

THE UNIVERSITY OF ARIZONA

*Supplement*

*revisions in the*

**BIENNIAL CATALOGUE**

*for*

**1964-1965**

THE UNIVERSITY OF ARIZONA, TUCSON

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June, 1964

THE  
UNIVERSITY OF ARIZONA  
RECORD

*Announcements in this catalogue concerning regulations, fees, curricula, or other matters, are subject to change without notice.*

STATEMENT OF MAILING PRIVILEGE

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- 3 Before "COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION" add: COLLEGE OF ARCHITECTURE.
- 3 Under "COLLEGE OF FINE ARTS" delete: Department of Architecture.
- 3 Before "COLLEGE OF PHARMACY" add: COLLEGE OF NURSING.
- 3 Under "COLLEGE OF LIBERAL ARTS" delete: School of Nursing.
- 6 *ACADEMIC CALENDAR, 1964–65, first semester, change date of opening of residence halls for new students to: Sept. 2, Wed.*
- 6 "Homecoming," change date to: Nov. 7, Sat.
- 7 *ACADEMIC CALENDAR, 1964–65, to "La Fiesta de las Vaqueros — no classes," add: Feb. 25, Thurs.*
- 7 Before "Spring recess," add: Records close for Midterm Scholarship Report, March 16, Thurs.
- 9 Add the following:
- MARVIN D. JOHNSON (1952).....*Vice President for University Relations*  
B.S., 1950, M.Sc., 1957, University of Arizona
- WILLIAM VORIS (1963).....*Dean of the College of Business and Public Administration*  
B.S., 1947, M.B.A., 1948, University of Southern California;  
Ph.D., 1951, The Ohio State University
- MERLIN K. DUVAL, JR. (1964) .....*Dean of the College of Medicine*  
A.B., 1943, Dartmouth College; M.D., 1946, Cornell University Medical College
- HOWARD S. COLEMAN (1964) .....*Dean of the College of Engineering*  
B.S., 1938, M.S., 1939, Ph.D., 1942, The Pennsylvania State University
- ROBERT LESLIE HULL (1964) .....*Dean of the College of Fine Arts*  
B.Mus., 1939, M.Mus., 1941, Eastman School of Music; Ph.D., 1945, Cornell University
- 10 Change title of "Sidney Wahl Little" to: Dean of the College of Architecture.
- 10 Change title of "Pearl Parvin Coulter" to: Dean of the College of Nursing.
- 80 Last paragraph, following "the Association of American Law Schools," insert: the American Chemical Society.
- 80 Same paragraph, following "the National League of Nursing," insert: the National Architectural Accrediting Board, and the National Council of Accreditation of Teacher Education.
- 85 Before "the INSTITUTE OF WATER UTILIZATION," insert:  
The INSTITUTE OF GOVERNMENT RESEARCH, a part of the Department of Government, is a research center for study in the various areas of political theory, American and comparative governments and politics, and international relations. Research programs include projects in public administration, Arizona government and politics, public policy, and Latin-American governments and politics.
- 91 ADMISSION OF FOREIGN STUDENTS, fifth line, change "Registrar's Office" to: Office of the Foreign Student Adviser.
- 100 CLASSIFICATION OF STUDENTS, second paragraph, first sentence, change "Graduate Students are such students of the University . . ." to: GRADUATE STUDENTS are such graduates of the University . . ."

- 103 *First paragraph, delete last three sentences, and substitute:*  
Those students having no requirement may register for physical education activity courses providing they are carrying at least 3 units of other credit course work.
- 107 *REQUIREMENTS FOR GRADUATION, under column headed "Degree," change 15th item to: Bachelor of Science in Business Administration.*
- 112 *DISMISSAL FROM COURSES OR FROM THE UNIVERSITY, delete second sentence and substitute:*  
Students who have been dismissed from the University are denied student privileges during the period of suspension.
- 112 *Same paragraph, delete last sentence and substitute:*  
They are not allowed to enroll for Continuing Education or evening courses, and they may not establish credit by examination during the period of suspension.
- 112 *Last line on page, delete "disqualification or . . ."*
- 115 *Delete fourth paragraph beginning, "Failure to earn . . ."*
- 115-16 *Beginning with section headed, "PROBATION OR DISQUALIFICATION BY SPECIAL ACTION," delete rest of material on page 115 and all of page 116 down to "INTERCOLLEGIATE ATHLETIC POLICY" and substitute:*  
*MIDSEMESTER SCHOLARSHIP REPORT* — A report of grades covering scholarship deficiencies is furnished by instructors (except in the College of Law) to the Registrar's office during the seventh week of classes each semester. The grades included on the midsemester scholarship report are limited to 5, a complete failure; and 4, unsatisfactory, though passing. (*Note:* the deferred grade of 6, indicating conditional failure may be reported only at the end of the semester.) Students listed on the midsemester scholarship report are warned that the quality of their work in the courses reported is deficient and their extracurricular activities may be restricted by the dean until the end of the semester.  
*ACADEMIC PROBATION AND DISQUALIFICATION* — Failure by a student to earn the required grade average to be in good standing ordinarily places the student on probation at the end of the semester, and, after a review of his case by the dean and the scholarship committee of the college concerned and upon approval by the Advisory Council, he may be disqualified as a student. A student on probation retains that status until he earns the cumulative grade average required for good academic standing, or until removed by the dean of his college. A student who has been disqualified, and who subsequently may be permitted to register in the University, is enrolled on probation.  
*Probation* — Students on probation are subject to such restrictions with respect to courses, extracurricular activities, and outside employment as may be imposed by the dean of the college concerned. Students are returned to good standing upon earning the cumulative grade average required by the table listed under "Minimum Grade Averages" above, or by action of the dean of their college.  
*Disqualification* — Disqualification for academic reasons is of two types, either from a given college in the University, or from the University as a whole.  
The type of disqualification will be established by the Advisory Council on the recommendation of the dean of the college in which the student was enrolled.  
The specific procedures of disqualification from a given college are as follows:  
1. The student who has been recommended for disqualification from a particular college may seek immediate admission to another college in the University. Per-

mission for such admission to another college is obtained by securing approval from the dean of the college into which the student plans to transfer. Ordinarily permission will be granted only if the student gives evidence that he plans to pursue a modified program and if his demonstrated ability warrants such action. Therefore, students who have been given college disqualification are strongly urged to secure thorough academic and vocational counseling and guidance. Failure to secure approval to transfer to another college in the University is tantamount to disqualification from the University as a whole, and the rules governing such type of disqualification then will apply.

