



University of Arizona Record

ANNOUNCEMENT
FOR THE
ACADEMIC YEAR
1932-33

Record of University Activities for the
Academic Year, 1930-1931

Register of Students, 1931-1932

PUBLISHED BY
University of Arizona
TUCSON, ARIZONA
APRIL, 1932

Price, 15 Cents

University of Arizona Record

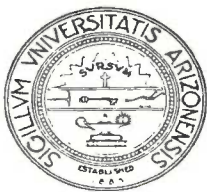
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April, 1932

University Station, Tucson, Arizona

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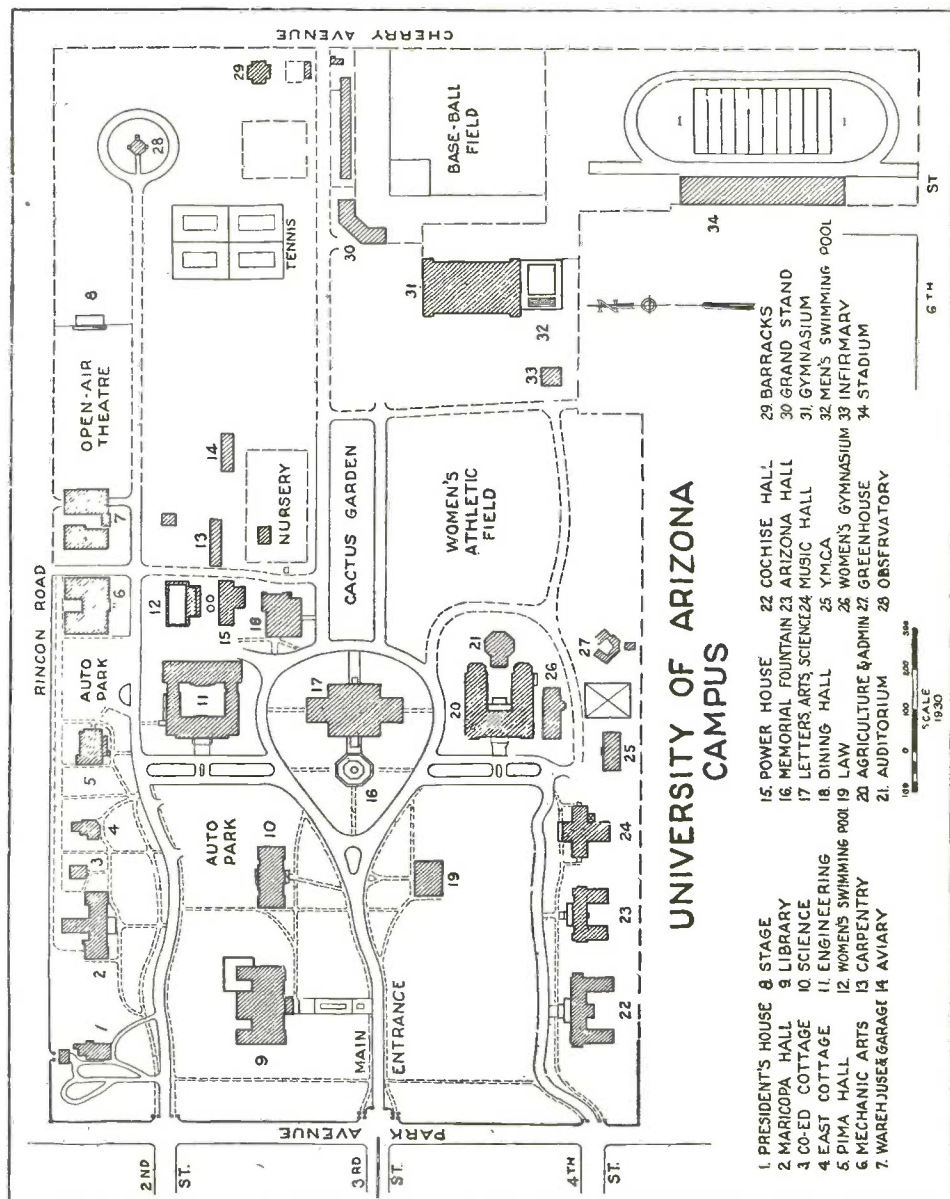


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CALENDAR

1932

JULY

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1933

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JULY

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AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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UNIVERSITY CALENDAR

1932-1933

FIRST SEMESTER

September 6, Tuesday to September 10, Saturday	} Freshman Week Program.
September 6, Tuesday	Registration of Freshman.
September 7, Wednesday	Freshman Placement Examinations.
September 8, Thursday and September 9, Friday	} University Faculty Meeting, (Thursday). } Advisory and Social Program.
September 10, Saturday	} Enrollment in Freshman Courses. } Registration of all new students and } Seniors.
September 12, Monday	Registration of all other students.
September 13, Tuesday	Class work begins.
September 16, Friday	Applications for condition examinations filed with the Registrar.
September 17, Saturday	"A" Day—No classroom exercises.
September 24, Saturday	Condition examinations.
September 27, Tuesday	Last day of registration for credit.
October 20, Thursday	Records closed for preliminary scholarship report.
November 11, Friday	Armistice Day—No classroom exercises.
November 15, Tuesday	Graduate theses outlines submitted.
November 17, Thursday	Records closed for mid-semester delin- quent report.
November 23, Wed. eve to November 27, Sunday evening	} Thanksgiving recess.
December 16, Friday	Applications for condition examinations filed with the Registrar.
December 17, Sat. evening to January 2, Monday evening	} Christmas recess.
January 7, Saturday	Condition examinations.
January 21, Saturday to January 28, Saturday	Semester examinations.

SECOND SEMESTER

January 30, Monday	Registration of Freshmen, new students, and Seniors.
January 31, Tuesday	Registration of all other students.
February 1, Wednesday	Class work begins.
February 15, Wednesday	Last day of registration for credit.
February 22, Wednesday	Washington's Birthday—No classroom exercises.
March 9, Thursday	Records closed for preliminary scholarship report.
March 12, Sunday	Founders' Day.
April 6, Thursday	Records closed for mid-semester delinquent report.
April 13, Thurs. evening to April 17, Monday evening	} Easter vacation.
April 13, Thursday	Applications for condition examinations filed with the Registrar.
April 22, Saturday	Condition examinations.
May 1, Monday	Senior records complete except for second semester examinations.
May 5, Friday, and May 6, Saturday	University Week events. (Classes are held.)
May 10, Wednesday	Graduate theses submitted.
May 13, Saturday	1934 Seniors must file by this date their applications for candidacy for degrees.
May 25, Thursday	Senior records closed.
May 26, Friday	Semester examinations begin.
May 28, Sunday	Baccalaureate Sunday.
May 29, Monday	Senior Day—Honor Assembly.
May 30, Tuesday	Memorial Day—No classroom exercises. Alumni Day.
May 31, Wednesday	Commencement.
June 3, Saturday	Semester examinations end.

BOARD OF REGENTS

EX-OFFICIO

His Excellency, George W. P. Hunt.....Governor of Arizona
Hon. Charles O. Case, Ped.D., State Superintendent of Public Instruction

APPOINTED

Term Expires

Hon. George M. Bridge.....	January, 1933
Treasurer of the Board of Regents.	
Hon. Roy Kirkpatrick.....	January, 1933
Secretary of the Board of Regents.	
Hon. Franklin J. Crider, M.S.....	January, 1935
Vice-Chancellor of the Board of Regents.	
Hon. Theodora A. Marsh.....	January, 1935
Hon. W. O. Sweek, M.D.....	January, 1937
Hon. Robert E. Tally, B.S.M.E.....	January, 1937
Chancellor of the Board of Regents.	
Hon. Charles M. Layton.....	January, 1939
Hon. Henry S. McCluskey.....	January, 1939

OFFICERS OF THE UNIVERSITY

OFFICERS OF ADMINISTRATION

Homer LeRoy Shantz, Ph.D., Sc.D.	Campus
President of the University.	
Gurdon Montague Butler, E.M., Sc.D.	434 E. First St.
Dean of the College of Mines and Engineering; Director of the Arizona Bureau of Mines.	
Samuel Marks Fegtly, Ph.B., LL.B.	621 N. Tyndall Ave.
Dean of the College of Law.	
James Willis Clarson, Jr., Ph.D.	2143 E. Fourth St.
Dean of the College of Education.	
Charles Fletcher Rogers, M.A., Mus.D.	950 N. Sixth Ave.
Dean of the College of Music.	
Emil Richert Riesen, A.M.	621 N. First Ave.
Dean of the College of Letters, Arts, and Sciences.	
Paul Steere Burgess, Ph.D.	1071 N. Mountain Ave.
Dean of the College of Agriculture; Director of Agricultural Experiment Station.	
Charles Zaner Leshner, M.A.	1919 E. Fifth St.
Registrar; Secretary of the Faculty.	
Rudolph H. Gjelsness, B.A., B.L.S.	
Librarian.	
Arthur Hamilton Otis, A.M.	636 N. Park Ave.
Dean of Men.	
Evelyn Wellington Jones, A.M.	725 E. Speedway
Dean of Women.	
Fred P. Perkins, M.D.	923 E. Sixth St.
Medical Adviser; Director of Health.	
Byron Cummings, A.M., LL.D., Sc.D.	615 E. Second St.
Director of the Arizona State Museum.	
Andrew Ellicott Douglass, A.B., Sc.D.	1230 N. Euclid Ave.
Director of the Steward Observatory.	
Pontus Henry Ross, M.S.	Catalina Foothills Estates
Director of the Agricultural Extension Service.	
Arthur W. Holderness, Lieutenant Colonel, U. S. Army	
Director of the School of Military Science and Tactics.	
James Fred McKale, M.A.	801 E. Second St.
Director of Physical Education for Men.	
Ina Estelle Gittings, M.A.	742 E. Fifth St.
Director of Physical Education for Women.	
Max Phillip Vosskuhler, M.S.	1511 E. Edison St.
Director of University Extension.	
John Franklin Walker, Ph.D.	1328 E. First St.
High School Visitor.	
Francis Marion Walker	725 E. Fourth St.
Comptroller.	
William Joseph Bray	1427 Rincon Road
Superintendent of Buildings and Grounds.	
Alter Louis Slonaker, M.A.	1030 E. Seventh St.
Alumni Secretary.	

UNIVERSITY COMMITTEES

1932-1933

Admission—The Registrar, the Deans of the several Colleges.

Advanced Standing—The Registrar, the Dean of the College, and the Head of the Department concerned.

Advisory Council—The President, the Deans, the Registrar. Wed. 3:30.

Assembly—Lockwood, Mathewson, Rogers.

Athletics—Thomas, Kelton, Leshner, McKale, Nugent.

