity with older theoretical positions and application in contemporary research. Prerequisite: 101 or 401 or equivalent.

*481. **Research Methods in Sociology.** (3) Meier
Prerequisite: 101 or 401 or equivalent.

490. **Directed Study.** (1-3 hrs. up to maximum of 6) Dilatush, Dyer, Forslund, Gonzalez, Meier, Woodhouse
Restricted to students with substantial background in Sociology. Permission of Chairman required.

*500. **Seminar: Social Organization.** (3) Gonzalez

*501. **Interdepartmental Seminar in the Culture of the United States.** (3) Staff
(Same as American Studies 501.)

*502. **Seminar: Social Processes.** (3) Meier

*503. **Seminar: Social Control.** (3) Woodhouse

*504. **Seminar: Human Ecology.** (3)

*505. **Seminar: Theory of Complex Organizations.** (3) Dyer

*551-552. **Problems.** (2-3 hrs. each semester) Dilatush, Dyer, Forslund, Gonzalez, Meier, Woodhouse

*584. ***Interdisciplinary Seminar on Problems of Modernization in Latin America.*** (3) Liepe, Lieuwen, Needler, Schwerin
(Same as History 584.)

*599. **Master's Thesis.** (1-3 hrs. per semester) Dilatush, Dyer, Forslund, Gonzalez, Meier, Woodhouse
See the **Graduate School Bulletin** for total credit requirements.

SPANISH

See Modern and Classical Languages.

SPECIAL EDUCATION

See Education, Special Education.

SPEECH

Professors W. C. Eubank (Chairman), F. M. Chreist; Associate Professors E. W. Bundy, C. B. Owens; Assistant Professors D. S. Butt, J. W. Carey, R. C. Dick, J. D. Gibb, J. D. Hughey, L. Lamb, M. J. VanGraber; T. W. Norris (Consultant in Audiology); Instructors T. A. Browning, A. W. Johnson, J. D. Ferguson (part-time).

MAJOR STUDY

36 hours in Speech including 101 and 102 (or equivalent), 251, 260, 280, 303, 470, 495 or 496, and 498.

SPEECH MAJOR WITH EMPHASIS IN TELEVISION-RADIO. 42 hours completed in the Departments of Speech and Dramatic Art. Required Speech courses: 101, 102, 251, 260, 265, 280, 303, 470, 480, 495 or 496 or 498, and 3 hours selected from 465 and 466. Required Dramatic Art courses: 351 and 6 hours selected from 305, 306, and 352.

SPEECH MAJOR WITH EMPHASIS IN TELEVISION-RADIO JOURNALISM. 42 hours completed in the Departments of Speech and Journalism. Required Speech courses: 101, 102, 251, 260, 265, 280, 303, 470, 480, 495 or 496 or 498, and three hours selected from 465 and 466. Required Journalism courses: 251, 252 and 494.

SPEECH MAJOR WITH EMPHASIS IN SPEECH CORRECTION. 39 hours in the Department of Speech: 101, 102, 280, 285, 303, 321, 330, 430, 435, and 9 hours (3 hours upper-division) selected from areas other than Speech Pathology and Audiology.

MINOR STUDY

21 hours completed in the Department of Speech, including 101, 102, 260, 280 and 470.

Students in the College of Arts and Sciences may minor in Dramatic Art. For course requirements, see p. 263.

101-102. Fundamentals of Speech. (3, 3) Staff
The preparation and delivery of original and practical extempore speeches, including a study of rhetorical principles, audience psychology, methods of presentation, and the basic principles of the physiology of speech and voice.

103. Speech Improvement. (3) Butt, Chreist
Articulation, voice and language problems in formal and informal speech situations. 2 lectures, 2 hrs. lab.

105. Speech for Foreign Language Students. (3) Butt, Chreist
Designed for the student who speaks English with a foreign accent or who lacks English speech patterns and rhythms. Considerable work will be given in International Phonetics. 2 lectures, 2 hrs. lab.

250. Parliamentary Procedure. (1) Eubank, Owens, Van Graber
Study and practice of the rules governing the proceedings of groups and deliberating assemblies.

251. Introduction to Radio and Television. (3) Bundy
Origin and development of broadcasting; nature, functions, obligations, and responsibilities of radio and television in modern society; observation of studio operations and techniques. Prerequisite: permission of instructor.

255. Public Speaking. (3) Staff
Critical analysis of significant public speeches. Emphasis on audience analysis and adaptation, organization and delivery. Speech majors and minors should take 101 and 102, and not 255. **Credit will not be allowed for both 101 and 255.** Students having completed 255 may take 305.