2. A student who has been disqualified from a particular college and who may have secured subsequent permission to study in another college, is automatically on scholastic probation in the new college. He is not eligible to receive a second college disqualification. That is, a student may be granted college disqualification only once in his academic career. Any later recommendation which may be made for disqualification will be considered as a second disqualification from the University as a whole.

A student who is disqualified from the University as a whole, either at the end of a semester or at the close of a summer session is ineligible to register the following semester. A student disqualified at the close of the first semester may enter the summer session, but a student disqualified at the close of the second semester is not eligible to enter the summer session or the first semester of the following academic year. A student disqualified at the end of the summer session is not eligible to return the first semester of the following academic year.

A student with two disqualifications may return to the University only on the basis of evidence that underlying conditions have materially improved and that he is now capable of serious intellectual effort. A student who has been disqualified twice may be allowed to re-enroll only after he has furnished the Registrar with a letter from the dean of the college from which he was last disqualified stating that the dean approves his re-registration. If he wishes to enroll in a college of the University other than the one from which he was last disqualified, he must obtain the approval of both the dean of the college from which he was disqualified and the dean of the college he desires to enter.

Students who have been disqualified from the University are not permitted to enroll in Continuing Education classes or evening courses, but, with the permission of the dean of the college concerned, they may enroll for correspondence study courses. They may not establish credit by examination during the period of disqualification and they may not transfer to the University any credit completed elsewhere during the period of disqualification.

A conditional failing grade of 6 which is included in the cumulative grade average on which disqualification from the University is based, may not be removed during the period of disqualification. (A grade of 6 is computed as a 5 (failure) in the cumulative grade average until it is removed with a higher grade.)

**PROBATION OR DISQUALIFICATION BY SPECIAL ACTION** — Upon the recommendation of the dean of his college and the approval of the Advisory Council of the University, a student may be placed on scholastic probation or disqualified at any time for neglect of his academic work. Such disqualification may be either temporary or permanent.

117 *MEN'S RESIDENCE HALLS, change "Arizona Hall" to: South Hall, and add: Yavapai Hall.*

117 *WOMEN'S RESIDENCE HALLS, delete "Yavapai Hall" and substitute: Arizona Hall.*

118 OCCUPANCY OF ROOMS, following the third paragraph insert new paragraph:  
All men students assigned to residence halls are required to sign a housing agreement pledging to remain in the residence halls for the entire semester.

120 EXPENSES AND FEES  
Line 5, "nonresident tuition fee \$300 ..." change amount to: \$325.  
Line 6, "totals \$600 ... \$1,026 ..." change amounts to: \$650 and \$1,040.

121 SUMMARY OF MINIMUM ANNUAL EXPENSE FOR CAMPUS STUDENTS  
Line 1, "Residence Hall room ... \$240 ..." change amount in each column to: \$248.  
Line 5, "Laboratory fees ... \$24": change amount in column 1 to: \$25.  
Line 7, "Total ... \$1,026 — \$1,072 — \$1,052," change totals to: \$1,040 — \$1,085 — 1,065.

121 ADMISSION APPLICATION FEE, line 2, following "application fee of \$10," insert:  
(not applicable for admission to Graduate College)

121 TUITION FOR NONRESIDENT STUDENTS  
Line 5, "nonresident fee of \$300 ..." change amount to: \$325.  
Line 6, "nonresident fee of \$25.00 per unit ..." change amount to: \$27.

122 REGISTRATION FEE, line 1, "registration fee of \$103.50 ..." change amount to: \$106.

125 ROOM, last paragraph before "Residence Hall Fees," delete last line and substitute:  
... payments may be made in three installments as follows:  
(a) one-half of the semester rate on the first day of registration for classes;  
(b) one-fourth due on Monday of the fifth week of classes;  
(c) final payment of one-fourth due on Monday of the tenth week of classes.

125 RESIDENCE HALL FEES, change occupancy rates as follows:

Residence Hall	Semester Rate Per Student	
	Double Occupancy	Triple Occupancy
Apache, Arizona, Coconino, Graham, Greenlee, Huachuca, Kaibab, Manzanita, Mohave, Santa Cruz, Sonora .....	\$162.00	\$152.00
Yavapai .....	130.00	—
Navajo, Pinal .....	136.00	—
Gila, Maricopa, Yuma .....	—	130.00
Cochise, South, Hopi, Papago, Pima ....	124.00	114.00
East Stadium .....	110.00	100.00

126 ROOM AND BOARD, delete entire paragraph and substitute:  
ROOM AND BOARD — No refund will be made of the current month's room rent unless the move is made for one of the following reasons:  
(a) at the request of the University;  
(b) upon withdrawal from the University;  
(c) in accordance with one of the terms of the housing agreement for men which authorizes a refund of the unused portion of the semester fee.  
No refunds will be made on meal tickets.