Campus—Bray, Kinnison, Nichol, Streets.

Catalogue—Leshner, Riesen, Solve.

Educational—Solve, Curtis, Ehle, Hawkins, Sands, Schultz, J. F. Walker.

Extension and Correspondence—Vosskuhler, Larson, Leshner, Pattison, Schmidt, Wharton.

Gifts—Perry, Douglass, Jones, Pattison.

Graduate Study—R. J. Leonard, Chairman, Brooks (Humanities), Carpenter (Physical Sciences), Vorhies (Biological Sciences), J. F. Walker (Social Sciences), Williams (Arts).

Health—University Physician, Directors of Physical Education, Dean of Men, Dean of Women.

Lectures and Entertainments—Graesser, Houghton, Mathewson, Pattison, Solve.

Library—Houghton, Ball, Clampitt, J. C. Clark, Gjelsness, Larson, Streets, Thomas, Thrift.

Publications—Leshner, Burgess, G. M. Butler, Hopkins, R. J. Leonard.

Research—Anderson, J. G. Brown, Chapman, Fitz-Gerald, Hubbard, M. C. Smith.

Residence Standing—Dean of Men, the Registrar, the Dean of Women, the Assistant Comptroller, Thomas.

Rhodes Scholarship—Schneck, Garretson, Nugent.

Schedule—The Registrar, Hawkins, Howard, M. Thornburg.

Special University Occasions—H. B. Leonard, Rogers, Vosskuhler.

Student Activities and Eligibility—G. T. Caldwell, Briggs, J. B. Cunningham, L. W. Davis, the Registrar, Dean of Men, Dean of Women.

Student Loans and Scholarships—The Comptroller, the Registrar, the Dean of Men, the Dean of Women.

OFFICERS OF INSTRUCTION

Professors

Guild, Frank Nelson, Ph.D.	107 Olive Road
Professor Emeritus of Optical Mineralogy.	

Smith, George Edson Philip, C.E., D.Eng.	1195 E. Speedway
Professor of Agricultural Engineering; Agricultural Engineer, Agricultural Experiment Station.	

Thornber, John James, A.M.	117 Olive Road
Professor of Botany; Botanist, Agricultural Experiment Station.	

Lutrell, Estelle, M.A.	637 N. Park Ave.
Consulting Librarian; Professor of Bibliography.	

- Douglass, Andrew Ellicott, A.B., Sc.D. 1230 N. Euclid Ave.
Director of the Steward Observatory; Professor of Astronomy.
- Perry, Frances Melville, A.M. 1207 E. Speedway
Professor of English.
- Butler, Gurdon Montague, E.M., Sc.D. 434 E. First St.
Dean of the College of Mines and Engineering; Director of the
Arizona Bureau of Mines; Professor of Mining Engineering.
- Cummings, Byron, A. M., LL.D., Sc.D. 615 E. Second St.
Director of the State Museum; Professor of Archæology.
- Leonard, Heman Burr, Ph.D. 840 E. Fourth St.
Professor of Mathematics.
- Brown, Elmer Jay, Ph.D. El Encanto Estates
Professor of Business Administration and Economics.
- Fegtly, Samuel Marks, Ph.B., LL.B. 621 N. Tyndall Ave.
Dean of the College of Law; Professor of Law.
- Lockwood, Francis Cummins, Ph.D. 601 E. First St.
Professor of English.
- Vorhies, Charles Taylor, Ph.D. 1424 E. Fifth St.
Professor of Entomology; Entomologist, Agricultural Experiment Sta-
tion.
- Chapman, Thomas Garfield, Sc.D. 2724 E. Eighth St.
Professor of Metallurgy and Ore Dressing; Metallurgist, Arizona
Bureau of Mines.
- Ehle, Mark, E.M. 731 E. Fourth St.
Professor of Mining Engineering; Mining Engineer, Arizona Bureau
of Mines.
- Pattison, Sidney Fawcett, M.A. 1845 Santa Rita Ave.
Professor of English.
- Fowler, Frank Hamilton, Ph.D. 1036 E. Helen St.
Professor of Classical Literature.
- Kelton, Frank Caleb, M.S. 412 E. Fourth St.
Professor of Civil Engineering.
- Bryan, Walker Edward, M.S. 1146 E. Fifth St.
Professor of Plant Breeding; Plant Breeder, Agricultural Experiment
Station.
- Cunningham, Walter Stanley, M.S. 626 E. Fourth St.
Professor of Dairy Husbandry; Dairy Husbandman, Agricultural
Experiment Station.
- Hubbard, Howard Archibald, Ph.D. 801 E. Third St.
Professor of History.
- Otis, Arthur Hamilton, A.M. 636 N. Park Ave.
Professor of French; Dean of Men.
- Brown, James Greenlief, Ph.D. 1733 E. Sixth St.
Professor of Plant Pathology; Plant Pathologist, Agricultural Experi-
ment Station.
- Clarson, James Willis, Jr., Ph.D. 2143 E. Fourth St.
Dean of the College of Education; Professor of Secondary Education.
- Curtis, Leonard J., J.D. 603 E. Speedway
Professor of Law.
- Darrow, Lemuel DeWitt, M.A., LL.B. 606 N. Park Ave.
Professor of Mechanic Arts.
- Life, Frank Mann, B.S. 105 E. Speedway
Professor of Physics.
- McKale, James Fred, M.A. 801 E. Second St.
Director of Physical Education for Men, Professor of Physical Edu-
cation for Men.
- Riesen, Emil Richert, A.M. 621 N. First Ave.
Dean of the College of Letters, Arts, and Sciences; Professor of
Philosophy.

- Anderson, Ernest, Ph.D. 1930 E. Hawthorne St.
Professor of Chemistry.
- Gittings, Ina Estelle, M.A. 742 E. Fifth St.
Director of Physical Education for Women; Professor of Physical Education for Women.
- Burgess, Paul Steere, Ph.D. 1071 N. Mountain Ave.
Dean of the College of Agriculture; Director of Agricultural Experiment Station; Professor of Agricultural Chemistry.
- Cunningham, John Bissell, E.M. 236 E. Second St.
Professor of Metallurgy and Ore Dressing.
- Caldwell, George Thornhill, Ph.D. 1848 E. Third St.
Professor of Zoology.
- Clark, James C., E.E. 317 N. Park Ave.
Professor of Electrical Engineering.
- Mathewson, Edward Payson, B.S., LL.D., Sc.D. 1203 N. Campbell Ave.
Professor of Administration of Mineral Industries; Metallurgist, Arizona Bureau of Mines.
- Roberts, Lathrop Emerson, Ph.D. E. Speedway and Dodge Blvd.
Professor of Chemistry.
- Stoyanow, Alexander A., Ph.D. 2231 E. Helen St.
Professor of Geology.
- Thornburg, Martin Lynn, M.E. 1640 E. Sixth St.
Professor of Mechanical Engineering.
- Butler, Bert S., A.M., Sc.D. 1838 E. Drachman St.
Professor of Geology.
- Embleton, Harry, B.S. Route 1, Box 190
Professor of Poultry Husbandry; Poultry Husbandman, Agricultural Experiment Station.
- Frazier, Allegra, A.M. Avalon, Oracle Road
Professor of English.
- Gunthorp, Horace, Ph.D. 1227 E. Lowell Ave.
Professor of Zoology.
- Hawkins, Ralph Sams, M.S. 824 N. Euclid Ave.
Professor of Agronomy; Agronomist, Agricultural Experiment Station.
- Hemenway, Ansel Francis, Ph.D. Cortaro
Professor of Botany.
- Howard, Russell Marion, M.S. 2843 E. Third St.
Professor of Business Administration.
- Kinnison, Allen Fisher, M.S. 63 N. Melwood Ave.
Professor of Horticulture; Horticulturist, Agricultural Experiment Station.
- Mather, Stella, M.S. 922 E. Fourth St.
Professor of Home Economics.
- Rogers, Charles Fletcher, M.A., Mus.D. 950 N. Sixth Ave.
Dean of the College of Music; Professor of Voice and Choral Conducting.
- Stanley, Ernest Brooke, M.S. 1726 E. Fifth St.
Professor of Animal Husbandry; Animal Husbandman, Agricultural Experiment Station.
- Warner, Earle Horace, Ph.D. 510 E. Fourth St.
Professor of Physics.
- Ball, Elmer Darwin, Ph.D. 1620 E. Speedway
Professor of Economic Zoology; Economic Zoologist, Agricultural Experiment Station.
- Buehrer, Theophil Frederic, Ph.D. 2715 E. Fifth St.
Professor of Agricultural Chemistry; Physical Chemist, Agricultural Experiment Station.
- Tucker, William John, Ph.D. 2705 E. Seventh St.
Professor of English.

Smith, Margaret Cammack, Ph.D. Professor of Nutrition; Nutrition Chemist, Agricultural Experiment Station.	El Encanto Estates
Smith, Chester H., LL.B., S.J.D. Professor of Law.	720 N. Treat Ave.
Fitz-Gerald, John Driscoll, II., Ph.D., Litt.D. Professor of Romance Philology.	Hotel Geronimo
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Cox, Fred	Judd, Dell	Smith, John
Campus Painter	Storekeeper	Plumber
Davis, Glen	Kelly, Henry	
Repairman	Garageman	

GENERAL INFORMATION

THE UNIVERSITY

The University of Arizona is an integral part of the system of public education established by and for the State. Its purpose, in the language of the organic law, is "to provide the inhabitants of this State with the means of acquiring a thorough knowledge of the various branches of literature, science, and the arts," and, in so far as possible, a technical education adapted to the development of the peculiar resources of Arizona. In furtherance of this purpose, the College of Agriculture, the Agricultural Experiment Station, the Agricultural Extension Service, the College of Education, the College of Law, the College of Letters, Arts, and Sciences, the College of Mines and Engineering, the College of Music, the Arizona Bureau of Mines, Graduate Studies, the General University Extension Division, the School of Military Science and Tactics, the State Museum, and the Steward Observatory have been organized. In creating the University the Legislative Assembly wisely unified under one management these various colleges and institutions of higher learning and investigation.

The general organization of the University is in accordance with the Act of Congress of July 2, 1862, known as the Morrill Act, creating the "Land Grant Colleges." The details of its organization and government are regulated by the Act of the Legislative Assembly of the Territory of Arizona, passed in 1885, and subsequent acts of the Legislature.

THE BOARD OF REGENTS

The government of the institution is vested in the Board of Regents of the University of Arizona, a corporation consisting of the Governor and the Superintendent of Public Instruction of the State, ex-officio, and eight members appointed by the Governor. Appointment is made subject to the advice and consent of the Senate. The term of office is 8 years, beginning on the date of confirmation by the Senate, and continuing until the appointment of a successor. In case of a vacancy the Governor fills the office by appointment. The Board elects a presiding officer, who is Chancellor of the Board. It also elects its own Secretary and Treasurer. The Board of Regents has power to control and manage the University and its properties, and to enact laws governing the University.

