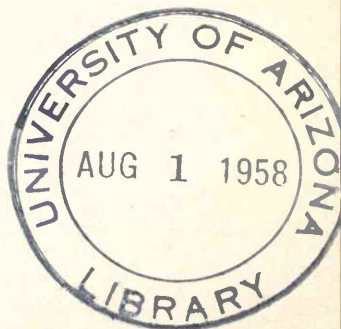


Vol. LI, No. 3

June, 1, 1958



# University of Arizona Record

**REVISIONS IN BIENNIAL CATALOGUE**

**1957-58, 1958-59**

**STATEMENT OF MAILING PRIVILEGE**

The *University of Arizona Record* is issued seven times a year. Published monthly during July, August, and October and semimonthly during June and April.

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9791  
niv. 16  
51, #3

### University Calendar (page 4-5).

1958-59 add the following dates: Mother's and Dad's Day, Oct. 11, Saturday. Homecoming, Nov. 1, Saturday. Change Records close for midsemester scholarship report to Oct. 28, Tuesday. Change Records close for midsemester scholarship report to March 10, Tuesday.

### Admission (page 71).

Add immediately preceding **Admission to Freshman Standing.**

### ADVANCED PLACEMENT

Advanced placement and credit may be approved by the department concerned for students entering with advanced work completed in high school under the Advanced Placement Program.

Requests for advanced placement should be addressed to the Director of Admissions.

### General Regulations

WITHDRAWAL GRADES (page 86, paragraph 3).

Add a final sentence: The right of graduate students to withdraw with the grade of W is limited to the first six weeks of classes; thereafter the grade will be awarded only for cause approved by the Committee on Graduate Study.

### EXPENSES AND FEES (page 96).

For summary of minimum annual expense for campus students substitute the following:

	General	College of Law
Dormitory Room (1)	\$196.00	\$196.00
Meals in University Cafeteria (1)	500.00	500.00
Books and Supplies (\$30.00 per semester) (2)	60.00	80.00
Registration Fee (\$50.00 per semester) (3)	100.00	100.00
Student Activity Fee (\$10.00 per semester)	20.00	20.00
Student Union Fee (\$7.50 per semester)	15.00	15.00
Health Service Fee (\$4.00 per semester)	8.00	8.00
Library Fee (\$2.00 per semester)	4.00	4.00
University Series Fee (\$1.25 per semester)	2.50	2.50
Alumni Association Fee (\$1.25 per semester)	2.50	2.50
Laboratory and Incidental Fees	20.00	
Special Law Fee (\$25.00 per semester)		50.00
Total Minimum Annual Expense (Legal Residents of Arizona)	<u>\$928.00</u>	<u>\$978.00</u>
Nonresident Tuition Fee (\$225.00 per semester) (4)	<u>450.00</u>	<u>450.00</u>
Total Minimum Annual Expense (Nonresidents)	\$1,378.00	\$1,428.00

All students should add to this list incidental personal expenses as needed, and a room reservation deposit of \$10.00. Men students taking military science should add a military deposit of \$25.00.

All fees are payable to the University Cashier on registration day as the final step in the registration procedure. Dormitory rent should be paid by the semester in advance. Students may purchase meals at the University Cafeteria on a daily a la carte basis, or may purchase meal ticket books for bi-weekly or monthly periods.

266. Police Organization and Administration. (3) II .....Staff  
A thorough analysis of theory and practice of police organization and administration at the national, state and local levels. P, Soc. 2 and 87.
267. Public Personnel Administration. (3) I .....Kelso  
Development of public service and its role in the contemporary state. Basic ideas, problems, and processes in public personnel administration. Development of a career service. P, Pol. Sc. 51a-51b and upper division standing.
- 337a-337b. Fiscal and Budgetary Administration  
of Public Agencies. (2-2) Yr. ....Staff  
Analysis of the internal fiscal operation, and the budgetary cycle, of public and non-profit agencies. Individual reports will be assigned. P, Bus. Adm. 237.
- 346a-346b. The Dynamics of Probation and Parole. (2-2) Yr. Mulligan  
A critical discussion of the techniques of social investigation, diagnosis, supervision and treatment of the offender. P, 245 or equivalent.
366. Rehabilitative Services in Correctional Institutions. (2) I..Vedder  
Analysis of the rehabilitative process in the modern correctional institution. Problems associated with admission and reception, discipline, special services, classification, education, vocational training, and preparation for parole. P, Soc. 2 and 87.
- 405p. Internship in Probation and Parole. (2-6) I, II.....Mulligan  
Student serves an internship of from 8 to 10 weeks on a full-time basis in a community correctional agency under professional and university supervision. Open only to graduate students in the probation and parole program. P, 346a-346b.
- 405c. Internship in Correctional Administration. (2-6) I, II...Vedder  
The advanced student and candidate for the master's degree in the correctional program is required to spend time working in a penal institution under the guidance and supervision of responsible officials. Emphasis is placed on the practical aspects of the correctional field. P, Soc. 87, 166a-166b, 287.

### Romance Languages (page 419).

French

Add the following new course:

- 1g-2g. Training in Reading French for Graduates. (0-0) Yr...Staff  
A summary of basic grammar essential to a reading knowledge of the language will be accompanied by readings of increasing difficulty both in the general literature and the student's chosen field of specialization.

### Secretarial Studies (page 424).

Add the following new course:

273. Advanced Techniques for Office Control. (2) I .....Langen  
The analysis and application of modern techniques for special office situations in various businesses. P, 77 or equivalent office experience. Fee \$3.

### Sociology (page 425).

Delete the following courses: 25a-25b, 168, 203, 210, 220, 276, 277, 279.  
Delete 1957-58 from 289, 293, 295, 289. Change II to I.  
Delete 1958-59 from 252, 284, 285, 286, 290, 315, 316.

Add the following new courses:

40. Introduction to Social Administration. (2) I.....Mulligan  
An over-all view of the background and functions of the major institutions, public and private, in the fields of public health, welfare, and labor.
212. Sociology of Collective Behavior. (3) I .....Yoshino  
An analytical approach to the principles common to such aspects of collective behavior as the crowd, the public, and such social movements as those having a political, religious, or minority context. P, 1 and 2.

281. Lip Reading. (4) I .....Lambert-Dimmick  
Presentation of basic principles for understanding language through the observation of the speaker's lips, facial expression, and body activity. Emphasis on theory and development of skill in speech reading and in the teaching of speech reading. 3R, 3L. P, 267, 278, 279.

282a-282b. Language and Speech for the  
Deaf and Hard of Hearing. (4-4) Yr. ....Dimmick  
Stage by stage instruction for teaching language and speech to deaf and hard of hearing children of all ages. Emphasis on basic problems confronting the acoustically handicapped; specific methods and equipment used in instruction. 3R, 3L. P, 281 or CR.