130 KIWANIS CLUB OF TUCSON SCHOLARSHIP, "Value," change \$150 to: \$300.

- 138 *After the "Solot Realty Co. Scholarship" insert:*  
SOUTHERN ARIZONA BANK SCHOLARSHIP  
Source: Southern Arizona Bank and Trust Co.  
Eligibility: An outstanding member of the junior class in the College of Business, majoring in the field of finance.  
Value: \$400.  
Inquiries: Department of Finance.
- 140 *After the "Sperry Phoenix Company Scholarship" insert:*  
TUCSON GAS & ELECTRIC COMPANY SCHOLARSHIP  
Source: Tucson Gas & Electric Company.  
Eligibility: Worthy upper classmen in Electrical and Mechanical Engineering.  
Value: Three at \$400 each.  
Inquiries: Committee on Scholarships and Awards.
- 153 *Under "The Class Scholarship Awards," change the prize from "certificates" to:* Silver bowls.
- 158 *After the "Meyer Rubinstein Award" insert:*  
THE R. E. RUFENACHT FRENCH AWARDS  
Donor: Mrs. R. E. Rufenacht.  
Given to: The outstanding student in elementary and intermediate French, and the outstanding junior and senior French majors.  
Prize: Books.
- COLLEGE OF AGRICULTURE
- 182 *MINIMUM REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE, General, Group IV, Physical Science, following "botany," add:* chemistry.
- 182 *At bottom of page, change heading to read:* MINIMUM REQUIREMENTS FOR BACHELOR OF SCIENCE IN AGRICULTURE.
- SCHOOL OF HOME ECONOMICS
- 186 *Curriculum in Apparel Design, Group C, change "Art 45a-45b" to:* Art 45 (Art 45 must be repeated for a total of 4 units).
- COLLEGE OF BUSINESS AND PUBLIC ADMINISTRATION
- 1204 *Change all references to the "Department of Business Administration" to:* Department of Management. *Change all references to the "Department of Secretarial Studies and Business Education" to:* Department of Office Administration and Business Education.
- 204 *Change all courses listed as "Business Administration" (B.A.) to:* Management (Mgt.).
- 204 *Change all courses listed as "Secretarial Studies" (Sec. Stu.) to:* Office Administration (Off. Ad.).
- 190 *OTHER CURRICULA, Business-Law, first line, following "College of Law in the University" insert:* in or before September, 1966.
- 203 *Junior-Senior Years, section (b), line 1, change "at least 13 units" to:* at least 16 units.
- 203 *COMBINED COURSE IN BUSINESS ADMINISTRATION OR PUBLIC ADMINISTRATION AND LAW, first line, following "Students in this College," insert:* who have the qualifications for admission to the College of Law in or before September, 1966.

## COLLEGE OF FINE ARTS

- 233** *DEPARTMENT OF ARCHITECTURE*, change to: COLLEGE OF ARCHITECTURE.
- 234** *OUTSIDE WORK*, delete last paragraph beginning, "The curriculum . . ." and substitute: ACCREDITATION — The curriculum has been fully accredited by the National Architectural Accrediting Board. The State Boards for Architectural Registrations recognize degrees granted by the University of Arizona as eligible for professional registration after a typical in-service training period. In Arizona, this includes participation in the A.I.T. program. The College of Architecture is a member of the Association of Collegiate Schools of Architecture. The College recognizes a student chapter of the American Institute of Architects.
- 235** *PROFESSIONAL PHASE*, Fourth Year, each semester, reduce units of electives from 6 to 5; first semester, change total to: 17; change second semester total to: 16.
- 235** *BACHELOR OF FINE ARTS DEGREE*, Major in Art, Sophomore Year, first semester, change Art 45a to: Art 45; change Art 80a to: Art 80. Second semester, change Art 45b to: Art 45; change Art 80b to: Art 80.
- 236** *Painting or Printmaking Concentration*, Junior Year, first semester, change Art 145a to: Art 145; change Art 180a to: Art 180. Second semester, change Art 145b to: Art 145; change Art 180b to: Art 180.
- 236** *Sculpture or Ceramics Concentration*, Junior Year, first semester, change Art 143a to: Art 143; change Art 145a to: Art 145. Second semester, change Art 143b to: Art 143; change Art 145b to: Art 145.
- 237** *BACHELOR OF FINE ARTS DEGREE*, Major in Commercial Design, Sophomore Year, first semester, change Art 45a to: Art 45; change Art 80a to: Art 80. Second semester, change Art 45b to: Art 45; change Art 80b to: Art 80.
- 237** *BACHELOR OF FINE ARTS DEGREE*, Major in Art Education, Sophomore Year, first semester, change Art 45a to: Art 45; change Art 80a to: Art 80. Second semester, change Art 45b to: Art 45; change Art 80b to: Art 80.
- 238** *BACHELOR OF ARTS IN EDUCATION DEGREE*, Major in Art Education, Sophomore Year, first semester, change Art 45a to: Art 45. Second semester, change Art 45b to: Art 45.
- 238** *BACHELOR OF ARTS IN ART DEGREE*, Major in Art History or Studio Art, second paragraph, first line, change Art 45a–45b to: Art 45 (must be repeated for a total of 4 units); and change Art 80a–80b to: Art 80 (must be repeated for a total of 4 units).

## SCHOOL OF MUSIC

- 242** *FEES*, following the sentence, insert:

For non-majors, the fees per semester for individual instruction in the applied fields of piano, organ, voice, band, and orchestral instruments are:

1 lesson	per week	\$35
2 lessons	per week	\$50
3 lessons	per week	\$60

Lessons are not interchangeable, and if one lesson a week is desired in any field other than that of the major, the price of that lesson will be on the basis of one lesson a week at the regular rate.