THE FACULTIES OF THE UNIVERSITY

The University Faculty is composed of the President and the faculties of the University; it conducts and regulates the general and special courses of instruction, and receives and determines all appeals from acts by the faculty of any college. The proceedings of the University Faculty are conducted according to the rules of order adopted by it, and every person engaged in instruction in the University may participate in its discussions. The right of voting, however, is confined to the administrative officers and members of the teaching staff above and including full instructors.

THE FACULTIES OF THE SEVERAL COLLEGES

The immediate government of the several colleges is entrusted to their respective faculties, each of which has its own organization, and

regulates its immediate affairs, subject to the approval of the University Faculty.

MAINTENANCE AND ENDOWMENT

The University is maintained by funds appropriated by the United States and by the State of Arizona.

Federal Support—By the provisions of the Morrill Act of 1890, the University receives annually from the United States the sum of \$25,000 "to be applied only to instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural, and economic sciences, with special reference to their application in the industries of life, and to facilities for such instruction." This Morrill Fund is duplicated by the Nelson Fund, created by the Act of March 4, 1907. The University receives from the same source, for the support of the Agricultural Experiment Station, \$15,000 yearly from the Hatch Act of 1887, and \$15,000 additional from the Adams Act of 1906. From the Purnell Act of 1925 the University receives \$60,000 annually. The sum of \$73,765.19 for 1931-32 was the Federal appropriation for the Agricultural Extension Service. Fifty-seven sections of valuable pine land in Coconino County have been set apart by the Federal Government for the benefit of the University, and a small sum is received annually from the leases of this land.

State Appropriation—The appropriation of the Legislature for the year 1931-32 was \$1,002,500.00 and for the year 1932-33 was \$937,500.00, but this amount was voluntarily reduced by the Board of Regents to \$800,000 to help mete the economic emergency in the State.

Gifts and Endowments—The Douglas Endowment Fund was established by the gift of Doctor James Douglas of New York. The income from this fund is to be applied annually to the purchase of instruments of precision and research, or special apparatus for scientific instruction and education in the College of Mines of the University of Arizona.

The Freeman Endowment Fund was established through the gift of Dr. Merrill P. Freeman. The proceeds of this fund are to be used for "the development of men and women."

The Land Fund—The University of Arizona receives annually about \$35,000 from the 600,000 acres of public lands which have been allotted to it from the United States and from the State.

HISTORY

Act of Legislative Assembly authorizing the formation of the University of Arizona was passed in 1885. By 1890 three of the departments for which it provided, the College of Agriculture, the College of Mines and Engineering, and the Agricultural Experiment Station, were organized, and in 1891 the University was opened to students, with a faculty of eight professors and instructors. Only 31 students, all told, matriculated in that year, and only nine of these were of college rank. All departments at that time were housed in the Old Main Building.

From these beginnings in pioneer days the University advanced slowly for the first 20 years of its history. The enrollment in the Preparatory Department exceeded that in the University proper, and the number of University graduates was never more than ten a year.

This long germinal period was followed by a decade of rapid expansion. The Territory had become a State; high schools had multiplied, and the Preparatory Department was accordingly closed. The attendance in the University increased eightfold in 10 years. New departments were formed, the Faculty was enlarged, and campus improvements on a larger and more permanent scale were begun with the erection of

Arizona Hall and the Agriculture Building, for which appropriations were made in 1911 and 1912 respectively. The Swimming Pool, the Mines and Engineering Building, Mechanic Arts Building, the Berger Memorial Fountain, Maricopa Hall, the Steward Observatory, and Cochise Hall were built in quick succession. The College of Letters, Arts, and Sciences was established, and the several colleges segregated under individual deans and faculties.

In the year 1916, the University of Arizona was placed on the accredited list of the North Central Association of Colleges and Secondary Schools. A survey of the University was made by the Bureau of Education of the Department of the Interior in the spring of 1922. This report summed up the development of the University as follows: "The people of Arizona must realize that their institution is no longer the high school of early days, or even the simple college of twenty years ago, but that it is a real state university, comparing favorably in scope with the higher educational systems of most of the other states of the Union."

Since this survey, a College of Education, a College of Law, a College of Music, and a School of Military Science and Tactics have been established. The Association of American Universities placed the University of Arizona on its list of approved colleges in November, 1924. In December, 1931, the College of Law was admitted to membership in the Association of American Law Schools.

LOCATION AND CLIMATE

The University of Arizona is situated at Tucson, Arizona, a city of 42,000 inhabitants, on the main line of the Southern Pacific Railway. The city lies in a broad valley at an altitude of 2,400 feet and is surrounded by rugged mountains.

Climatic Advantages—Its dry, mild, and equable climate has made Tucson a winter resort unsurpassed for healthfulness. The mean maximum temperature for the year is 78.8° and the mean minimum temperature is 50°. Little rain falls during the winter; fogs are all but unknown; cloudy days are rare. The percentage of sunshine throughout the year is over 85 percent of possible sunshine. The relative annual humidity is 45 percent, and the average precipitation for the 9 months of the academic year is 5.7 inches. Owing to the extreme dryness of the air the highest temperatures known are less oppressive to the senses and less dangerous to the health than is the summer heat of the upper Mississippi Valley states. These conditions insure to students a wide range of outdoor recreation throughout the college year.

Advantages of Location for Students of Agriculture—The situation of the University is favorable for students of agriculture. Tucson has many irrigated farms in its neighborhood, is near the great range country of southern Arizona, and occupies a central position with relation to the agricultural activities of the State. The University has kept pace with the growing interest and investment in agriculture in Arizona and has adapted its instruction and research in this science to the special needs of the State.

Advantages for Students of Anthropology and Archaeology—The University of Arizona is located in the midst of the country occupied by the prehistoric Pueblo peoples of the great Southwest. In her immediate vicinity lie the ruined villages of the ancient valley and mesa Pueblo peoples. In the central and northern parts of the State are found the remains, not only of valley and mesa pueblos, but also the extensive ruins of the cliff Pueblo people. In all parts of the State are found the living tribes of the primitive people of America, still pursuing

their simple avocations and living in the simple style of primitive men. Students of ethnology find the region an exceedingly interesting and fruitful field of investigation. Stretching to the south are the ruins of the ancient peoples of Old Mexico. With the opening up of the direct line of the Southern Pacific of Mexico Railway, which connects Tucson with Guadalajara and the City of Mexico, the wonderful ruins of the ancient cities of Mexico are brought within easy reach of the students of the University of Arizona. Climatic conditions are favorable for field work throughout the entire year, and no other institution is able to provide so extensive an outdoor laboratory for the investigation of prehistoric America and the study of her surviving tribes as does the University of Arizona.

Advantages of Location for Students of Astronomy—In natural advantages the University, with all southern Arizona, is most highly favored by a climate which is perhaps the best in the United States for astronomical observations. The fine weather day after day, the quietness of the air at night, and the freedom of the winters from snow, all contribute to a consecutiveness of observation day by day such as is found practically nowhere else, and to a perfection of the atmospheric conditions that renders possible the most exacting work.

Advantages of Location for Students of Engineering—Because of its situation in the neighborhood of great mines, the University offers exceptional advantages to the students of mining engineering, affording them the opportunity of seeing the actual operation of mines and the development of great enterprises, while carrying on the theoretical and experimental work of the mining course. As Tucson is a railroad center of importance and the engineering headquarters for several lines of the Southern Pacific System, the students of civil engineering are also provided with a field for observation and vacation employment.

GENERAL UNIVERSITY FACILITIES

Grounds

The University Campus, comprising 75 acres, is situated upon high ground in the northeast part of Tucson. The Campus, commanding on every side a view of mountain ranges, is laid out in drives, lawns, and gardens, with a large number of palm, olive, ash, umbrella, pepper, bagota, cottonwood, cedar, cypress, juniper, casuniana, eucalyptus, arborvitae, and athol trees.

The University has its own water supply system for fire protection, irrigation, laboratory, and domestic purposes. The water is drawn from deep wells, with a capacity of 1,500 gallons a minute, and is of exceptional purity, chemically and bacteriologically.

Buildings

Old Main (1891) the oldest of the University buildings, contains recitation rooms and offices of the College of Letters, Arts, and Sciences, and houses the Cooperative Bookstore.

Pima Hall (1892), provides accommodations for 30 women, and has sleeping porches, in addition to well appointed parlors and living rooms.

East Cottage (1893), provides offices for the Department of English.

The President's House (1894), is situated at the west end of the north drive.

Music Hall (1900), houses the College of Music.

Herring Hall (1903), the women's gymnasium, is the gift of the late Doctor James Douglas and his associates of the Copper Queen Consolidated Mining Company, through Colonel William Herring, after whom it was named, at the suggestion of Doctor Douglas.

The Law Building (1904), a structure of red brick and Bedford limestone, contains class rooms, a modern court room, faculty offices and conference rooms, a commodious reading and study room, and ample stack room space, in which is housed the Law Library.

The University Commons (1904), provides boarding accommodations for all persons living on the Campus.

Science Hall (1909), accommodates on its three floors the departments of Physics, Chemistry, and Biology.

Arizona Hall (1912), a men's dormitory, accommodates 44 students and is thoroughly modern, both in materials and equipment.

Agriculture Building (1915), a commodious building of brick and reinforced concrete, provides temporary quarters for administration offices and the College of Education, and permanent quarters for the College of Agriculture.

The Auditorium (1915), having a seating capacity of 500, accommodates University meetings and student assemblies. Its stage, when opened on the patio between the wings of the Agriculture Building, completes an open-air theater seating about 1,200.

The Mechanic Arts Building (1917), a brick and wood structure, provides exceptionally commodious quarters for the shops, as well as an office, finishing room, locker and wash room, and stock room.

The Storehouse and Garage (1932), a brick structure, houses offices and facilities for the receipt, storage, and disbursement of University supplies and quarters for the motor transport service.

The Mines and Engineering Building (1919), a large building of brick, reinforced concrete, and terra cotta, provides class rooms, drafting rooms, laboratories, and offices for the College of Mines and Engineering, the United States Bureau of Mines Experiment Station, and the Arizona Bureau of Mines.

Maricopa Hall (1919), provides accommodations for 113 women, and has parlors, living rooms, and sleeping porches.

The Berger Memorial Fountain (1919), the gift of Mr. Alexander Berger, is a memorial to the sons of the University of Arizona who sacrificed their lives in the World War.