**Zoology (page 431).**

Add the following new courses:

18a-18b. Scientific Illustration. (4-4) Yr. ....Sayner  
Principles and practice of executing drawings of scientific specimens, maps, and graphs for the thesis and the press. An approach to realistic representation of subject matter by means of modern materials and methods. 2R, 6L. Fee \$5.

356. Radioactive Indicators and  
Radiation Sources in Zoology (3) I .....Slater  
Primarily a laboratory course in advance techniques in the use of radioactive tracers in physiological zoology and the influence of radiation on animal growth, survival and genetics. 1R, 6L. P, 12 units of zoo. and 6 units of chem. Fee \$8.

**Departments of Research and Extension. (page 436).**

Change Bureau of Business Research to Bureau of Business and Public Research.

**University Calendar** (page 4-5).

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(1) It is estimated that a minimum of \$725.00 to \$800.00 is necessary to cover a year's room and board in fraternity or sorority houses. This does not include dues and incidental fees.

(2) Freshman students should provide for an additional \$45.00 for the first semester.

(3) Students taking 5 or less units of work pay \$8.50 per unit plus the Health Service Fee.

(4) \$18.75 per unit for 6 through 11 units of work. Nonresident fee waived for students taking less than 6 units of work.

**Registration Fee** (page 98), substitute the following statement:

A registration fee of \$50.00 is charged for a credit load of six or more units, plus other applicable fees for a total of \$76.00 which does not include course, laboratory, or non-resident tuition fees. For a credit load of 5 units or less \$8.50 per unit is charged.

**Alumni Association Fee** (page 98). Add following the present statement . . . unless the student presents evidence of life membership in the University of Arizona Alumni Association.

**Dormitory fees** (page 101).

Change Apache, Coconino, etc. to \$128.00.

Change Gila and Yuma to \$112.00.

Change Maricopa and Yavapai to \$102.00.

Change Arizona, Cochise, etc. to \$98.00.

**Financial Assistance and Honor Awards.**

After BORDEN AGRICULTURAL SCHOLARSHIP (page 109) add:

BERT S. BUTLER SCHOLARSHIPS. Dr. Bert S. Butler, widely known for his contributions to Economic Geology, Professor of Geology and for many years Head of the Department of Geology in the College of Mines at the University of Arizona, together with his wife, Mrs. Loretta Butler, has established a fund to support the Bert S. Butler Scholarships. This scholarship in the amount of \$600 annually is awarded to a graduate student in geology on the basis of character, scholarship, need, and professional potential. The recipient shall be recommended by the College of Mines Scholarship Committee and approved by the University Committee on Scholarships and Awards. Any student receiving an award may be eligible for successive annual scholarships.

After KENNECOTT COPPER CORPORATION SCHOLARSHIP (Page 111) add:

SAMUEL LATTA KINGAN SCHOLARSHIPS. Two scholarships in the approximate amount of \$300 each are awarded on the recommendation of the faculty of the Department of Art and approval of the University Committee on Scholarships and Awards to outstanding sophomore, junior or senior Arizona resident students majoring in art. These scholarships are a memorial to the late Samuel Latta Kingan, prominent Tucson lawyer, artist and patron of the fine arts, and were established in the will of his widow, Gertrude Withers Kingan.

**College of Agriculture**

Under Major Fields of Study, (page 142) delete "and Range Management" from Agronomy and Range Management.

At end of second column, add "Watershed Management (Range, Forest, Hydrology, and Conservation)."

Delete the entire statement under heading Preforestry (page 143).  
Add under second paragraph of Pre-Veterinary statement:

**WATERSHED MANAGEMENT.** The Board of Regents of the University and State Colleges of Arizona has authorized the establishment of a Department of Watershed Management and the development of an instructional, research, and extension program in the field. A special curriculum in Watershed Management will appear in the next issue of the Biennial Catalogue. The Watershed Management curriculum will provide an opportunity for study and research into problems peculiar to watersheds of the Southwest, including such interrelated items as Forest Influences, Range Management, Wildlife Management, Hydrology, and Conservation as well as foundation courses in the basic and applied sciences. Students completing this curriculum will have the minimum requirements to qualify for positions in the professional fields relating to Watershed Management.

**College of Business and Public Administration** (page 163-165)

Delete Bachelor of Science in Public Administration with a Major in Social Work and insert following:

**BACHELOR OF SCIENCE IN PUBLIC ADMINISTRATION  
WITH A MAJOR IN SOCIAL ADMINISTRATION**

This major is designed for students who wish to prepare for administrative or research positions in governmental or private agencies in the general fields of public health, social welfare, and labor. In addition to equipping the student with both the basic knowledge and skills for these areas, a sound preparation will be afforded students who may subsequently desire to do graduate work in these fields.

**FRESHMAN YEAR**

First Semester		Second Semester	
Subject	Units	Subject	Units
Eng. 1a (Composition) . . . . .	3	Eng. 1b (Composition) . . . . .	3
Science or Mathematics* . . . . .	4-5	Science or Mathematics* . . . . .	4-5
Speech 2 (Principles) . . . . .	3	Speech 10 (Public Speaking) . . . . .	3
Soc. 1 (Introduction) or Soc. 2 (Social Problems) . . . . .	3	Soc. 2 (Social Problems) or Soc. 1 (Introduction) . . . . .	3
Soc. 40 (Intro. to Soc. Adm.) . . . . .	2	Sec. Stu. 77 (Add-Calc. Mach.) . . . . .	2
Mil. Sci. 1a (Men) . . . . .	1	Mil. Sci. 1b (Men) . . . . .	1
P. E. (Women and Men) . . . . .	1	P. E. (Women and Men) . . . . .	1
	17-18		17-18

**SOPHOMORE YEAR**

First Semester		Second Semester	
Subject	Units	Subject	Units
Humanities . . . . .	4	Humanities . . . . .	4
Pol. Sci. 51a (Am. Govt.) . . . . .	3	Pol. Sci. 51b (Am. Govt.) . . . . .	3
Economics 1a (Introduction) . . . . .	3	Economics 1b (Introduction) . . . . .	3
Psych. 1a (Elementary) . . . . .	3	Psych. 1b (Elementary) . . . . .	3
P. E. (Women) . . . . .	1	P. E. (Women) . . . . .	1
Mil. Sci. 2a (Men) . . . . .	1	Mil. Sci. 2b (Men) . . . . .	1
Elective . . . . .	2-3	Elective . . . . .	2-3
	17-18		17-18

\* Either a full year in a single laboratory science, or 8 hours of approved mathematics courses, must be taken to fulfill this requirement. Students planning to enter the field of public health administration should elect Zoology 1a-1b.