**RENTALS** — Pianos may be rented only by those enrolled for instruction. Pianos may be rented for a semester at the following rates:

\$ 4 for 1 hour's practice per day  
 \$ 6 for 2 hours' practice per day  
 \$ 8 for 3 hours' practice per day  
 \$10 for 4 hours' practice per day

No student is allowed to use pianos regularly unless rent has been paid.

**ORGANS** may be rented at a charge of \$10 per semester for one hour daily; \$15 for two hours daily; \$20 for three hours daily.

A limited number of *band and orchestral instruments* may be rented for \$2 per semester. If the instrument is damaged in any way, the renter will be held responsible for the full amount of the damage.

All rentals are for a period of 17 weeks.

**REFUNDS** will be made according to the refund schedule (see page 126). No refund will be made on rental charges of \$4 or less.

### ENTRANCE REQUIREMENTS

1. Credit for applied music is granted only to students who are eligible to register for regular University credit.

2. An entrance examination in music aptitude and placement tests in theory and applied music are required.

3. Students desiring to enter courses leading to the degree of Bachelor of Arts in Music or the Bachelor of Music degree with a major in music education or theory and composition must place in Music 13 in the applied field of concentration. In addition, it is recommended that these students have some knowledge of the piano if the piano is not the applied field of concentration.

4. Students desiring to enter courses leading to the Degree of Bachelor of Music with an applied major must take a placement test and meet requirements for registration in Music 15 in the chosen field.

244 **BACHELOR OF MUSIC DEGREE, Major in Music Education, make the following changes:**

	Units		Units
<i>Junior Year, 1st Semester</i>		<i>Junior Year, 2nd Semester</i>	
Add: Academic Electives .....	2—1	Delete: Music 221 .....	3
Change total units to: .....	18	Add: Academic Electives .....	4
		Change total units to: .....	15—16
<i>Senior Year, 1st Semester</i>		<i>Senior Year, 2nd Semester</i>	
Add: Academic Electives .....	3	Add: Academic Electives .....	2
Change total units to: .....	17—18	Change total units to: .....	16—17

### COLLEGE OF LAW

250 *Top of page, just preceding paragraph beginning, "At the time of admission . . ." insert two new paragraphs:*

All applicants for admission to the College of Law in and after September, 1967, must present a bachelor's degree from an accredited institution, and an undergraduate grade average of 3.0000 (C) or better. The grade average shall be computed upon all work undertaken, whether passed or failed, exclusive of non-theory courses as defined above.

Nonresident applicants for admission who have not earned 30 or more semester hours of their prelaw credit at a college or university in Arizona may be subject to somewhat more stringent admission requirements than those outlined above.

- 253 **COMBINED COURSES OF STUDY**, first line, delete "*The University offers a combined course whereby its students may qualify,*" and substitute:  
For students with the qualifications for admission to the College of Law in or before September, 1966, the University offers a combined course whereby they may qualify. . . .

**COLLEGE OF LIBERAL ARTS**

- 258 *First paragraph, change last sentence to: A student remains in the lower division until he has earned 56 units of credit.*
- 259 **GROUP UNITS REQUIRED FOR THE GENERAL STUDIES CURRICULUM LEADING TO THE DEGREE OF BACHELOR OF ARTS, Group V**, change statement for women to: P.E., 4 units.
- 260 **GROUP UNITS REQUIRED FOR THE DEGREE OF BACHELOR OF SCIENCE, Group V**, change statement for women to: For women, P.E., 4 units.
- 263 **CREDIT BY EXAMINATION**, delete third paragraph and substitute:  
Courses in which a grade of 5 has been awarded may not be established for credit by examination.
- 268 *First paragraph, add following sentence at end:*  
Due to a change effective September, 1967, in the requirements for admission to the College of Law, this plan may be followed only if the student meets the requirements for admission to the College of Law at the University of Arizona on or before September, 1966.
- 269 **NURSING**, change all references to "*School of Nursing*" to: College of Nursing.
- COLLEGE OF MINES**
- 273 *First paragraph, delete next to last sentence and substitute:*  
At present, the College is comprised of the Department of Chemical Engineering, the Department of Geology, the Department of Metallurgical Engineering, and the Department of Mining and Geological Engineering.
- 273 **DEGREES**, change first paragraph to:  
The College of Mines, through its departments of Chemical Engineering, Geology, Metallurgical Engineering, and Mining and Geological Engineering, offers opportunities to earn the following degrees:
- 273 **BACHELOR OF SCIENCE**, change last paragraph to:  
The curricula in Chemical Engineering, Geological Engineering, Metallurgical Engineering, and Mining Engineering are accredited by the Engineers' Council for Professional Development (ECPD).
- 273 **MASTER OF SCIENCE**, add: Geological Engineering.
- 273 **DOCTOR OF PHILOSOPHY**, add: Geological Engineering.
- 274 **ADMISSION**, under the list of high school subjects required for admission, after "*English . . . 4 units,*" add footnote:  
or 3 units of English and 2 units of one foreign language, in which case the number of units of electives is reduced to 15.
- 277 **ORGANIZATIONS**, change "*Chemical Engineers Club . . .*" to : American Institute of Chemical Engineers — student chapter.

**279** *Third paragraph, change to:*

Options in Engineering Geology or Mining Geology enable the student to specialize in his major field of interest. The first two years of work are identical in both options.

**280** *Petroleum Geology Option, delete entire option, including listings of curriculum for Junior year, Summer Session, and Senior year.*

## GRADUATE COLLEGE

**297** *GRADUATE DEGREES, Physical Sciences and Engineering, following "geochronology," insert: geological engineering.***297** *Under "Major work and research leading to the Doctor of Philosophy degree . . ." following "French" add: geological engineering; following "psychology" add: sociology.***305** *MASTER OF ACCOUNTING, delete second paragraph and substitute:*

The undergraduate major to be completed shall include at least one course in each of the areas of intermediate accounting, advanced accounting, cost accounting, federal income taxes, and auditing. In addition, undergraduate preparation shall include at least 3 semester units, or the equivalent, in each of the following fields of study: economics, statistics, business law, business finance, marketing, and management.