The Steward Observatory (1921), built of white glazed brick and terra cotta, stands on the highest part of the Campus, to the east of the other buildings.

Cochise Hall (1922), a men's dormitory, provides accommodations for 140 students, and, like other dormitories, includes sleeping porches.

The University Library (1925), modern renaissance in design, is a 3-story building of red, rug-faced brick, trimmed in terra cotta, covering a ground area of 195x110 feet. It is of steel frame construction with reinforced concrete floors and roof slabs, the latter covered with Spanish tile. The reserved book room and the outdoor reading room adjoining seat 155. The main reading room on the second floor, including the alcoves for periodicals and special collections, seats 290. There are 15 seminar rooms on the third floor. The steel stack room affords space for the shelving of 225,000 books, and is capable of further expansion.

The Men's Gymnasium and Armory (1926), on the east side of the Campus, is a modern, well equipped building 120x220 feet in size, costing approximately \$160,000. In 1929 a swimming pool of standard size for aquatic contests was added.

The Stadium (1929), has a seating capacity of 8,000. In the stadium building are housed the Arizona Pioneer Society, the Arizona State Museum, the Department of Art, and the offices and workshop of the drama division of the Department of English.

The Baseball Stadium (1929), has a seating capacity of 1,400.

The Infirmary, a 2-story building on the Campus, furnishes provision for caring for students who are ill.

The greenhouses not only provide laboratories for work in horticulture, plant breeding, and plant pathology, but also furnish plants and flowers for the ornamentation of the buildings and grounds.

The central heating, light, and power plant is equipped to care for the heating and electrical service of the Campus.

Library

The University Library, housed in the Library Building, contains the General Library, the Agricultural Library, and the Freeman Collection of Arizoniana.

Accessions—The Library contains about 85,000 accessioned volumes, 12,000 Federal Documents, and several thousand unbound bulletins and reports. About 900 serials are received by purchase, gift, and exchange. Of these the back files show 325 complete sets and about 275 runs of workable value. In addition to the accessions acquired by purchase, the Library as a depository receives the documents and publications of the United States Government, the publications of the Carnegie Institution and a large number of university exchanges.

The Law Library—The Law Library, which was opened in 1915, is now housed in the Law Building and contains more than 8,600 volumes representing in content value in excess of 10,000 volumes. It includes complete reports of the U. S. Supreme and Federal Courts, the National Reporter System, reports of the highest courts of 46 states prior to the Reporter System, the English Reprint, English Law Reports, a considerable number of the English Year Books, several sets of Canadian Reports, eight principal series of Annotated Cases, the complete American Digest System, the leading American and English Encyclopedias, U. S. Code Annotated, U. S. Statutes at Large, the Statute Law of several states, Words and Phrases, Rose's Notes, complete sets of leading law periodicals and a carefully selected collection of text books and works of legal, historical, and philosophical import.

The Agricultural Library—The Agricultural Experiment Station Library of about 6,500 volumes contains the publications of the U. S. Department of Agriculture, complete sets of U. S. State Experiment Station bulletins and reports, together with the card catalogues indexing these sets. It also receives currently many reports from foreign agricultural bureaus, annual volumes of American Herd Books, and about 150 agricultural serials.

The Arizona Bureau of Mines Library—A working library is being established gradually in connection with the Arizona Bureau of Mines. In addition to the standard mining handbooks, much local material is being collected and about 25 journals are received chiefly in exchange for the bulletins of the Bureau. This material is catalogued and is accessible to the specialist upon application.

The United States Document Collection—The University Library, designated a depository in 1907, received a gift from the Carnegie Public Library of Tucson of its entire run of documents. Since the Public Library was made a depository in 1885, this transference added many valuable documents to the University set, bringing the total number to about 11,000 volumes.

The Freeman Collection—This collection, assembled by the late M. P. Freeman of Tucson, for many years a Regent of the University of Arizona, contains about 1,000 volumes, dealing chiefly with the history of Arizona, New Mexico, and Old Mexico.

Two Special Collections—A general collection of works descriptive of Arizona, those by Arizona writers, and those with Arizona imprints, is growing constantly in value. There is also a collection of books by modern Mexican writers.

These two special collections in the Library are indexed and described by the following Library publications:

A bibliographical list of books, pamphlets, and articles on Arizona in the University of Arizona Library.

Mexican Writers. A list of books, pamphlets, and articles on Mexico with synopses and biographical notes.

Withdrawal of Books—The Library is for the use of University officers and students. Books not held in reserve for special reasons are allowed to go out for home use in accordance with the published regulations. See Students' Handbook.

Correspondence and Loans—The Library undertakes to serve not only the University, but the State at large. Books that can be spared from the University are loaned to other libraries, to superintendents and principals of Arizona schools, and to other properly accredited residents of the State engaged in systematic study.

STEWART OBSERVATORY

The Stewart Observatory, a gift of the late Mrs. Lavinia Stewart of Tucson, was opened in 1921. The telescope mounting, made by Warner and Swasey, was installed in August of the same year. The disk of glass weighing 800 pounds, was made by the Spencer Lens Company, of Buffalo, the first glass ever made in America. The optical work was completed and the instrument in use in the fall of 1922.

The Observatory has a 4-inch telescope and a Callendar pyrheliometer. Among other important pieces of apparatus located in the Observatory is the periodograph, an instrument recently designed here for purposes of climatic study. (For additional information, see page 240.)

State Museum

The Arizona State Museum, established by law as an integral part of the State University, is maintained as an educational factor in the institution and in the State. Its chief aim is to present the life history of Arizona and the great Southwest. Its archaeological collections emphasize the conditions and the achievements of the ancient Cave, Cliff, and Pueblo peoples of the region and its ethnological collections present the manufactured products of the various modern Indian tribes. Its natural history collections show the bird life of the State and present many other forms of animal existence. Through gifts and exchanges with other museums and by purchase the Museum has secured numerous specimens representing other lands and other ages of culture. Thus it is

possible to gather in Arizona not only a rich collection representing the southwestern United States, but also sufficient material from other regions to have a reasonable basis of comparison with other lands. The Museum is housed in the Stadium Building. (See page 239.)

ADMISSION

GENERAL REQUIREMENTS FOR NEW STUDENTS

Age—All applicants for admission to the University must be at least 16 years of age.

Character—All new students are required to furnish satisfactory evidence of good character, and certificate of graduation or of honorable dismissal from the school last attended.

Health—Each year all students are required to report to the University Physician for physical examination. Following such examination a statement certifying to good health or to such disability as need not affect the student's membership in the University must be submitted within 3 weeks after the student registers.

ADMISSION TO FRESHMAN RANK

Application for Admission—Formal application for admission to Freshman standing may be made by submitting a statement of high-school credits and recommendation of the principal on the University certificate of recommendation form R-25, issued by the Office of the Registrar.

All applicants for admission to Freshman rank in the University shall have completed the equivalent of a 4-year high-school course; that is, 15 units of high-school or other secondary-school work in acceptable subjects.

Deficiencies—No deficiencies in the general University requirements for admission are permitted, either in the number or the nature of the units, and no admissions are granted with conditions in either the quantitative or the qualitative requirements as listed.

Summary of Admission Units

The 15 units offered for admission must include the following requirements common to all Colleges of the University, together with any additional subject-matter requirements that may be specified by the College in which the student desires to register:

English Composition and Literature.....	3 units
Language (one subject).....	2 units
Algebra.....	1 unit
Plane Geometry.....	1 unit
*Science, with laboratory work.....	1 unit
United States History and Civics.....	1 unit
Electives.....	6 units
Total.....	15 units

Entrance Requirements by Colleges

The following table lists the number of units† required in each of the subjects specified for entrance to the several colleges:

* Must be other than introductory or general science.

† A high-school unit is understood to stand for one study pursued satisfactorily five times a week for a minimum of 36 weeks.

	Agric.	L.A.& S.	Educ.	Law	Mines	Music
English	3	3	3		3	3
Language (one sub.)	2*	2	2	See	2	2
History and Civics	1	1	1	College	1	1
Algebra	1	1	1	of	1½	1
Geometry	1	1	1	Law	1½	1
Science (Lab.) †	1	1	1		Physics‡	1
Electives	6	6	6		5	6§

Admission on Certificate

The University admits without examination recommended graduates of approved high schools presenting certificates showing them to have completed, with satisfactory scholarship, the courses prescribed for admission.

This transcript of high-school credits should in all cases be sent by the high-school officer to the Registrar of the University by September 1 for first-semester or January 15 for second-semester registration.

Admission by Examination

Students lacking satisfactory credentials will be examined on the work required for admission, on Thursday and Friday, September 1 and 2. Application for such examination should be made not later than Saturday, August 13.

Admission from Other States

Credentials from high schools and preparatory schools in other states, accredited by the state universities of such states, will, when accompanied by the recommendation of the principal, and showing evidence of thoroughly satisfactory scholarship records, excuse from examination in subjects covered by such credentials. It is provided, however, that in any case the applicant must be eligible, in so far as scholarship is concerned, for admission to his own state university.

Admission from Arizona High Schools

The high schools of the State are classified in three divisions, namely, North Central Association High Schools, Class A High Schools, and Class B High Schools. Recommended graduates of these schools are accepted into full Freshman standing without examination under the foregoing provisions governing admission.

North Central Association High Schools

The following schools are members of the North Central Association

* Two units of vocational agriculture may be substituted for two units of foreign language in meeting the entrance requirements to the College of Agriculture.

† Must be other than introductory or general science.

‡ It is recommended that candidates for admission to the College of Mines and Engineering offer one unit of credit in chemistry in addition to the required unit in physics.

§ Credit in high-school music to a maximum of 4 units will be accepted from such high schools in the State as have been accredited in music by the University through the Inspector of High School Music. See "College of Music."

of Colleges and Secondary Schools and meet the standards set up by that Association:

Ajo	Florence Union	Nogales	Superior
Bisbee	Gilbert	Peoria	Tempe Union
Buckeye Union	Glendale Union	Phoenix Union	Thatcher
Casa Grande Union	Globe	Prescott	(Gila College)
Chandler	Holbrook	Ray	Tombstone Union
Clarkdale	Jerome	Safford	Tucson
Clifton	Kingman	Scottsdale	Willcox Union
Douglas	Marana	Snowflake Union	Williams
Duncan	Mesa Union	St. Johns County	Winslow
Flagstaff	Miami	Union	Yuma Union

Class A High Schools

The following schools are fully accredited by the University as meeting the regulations and standards prescribed for such recognition:

Benson	Patagonia Union
Bowie	Round Valley Union
Fort Thomas Union	San Simon
Hayden	Tolleson Union
Morenci	Wickenburg

Class B High Schools

Certain schools, which because of size, buildings, personnel, or other reasons do not fully meet the standards set up for Class A schools, but which are nevertheless providing satisfactory instruction to a small group of students, are rated as Class B schools. This rating means that graduates of these schools who otherwise meet the requirements for admission will be accepted into full Freshman standing upon the personal recommendation of the principal of the school from which they came.