## JUNIOR AND SENIOR YEARS

Forty-five units from the following list are required to fulfill the major requirements, including all the starred courses.

Subject	Units
*Bus. Adm. 32 (Introduction to Accounting) I, II	3
Bus. Adm. 201 (Personnel Management) I	3
Bus. Adm. 203 (Wage and Salary Administration) I	3
Bus. Adm. 204 (Collective Bargaining) II	3
Bus. Adm. 237 (Governmental and Institutional Acctg.) II	3
Econ. 205 (Labor Problems and Trade Unionism) I, II	3
Econ. 206 (Industrial Relations) II	3
*Econ. 245 (Public Finance) I	3
Econ. 351 (Theory of Social Insurance) I 1958-59	2
Pol. Sci. 252 (Probs. of Mun. Mgmt.) I 1957-58	3
Pol. Sci. 258 (Pol. Aspects of Law Enf. & Crime Cont.) II	3
*Pol. Sci. 271a, 271b (Public Adm.) Yr. or *Bus. Adm. 272 (Prin. of Mgt.) and another approved course	6
Psych. 15 (Intro. to Soc. Psych.) II	3
Psych. 23 (Bus. and Industrial Psych.) II	3
Psych. 210 (The Individual in the Group) I, II	3
Psych. 216 (Personality) II	3
*Pub. Adm. 243 (Welfare Legislation) II	3
Soc. 87 (Criminology) I, II	3
*Soc. 138 (Fields of Social Work) I	3
*Soc. 143 (Intro. to Public Welfare) I	3
*Soc. 145 (Intro. to Case Work) II	3
Soc. 212 (Sociology of Collective Behavior) I	3
Soc. 222 (Sociology of Minority Relations) II	3
Soc. 240 (Child Welfare Problems) I	2
Soc. 241 (Juvenile Delinquency) II	3
Soc. 253 (Group Dynamics) II	3
*Soc. 260a-260b (Methods of Social Research) Yr.	4
*Soc. 261 (Introductory Social Statistics) I, II	3
Soc. 285 (Sociology of the Family) II	3
Soc. 286 (Sociology of Industry) I	3
*Soc. 289 (Population Problems) I	3
Soc. 290 (Problems of an Aging Population) II	3

### College of Education (page 174)

2nd footnote, change History VGab to History 17 ab.

### College of Engineering

CHANGE page 191 and 193 to read as follows:

#### Semester II—Sophomore Year

EE 22 (Introduction to Circuit Theory)	3
EE 23 (Basic Circuits Laboratory)	1
EE 50 (Physical Basis for EE)	3
Engl. 8 (Expository Writing)	2
Math. 200 (Differential Equations)	3
Phys. 10b (Engineering Physics)	5
Mil. Sc. 2b	1



Semester I—Junior Year	
EE 122 (Electric Circuit Theory I) .....	3
EE 123 (Circuits Laboratory) .....	1
EE 150 (Principles of Electronics) .....	4
EE 151 (Electronics Laboratory) .....	1
EE 160 (Energy Storage and Conversion) .....	3
Math. 202a (Advanced Calculus) .....	3
Phys. 211a (Electricity and Magnetism) .....	3
	18
Semester II—Junior Year	
EE 152 (Electronic Circuits) .....	4
EE 153 (Electronic Circuits Laboratory) .....	1
EE 162 (Energy Conversion Devices) .....	4
EE 163 (Electrical Machinery Laboratory) .....	1
EE 222 (Electric Circuit Theory II) .....	3
CE 113 (Analytical Mechanics) .....	5
	18
Semester I—Senior Year	
Replace Phys. 211a with CE 114 (Mechanics of Materials)	
Semester II—Senior Year	
Delete Phys. 260	
ADD Phys. 205L (Thermodynamics Lab.)	
CHANGE total from 18 to 17.	
Semester I—Senior Year (page 194)	
Change ME 126 to ME 118a (Thermodynamics) .....	4
Delete Phys. 211a	
ADD EE 261 (Nuclear Engineering Laboratory) .....	1
Change total to 17.	
Semester II—Senior Year	
Delete Phys. 260	
ADD Math. 202b (Advanced Calculus II) .....	3
Change units on non-tech. electives to .....	
	3

**College of Fine Arts** (page 203).

ADD (Immediately preceding Department of Drama)

### DEPARTMENT OF ARCHITECTURE

Provision for instruction in architecture, beginning the first semester of 1958-59, has been made by the Board of Regents. Inquiries concerning the program in architecture may be addressed to the Dean of the College of Fine Arts.

**College of Liberal Arts**

SOPHOMORE YEAR (page 227) under second semester, change Span. 17a to Span. 17b.

Under Committee on **Oriental Studies**, (page 228).

DELETE M.M.R. Schneck ..... (Philosophy and Psychology)  
Substitute Charles O. Hucker, Chairman (Anthropology)

DELETE on 4th line Associate Professor Charles O. Hucker, Secretary (Anthropology).

**The Graduate College** (page 252) following Master of Business Administration.

ADD: **MASTER OF PUBLIC ADMINISTRATION**

The degree of Master of Public Administration will be conferred upon completion of programs designed to give advanced training in general governmental administration at the national,

state, and local levels; in criminology and correctional administration; in probation-parole administration; and in the fiscal or business administration of public school systems. In the latter field, the degree of Master of Education may, alternatively, be conferred.

Admission, residency, candidacy, and final examination requirements are the same as those required of candidates for the Master of Arts and Master of Science degrees, with the following exceptions. Undergraduate work should preferably include background courses in public administration and related subject matter.

**Course requirements**—Course work (excluding credit given for thesis preparation or internship) must include a minimum of 30 hours; the number of hours required in a specialized field will be prescribed for each student, at the time he submits a program of study, by the appropriate major professor.

**Thesis-Internship**—Either a written thesis, or an approved internship in a governmental or private agency in Arizona or elsewhere, will be required. Appropriate course credit will be given in either case.

**Final Examination**—The required final examination may be related either to the thesis, or to the internship.

## COURSES OF INSTRUCTION

### General Agricultural Courses, (page 273).

Add course numbers, and faculty names as follows:

1. Vocations in Agriculture
  2. Animal Industry ..... Taylor-Smith-Pasvogel
  3. Plant Industry ..... McAlister-Fazio-Humphrey
- 230 Principles of Agricultural Research

ADD to the listing of General Agricultural Courses:

- 235 Sample Survey Methods. (3) II. .... H. Tucker  
(See Plant Breeding 235, page 415)
- 237a-237b Statistical Methods in Agriculture. (3-3) Yr. H. Tucker  
(see Plant Breeding 237a-237b, page 415)

ADD to Analysis and Design of Experiments in Agriculture the course number 339 and the statement (see Plant Breeding 339, page 415); delete from the descriptive title the words Analysis and.