**320** *CREDIT BY EXAMINATION, delete third paragraph.***320** *CREDIT BY EXAMINATION, delete fifth paragraph and substitute:*

The privilege of establishing credit by examination is limited to persons who are registered, or who have previously been registered, in the University. Only undergraduate credit may be established by examination. Courses in which a grade of 5 has been awarded may not be established for credit by examination.

Revisions — Courses of Instruction  
(Pages 325–520)

## AEROSPACE AND MECHANICAL ENGINEERING

*Add new course:*

- 330** 208. Reliability Engineering (3) I Kececioglu  
Application of the science of reliability to the determination of the capability and probability of components and equipment to perform intended functions in a given environment for a specified period without failure. P. CR 110.

## ANIMAL BREEDING

*Agricultural Biochemistry*

- 345**
- Change 320 to: 370.*

*Zoology*

- 346** *Change "255. General Endocrinology (3)" to: 255. Comparative Endocrinology (2).*  
**346** *Change 352 to: 259.*

## ANTHROPOLOGY

*Add new courses:*

- 350 237. Issues in Indian Education (3) II Greenberg  
(Identical with Education 237)
- 351 294. Historical Archaeology (2) II Woodward  
Survey of the basic data and methods of research in the material culture of  
modern history. (Identical with Hist. 294.)

## ARCHITECTURE

- 352 10a-10b. *Change title and description to:*  
Fundamentals of Drawing and Design (4-4) Yr. Staff  
Short problems in the broad aspects of design having architectural bearing.  
Problems and exercises in drafting techniques, perspective, shades and shadows.  
8L. Fee, \$2.
- 352 12a-12b. *Delete.*
- 352 20a-20b. *Change units from "(3-3)" to: (4-4). Change "6L" to: 12L. Add: Fee, \$1.*
- 352 24a-24b. *Delete.*
- 353 130a-130b. *Change units from "(4-4)" to: (5-5).*
- 353 140a-140b. *Change units from "(5-5)" to: (6-6).*

## ART

- 354 45a-45b. *Change number to: 45. Change "Yr." to: I, II. Add to description: Must be  
repeated for a total of 4 units.*
- 354 80a-80b. *Change number to: 80. Change "Yr." to: I, II. Add to description: Must be  
repeated for a total of 4 units.*
- 354 143a-143b. *Change number to: 143. Change "Yr." to: I, II. Add to description: Must  
be repeated for a total of 4 units.*
- 354 145a-145b. *Change number to: 145. Change "Yr." to: I, II. Add to description: Must  
be repeated for a total of 4 units.*
- 355 180a-180b. *Change number to: 180. Change "Yr." to: I, II. Add to description: Must  
be repeated for a total of 4 units.*
- 356 280. *Advanced Painting III, delete "III."*

## ASTRONOMY

- 358 240. *Change units from "(2)" to: (3). Change description to: Theory of atomic and  
molecular spectra; applications to physics, astrophysics, and planetary physics.  
P, Math. 79b, Phys. 2b, or 15 and 20.*

## BOTANY

*Add new course:*

- 360 112. Plant Morphology (4) II Hoshaw  
Comparative and developmental study of the structure, reproduction, and  
evolution of plant types; emphasis in the laboratory on the use of these types

as experimental organisms. 2R, 6L. P, 1 or 5; Biol. 1b. One 1-day field trip. Fee, \$8.

361 266. Change units from "(3)" to: (2).

#### BUSINESS ADMINISTRATION

363 Change name of "Department of Business Administration" to: Department of Management.

#### CHEMISTRY

367 Under "The major for the Bachelor of Arts degree," for the second sentence substitute: Not less than 14 units must be upper-division course work.

367 Under "The major for the Bachelor of Science degree," for the second sentence substitute: Not less than 18 units must be upper-division course work.

370 310. Change number to: 310a-310b. Change units from "(3)" to: (3-3). Change "II" to: Yr. Change "Yoke" to: Rund-Yoke. For description substitute: Lectures, discussions, and reports in coordination chemistry, bonding theory, reaction mechanisms, acid-base theory, organometallics, and selected recent topics. P, 280b or 283b.

#### DRAMA

381 220. Change "2R, 1L" to: 2R, 3L.

#### ELECTRICAL ENGINEERING

##### Add new courses:

394 114. Elements of Electrical Engineering (3) I Becker  
Introductory course covering the natural response and steady-state response of electrical networks; magnetic fields and circuits; energy conversion methods and devices; automatic control systems. P, Math. 79b, Phys. 3b or 15. Fee, \$5. Credit not allowed in both E. 22 and E.E. 114.

394 116. Elements of Electronics (3) II Becker  
Introductory course covering vacuum tubes and transistors as electron devices and as circuit elements; the principles of rectification, amplification, oscillation, modulation, and wave shaping; elements of electronic instrumentation. P, 114 or E. 22 and E. 80. Fee, \$5.

#### ENGLISH

403 399. Change topic "e" to: Age of Wordsworth.

##### Comparative Literature and Linguistics

403 Add, under "English:"  
215a-215b. General Linguistics (3-3)

413 Following "Geography and Area Development," add:

#### GEOLOGICAL ENGINEERING

(See Mining and Geological Engineering, below.)