260. Oral Interpretation. (3) Eubank, Van Graber
Voice training with emphasis upon the developing of voice and body in oral communication; oral reading of poetry and prose excerpts. Prerequisite: 101 or 255.

265. Production Procedures in Radio and Television. (3) Bundy
Theory, methods, tools, and techniques of basic television-radio production. Prerequisite: 251 or permission of instructor.

277. Discussion and Leadership Training. (3) Dick, Eubank, Hughey, Owens
Theory and practice of elements of discussion and related leadership training. Prerequisite: permission of instructor.

278. Argumentation and Debate. (3) Carey, Dick, Eubank
Theory and practice of principles of argumentative speaking and debate aimed at training the student to be a more effective advocate in the public forum. Prerequisite: permission of instructor.

280. Scientific Bases of Speech. (3) Chreist
The bases of the speech process as presented in the scientific materials of such related fields as physics, physiology, psychology, and linguistics.

285. Introduction to Speech Pathology. (3) Butt, Chreist
Nature, diagnosis, and treatment of speech disorders. Prerequisite: 280 or permission of instructor.

***303. Phonetics.** (3) Chreist
English phonetics as applied to the problems of articulation, pronunciation, rhythm, dialects, and to the teaching of speech, English, and to speech correction.

***305. Advanced Public Speaking.** (3) Carey, Eubank, Gibb, Owens
Rhetorical principles combined with construction and delivery of various forms of public address. Prerequisites: 101 and 102 or 255 or permission of instructor.

***310. Theories of Communication.** (3) Hughey
Critical analysis of contemporary theories, concepts, models, and empirical research relevant to communicative processes ranging from intrapersonal communication to mass communication. Prerequisite: Permission of the instructor.

*311. **Problems of Interpersonal Communication.** (3) Hughey
Application of modern communication theory in the interview and small group environment. Emphasis upon identifying and eliminating barriers to communication. Prerequisite: Permission of instructor.

*321. **Introduction to Audiology.** [Pathologies of Hearing] (3) Lamb
History of audiology; the auditory stimulus; pathological conditions of the auditory system; basic methods of individual pure tone audiometry. Prerequisites: 285 or permission of instructor.

*330. **Speech Pathology in the Schools.** (3) Butt, Chreist
An introduction to types of speech and hearing problems found in the schools. Prerequisite: permission of instructor.

*354. **The Nature of Language.** (3) Newman
(Same as Anthropology 354.)

*359. **Language and Culture.** (3) Rigsby
(Same as Anthropology 359.)

*361. **Advanced Oral Interpretation.** (3) Eubank, Van Graber
Theory and techniques involved in the interpretation of prose, drama, and poetry. The student will build and present a lecture-recital. Prerequisite: 260 or permission of instructor.

*392. **Introduction to Linguistics.** (3) Pickett
(Same as English 392.)

*403. **History of the English Language.** (3) Baltzell, Kuntz
(Same as English 403.)

*422. [560] **Hearing Conservation.** [Audiology in Hearing Conservation] (3) Lamb
The role of the speech and hearing specialist in hearing conservation programs; screening audiometry; special tests for infants and children; hearing problems in industry. Prerequisites: 321 or permission of the instructor.

*430. **Development of Speech and Language.** (3) Butt, Chreist
The study of typical and atypical acquisition of phonetic and morphemic skills in the child and in the adult. Prerequisites: Psychology 311, Educational Foundations 300, Speech 280 or permission of instructor.

*435. **Pathological Problems in Speech.** (3) Butt, Chreist
Problems of speech including those of articulation and voice. Laboratory work required. Prerequisite: 285 or permission of instructor.

*436. **Stuttering.** (3) Butt
The various theories of stuttering and other rhythmic disorders as well as corrective therapies will be studied. Prerequisite: 285 or permission of instructor.

*437. **Aphasia.** (3) Butt, Chreist
Symbolic disorders of communication, including receptive and expressive speech and language problems. Prerequisites: Speech 285 and 430 or permission of the instructor.

*450. **Anatomy and Neurophysiology of Speech and Hearing.** (3) Lamb
Structure and function of the speech and hearing mechanisms as they relate to normal and disordered communication. Prerequisites: 280 or permission of the instructor.

*458. **Clinical Practice.** (3) Butt, Chreist
Speech pathology and audiology in the clinic. Prerequisites: 321, 435, 436, or permission of instructor.

*465. **Broadcast Programming and Policy.** (3) Bundy
Principles of television and radio programming; analysis of programming practices; regulations governing broadcasting; responsibilities of broadcasters. Prerequisites: 251 and permission of instructor.