ADD following GENERAL AGRICULTURAL COURSES a new department, (page 272).

### Accounting

Professor Russell M. Howard (Head of the Department)

The following courses will be offered by this new department, transferred from and previously offered by the Department of Business Administration: 31a, b; 32; 33; 131a, b; 232; 233a, b; 235; 236a,b; 237; 243; 331; 332a, b; 335.

The following courses will be offered by the Accounting Department and also by Business Administration: 196, 299, 400, 410.

Add to 243 the following statement after... planning and control. Not open to students who have credit in 131a.

ADD the following new course:

- 334a-334b. Accounting systems (2-2) Yr. .... Raby  
Steps in design and installation of systems, including general aim of the systems, designing of general ledger and expense classifications, types and use of codes, the basic plans of summarizing, the designing of business paper and forms; internal check and accounting control; special problems of small business; methods and procedures in handling business data; systems reports and systems manuals; punched card accounting.  
P, 131b, 233a.

Agricultural Chemistry and Soils (page 275).

399 Seminar, change I to I, II.

Range Management (page 284).

218s, add Fee, \$50.

Animal Pathology, (page 285) add after 116:

203. Parasites of Domestic Animals (3) II 1958-59 ..... Dewhirst  
The biology, distribution, economic importance, pathogenicity, diagnosis, treatment and control of parasites of domestic animals with emphasis on the disease-producing capabilities of parasites. P. Zoology 1a, 2R, 3L. Fee. \$3.

Animal Science (page 286).

103, change II to I, II.

Add the following new courses:

106. Meat Judging (2) I. .... Roubicek  
Consideration of factors involved in selection and grading of carcasses and wholesale cuts of beef, pork, and lamb. A meat judging team will be selected from students in this course. 1R, 3L. P, Animal Industry 1. Fee \$3.
107. Meat Selection and Identification. (2) II. .... Roubicek  
Identification, quality determination, and meat cutting demonstrations, with special reference to institutional requirements. 1R, 3L. Fee \$3.

Anthropology (pages 287-291).

90a-90b, change to 40a-40b, and add statement (Identical with Hist. 40a-40b).

208. Delete

209. Delete

211. Delete 1958-59.

225. Change 1958-59 to 1959-60.

242a-242b. Delete

245a-245b. Delete

345a-345b. Change to 345, delete 1957-58, change Yr. to II.

Add the following new course:

255. Quantitative Studies in Cultural Anthropology (3) I. Ha-kenberg  
Review of the quantitative studies which have been made by cultural anthropologists. Discussion of the types of problems, populations, and conceptual approaches which involve or require the use of quantitative assumptions and inferences. P. 25a-25b.

Bacteriology and Medical Technology, (pages 296-297). Para. 2, following Amer. Med. Assn., insert Bacteriology and Medical Technology 101a-101b (13-12) will be credited toward the Bachelor of Science degree when the course has been successfully completed... ~~delete~~ A maximum of 25 credits for this training in absentia and add as a last sentence of the paragraph following fees paid: A student must complete 100 units of course work including all the requirements for the major as listed above before he can be eligible for this course.

17. Change to 17a-17b (4-4) Yr.

Add the following new course:

- 319a-319b. General Pathology. (3-3) Yr. .... Schloss  
The reactions of the tissues of man and experimental animals to the invasion by microorganisms will be studied. This includes changes due to inflammation, degeneration and neoplasia. Gross and microscopic examinations. P, 219a. Fee \$7.

Biochemistry and Nutrition, (page 299).

Add:

312. Chemistry of Enzymes. (2) II, 1958-59 ..... Kurnick  
Biochemical and physical principles as applied to the study of properties, functions, mode of action, isolation, purification, and identification of enzyme compounds. P. Chem. 140b or 40 and 60; Chem. 261b or Zool. 253b, or Bot. 303 or Home Econ. 202R.  
(Identical with Poultry Science 312)

Business Administration, (pages 302-308).

Change Professor Howard (Head of Department) to Dean Shaw Livermore (Acting Head of Department).

200. Change to read as follows:

200. Electronic Data Processing and Computer Programming. (3)  
I, II. Raaf.  
Business operational data systems. Computer characteristics and feasibility. Digital computer programming.

249. Change to read as follows:

349. Bank Organization and Management. (3) I, 1959-60....Staff  
Problems of bank organization; responsibilities of officers and directors; relationship of correspondents, government agencies, and the money market. Management of bank funds; bank credit and bank policies. P, Econ. 248 open to qualified seniors and graduate students.

Change 278 to read as follows:

225. Industrial Traffic Management. (3) II. ....Gifford  
(Identical with Economics 225.)

356. Change to read as follows:

356. Sampling Theory and Methods. (3) II. 1958-59.....Raaf  
Theory and applications of sampling methods useful in various areas of business and governmental operations and research. Experimental design. P, 255 or equivalent.

Add the following new courses:

232. Business Budgeting. (2). II. ....Raby  
Relationship of budgeting to management functions; principles and procedures of profit planning and financial control for both manufacturing and non-manufacturing organizations. P, 31b or 32.
301. Human Relations in Administration (2). II.....Ireland-Leonard  
(Identical with Sociology 301.)

**Chemistry** (page 310).

40. Change I to I, II.

**Civil Engineering** (pages 314-316).

122. Change I to I, II.  
265. Add Fee \$5.  
310. Change I to I, II.

**Drama** (page 323).

Add the following new course:

236. The Oral Interpretation of Shakespeare. (3) I.....Mattingly  
(Identical with Speech 236.)

**Economics** (page 325).

Add the following new course:

225. Industrial Traffic Management. (3) II. ....Gifford  
Transportation from the viewpoint of the shipper; rates and services of the various carriers, classifications and rules, freight rates and tariffs. P, 221.  
(Identical with B.A. 225.)

**Electrical Engineering** (pages 338-342).

120. Change to read as follows:

122. Electric Circuit Theory I. (3) I, II.....Staff  
A detailed treatment of basic concepts in modern network theory based upon the general concepts introduced in EE 22. Emphasis upon vector diagrams, locus diagrams, and energy considerations in single and variable frequency steady state solutions. Introduction to the Fourier and Laplace transforms. P, 22 and CR 123.