#### GEOLOGY

413 Delete: Professor Willard C. Lacy; Associate Professor Thomas W. Mitcham.

- 413 "Undergraduate Program," for first paragraph substitute:  
For requirements for the degree of Bachelor of Science in General Geology and Geophysics-Geochemistry, see College of Mines requirements.
- 414 1a-1b. Add to description: Deposit, \$4.
- 414 206. Delete.
- 415 207. Add to description: (Identical with Geol.E. 207).
- 415 210. Delete.
- 415 223. Add to description: (Identical with Geol.E. 223 and Min.E. 223).
- 415 224. Add to description: (Identical with Geol.E. 224 and Min.E. 224).
- 416 226a-226b. Add to description: (Identical with Geol.E. 226a-226b).
- 416 228. Delete.
- 416 238. Delete.
- 416 259. Add to description: (Identical with Geol.E. 259).
- 417 307. Add to description: (Identical with Geol.E. 307).

#### GOVERNMENT

- 422 Immediately preceding courses add:

##### Institute of Government Research

The institute is a center of research in the various areas of political theory, American and comparative governments and politics, and international relations. A publications program is designed to make specialized research findings available to scholars, government officials, and the public. The institute maintains a reference library of research materials, and administers the government Internship and United Nations' programs.

Acting Director: Currin V. Shields

Research Specialists: David A. Bingham, Rosendo A. Gomez, Conrad Joyner,  
Paul Kelso

##### Add new courses:

- 422 205. The American Presidency (3) II Lytle  
The political dynamics of the executive office and its relationship to the competitive branches of government within the American political system.
- 423 234. Electoral Processes (3) II Jones  
Examination of nomination and election processes, their impact on parties and voting behavior, and their relationship to the other political institutions and processes. P, 2.
- 424 244. Change "II" to: I.
- 424 247. Change title to: Government in Latin America. Change description to:  
The Latin-American political processes with emphasis on functional approach.
- 424 251. Change "I" to: II.
- 424 254. Change "II" to: I.
- Add new course:
- 424 258. Regional Political Systems (3) II Staff  
Intensive study of regionalism and regional arrangement in contemporary world politics. Theory and place of regionalism considered in the light of changing technology, politics, and military strategy, including principal regional groupings

and collective defense arrangements to determine their accomplishments and significance. Attention also to the relationship of regional developments to the functioning of the UN. P, 50.

424 259. *Change "I" to: II.*

424 267. *Change "I" to: II.*

*Add new course:*

425 280. Formation of Public Policy (3) I Jones  
The needs and demands for public action on policy issues, the organization and nature of political support, and the processes and problems of decision making in the formation of public policy at the national, state, and local levels. P, 2.

425 291. *Change "I, II" to: II.*

*Add new course:*

425 298. Seminar on Latin America (2) I Gomez-Staff  
P, 3 years of college Spanish or graduate standing. (Identical with Spanish 298.)

425 306. *Change units from "(2)" to: (3).*

425 350. *Change units from "(2)" to: (3).*

425 359. *Change units from "(2)" to: (3).*

## HISTORY

432 223a-223b. *Change number to: 223. Change title and description to:*  
Latin America and the United States (3) I Stevens  
United States-Latin American relations from about 1800 to the present.

*Add new courses:*

433 292. Archives and Archival Management (1) I Staff  
Archival resources and their use; techniques in collecting, preserving, organizing, and classifying unpublished materials of value for historical research.

433 294. Historical Archaeology (2) II Woodward  
(Identical with Anthropology 294)

## HOME ECONOMICS

435 204. *Change semester from "II" to: I.*

## HONORS

*Add new course:*

439 50. Sophomore Colloquium (2) I, II Mayo  
Open only to Honors Program participants.

## HUMANITIES

441 50a-50b. *Change last sentence of description to:* Required of sophomores in the colleges of Business and Public Administration, Engineering, and Liberal Arts.

## MATHEMATICS

451 *First paragraph, 5th line, following "180" add: plus 9 upper-division units.*

*Add new course:*

- 451 65a-65b.\* Topics for Social Science (3-3) Yr. Staff  
 Selected topics from analytic geometry, calculus, logic, set theory, matrices, and game theory. Not to be used as prerequisite for further courses in the Mathematics Department. P, Math. 20.  
 \*Credit is allowed for only one of the following: 65a, 79a.

- 451 *Delete first two paragraphs in footnote headed "\*\*\*" and substitute:*  
 Any student who earned grades of 1 or 2, or equivalent, in Math. 20 (College Algebra) and Math. 24 (Trigonometry) in high school may enter Math. 79a. No further examinations are necessary.  
 Students may take an exemption examination in Math. 20 and Math. 24 regularly offered during Orientation Week in September. A fee of \$3 is charged for the exemption examination in each course.

*Add new courses:*

- 452 105. Basic Concepts of Mathematics (3) II Steinbrenner  
 Emphasis on the development of the number system and study of the structure of algebra. Designed for students planning to enter the field of elementary education. P, 12 or cognate course.
- 452 172. Intermediate Calculus and Differential Equations (3) II Staff  
 Power series and selected topics from ordinary differential equations. The course may not be used as prerequisite to further courses in the Mathematics Department. P, 79b. (Note: Credit is allowed for only one of the following: 180, 172, 181.)
- 454 398. *Following first sentence of description add:* This course may be repeated for credit.

**MICROBIOLOGY**

*Add new course:*

- 458 330. Advanced Immunology (4) II Jeter  
 Analysis of immunological, serological, and immunochemical theories and techniques. 2R, 6L. P, 219a-219b, and Chem. 260a.