*466. **Television and Radio Writing.** (3) Bundy
Theory, analysis, and practice in writing station and program continuity. Prerequisite: permission of instructor.

*470. **Teaching Speech in the Schools.** (3) Eubank
For teachers in the elementary and secondary schools. Prerequisite: permission of instructor.

*480. **Advanced Television-Radio Production and Directing.** (3) Bundy
Practicum in television-radio. Detailed study of directing techniques; planning, preparation, and presentation of program projects. Prerequisite: completion of all other requirements of Television-Radio Emphasis.

*490. **Administration of the Forensic Program.** (3) Eubank, Owens
Directing competitive speech activities: debate, discussion, oratory, extemporaneous and impromptu speaking, oral interpretation, tournaments and festivals in high school and college. Prerequisite: 470 or permission of instructor.

493. **Reading and Research in Honors.** (3)

494. **Senior Thesis.** (3)

*495. **American Public Address.** (3) Eubank, Owens
Speeches of great American speakers studied against the background of their lives and the issues of the times. Prerequisites: 101, 102, 277, or permission of instructor.

*496. **British Public Address.** (3) Eubank, Owens
Speeches of great British speakers studied against the background of their lives and the issues of the times. Prerequisites: 101, 102, 277, or permission of instructor.

*498. **Persuasion.** (3) Eubank, Owens
Open to seniors and graduates. Theory of persuasion. Construction and delivery of persuasive speeches. Prerequisite: permission of instructor.

*499. **Rhetorical Theory.** (3) Eubank, Gibb, Owens, Van Graber
Focus on classical rhetorical theories. Some attention will be given to British rhetorical theorists of the 18th and 19th centuries. Prerequisite: permission of instructor.

*500. **Introduction to Graduate Study.** (3) Chreist, Eubank, Owens
The various areas within the field of speech with emphasis on research problems, techniques and bibliography. Each student will submit a seminar paper demonstrating research ability. Required of all graduate students.

*520. **Seminar in Television and Radio.** (3) Bundy

*530. **Advanced Speech Pathology.** (3) Butt, Chreist
The less common types of speech and hearing problems which require clinical treatment.

*535. **Speech and Hearing Problems of the Retarded.** (3) Butt, Chreist
Differential diagnosis and therapy for developmental retardation in speech and language. Prerequisite: permission of instructor.

*540. **Classical Rhetoric.** (3) Eubank, Gibb, Owens
Emphasis on rhetorical criticism; a study of the works of the ancients that have influenced rhetorical thought, criticism and speaking (Attic and Roman orators and rhetoricians.)

*542. **Communication Research.** (3) Hughey
Critical consideration of the nature and selection of research problems in speech communication, with special emphasis on measurement methodologies, techniques of data collection and analysis, and interpretation of results. Prerequisite: permission of instructor.

*545. **Seminar in Public Address.** (3) Eubank, Gibb, Owens
Prerequisite: Speech 495 or 496.

*551-552. **Problems.** (2-3 hrs. each semester) Staff

*560. [422] **Audiology and Audiometry.** [Hearing Problems and Hearing Testing] (3) Lamb
Techniques of evaluating residual hearing; administration and interpretation of differential diagnostic hearing tests; speech audiometry and hearing aid evaluation. Prerequisites: 321 or permission of instructor.

*565. **Seminar in Aural Rehabilitation.** (3) Lamb
Prerequisite: 321 or equivalent.

*599. **Master's Thesis.** (1-3 hrs. per semester)
See the **Graduate School Bulletin** for total credit requirements.

WESTERN EUROPEAN STUDIES

Committee in Charge: Assistant Professor H. Tobias (History), Chairman; Professor R. Murphy (Geography); Associate Professors M. Neuweld (Political Science), W. Wagar (History); Assistant Professors P. Chung (Economics), R. Holzapfel (Modern Languages).

The combined major in Western European Studies is administered by the interdepartmental committee listed above. The object of the program is to provide the student with a broad knowledge of the area in the social sciences and the humanities buttressed by a strong background of language study. Proficiency

in French and a reading knowledge in German or Spanish are required. Students are expected to use the languages as tools in the advanced courses of the program.

FOREIGN LANGUAGE, 24 hours
One of the following is required.
French 101, 102, 251, 252, 301, 302
German 101, 102, 251, 252, 301, 302
Spanish 101, 102, 251, 252, 301, 302
In addition, six hours above 300 in the literature since 1800 and in the language are required. In Spanish, the literature must be Peninsular. If the language offers a reading as well as an oral sequence in the lower division, the student may choose either one.