121. Change to read as follows:

123. Circuits Laboratory. (1) I, II .....Staff  
Experimental aspect of EE 122. P, CR 122. Fee \$5.

150. Change units to 4.

152. Change units to 4.

161. Add Fee \$5.

222. Change to read as follows:  
 222. Electric Circuit Theory II. (3) I, II.....Staff  
 A continuation of EE 122 encompassing elementary theory of functions of a complex variable, inverse transform techniques, limitations imposed on immittances from energy considerations, and an extension of the basic concepts to networks with distributed parameters. P, 122 or 120.
223. Change to read as follows:  
 23. Basic Circuits Laboratory. (1) I, II .....Staff  
 Experimental aspect of EE 22. P, CR 22. Fee \$5.
228. Change to read as follows:  
 228. Advanced Circuit Theory. (3) I, II, Rogers, Hasenbauer, Enloe  
 Advanced topics in the Laplace and Fourier transform and pole-zero methods; treatment of frequency selective networks and elementary synthesis procedures. P, 222.
254. Change to read as follows:  
 254. Modulation and Coding. (3) I, II...Featherston, G. Russell  
 Theory and techniques associated with the preparation of information for transmission and reception; modulation, encoding and decoding processes; information content, band-width, channel capacity, and signal-to-noise considerations in information systems; emphasis upon time and frequency multiplexing. P, 152 and CR 255.
255. Change to read as follows:  
 255. Modulation and Coding Laboratory. (1) I, II.....Staff  
 Experimental aspect of 254. P, CR 254. Fee \$5.
280. Change prerequisites to Phys. 211a and CR 281.
301. Change to read as follows:  
 301. Operations Research I. (3) I .....Hessemer  
 A study of the general nature of operations research including a definition of the problem and the use of models in the solution. The required material on probability theory and statistics applicable to these problems is developed as needed. P, Math. 202a.
302. Change to read as follows:  
 302. Operations Research II. (3) II .....Hessemer  
 A study of allocation, waiting time, and competitive models. The required mathematical techniques, such as linear programming, queuing, and game theory, are introduced as needed. P, 301.
310. Change to read as follows:  
 310. Operational Methods of Circuit Analysis. (3) I, II.....Staff  
 A presentation of the elements of functions of a complex variable followed by application of Fourier transform and Laplace transform techniques to the problems of signal transmission through lumped and distributed parameter systems.
315. Change to read as follows and relocate numerically:  
 340. Synthesis of Control Systems I. (3) I...Hasenbauer, L. Enloe  
 Analysis and synthesis of linear, continuous, closed-loop control systems. P, 270.
330. Change to read as follows:  
 330. Video and Filter Amplifiers. (3) I...Walker, Perkins, Latorre  
 Design of wide band and fast amplifiers using pentodes and transistors; stagger tuning, distributed amplifiers, feedback and noise. P, 310 or CR.
331. Change to read as follows:  
 331. Pulse and Logic Circuits. (3) II.....Staff  
 Wave shaping, trigger, and computing circuits and non-sinusoidal oscillators using vacuum tubes and semi-conductor devices. P, 310.

333. Change to read as follows:

333. Electronic Systems. (3) I, II.....G. Russell  
Definition of large-scale systems and their electronic sub-systems in terms of block diagrams. Development of the criteria system design from consideration of exterior requirements such as information theory and interior requirements such as probability of error or failure. The effect of coding, modulation, and transducer processes upon realization of these design criteria in practical information-handling systems.

334. Change to read as follows:

334. Transistor Electronics. (3) I, II.....Walker, H. Enloe  
Physical theory of the p-n junction and the transistor; equivalent circuits for small signal and switching applications; basic transistor circuitry.

350. Change to read as follows:

350. Advanced  
Electromagnetic Engineering. (3) I....Hessemer, Stewart  
Application of the electromagnetic field equations to the solution of static field problems and high frequency potential and circuit concepts. The analysis of wave propagation and reflection in dielectrics, conductors, and waveguides. P, Phys. 211a.

361. Change to read as follows and relocate numerically:

335. Introduction to Random Processes and Noise. (3) I...Korn  
Introduction to statistical models, with emphasis on communication systems. Description of random processes. Sampling theorems, correlation functions and spectra. Gaussian random processes. Shot noise and thermal noise. P, 310.

362. Change to read as follows:

362. Methods of Communication Theory and  
Detection Theory. (3) I, II.....Korn  
Statistical description of a communication process. Information and channel capacity for discrete signals. Coding. Continuous signals and modulations: Nyquist-shannon theorem. Application to AM, FM, and PCM. Prediction and filtering by linear systems. Introduction to statistical detection theory. P, 335 (satisfactory grade).

370. Change description to read as follows:

Design and application of analog-computer systems for computation and control. Accuracy considerations. Design of multipliers, function generators, and noise generators. Measurement of statistical parameters. Precision electronic switches. Control circuits and computer system design. Application to flight simulators, nonlinear control systems, random processes, modulation and detection. Term papers on special problems. Course uses University of Arizona analog computers. P, 230 and 231.

371. Change to read as follows:

371. Machine Logic. (3) I, II.....Featherston, P. Russell  
The logical basis of arithmetic and "decision making" functions of digital computers is examined using the methods of Boolean algebra. Relay and electronic designs capable of these functions are treated with some laboratory work on the IBM 650 and SPACE computers.

Add the following new courses:

22. Introduction to Circuit Theory. (3) I, II.....Staff  
Introduction to basic concepts in modern network theory to include complex plane representation of the solution of differential equations, variable and single frequency, sinusoidal, steady state solutions. Introduction to Fourier analysis and complex algebra. P, CR 23 and Math 200.
203. Advanced Programming for  
Digital Computers. (3) I, II. 1957-58 .....Wymore  
This is a continuation of EE 201. Advanced programming techniques will be discussed with special emphasis on abstract and symbolic coding, subroutine design and organization, assembly routines, automatic coding systems and interpretive routines. Applications to large scale computers will be given with detailed study of the IBM 704 and Univac scientific computers. P, 201 Fee \$5.00.

230. Electronic Analog Computers. (3) I, II.....Korn  
Applications and basic design of analog computers, with emphasis on d-c analog computers. Computing elements and scale factors. Applications to dynamics, control systems, and aircraft flight equations. P, senior standing in EE. CR 231.
231. Basic Analog  
Computer Laboratory. (1)I, II.....Korn, Koerner, Staff  
Laboratory practice with modern "slow" and repetitive electronic analog computers (taught concurrently with 230). P, CR 230. Fee \$5.
261. Nuclear Engineering Laboratory. (1) I, II.....Wittmeyer  
Experimental aspect of EE 260. P, CR in 260. Fee \$5.00.
341. Synthesis of Control Systems II. (3) II..Hasenbauer, L. Enloe  
A continuation of EE 340 to include principles and applications of statistical design, sampled data systems and non-linear systems. P, 340.