**AIR SCIENCE**

- 460 2a-2b. *Change title and description to:*  
 Second Year. World Military Systems (1-1) Yr. Staff  
 Comparative study of world military forces including free-world land and naval forces, free-world air forces, Communist military systems, and trends in the development and employment of military power. 2R, 1L.
- 460 103a-103b. *Change title and description to:*  
 First Year. Growth and Development of Aerospace Power (3-3) Yr. Staff  
 The nature of war; development of air power in the U.S.; mission and organization of the Defense Dept.; Air Force concepts, doctrine, and employment; astronautics and space operations; the future development of aerospace power. Includes U.S. space programs, vehicles, systems, and problems, and problems in space exploration. 4R, 1L.
- 460 *Change "MINING AND METALLURGICAL ENGINEERING" to: METALLURGICAL ENGINEERING.*

460 Delete the following faculty: Professors James D. Forrester, Harry E. Krumlauf; Associate Professors Jay C. Dotson, Elmer R. Drevdahl.

460 "Undergraduate Program," change sentence to read: For requirements for the degree of Bachelor of Science in Metallurgical Engineering, see College of Mines requirements.

461 Delete second paragraph.

461 Delete the head, "METALLURGICAL ENGINEERING."

**MINING AND GEOLOGICAL ENGINEERING (new department)**

464 Preceding the head "MINING ENGINEERING" insert the following:

**MINING AND GEOLOGICAL ENGINEERING**

Professors Willard C. Lacy, *Head*, James D. Forrester, Harry E. Krumlauf  
Associate Professors Jay C. Dotson, Thomas W. Mitcham, Erich Sarapuu  
Lecturer in Mining Engineering William H. Loerpabel

**Undergraduate Program**

For requirements for the degree of Bachelor of Science in Mining Engineering or Geological Engineering, see College of Mines requirements.

**Graduate Program**

The department offers the Master of Science degree in Mining Engineering and in Geological Engineering, and the Doctor of Philosophy degree in Geological Engineering. Supporting courses may be chosen from the fields of mining engineering, civil engineering, hydrology, or geology.

**GEOLOGICAL ENGINEERING**

Geological Engineering entails the application of geological principles in the analysis and design of engineering programs and structures. The fields of engineering most profoundly affected by geological factors are mining, petroleum, civil, and agricultural engineering. The following Geological Engineering courses are designated also by the prefix, Geol.E.

- 206. Engineering Geology (3) I Lacy  
Soil and rock mechanics and their relations to geological features influencing design, construction, and maintenance of engineering projects. 2R, 3L, including 1 field trip. P, Sr. standing. Fee, \$2.
- 207. Photogeology (2) I Mitcham  
(Identical with Geology 207)
- 210. Mining Geology (3) I Mitcham  
Principles of geology applied to the development and exploitation of mineral deposits; includes underground geologic mapping. 1R, 6L. Laboratory comprises field trip every Saturday. P, Geol. 103, 213s, 121. Fee, \$15.
- 223. Petroleum and Groundwater Exploration and Production (2) I Pye  
(Identical with Geology 223 and Mining Engineering 223)
- 224. Reservoir Testing, Development, and Evaluation (2) II Pye  
(Identical with Geology 224 and Mining Engineering 224)
- 226a-226b. Surface and Subsurface Exploration and Evaluation (1-1) Yr. Pye  
(Identical with Geology 226a-226b)
- 227. Geomechanics (2) II Lacy  
(Identical with Mining Engineering 226)

*Page*

- 464 228. Ore Finding (3) II Lacy-Mitcham  
Analysis of guides and techniques leading to location and delimitation of ore bodies. Two field trips. P, Geol. 103. Fee, \$4.
238. Prospect Valuation and Development (3) I 1964-65 Lacy-Mitcham  
Principles of geology applied to the analysis and design of exploration programs in mineral prospects. P, 228.
259. Theory and Techniques of Geochemical Prospecting (3) II 1964-65 Titley  
(Identical with Geology 259)
305. Ground Stabilization (3) II 1964-65 Lacy  
Causes and control of erosion, landslides, subsidence phenomena; problems of rock and soft-ground tunneling, rock bursts, and methods of support and ground control; analysis of case histories of failures and corrective methods. Field trip. P, 206. Fee, \$5.
306. Site Examination and Testing (3) II 1964-65 Lacy  
Correlation of geologic conditions with requirements for building foundations, dam locations, methods of drilling and testing of soil and rock conditions, examination of case histories of foundation and dam failures. Field trip. P, 206. Fee, \$5.
307. Advanced Photogeology (2) II Mitcham  
(Identical with Geology 307)
399. Seminar (1 to 3) I, II Staff  
Individual Studies (see page 326)
299. (1 to 5); 400 (1 to 4); 410 (1 to 6) maximum total, 6 units; 420 (1 to 9)

**MINING ENGINEERING**

- 464 *Immediately following head "MINING ENGINEERING" insert:*  
A branch of engineering which entails the application of engineering skills to the exploration for, and production of, mineral resources.
- 464 223. *Change description to:* (Identical with Geology 223 and Geological Engineering 223).
- 464 224. *Change description to:* (Identical with Geology 224 and Geological Engineering 224).
- 465 226. *Add to description:* (Identical with Geological Engineering 227).

**MUSIC**

- 469 *Preceding "Individual Studies" add new course:*  
399. Seminar (2 to 6) I, II Staff
- 469 *Under "Individual Studies" add new course:*  
199. Independent Study (2 to 4) I, II

**NUCLEAR ENGINEERING**

- 471 380. *Delete.*
- 471 382. *Delete.*

*Add new courses:*

- 71 381. Neutron Transport Theory (3) II Hetrick  
Application of the Boltzmann equation to neutron transport; Green's functions, exact solutions for special cases, approximation methods, and transport corrections to diffusion theory. P, 340, CR Math. 203.
- 71 386. Non-linear Reactor Dynamics (3) I Weaver-Hetrick  
Non-linear dynamics of nuclear reactors; shutdown mechanisms, inertial effects. non-linear stability criteria, time-dependent neutron transport, neutron waves, and applications to pulsed reactors, start-up transients, reactor stability, and reactor safety. P, 340.