CLASS B PUBLIC HIGH SCHOOLS

Apache Union (McNary)	Marcus (St. David)
Ash Fork	Northern Yuma County (Parker)
Camp Verde	Pine
Gila Bend	Pearce Union
Litchfield Park	Seligman

CLASS B PRIVATE HIGH SCHOOLS

School	Location
Borphy Junior College, H. S. Department	Phoenix
Evans School	Tucson
Hacienda del Sol	Tucson
Loretta Academy	Bisbee
Loretta Academy	Douglas
Mesa Ranch School	Mesa
Southern Arizona School for Boys	Tucson
St. Joseph's Academy	Prescott
St. Joseph's Academy	Tucson

SCOPE OF ADMISSION REQUIREMENTS

English

English—3 units. (a) English composition. The requirements in grammar and composition are: A thorough knowledge of the essentials of English grammar, habitual correctness in spelling, punctuation, sentence structure, paragraphing, and ability to make unified and coherent outlines and to write accurately and clearly on familiar subjects. (b) English Classics. The classics to be studied in preparation for college English are divided into two classes, those intended for thorough study and those intended for general reading. Preparation in the former class should cover subject matter and the leading facts in those periods

of English literary history to which the prescribed books belong. In the latter class, the student should secure general knowledge of the subject matter, and of the lives of the authors. In exceptional cases an equivalent amount of reading and study in other than prescribed works will be accepted.

For thorough study Shakespeare's *Macbeth* or *Hamlet*; Milton's *Comus*, *L'Allegro*, and *Il Penseroso*, or selections from Book IV of Palgrave's *Golden Treasury*, with special attention to Wordsworth, Keats, and Shelley; Burke's *Speech on Conciliation with America*, or Washington's *Farewell Address*, Webster's *First Bunker Hill Oration*; Macaulay's *Life of Johnson* or Carlyle's *Essay on Burns*, with a brief selection from Burns' poems.

For general reading and practice, selections will be made, at the discretion of the teacher, from groups I-V of College Entrance Requirements in English.

History

To meet the requirements in history the student should have acquired a knowledge of events as presented in any of the standard textbooks. There is required further an interpretation and analysis of these events, which include an understanding of the causes and results of any movement, and an appreciation of the various influences acting in the development of an institution.

Ancient History, to the year 800 A.D.—1 unit.

Mediaeval and Modern History of Europe—1 unit.

History of England—1 unit.

History and Government of the United States—1 unit.

Mathematics

Algebra—1 unit. The work required in algebra covers the usual fundamental subjects and extends into graphical representation and quadratic equations, etc., as given in standard texts, such as Hawkes-Luby-Touton, *New First Course in Algebra*, or Wells-Hart, *Modern First Year Algebra*, or Longley and Marsh, *Algebra, Book One*, or Schorling-Clark, *Algebra, Ninth School Year*.

Advanced Algebra— $\frac{1}{2}$ unit for a half year of work, on quadratics and beyond. In the College of Mines and Engineering, students are required to present for entrance this half unit.

Plane Geometry—1 unit for a year of work. The requirement is based on the work outlined in textbooks such as Wentworth-Smith, Young-Schwartz, or Hart-Feldman, *Plane Geometry*, with special references to original exercises and notebook work.

Solid Geometry— $\frac{1}{2}$ unit for a half year of work. Original exercises and notebook work are required. In the College of Mines and Engineering, students are required to present for entrance this half unit.

Plane Trigonometry— $\frac{1}{2}$ unit for a half year of work. Students who have taken this course in high school and who have had more than 15 acceptable entrance units may receive 2 college units for Mathematics 24 upon passing an examination at one of the times set for Condition Examinations. The examination may require the solution of given oblique triangles, and of trigonometric identities and equations.

Languages

***Greek**—2 units. Two years of high-school work covering the usual beginner's course and the reading of four books of Xenophon's *Anabasis*.

***Latin**—2, 3, or 4 units. (a) Elementary Latin—2 units. The 2 years of high-school work should give the ability to read with considerable ease ordinary Latin prose and to translate into Latin easy English sentences. (b) Advanced Latin—1 unit. The reading of six orations of Cicero or an equivalent with prose composition. (c) Advanced Latin—1 unit. The reading of six books of Virgil's *Aeneid*.

***German**—2 units. Two years of high-school work covering the usual beginner's course and the reading of the following or an equivalent: Storm's *Immensee*, von Hillern's *Hoeher als die Kirche*, Meyer-Foerster's *Karl Heinrich*, Schiller's *Wilhelm Tell*.

***French**—2 units. Two years of high-school work, covering the following tests, or an equivalent: Aldrich, and Roulé, *French Grammar*; Méras, *Les Petits Contes de France*. Composition and oral practice. Reading of Daudet, *Le Petit Chose*.

***Spanish**—2 units. Two years of high-school work. Elements of Spanish grammar of which the minimum amount should be articles; plurals; gender; agreement; possessives; demonstratives; objective personal pronouns; uses of *ser* and *estar*, *haber* and *tener*, *parar* and *por*, of preterite and imperfect; subjunctive in main subordinate clauses; verbs, regular and irregular; radical and orthographic-changing—ten tenses indicative and six subjunctive.

Note—Students who have completed 2 years of a language in high school and desire to continue the subject in the University, ordinarily register for the work of the first semester of the Sophomore year.

Science

Botany—1 unit or $\frac{1}{2}$ unit. The course should cover a study of the life histories of types from the main groups of plants, and a series of simple physiological experiments. At least two-thirds of the course should consist of laboratory work. Botany as a half-unit may be combined with a half-unit in zoology for a full unit or year's work in biology.

Chemistry—1 unit. A year's course of descriptive chemistry, consisting of both classroom and laboratory work, should include the more common metals and non-metals, and their compounds. A careful record of laboratory experiments should be kept.

Physics—1 unit. Along with the use of the standard textbooks the year's course should include continuous and systematic laboratory practice, recorded in a notebook.

General Science—One credit will be granted for general science, but this will not meet the requirement of one year of one laboratory science.

Electives

The electives offered for admission should be chosen from the subjects named above or any other subjects ordinarily taught in high schools and accepted by colleges and universities of standing, with the following restrictions:

Credit to the extent of 2 units each will be allowed in free-hand

* The courses offered should include the text named or an equivalent. Two years of one language must be presented, but one or more years of a second language will be accepted as elective.

drawing, mechanical drawing, shop work, home economics, stenography, typewriting, and bookkeeping. Two units in music, one of which must be in theory, will be accepted for entrance to all colleges other than the College of Music, provided that the credit is presented from schools accredited by the University in courses in theory. Four units in music may be presented for admission to the College of Music. Credit in other subjects or additional units in the above subjects may be presented for consideration of the Registration Committee.

Vocational Work—Where the student has the full number of required units for the course which he elects to pursue, he will be given credit unit for unit for such vocational work as a recognized high school has granted toward the units required for graduation. If the student desires to change from one course to another, he will have to meet the requirements of the newly-elected course.

ADMISSION TO ADVANCED STANDING

Students coming from other institutions of higher learning will be required to present to the Registrar properly authenticated certificates of work done. Students from institutions approved by the National Association of American Universities ordinarily will be given credit, hour for hour, for work done in these institutions, in so far as it applies to the requirements of the curricula pursued at the University of Arizona. Credit from other institutions of higher education will be evaluated on merit on the basis of requirements at the University of Arizona. Only an approximate estimate of the total amount of credit allowed can be made in advance. The detailed distribution, branch for branch, is determined by conference after the student enters the University.

Certificates of record should be accompanied by statements of honorable dismissal or leave of absence, evidence of satisfactory scholarship, and a copy of the register or catalogue showing the content of the credit certified. These should be filed in the Registrar's office by September 1 for first-semester, or January 15 for second-semester registration.

The Committee on Admission is empowered to reject in whole or in part any certificate and to require examination in any or all of the subjects offered. Applicants who have failed to maintain a thoroughly satisfactory scholarship record as distinguished from a record which is poor or barely passable will not be admitted, nor will admission be granted to students whose credentials from other institutions are not on file, or to students who, for any reason, are ineligible to continue in the institutions from which they desire to transfer.

ADMISSION OF SPECIAL STUDENTS

A limited number of applicants 21 years of age or over who have not completed the requirements for high-school graduation and as a result are unable to present the formal admission credits as specified, may be admitted as special students to the various university colleges (except the College of Law) in consideration of experience, training, and purpose. Such students are not candidates for any degree, but may elect, with the consent of the instructor in charge and of the Dean of the college concerned, such courses as they are prepared to carry with profit. Information concerning admission of special students to the College of Law will be found on page 82. For the provisions under which a special student in a College other than the College of Law may become a candidate for a degree, see "Requirements for Graduation," page 64.

Credits from Junior Colleges

Credits transferred from an accredited junior college will be accepted up to a maximum prescribed by the University for the first 2 years in the corresponding university curriculum.

The number of units accepted for any semester of junior-college work shall not exceed the maximum registration allowed for the first semester in residence in the corresponding university curriculum.

REGISTRATION

Time and Place—All students are required to register on designated days at the beginning of the academic year and at the beginning of the second semester, in the Registrar's office or in such rooms as may be designated for the purpose. The period of registration for credit closes at the end of the second week from the opening of classes.

Penalty for Late Registration—For registration completed after the last day scheduled for registration, a fee of \$5 will be charged.

Presentation of Credentials—All students must file in the Registrar's office certified copies of their records in schools previously attended, together with certificate of graduation or of honorable dismissal, and a copy of the school catalogue or course of study. These credentials must be filed by September 1 for first-semester registration, and by January 15 for second-semester registration. Registration will not be granted without credentials from the school previously attended.

REQUIRED SUBJECTS—LOWER DIVISION

Required of all Freshmen—

English 1a and 1b. Freshman Composition.

For men, military science and tactics, and physical education.

For women, physical education and social fundamentals.

Required of Sophomores—

For women, physical education.

For men, military science and tactics.

REQUIREMENT IN MILITARY SCIENCE

All lower-division men students registered for more than 5 units of university work are required to take military science and tactics, unless excused upon petition. Students claiming exemption will present to the Registrar a petition, on Form R55, for such exemption. Pending action on his petition, the student will enroll in the courses prescribed for his year and will enter upon the work.

Grounds for exemption are restricted, in the case of lower-division students, to the following: (a) Physical disability on the University Physician's certificate; (b) non-citizenship; (c) over 25 years of age at the time of admission to the University.