Add, following Electrical Engineering, a subdepartment of Engineering Physics listing the following courses:

200. Physical Bases for Nuclear Engineering. (3) I, II..Wittmeyer  
Production of nuclear radiation and its interaction with matter. P, 50 or Phys. 10b and Math. 200.
210. Isotopic Techniques. (3) I, II.....Wilde  
An engineering approach to the study of stable and radioactive isotopes. Topics to include: fundamental properties, handling, measurements, applications, and design techniques. P, EE 230 or Phys. 218b.
211. Isotopic Laboratory Methods. (1) I, II.....Wilde  
Laboratory methods of EP 210 Isotopic Techniques. Topics cover handling of radioactive materials, instrumentation techniques, and isotope production in a nuclear reactor. P, CR 210. Fee \$5.00.
212. Materials in Radiation Fields. (3) I, II.....Staff  
A discussion of the effects of radiation fields on materials, utilizing radiation induced changes, minimizing radiation effects, and studying changes in radiation fields caused by materials. P, 200.
220. Nuclear Power Sources. (3) I, II.....Staff  
An analysis of problems encountered in utilization of the energy released in nuclear reactions. P, 200, Math. 202a.
221. Nuclear Power Sources Laboratory. (1) I, II.....Staff  
Experimental aspect of EP 220. P, CR 220. Fee \$5.00.

### Geochronology (page 348).

Add the following courses:

299. Special Problems. (1-5) I, II.....Staff
328. Principles of Geochemistry. (3) I.....Damon  
(Identical with Geology 328).
329. Nuclear and Isotope Geology. (3) II.....Damon  
(Identical with Geology 329).
331. Pleistocene Biology. (3) I. 1958-59.....Martin  
Events of the glacial period as they relate to natural sciences. Glacial geology, relative and absolute dating, pollen stratigraphy, the fossil record, biogeographic theory, and the impact of man. 2R, 3L or field work. Fee \$5.00.

**Geology** (page 350).

52. Delete.

219. Change title to Geophysics I. (3) I.....Pye  
Add 2R, 3L and Fee \$2.00.

Delete (Identical with Mining 219).

312. Change II. to I.

314. Change I. to II.

324. Change I. to I., II.

Add the following new courses:

205. Industrial Minerals. (3) I.....Lacy and Pye  
Mode of occurrence, specifications, uses and methods of evaluating industrial mineral deposits. 2R, 3L. P, 204. Fee \$2.00.

220. Geophysics II. (3) II.....Pye  
A study of the theory of gravimetric, magnetic, electric, seismic radioactive and other geophysical techniques; a study of new techniques being developed and case histories of oil and mineral deposits discovered by geophysical techniques. P, 219.

307. Exploration Photogeology. (2) I.....Mitchum  
Application of photogeology techniques, determining structural situations and rock alteration, in delimiting ore targets. 6L. P, 207, 228. Fee \$4.00.

328. Principles of Geochemistry. (3) I.....Damon  
An introductory course in the chemistry of the earth. Survey of the origin, structure and composition of the earth and the distribution and migration of the chemical elements in nature. (Identical with Geochronology 328).

329. Nuclear and Isotope Geology. (3) II.....Damon  
Systematic study of nuclear and isotopic processes occurring in nature of interest to the geologist. Particular attention will be given to geochronological applications. Techniques of importance to industry, such as isotopic tracing and activation analysis, will also be covered. (Identical with Geochronology 329).

330. Advanced Geochemistry. (3) II.....Damon  
An advanced course in the systematic geochemistry of individual elements with applications to applied research problems. P, 328, or 229 and Chem. 284b.

334. Theories of Ore Deposition. (3) II.....Lacy  
Theories pertaining to origin, concentration, transport and deposition of elements constituting ore deposits. 2R, 3L. Fee \$2.00.

**German** (page 354).

Below the fifth paragraph headed Graduate Work add the sub-heading German; Below the course 410 add the sub-heading Russian. Under sub-heading German.

3c. change I, II to II.

Add the following new course:

1g-2g. Training in  
Reading German for Graduates. (O) I, II.....Staff  
A summary of basic grammar essential to a reading knowledge of the language will be accompanied by readings of increasing difficulty both in the general literature and the student's chosen field of specialization.

Under sub-heading Russian

Add the following new course:

1a-1b. Elementary Russian. (4-4) Yr. ....Staff  
Stress on reading, writing and grammar; simple conversation.



## History and Political Science (page 358).

### History

219a-219b. Delete 1957-58. Add P, 2a, b (219a not a prerequisite to 219b).

241. Change title and number to:

241a-241b. History of China. (3-3) Yr.

Add the following new courses:

40a-40b. Introduction to

Far Eastern Civilizations. (3-3) Yr. . . . . Hucker  
Evolution of the great Far Eastern civilizations, with special reference to social, political and thought patterns, and to problems of modern change. I: India and Southeast Asia. II: China, Japan and Korea. (Identical with Anthropology 40a-40b).

202a-202b. Intellectual History of Europe since the end of the Middle Ages. (3-3) Yr. . . . . Donohoe

Dominant ideas in Western Civilization from the eve of the Italian Renaissance to the period of World War One.

244a-244b. History of the Near and

Middle East. (3-3) Yr. . . . . Mamatey

A broad historical survey of the Near and Middle East from Mohammed to the present time.

### Political Science

254. Delete.

265. Delete.

Add the following new courses:

1. Introduction to Political Science. (3) I. . . . . Kelso

A comprehensive introduction to political science designed for both majors and non-majors. The meaning of political science and relation to other disciplines. The state and forms of government. Legal systems. The theory and organization of the modern state. Public opinion, parties, and propaganda.

231. Political Parties. (3) I. . . . . Hennessy

An examination of the nature, structure and functions of political parties. Emphasis on the role and activities of parties in Western democracies. Special attention to American parties, their history and current problems of organization, ideology and leadership. P, 1 or 51a.

232. Pressure Groups. (3) II. . . . . Hennessy

An analysis of the formation, structure and place of pressure groups in the democratic society; the function of interest groups in the political process; the problems of leadership, internal organization, and membership loyalties. P, 1 or 51a.

237. The Legislative Process. (3) I. . . . . Mann

A study of the role of the legislature in the framework of national and state governments. Consideration of the influence of parties, pressure groups, public opinion, constituencies, the "Committee system", the "administration", the Constitution, etc. in the law-making process. P, 1 or 51a.

263. The Administrative Process. (3) II. . . . . Burke

A detailed study of the processes of policy making and execution within the executive branch of the government with special emphasis on the influence of parties, pressure groups, public opinion, Congressional committees and leaders, and in-administration interests. P, 51a (Identical with Public Administration 263).

272a-272b. Principles of Constitutional Law. (3-3) Yr. . . . . Burke

A study of the principles and concepts of the constitution as revealed in leading decisions of the courts. Part I; The development of the concepts and principles of judicial review, federalism, separation of powers, and implied powers. Part II; The development and current usages of Constitutional limitations such as due process of law, equal protection, the contract clause, and etc. P, 1 or 51a.