**NURSING**

- 73 *Change all references to "School of Nursing" to: College of Nursing.*
- 172 *Basic Nursing Curriculum, Sophomore year, second semester, change "Nursing 50a" to: Nursing 50b.*
- 172 *Same curriculum, Senior year, second semester, change "Soc. 143" to: P.A. 1.*
- 172 *Typical Registered Nurse Curriculum, 12th line, change "Soc. 143" to: P.A. 1.*

**ORIENTAL STUDIES**

- 176 *Under "Individual Studies" add new course:*  
199. Independent Study (2 to 4) I, II Staff

**PHYSICAL EDUCATION FOR WOMEN**

- 181 *Under "The Requirement," first paragraph, delete last three sentences and substitute:*  
Those students having no requirement may register for physical education activity courses providing they are carrying at least 3 units of other credit course work.

**PHYSICS**

- 184 *Change footnote to read:*  
\*Credit will be allowed for only one of the following: 1a-1b, 2a-2b, or 3a-3b; or 11, 15 and 20. Students from Engineering may not receive credit for both E. 16 and Phys. 11, or E. 80 and Phys. 5.

**PUBLIC ADMINISTRATION**

*Add new courses:*

- 495 229. Public Administration Research (3) I, II Staff  
The use of basic research methods in the administration of recreation, welfare, law enforcement, and correctional agencies: Selection of topics may vary.
- 495 230. Social Casework (3) II Staff  
Theory and principles of social casework.
- 496 244. Social Group Work (3) I Chiles  
Introduction to the purpose, scope, method, and values of social group work as practiced in social group-work agencies. Emphasis on group work as a method of social work.

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- 496 272. Legal Aspects of the Law Enforcement Process (3) I Shoultz  
Designed for law-enforcement majors; covers study of crimes, their classification, elements and required proof, evidence, legal procedure in the important areas of arrest, force, and search and seizure.
- 496 302. The Law and the Correctional Process (3) II Shoultz  
Problems in the administration of justice as related to the field of correctional administration.
- 497 365. Theory of Crime and Delinquency (3) I, II Staff  
Survey of traditional and current theories of crime and delinquency. Evaluation of the relationship between theory and correctional administration.
- 497 367. Correctional Group Therapy (3) II Chiles  
Group-therapy practice in a correctional institution together with a lecture-discussion period on the therapeutic use of group dynamics and role playing. P, 366.

SECRETARIAL STUDIES

- 503 *Change name of "Department of Secretarial Studies and Business Education" to: Department of Office Administration and Business Education.*

SOCIOLOGY

- 504 *"The Major," change first sentence to: 30 units including 1, 161, 170, 280, and 281.*
- 505 60. *Delete.*
- 505 161. *Change description to:*  
Techniques of statistical description and elementary statistical inference as applied to social data. 2R, 2L. P, Math. 11 or equivalent.
- Add new course:*
- 505 170. Introductory Social Research Methods (3) I, II Staff  
The design of social research and the collection and analysis of field research data. 2R, 2L. P, 161 or Math. 91.
- 506 260. *Delete.*
- 506 263. *Change title and description to:*  
Intermediate Social Statistics (3) II Miller-Snow  
A second course in social statistics, with emphasis on statistical inference and multivariate analysis as applied to social data. 2R, 2L. P, 161.
- Add new course:*
- 506 270. Intermediate Social Research Methods (3) I Staff  
A second course in social research methods, including an introduction to experimental design and measurement. 2R, 2L. P, 170.
- 506 294. *Change title and description to:*  
Practicum in Social Research (3) II Bowers-Miller  
Practical experience in designing and conducting a team-research project, each student taking responsibility for a segment of it and the writing of a separate report. 2R, 2L. P, 263, 270.
- 507 301. *Delete.*

- 507 315. *Change number to: 215. Add to description:* Special emphasis on the development of concepts and views which paved the way for contemporary sociology. P, 1.

*Add new courses:*

- 507 320. Complex Organizations (3) I Bowers  
Critical review of research on large-scale, formal organizations, their goals, social structure, and effectiveness. Application of findings to existing theoretical models.
- 507 350. Social Disorganization (3) II Queen-Rivera  
Testing the utility of various frames of reference for studying social problems. P, 282 or 12 units of upper-division courses in Sociology.
- 507 360. Advanced Principles of Demography (3) I Staff  
Advanced principles of population analysis and critical discussions of recent research literature. P, 289 and two semesters of statistics.
- 507 365. Community Research Problems (3) II Staff  
Critical review of current research literature on selected topics in urban and rural sociology. P, 293 and two semesters of statistics.
- 507 370. Advanced Problems in Research (3) I Miller-Staff  
Critical analysis of recent advances in experimental and survey research design. P, 263 and two courses in research methods.
- 507 380. Development of Sociological Theory (3) II Staff  
The nature of theory construction; exercises in conceptual formulation from empirical findings; the derivation of hypotheses for the direction of research. P, 263 and 280.
- 507 390. Colloquium in Sociology (1) I, II Bowers  
Reports of research and other new developments in sociology. Required of all graduate students in residence. May be repeated for credit.
- 507 399. *Change units from "(1-3)" to: (3); delete list of topics.*

ZOOLOGY

*Add new course:*

- 517 222. Marine Ecology (8) I, II Staff  
Marine organisms and their distribution in relation to physical, chemical, and biotic factors in the environment; includes field and laboratory investigations at Puerto Peñasco, Sonora, Mexico, in the Gulf of California. P, 1b, Chem. 1b, and permission of the instructor. Fee, \$10.