Lower-division students excused from military training by reason of physical disability must enroll in the Department of Physical Education for Men.

Special students, under 25 years of age, registered for more than 5 units, are not exempt from the requirement in military science.

DEGREE COURSES

Specific Requirements—For the specific requirements of the several courses leading to degrees, see outlined courses of study under the listings of the different colleges. Each student must register for the required subjects of his course in the year for which they are prescribed. Deviation from this rule can be made only with the consent of the Dean of the College in which the student is enrolled.

MAXIMUM UNITS ALLOWED

Excess Units—Entering students may not elect work in excess of the

number of units recommended by the proper dean. Petitions to elect work in excess of the number of units recommended in the course for which a student registers, will be considered only when presented by students whose capacity for work has been demonstrated to the satisfaction of the Registration Committee.

Number of units students may take without petition in addition to $\frac{1}{2}$ unit required in Physical Education or Social Fundamentals.

College of Agriculture—Maximum, 18 units.

College of Education—Maximum, 17 units.

College of Law—Maximum, 15 units.

College of Letters, Arts, and Sciences—Maximum, 17 units.

College of Mines and Engineering—Maximum, 19 units.

College of Music—Maximum, 18 units.

Excess Registration—A petition for excess units is never approved for a student in the first semester in this institution. Thereafter, a student may have his petition approved for extra credits provided his semester average for the preceding semester indicates his ability to do the additional work.

The maximum credit allowed without petition, as indicated above, includes not only work done in residence, but correspondence courses, business-college, or high-school work which the student is subsequently presenting for consideration by the University.

The petition for excess units should always specify the course which is considered to be in excess. Otherwise, should the petition be rejected, the last elective course appearing on the student's program is cancelled.

The burden of obtaining approval for excess units rests upon the student, and not upon the office of the Dean or the Registrar. Where the student actually carries more than the number to which he should be limited, even though such subjects are passed, such units will be allowed, but no more than the normal maximum will be counted toward the degree. As an illustration, should a student in the College of Letters, Arts, and Sciences, carry 20 units without petition, and without the discovery of his excess units, the courses will be credited to him at the end of the semester, but 3 units will be deducted.

CHANGES AFFECTING REGISTRATION

Registration in Extension Division—Resident students may not enroll for correspondence or extension courses without the permission of the Registration Committee as indicated by a written statement signed by the Registrar.

Change of Schedule—Registration may be changed by obtaining the proper form from the Registrar, and securing thereon the signatures of the instructors concerned, the major professor or adviser, and the Dean of the College.

A fee of \$1 is charged for change of registration, unless it involves only withdrawal from a course with a grade of 5, in which case no charge is made. This fee is effective with the opening of classes.

Change of College—Students who desire to change their registration from one college to another may do so by making formal application for admission to the college to which the transfer is to be made. Application blanks may be obtained at the Office of the Registrar, but may be filed only at the opening of a semester. Such change must be checked by the Registrar and approved by the Deans of both colleges concerned.

Change of Major—A student may change his major subject at the beginning of any semester by filing with the Registrar a petition approved by the two major professors concerned and the Dean of the College.

STATUS OF STUDENTS

The students of the University of Arizona are classified as graduate and undergraduate.

Graduate students are such graduates of the University of Arizona or of other universities, colleges, or like institutions as may be authorized to pursue advanced or special studies under the direction of a faculty. Such students may or may not be candidates for degrees.

Undergraduate students are:

Regular Students:

- (a) **Classified**—Those students who have fulfilled the matriculation requirements and are pursuing the regular college course.
- (b) **Unclassified**—Those students who have fulfilled the matriculation requirements but are not candidates for a degree.

Special—Students who have not completed the requirements for high-school graduation and are admitted in consideration of maturity, training and purpose. Special students are not candidates for any degree.

REGULATIONS AFFECTING STUDENTS

ATTENDANCE

A student having registered for a course, is expected to attend all resulting appointments regularly.

Absences—Individual instructors are authorized to administer the matter of attendance. Instructors are required to report to the Dean of Men or the Dean of Women, through the offices of their department head and the Dean of the College, all students who are absent three consecutive times in a course meeting at least three times a week or two consecutive times in a course meeting twice a week.

The coach or instructor or official under whom participation in required field trips, intercollegiate debates, games and conferences, and academic contests off the Campus, occasions absences from other classes, shall prepare a list of the names of the students involved, secure thereto the signed approval of the Dean of each college concerned and, at least 24 hours before the activity, file the same in the office of the Dean of Men.

CHANGE OF STUDY LIST

Additions or Withdrawals—Changes in the original registration by additions or withdrawals may be made upon approval of the instructor, the major professor, and the Dean concerned. Blank forms for this purpose are obtained at the office of the Registrar. For such change of schedule, a fee of \$1, effective with the opening of classes, is charged, unless the change is made for the convenience of the department, or is limited to withdrawal with failing grade of 5 when no fee is charged.

Withdrawal Grades—Withdrawal grades are restricted to W, an approved withdrawal, indicating satisfactory work at the time the course is dropped, or 5, a failure. Such grades awarded after the close of the second week of classes are included in the report for the semester. All withdrawals properly filed prior to the close of the second week of classes are recorded with a grade of W. Students who drop a course at any time without filing a change of study list are given a grade of 5 in the course.

Withdrawal from the University—Formal withdrawal from the University, with provision for the filing of approved withdrawal grade of W, is arranged through the office of either the Dean of Men or the Dean Women. Students who drop their University work without filing a statement of formal withdrawal are given a grade of 5 in all courses, unless before leaving the University, permission is granted by the instructors for the completion of the work at a later date, in which case semester grades of "Inc" are awarded under the following provision:

Students who, because of illness or other acceptable reasons, withdraw from the University shortly before the close of the semester, may arrange with the instructors concerned for the award of a grade of "Inc." The award of such grade must be indicated as part of the formal withdrawal. The proper form is obtained at the office of the Dean of Men or the Dean of Women.

Dismissal from Courses—After conference with the President and the Dean of the college in which the student is registered, an instructor, may at any time, dismiss a student from a course. Written notice of such action, signed by the Dean and the instructor interested, should be sent

immediately to the Registrar. Such dismissal is considered a failure and is indicated on the record by the grade 5.

STATEMENT OF GRADING SYSTEM

Grades—The grades awarded in courses of study are given on a basis of relative position in a series. These grades are: 1, 2, 3, 4, and 5. Grades 1 to 4 indicate different ranks of passing work; grade 5 indicates failure. As a standard of grade distribution to be approximated as closely as possible a normal probability curve has been adopted. D and Inc. are used to indicate deferred grading; D, a failure that may be removed before repetition of the course by extra-class requirements or by examination given only at the time set for condition examination, but the grade may be filed only at or after the time set for a condition examination; Inc., incomplete, because of illness or other accepted reasons, a deficiency that may be made up within 1 year, at the convenience of the instructor. W is used to indicate satisfactory work at time of approved withdrawal; 5, a failure; credit may be obtained only by repeating the course. The grade U indicates unsatisfactory (barely passing) work and is used only in connection with preliminary and mid-semester scholarship reports.

Only one attempt to remove a D condition by examination or extra-class work is permitted. Such a condition must be removed before the repetition of the course in a semester corresponding to the one in which it has been obtained, and if not so made up, automatically becomes 5, necessitating the repetition of the course.

A grade of 4 can be raised only by repetition of the course when this has been approved by the Dean, the major professor, and the head of the department concerned.

Minimum Scholarship Requirement—Eighty percent of the units completed at the University of Arizona for a bachelor's degree from this University must have received a grade above 4. In the Colleges of Letters, Arts, and Sciences, and Education, a similar requirement applies to the major subject.

Examinations Required—All students, including graduating Seniors, are required to take semester final examinations in their respective courses.

ELIGIBILITY FOR EXTRA-CURRICULA ACTIVITIES

General Activities—In order to be eligible for participation in any extra-curricula activity, other than intercollegiate athletics, at any time prior to the issuance of the mid-semester delinquent list of any semester, a lower-division student must be registered for at least 10 units, and must have received credit for at least 75 percent of the units for which he was registered during his last semester in residence at the University of Arizona, unless such registration was for less than 10 units; in which case he must have received credit for, or a grade of W, in all courses for which he was registered. To be eligible at any other time during any semester, a lower-division student must be passing in at least 75 percent of the units for which he was registered at any time during the semester, and from which he has not withdrawn with the grade of W, as shown by the latest delinquent list, but no student is eligible under this rule unless he is passing in at least 10 units.

In order to be eligible at any time during a semester, an upper-division student must: (1) Be registered for at least 10 units; (2) if in his first semester of residence, fulfill the requirements for lower-division students; (3) if not in his first semester of residence, have received credit for, or a grade of W in, all courses registered for during the last semester in which he was in residence at the University of Arizona, whenever such regis-

tration was for 10 units or less; and, in addition, fulfill the requirements for lower-division students; (4) have received credit for at least 75 percent of all units registered for during the last semester of residence at the University of Arizona, whenever such registration was for more than 10 units, provided, however, that such student shall not be eligible in any case, unless he has received credit for at least 10 units, except when, through withdrawal with a grade of W, his registration fell below 10 units, in which case he must meet the requirements under (3).

No student shall make a public appearance in any extra-curricula activity unless he has been certified as eligible by the Activities Committee, and the responsibility for securing this certification shall rest with the student concerned and with the supervisor of the activity in question.

Eligibility for Athletics—No person shall participate in any inter-collegiate sport:

(a) Unless he shall have completed 15 high-school entrance units.

(b) Unless he is a bona fide student enrolled in at least two-thirds of the normal work as required in a regular or special course as defined in the curriculum of his college.

Note: A normal course is defined as follows: In the College of Letters, Arts, and Sciences, the College of Education, and the College of Music, 15 units; in the College of Law, 12 units; in the College of Agriculture, 17 units; in the College of Mines and Engineering, 18 units.

(c) Unless he has satisfactorily completed 24 semester units of collegiate work.

(d) Unless he shall have satisfactorily passed two-thirds of the normal work for the curriculum for which he was enrolled for the last semester of residence previous to participation. Deficits in any semester may be made up by units received subsequently but surplus units cannot be carried forward. Fractional hours are to be disregarded in favor of the participant. Incomplete grades shall not be counted either as passed or failed until adjusted. A condition grade of D shall count as failure until removed.

(e) All members of the squad found eligible one week before the first inter-collegiate contest shall be declared scholastically eligible for the season in question.

(f) **Freshman Competition**—In order to be eligible for Freshman competition a student must have satisfactorily passed two-thirds of the normal work for the curriculum for which he is enrolled, as indicated by the mid-semester delinquent report and the report of semester grades.