274. Legal Aspects of Administration. (3) I. 1958-59. . . . .Burke  
A study of the law governing the organization, powers and procedures of the executive and administrative establishment, with emphasis on the limitations imposed by the American constitutional system. P, 51a.
277. Jurisprudence and Legal Systems. (3) II. 1958-59. . . . .Burke  
A study of the nature, sources and theories of law; the role of law in modern society; the application of various theories of law to the legal and political systems of major governments. P, 1 or 51a.
291. Recent Political Thought. (3) II. 1958-59. . . . .Gomez  
An examination and analysis of the main political doctrines since the mid-nineteenth century with emphasis on socialism, communism, fascism and democracy.

**Home Economics** (page 362).

11. Change II to I, II.  
209. Change I, II to II. 1958-59.  
246. Change I to II.

**Horticulture** (page 367).

102. Change Units to 3.  
103. Change Fee to \$2.00.  
208. Change Fee to \$4.00.

**Law** (page 371).

Add the following new course:

195. Estate Planning. (2) II. . . . .Lenoir

**Mathematics** (page 372).

In third paragraph the major actuarial mathematics...insert 291a after 202a.

91. Delete 1957-58.  
200. Change title to read Ordinary Differential Equations.

Add the following new course:

275. Numerical Analysis. (3) II. . . . .Wymore  
Introduction to Numerical Analysis with emphasis on the underlying mathematical concepts. Included will be topics in the categories of error analysis, solution of systems of linear and non-linear equations, approximation theory, numerical solution of ordinary and partial differential equations with special topics in numerical evaluation of multiple integrals, relaxation methods, Monte Carlo methods, and Chebycheff approximations. P. 202a. Fee \$5.00.

**Mechanical Engineering** (page 376).

242. Change I to I, II.  
246. Change II to I, II,  
310. Delete.

315. Change to read as follows:

315. Servomechanisms. (3) II. . . . .Bottaccini  
Analysis and synthesis of control systems. P, 270.

Add the following new courses:

261. Nuclear Engineering Laboratory. (1) I, II. . . . .Staff  
(Identical with EE261).
283. Engineering Analysis. (3) I. . . . .Sutton  
Setting up differential equations for physical phenomena. Solutions by ordinary methods, Laplace transforms, power series, Fourier series. Initial and boundary value problems. P, 118b, C.E. 113, Math. 200.
- 290a, b. Engineering Statistics and  
Quality Control. (3-3) Yr. . . . . Bottaccini  
P, Math. 201b.
300. Advanced Physical Properties of

Engineering Materials. (3) II. . . . . Marcoux  
Advanced study of the special physical properties of certain engineering materials used where high strength and toughness, wear and abrasion resistance, high temperature, or chemical corrosion are a factor. P, 125.

**Mining and Metallurgical Engineering** (page 382).

Metallurgical Engineering.

131. Change units to 3. Change 1R, 3L to 2R, 3L.

231. Change units to 3. Change 1R, 3L to 3R.

Add the following new courses:

235. Introduction to Powder Metallurgy. (2) I. . . . . Anthony  
Basic principles of the production and mixing of powdered metals and the forming, sintering and uses of powdered metal parts. 1R, 3L. P, 132.

**Nursing** (page 396).

Add the following new courses:

140. Team Nursing. (3) II. (1957-58 only) . . . . . McClure  
A course including leadership techniques as applied to the nursing service team. Consultation in the work setting will be a unique feature of the course. P, R.N. graduate. Fee \$22.50.

170. Patient and Community Teaching. (3) I. . . . . Coulter  
A required course for graduate nurses which supplements courses in clinical nursing transferred from Diploma Schools of Nursing. It is designed to help students identify health problems of hospitalized patients or community groups and to take responsibility appropriate for professional nurses in organizing content material and selecting methods incident to the teaching plan. P, 3 units of psychology.

**Oriental Studies** (page 397).

Add after Nursing the following:

Oriental Studies Committee

Professor Charles O. Hucker, Chairman (Anthropology)

100a-100b. Elementary Modern Chinese. (3-3) Yr. 1959-60. Hucker  
An introduction to the use of the modern Chinese language (Mandarin), with equal emphasis on speaking and reading.

101a-101b. Elementary Literary Chinese. (4-4) Yr. 1958-59. Hucker  
An introduction to pre-20th century Chinese styles through readings in *Classic of Filial Piety* and the *Analects of Confucius*. Oriental Studies 100a-100b is not a prerequisite. P, Upper-division standing.

**Pharmacy** (page 397).

Add the following new course:

4. Dosage and Solutions. (2) I. . . . . Zapotocky  
A study of dosage forms and their relationships, and of pharmaceutical and prescription terminology, including systems of weights and measures used in medicine, and calculations related to the proper use and administration of drugs. Credit may not be established for both 4 and 10.

**Physics** (page 412).

10a-10b. Add Fee \$4 each semester.

220. Add 1957-58.

306a-306b. Delete 1957-58. Add P, Math. 202a.

**Plant Breeding** (page 415).

237a-237b. Change title to Statistical Methods in Agriculture.

Add the following new courses:

235. Sample Survey Methods. (3) II . . . . . Tucker  
Study of practical problems arising in planning, execution, and analysis of a survey, methods of sampling, estimation of population values, estimation of sampling error and efficiency of methods. P, One course in statistics or Math. 20.

339. Design of Experiments in Agriculture. (3) I . . . . .Tucker  
Increasing precision and accuracy of experiments, complete and  
incomplete block designs, factorial experiments and confounding,  
response surface designs. P, 237a-237b.

**Poultry Science** (page 418).

Add the following course:

312. Chemistry of Enzymes. (2) II. 1958-59. . . . .Kurnick  
(Identical with Biochemistry and Nutrition 312.)

**Public Administration** (page 418).

Add after the heading Psychology (See Philosophy and Psychology)  
the following committee:

Public Administration  
Committee: (graduate)

Professors: (Seven members, including Dean of College of Business and  
Public Administration as chairman)

Graduate work leading to the degree of Master of Public Administration is offered, with major fields of specialization in governmental administration, criminology and correctional administration, and probation-parole administration. Public administration on the graduate level is an interdepartmental responsibility. Representatives of the Departments of History and Political Science, Sociology, Economics, Psychology, and Business Administration, and of the Bureau of Business and Public Research comprise the Graduate Committee on Public Administration.

Courses of study undertaken by candidates for the master's degree will be prescribed individually by an appropriate adviser. The prerequisite is a bachelor's degree from an approved institution, preferably with undergraduate concentration in political science and history, sociology or public administration. Candidates lacking such background may be admitted by permission, but they will find additional time and course work necessary to fulfill prerequisites before being advanced to candidacy for the degree.