HISTORY, 24 hours
History 101, 102, 335, 336
Twelve additional hours chosen from 303, 333, 340, 341, 344, 396, 428, 429, 438, 442

ECONOMICS, GEOGRAPHY, POLITICAL SCIENCE, AND SOCIOLOGY, 30 hours
Economics, 9 hours
Economics 200, 201, 450
Geography, 3 hours
Geography 332
Political Science, 12 hours
Political Science 102, 203, 362, 469
Six additional hours chosen from the following:
Economics 360, 364, 424
Geography 381
Political Science 442
Sociology 371

LITERATURE, ART, MUSIC, 6 hours
English 432, 435, 437, 478, 481, 482, 486
Music 312
Art 481, 482, 491

STATISTICS

*ENROLLMENT FOR 1966-67

	Men	Women	Total
Semester I, 1966-67	7,958	5,021	12,979
Semester II, 1966-67	7,419	4,738	12,157
Summer Session, 1966 (including workshops)	2,478	2,404	4,882

SUMMARY OF DEGREES CONFERRED 1901-1966

Earned Degrees				Total Earned Degrees	Honorary Degrees
Bachelor's	Master's	Law	Doctor's		
15,501	4,031	294	318	20,144	96

* Exclusive of correspondence, extension, and non-credit courses.

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C A L E N D A R

1968-69 Academic Year

1968 SUMMER SESSION

	1968
New Student Orientation	June 14, Fri.
Registration	June 15, Sat.
Instruction begins; Late Registration Fee applies	June 17, Mon.
Late Registration closes; last day for additions to programs; Change of Program Fee applies	June 21, Fri., 5 p. m.
End of Second Week; last day for withdrawal from course without grade	June 28, Fri., 5 p. m.
Fourth of July, holiday	July 4, Thu.
Session ends	Aug. 9, Fri., 10 p. m.

SEMESTER I, 1968-69

	1968
New Student Orientation Period	Sept. 9, Mon.-Sept. 10, Tues.
Advisement and Registration	Sept. 11, Wed.-Sept. 14, Sat.
Instruction begins; Late Registration Fee applies	Sept. 16, Mon.
Late Registration closes	Sept. 21, Sat. noon
Last Day for additions to programs of registered students; Change of Program Fee applies	Sept. 28, Sat. noon
End of Fourth Week; last day for withdrawal from course without grade	Oct. 12, Sat. noon
Homecoming, holiday	Oct. 19, Sat.
N. M. E. A. Convention, recess begins	Oct. 23, Wed., 10 p. m.
Classes resume	Oct. 28, Mon., 7:30 a. m.
Midsemester; deadline for faculty grade reports for first half of fall semester	Nov. 13, Wed., 9 a. m.
Thanksgiving recess begins	Nov. 27, Wed., 10 p. m.
Classes resume	Dec. 2, Mon., 7:30 a. m.
End of Twelfth Week; last day for removal of Incomplete Grade; last day for withdrawal from course without College approval	Dec. 14, Sat. noon

	1968
Christmas recess begins	Dec. 21, Sat., 10 p. m.
	1969
Classes resume	Jan. 6, Mon., 7:30 a. m.
Closed Period:	Jan. 13, Mon.-Jan. 25, Sat.
Pre-examination Week	Jan. 13, Mon.-Jan. 19, Sun.
Semester Final Examinations	Jan. 20, Mon.-Jan. 25, Sat.
Semester ends	Jan. 25, Sat., 10 p. m.

SEMESTER II, 1968-69

	1969
New Student Orientation Period	Jan. 31, Fri.-Feb. 1, Sat.
Advisement and Registration	Feb. 3, Mon.-Feb. 5, Wed.
Instruction begins; Late Registration Fee applies	Feb. 6, Thu.
Late Registration closes	Feb. 12, Wed., 5 p. m.
[illegible] programs of registered students; Change of Program Fee applies	Feb. 19, Wed., 5 p. m.
End of Fourth Week; last day for withdrawal from course without grade	Mar. 5, Wed. 5 p. m.
Midsemester; deadline for faculty grade reports for first half of spring semester	Apr. 2, Wed., 9 a. m.
Spring recess begins	Apr. 2, Wed., 10 p. m.
Classes resume	Apr. 10, Thu., 7:30 a. m.
Honors Assembly	To be arranged
Fiesta Day, holiday	To be arranged
End of Twelfth Week; last day for removal of Incomplete Grade; last day for withdrawal from course without College approval	May 7, Wed., 5 p. m.
Closed Period:	May 22, Thu.-June 4, Wed.
Pre-examination week	May 22, Thu.-May 28, Wed.
Semester Final Examinations	May 29, Thu.-June 4, Wed.
Semester ends	June 4, Wed., 10 p. m.
Commencement	June 6, Fri.

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