Additional requirements for eligibility for inter-collegiate athletics, covering late registration, limit of participation, outside competition, transfers, and minimum residence, are stated under Eligibility Rules, in the Students' Handbook.

Classification—Class standings in the several colleges are based upon the fulfillment of the entrance requirements and the completed percentage of the total number of units required for the degree sought.

Sophomore standing in all colleges other than Law is based upon the completion of 20 percent, Junior standing upon 45 percent, and Senior standing upon 70 percent of the total number of units required for a degree. In the College of Law, first-year standing is based upon the admission requirements of 60 academic units, second-year standing upon the completion of 27 law units, and third-year or Senior standing upon the completion of 51 law units.

Classification is based upon the number of units credited at the beginning of the school year.

Auditors—Auditors will be admitted to classes upon securing a card issued from the Registrar's office, provided the student has the approval of the instructor in charge of the course, and the Registrar. No credit will be given for work done by an auditor. A registration fee of \$10 is charged in addition to any special fees incident to the courses chosen, and a physical examination is required. Regularly matriculated students may not audit work, which if taken for credit, would constitute excess units.

Petitions—Students desiring to make requests of the University Faculty or the college faculty may obtain petition blanks in the Registrar's office. Petitions must in all cases bear the proper signatures before being filed with the Registrar.

Scholarship Reports—A report of grades covering scholarship deficiencies shall be furnished by the instructors to the Registrar's office at the close of work on Thursday, of the fifth and the ninth weeks of each semester. The first report is published as a matter of information and warning to students. The second, or mid-semester report is used as the basis of disqualification, for the balance of the semester, of those students who are then reported as failing in more than half of their work.

Delinquent Grades—The grades included on the preliminary and mid-semester reports are limited to "5," a complete failure, and "U" (unsatisfactory though passing), indicating poor and unsatisfactory work. Courses reported with the grade "U" are not included in units failed, and may be so reported only in connection with the special scholarship reports. (Note: The deferred grade of "D," indicating conditional failure, may be reported only at the close of a semester.)

Withdrawal Failures—Courses officially dropped with a grade of "5" prior to the close of the fourth week of a semester, are not included on any subsequent scholarship report and, therefore, do not affect the student's scholarship standing. Such courses are, however, listed on the student's semester record.

Continuance in College—All students, other than those on probation, shall be required to carry with a passing grade at least 50 percent of the work for which they are registered. Standings are checked at mid-semester and at the end of the semester.

In computing the percentage of scholarship failure, the student's schedule as officially recorded at the end of the second week of the semester shall be accepted as the total number of units carried, both for the purpose of the mid-semester report and of the final report of the semester. It is provided, however, that the schedule of units carried by students who may be reinstated on probation at mid-semester shall be adjusted in conformity to such provisions as govern their reinstatement.

Failure to pass the required percentage of units as shown by the mid-semester delinquent report, disqualifies the student from attending the University for the remainder of the semester. Upon his return he is considered as in good standing. (Note: The standing of the student as shown by the preliminary scholarship report, published at the end of the fifth week of the semester, has no bearing on his status as indicated by the mid-semester delinquent report.) Students disqualified through scholarship failure at the close of either semester shall be barred from class privileges for the following semester. Such students may be granted a card of honorable dismissal in which a statement regarding deficiencies in scholarship shall be expressly included. In the application of the rule the summer session is not regarded as a semester.

Students who are disqualified at the close of a semester, and are reinstated on probation at the opening of the following semester! shall be required to carry, with a passing grade, at least two-thirds of the work for which they are registered, as indicated by the mid-semester delinquent report. Students similarly reinstated on probation at mid-semester shall be required to complete, with passing grades, at least two-thirds of the work they are permitted to retain upon reinstatement.

Students on probation are returned to good standing upon passing the required percentage of work as indicated by the first mid-semester or semester delinquent report following their registration with probationary standing.

Students disqualified at the close of the first semester, or at the time of either mid-semester delinquent report, may enter the Summer Session conducted by the University, but students disqualified at the close of the academic year are not eligible to enter the Summer Session conducted by the University of Arizona.

Students disqualified by scholarship failure may not be permitted to register in the University Extension Division for correspondence or extension work.

STUDENT ACCOMMODATIONS

Residence Halls—Residence in dormitories is limited to under-graduate students and preference is given to those who are carrying 10 or more units of work. Provision is made for furnishing rooms on the University grounds for about 330 students. There are two residence halls for men: Arizona Hall, accommodating 44, and Cochise Hall, 140. There are two residence halls for women: Pima Hall, providing for 30 students, and Maricopa Hall, for 113. There are also fraternity and sorority houses under the supervision of the University. Each sorority is presided over by a head resident approved by the Dean of Women and directly responsible to her for the welfare of the group. For detailed information, see Housing Bulletin issued at the office of the Dean of Women.

All students in the residence halls sleep on porches screened and properly sheltered. Beds, mattresses, and pillows are furnished. Rooms contain tables, chairs, and chiffoniers. Students supply their own blankets, bed linen for single bed, towels, brooms, and laundry bags. Heavy blankets and bath robes should be provided for sleeping-porch use. Students care for their own rooms under the direction of the Head Resident. Residence halls will be open Monday, September 5. Students will not be admitted before that day.

All women registered as students in the University of Arizona are housed in the residence halls, in sorority houses, or in registered lodgings, except those living with their parents or with properly appointed guardians, or those working for room and board in private families. All women of Freshman rank not living at home shall be housed so far as practicable, in the residence halls. Permission to live off the Campus will be given undergraduate students only when the residence halls are full. Women students are not permitted to live alone or in groups in apartments, public inns or hotels, or in any house in which men roomers or transients are accommodated. No woman student or group of women students will be permitted to make lease contracts without first securing from the Dean of Women her approval of such contracts. The University reserves the right to change the residence of any student in case such change shall appear desirable. No change of residence may be made without the permission of the Dean of Women, and such permission must be secured at least one week in advance.

Reservation of Dormitory Rooms—Application for the reservation of a dormitory room should be made to the Comptroller of the University immediately upon receipt of notification from the Registrar that admission has been granted. The application should be accompanied by the reservation fee of \$10. (See "Board and Room," page 51.)

Residence off the Campus—The residence of students off the Campus except in the cases of those living at home, is subject to the approval and under the supervision of the University authorities.

University Commons—The University Commons is under the management of a trained dietitian, who is responsible to the President. It is the aim of the University to serve substantial, wholesome, appetizing meals at cost. The students and members of the Faculty who reside outside the residence halls may obtain their meals on the Campus with permission of the management. All students living in the residence halls are required to take their meals at the Commons. Board at the Commons is payable in advance on the first day of each month. No rebate will be allowed for absences incurred by the student, or for vacation periods during the academic year.

EXPENSES AND FEES

The University is unable to extend credit. It is therefore essential that all students shall have sufficient funds in hand on entering to defray their immediate expenses. An estimate of the amount required for the first month in residence, covering board and room on the campus, registration and incidental fees, books and supplies, etc., would be \$120. (This does not include the non-resident tuition fee of \$75 for each semester.)

The minimum cost covering all University charges for the academic year, exclusive of the non-resident tuition fee of \$150, is approximately \$375.

Tuition—The University of Arizona requires no general tuition fee of students who are citizens of the State of Arizona, and there is no charge for instruction, except for some courses in the College of Music. Graduate fellows are excused from all fees except the incidental registration fee. Other graduate students, registered for graduate credit as candidates for advanced degrees, are exempt from the non-resident tuition fee.

Note: Students who have been awarded degrees, but who register for work in the College of Law, are considered as undergraduate students in Law, rather than graduate students, and are not exempt from the non-resident tuition fee.

Tuition for Non-Resident Students—Provisions governing the assessment of a non-resident tuition fee have been adopted by the Board of Regents as follows:

1. Every non-resident undergraduate student carrying 6 or more units, shall be required to pay a non-resident fee of \$75 each semester.
2. A student to be considered a resident of Arizona, for the purpose of registering at the University of Arizona, must present evidence as follows:
 - a. **If under 21 years of age**—that the supporting parent (or guardian) has been a bona fide resident of the State of Arizona for at least one year next preceding registration.

Note: In the event that a legal resident of Arizona is appointed as the guardian of a non-resident minor, such minor does not become a resident until the expiration of one year from the time of appointment and then only upon a proper showing that such appointment was not made to avoid the non-resident fee.

b. **If over 21 years of age**—that bonafide residence in the State has been established for at least one year, next preceding registration, and that he is eligible to become a registered elector.

c. If an alien who has taken out first naturalization papers—that residence has been maintained in the State for at least one year previous to registration.

3. The responsibility of registration under proper residence is placed upon the student. If there is any possible question as to the legal residence, the matter should be brought to the attention of the Comptroller and passed upon previous to registration and payment of fees. Any student who has been found to have registered improperly under this ruling shall be subject to dismissal from the University. In doubtful cases a certified statement of the facts may be required.

4. In all cases where the records indicate that the student's home is outside of Arizona, the non-resident fee shall be assessed. Claims for refund may, however, be filed at any time within 30 days.

5. If a non-resident student withdraws during the first week after registration, the entire tuition fee will be refunded. If the withdrawal is within a month \$50 will be refunded, and if within 2 months \$25 will be refunded.

Incidental Fee—Incidental fee of \$17.50 per semester is paid on the day of registration by each student registering for 6 units or more of work. Of this fee, \$7.50 is credited by the University to the Student Activity Fund. An incidental fee of \$10 is paid by each student registering for 5 units or less of work. Graduate students registered for thesis work only pay an incidental fee of \$5. On the incidental fee there is no rebate if for any reason the student is compelled to leave the University, the money collected having already either been expended in cost of registration or otherwise distributed to the various University funds.

A fee of \$2 per unit (including thesis units) with a minimum of \$6 is payable each semester by post-graduate students carrying work in **absentia**.

Auditor's Fee—Auditors pay a registration fee of \$10 a semester, and any additional fees incident to the courses chosen.

Late Registration—For registration completed after the last day of registration as scheduled, a fee of \$5 will be charged.

Change of Registration—For any change in registration, other than withdrawal with a failing grade of "5" a fee of \$1 will be charged. This fee is effective the first day after the close of registration as scheduled.

Special Examination Fee—A fee of \$2 is charged for all special examinations for credit and for Freshman placement examinations given after the time regularly scheduled.

Men's Gymnasium Fee—A fee of \$2 is charged each semester to cover the cost of the use of locker and towels. One dollar is refunded at the end of the year if the locker is intact.

Women's Gymnasium Fee—A fee of \$2 is charged women registered for activity courses in physical education. This fee is to cover locker rent and use of towels. One dollar of this fee is refunded each semester if equipment and materials check is satisfactory.