Undergraduate students in the university may prepare for careers in public administration, or for graduate work, either in the College of Business and Public Administration or in the College of Liberal Arts. In the latter case, they will normally choose as major and minor fields in the upper division from among the fields of economics, political science, history, psychology, and sociology.

Undergraduate preparation for the examinations governing entrance into careers in the State Department (foreign and domestic service) may be secured either in the College of Liberal Arts or in the College of Business and Public Administration.

The following courses include those which will be normally included in various programs of study for the degree of Master of Public Administration. Prerequisites indicated may be satisfied by previous undergraduate course work or by inclusion in the first year programs of students admitted to the graduate program prior to their advancement to candidacy.

243. Welfare Legislation. (3) II . . . . .Yoshino  
A survey and analysis of the provisions and administration of the major federal legislation in the area of social welfare.
245. Counseling in Social Administration. (3) II . . . . .Mulligan  
The basic concepts and principles of counseling, casework, and interviewing in professional and administrative settings. P, 6 units of Soc. and senior standing.
263. The Administrative Process. (3) II . . . . .Burke  
(Identical with Pol. Sci. 263)

266. Police Organization and Administration. (3) II .....Staff  
A thorough analysis of theory and practice of police organization and administration at the national, state and local levels. P, Soc. 2 and 87.
267. Public Personnel Administration. (3) I .....Kelso  
Development of public service and its role in the contemporary state. Basic ideas, problems, and processes in public personnel administration. Development of a career service. P, Pol. Sc. 51a-51b and upper division standing.
- 337a-337b. Fiscal and Budgetary Administration  
of Public Agencies. (2-2) Yr. ....Staff  
Analysis of the internal fiscal operation, and the budgetary cycle, of public and non-profit agencies. Individual reports will be assigned. P, Bus. Adm. 237.
- 346a-346b. The Dynamics of Probation and Parole. (2-2) Yr. Mulligan  
A critical discussion of the techniques of social investigation, diagnosis, supervision and treatment of the offender. P, 245 or equivalent.
366. Rehabilitative Services in Correctional Institutions. (2) I. Vedder  
Analysis of the rehabilitative process in the modern correctional institution. Problems associated with admission and reception, discipline, special services, classification, education, vocational training, and preparation for parole. P, Soc. 2 and 87.
- 405p. Internship in Probation and Parole. (2-6) I, II. ....Mulligan  
Student serves an internship of from 8 to 10 weeks on a full-time basis in a community correctional agency under professional and university supervision. Open only to graduate students in the probation and parole program. P, 346a-346b.
- 405c. Internship in Correctional Administration. (2-6) I, II. ....Vedder  
The advanced student and candidate for the master's degree in the correctional program is required to spend time working in a penal institution under the guidance and supervision of responsible officials. Emphasis is placed on the practical aspects of the correctional field. P, Soc. 87, 166a-166b, 287.

### Romance Languages (page 419).

French

Add the following new course:

- 1g-2g. Training in Reading French for Graduates. (0-0) Yr. ....Staff  
A summary of basic grammar essential to a reading knowledge of the language will be accompanied by readings of increasing difficulty both in the general literature and the student's chosen field of specialization.

### Secretarial Studies (page 424).

Add the following new course:

273. Advanced Techniques for Office Control. (2) I .....Langen  
The analysis and application of modern techniques for special office situations in various businesses. P, 77 or equivalent office experience. Fee \$3.

### Sociology (page 425).

Delete the following courses: 25a-25b, 168, 203, 210, 220, 276, 277, 279.  
Delete 1957-58 from 289, 293, 295, 289. Change II to I.  
Delete 1958-59 from 252, 284, 285, 286, 290, 315, 316.

Add the following new courses:

40. Introduction to Social Administration. (2) I. ....Mulligan  
An over-all view of the background and functions of the major institutions, public and private, in the fields of public health, welfare, and labor.
212. Sociology of Collective Behavior. (3) I .....Yoshino  
An analytical approach to the principles common to such aspects of collective behavior as the crowd, the public, and such social movements as those having a political, religious, or minority context. P, 1 and 2.

222. Sociology of Minority Relations. (3) II .....Yoshino  
A critical approach to the social processes involved in minority relations in terms of race, caste, class, ethnicity, politics, and religion. The sources of minority attitudes; patterns of minority adjustment; trends in minority relations. P, 1 and 2.
261. Introductory Social Statistics. (3) I, II .....Ireland  
Methods of processing and presenting social data, with emphasis on tabular and graphic presentation, elementary statistical inference, and distribution-free measures.
280. Introductory Sociological Theory. (3) I .....Hambenne  
A critical review of the leading sociologists from Auguste Comte to the present day. P, 1.
287. Criminal Psychopathology. (2) I .....Vedder  
This course concerns itself with specific mental and emotional disorders of criminal behavior from the point of view of causation and development of abnormal behavior. Consideration of various approaches of diagnosis and treatment in psychiatric settings. P, 2, 87, and Psych. 1b.
301. Human Relations in Administration. (2) II...Ireland-Leonard  
A seminar dealing primarily with a discussion of case problems in the areas of industrial and governmental management and administration. P, 286 or B.A. 202. (Identical with Business 301.)
341. The Theory of Juvenile Delinquency. (2) I .....Mulligan  
Analysis of the sociological and psychological variables in the etiology of juvenile delinquency in American society. Some emphasis on a socio-psychological explanation of juvenile delinquency and the application of theory to rehabilitation and prevention. P, 241 and Psych. 1b.
387. Theory of Criminology. (2) I .....Vedder  
Historical and theoretical aspects of academic criminology. Contributions of the great individual thinkers with special emphasis on the recognized schools of criminological theory. P, 288.

**Speech (page 429).**

110. Delete.

118. Change title to read:

218. Persuasion. (3) II .....Sparks

Add the following new courses:

1. Speech for Foreign Students. (0) I, II ..... Lynn, Lambert  
A non-credit course in oral English for foreign students.

210. Problems in Speech Training. (3) II .....Lynn  
Study of objectives, materials, and techniques for developing speech skills. P, 15 units in speech.

213. Studies in Discussion. (2) II .....Sparks  
Investigation of source materials and research literature pertaining to public and group discussions. P, 113.

220. Classical Rhetoric. (3) I .....Sparks  
A study of Greek and Roman rhetorical principles. The analysis of selected orations of these periods. P, 2, 10.

222. British Oratory. (3) II. 1958-59 .....Sparks  
History and criticism of British speakers from the eighteenth century to the present. P, 220.

236. The Oral Interpretation of Shakespeare. (3) I ...Mattingly  
Character analysis and presentation of selected scenes from representative comedies, histories, and tragedies. P, 137a or 137b. (Identical with Drama 236.)