Laboratory Fees—In certain laboratory courses fees are required to cover the cost of breakage and material supplied. A statement of the amount of such fees may be found in connection with the announcement of courses in this catalogue.

Breakage Deposit—A breakage deposit is required of each student

registering for laboratory work in the Department of Chemistry. This fee, less the value of apparatus broken by the student, is returned upon completion of the course.

Cadet Uniforms—All students who are required to take military training are supplied with a uniform without cost. A deposit on day of registration of approximately \$18 is required to cover possible loss of uniform and equipment. This deposit is refunded at end of the college year or upon withdrawal from the course if no loss occurs.

In addition, such students are required to purchase at their own expense, laced boots of approved pattern at an approximate cost of \$7.

A student electing the advanced course is supplied with an officer's uniform made to individual measurements. A deposit of \$30, to be refunded at the close of the year, is required to cover possible loss of uniform and equipment. In addition students of the advanced course are required to purchase officer's boots and Sam Brown belts at their own expense at an approximate cost of \$25.

Trips for Students of Engineering, Agriculture, Economics, and Archaeology—Trips to near-by mines, mills, smelters, and power plants are made during the year by students in mining, metallurgy, geology, mechanical, civil, and electrical engineering. Trips to ranches and ranges are made by students in agricultural courses, and to points of historic and prehistoric interest by students taking work in the Department of Archaeology. Students in economics may be asked to make trips to industrial plants and business houses. The students pay the transportation expenses as well as all personal expenses.

Late Petition for Degree—For petition for candidacy for degree filed after May 15 of the Junior year (provided such Junior year has been the year immediately preceding that in which graduation is desired) a fee of \$2 will be charged.

Diploma Fee—A diploma fee of \$5 must be paid by May 1 of the year of graduation, for each degree to be taken in the University.

Binding Thesis—A fee of \$5, to cover the cost of binding two copies of the thesis for the Library, is required of each graduate student at the time of submitting the thesis.

Transcript Fee—Each student is entitled, upon request, to one transcript or statement of credits without cost. For each additional statement or transcript a fee of \$1 is charged. A statement of credits is a memorandum issued to the student; an official transcript is mailed direct to the institution to which the student transfers.

Music fee, tuitions, appointment regulations—All lessons must be paid for in advance and a receipt in the form of a class card from the Registrar's office given to the instructor before the student will be given lessons.

The rates for tuition in theoretical and academic subjects are the same as those in other colleges.

The rates of tuition for strictly individual lessons in voice, piano, or orchestral instruments, and rates for the rental of pianos, are listed under College of Music.

The University reserves the right to prescribe rules under which its students shall board in the Commons, in private families, and chapter

houses, or elsewhere, whether these rules are or are not published in its annual catalogue.

Board and Room—Board and room on the University campus is charged for at the rate of \$270 for the academic year and is paid for at the rate of \$30 monthly in advance. Students living in campus dormitories must purchase the University's monthly meal tickets.

Students living off the campus may obtain meals at the University Commons at the rate of \$27 per month.

No refund on the board and room charge is made.

As the accommodations are limited and the rooms are usually all engaged before the opening of the college year, students should make early application. A deposit of \$10 must accompany each application for room. This will apply as security against damage to or loss of the university property. This deposit is refunded when a student leaves the dormitory, provided all charges for loss or damage against the student have been paid. No student will be admitted to any room except on card from the Comptroller.

All applications for rooms, with accompanying check, should be mailed to Comptroller, University of Arizona. Deposits on rooms will not be refunded after 15 days preceding the opening of the first semester and not later than the first day of registration of the second semester, except in case of inability on the part of the University to provide accommodations.

Preference in the renting of rooms in University halls of residence is given to citizens of the State of Arizona up to September 1 for the first semester, and up to January 15 for the second semester, after which dates applicants for rooms will receive assignments according to priority of application, without reference to place of residence.

Re-assignment of rooms in each hall will be made by the Head Resident of that hall with the approval of the Dean of Men or Dean of Women.

University of Arizona Payee—Checks and postoffice or express money orders should be made payable to the University of Arizona.

FINANCIAL ASSISTANCE AND HONOR AWARDS

MEANS OF SELF-SUPPORT

Various positions about the grounds, buildings, and laboratories of the University, paying from \$10 to \$30 per month, are filled by students who must be self-supporting. The number, however, is not large, and preference is given to students from Arizona and to those who have spent enough time in the University to demonstrate that they are earnest, capable, reliable young people, able to do this outside work and at the same time maintain a good record as students.

Employment bureaus maintained by the offices of the Dean of Men, Dean of Women, and the Student Forum assist students of the University in the problem of self-support.

STUDENTS' LOAN FUNDS

The **Alumni Association Fund** of \$300 was given by the Alumni Association of the University in 1922, and is, for the present, available to deserving students who are members of the Junior and Senior classes.

The **J. Preston Jones Memorial Fund**, in memory of J. Preston Jones, Class of 1916, and in appreciation of his life and service as a student and as a member of the administrative staff, was established in 1921 by former President R. B. von KleinSmid, with a minimum gift of \$1,000. Loans from this fund are available for deserving students upon terms governing other University funds used for like purpose.

The **John E. Pollock Memorial Loan Fund** of \$100 is open only to citizens of Arizona, but otherwise without distinction of race or creed. Awarded on the recommendation of the President and the committee in charge of loans.

The **Merrill P. Freeman Fund** was established in 1920 by bequest. The proceeds from the fund (which were to be used for the maintenance of high scholastic standings) are granted on the basis of scholarship.

The **Rotary Club Loan Fund** was established in 1921 through the donation of \$1,000 by the Rotary Club of Tucson. In 1932 the fund was increased to \$1,500.

The Tucson Chapter of the **Daughters of the American Revolution** has established a loan fund in the amount of \$400 that is available under certain conditions to women of the University in their Junior or Senior year.

The **Alva Otis Neal Fund** of \$200 is a memorial to the late Alva Otis Neal, former Registrar of the University, and is available to both men and women students.

The Arizona Chapter of **Phi Kappa Phi**, national honor society, has established a loan fund of \$150 which is available to student members of the society.

The **Ajo Alumni Association Fund** of \$75 was given by the Ajo group of the University Alumni Association and is available to students from Ajo, Arizona.

The **Cosmopolitan-International Relations Fund** of \$70 was established in 1927, jointly by the Cosmopolitan Club of the University, and the Tucson Woman's Club, for the purpose of assisting deserving foreign students in the University.

Mortar Board Loan Fund—To establish a revolving loan fund for the

women students of the University of Arizona, the Mortar Board has placed \$50 (to be gradually increased) to be loaned at the discretion of the Dean of Women without interest, for periods not longer than 2 months, in loans not exceeding \$50.

The **Women's Self-Government Fund** of \$200 is available to women students of the University.

The **Alpha Zeta Fund** of \$80 is sponsored by the Fraternity of Alpha Zeta. This fund is limited to deserving students in the College of Agriculture who have attained Sophomore standing and have been in attendance at the University of Arizona for at least two semesters.

These funds are designed to give temporary assistance to deserving students. The conditions under which loans are made may be ascertained on inquiry of the Dean of Men or the Dean of Women. Application should be made at least 2 weeks before the funds are needed.

APPOINTMENT COMMITTEE AID

The University of Arizona maintains an Appointment Committee for the purpose of helping graduates who have received their training at the University of Arizona to secure desirable positions, and of leading employers to find well prepared and efficient workers. No registration fee is charged, and the Committee, without expense to the candidate, forwards to those interested in his application confidential information which it has collected concerning him. All students desiring to register with the Committee will confer with the Registrar.

FELLOWSHIPS, SCHOLARSHIPS, AND PRIZES

The appointments carrying pecuniary aid which are available for students are divided into fellowships and scholarships, the former being more important and valuable. Appointments to fellowships are awarded only to those students pursuing graduate work. The appointments are usually made in May of each year.

Applications for fellowships should include an abstract of the applicant's undergraduate work, signed by the proper college authority, and letters of recommendation from instructors or others capable of judging the candidate's character and ability to engage in research.

Fellowships

Archaeology Fellowship—A fellowship amounting to \$600 is granted annually to a student doing graduate work in archaeology.

Bureau of Mines Fellowship—The University of Arizona, through the Arizona Bureau of Mines, offers two fellowships to men holding bachelors' degrees who have specialized in metallurgy or chemistry as undergraduates. Each fellowship pays \$635 per year of 9 months; the fellows are expected to put half their time during the academic year upon research work for the United States Bureau of Mines Experiment Station located on the Campus of the University. Time not utilized in this way must be spent in study in candidacy for an advanced degree. The University offers unusual advantages to those wishing to do advanced work in mining, metallurgy, and geology.

Botany Fellowships—Two fellowships are given to persons taking advanced studies in botany. The holders of these fellowships will be required to assist in the department. The amount of each fellowship is \$600.

Chemistry Fellowships—Four fellowships, with stipends of \$600 each,

are awarded annually to graduate students in the Department of Chemistry.

Civil Engineering Fellowship—A fellowship is granted to a student doing graduate work in civil engineering. The stipend is \$600.

English Fellowship—A fellowship is granted to a student doing graduate work in English. It amounts to \$600 annually.

Geology Fellowships—Two geology fellowships of \$600 each are granted to two graduate assistants.

Home Economics Fellowship—The home economics fellowship in the amount of \$600 per annum is granted to a graduate assistant.

Metallurgy Fellowship—A fellowship is granted to a student doing graduate work in metallurgy. The fellowship is \$600 annually.

Philosophy Fellowship—A fellowship of \$600 is granted to a student doing graduate work in philosophy or psychology.

Zoology Fellowships—Two fellowships are given to persons taking advanced studies in zoology. The holders of these fellowships will be required to assist in the department. The amount of each fellowship is \$600.

Scholarships

The Bennett Scholarship—The Philo Sherman Bennett scholarship is endowed by a gift of \$500 to the University, through the agency of Mrs. William Jennings Bryan, the income to be used in aiding young women to secure an education.

The American Association of University Women Scholarship—The Tucson chapter of the American Association of University Women gives a scholarship stipend of \$100 to aid in the education of some young woman.

The Heard Scholarship Fund—The late Dwight B. Heard left a bequest of \$20,000 the income of which is to be used to provide free scholarships in the University in such amounts and under such regulations as the University officials may determine.

Home Economics Scholarship—A scholarship of \$50 is awarded to the student majoring in home economics who does the most outstanding work in her Freshman year.

Rhodes Scholarships—Under the conditions of the Rhodes Scholarship Trust the University of Arizona may nominate two candidates each year for a Rhodes Scholarship. Each scholarship is tenable for 3 years at Oxford University. The stipend of a Rhodes scholar is £400 a year. He must be a citizen of the United States, unmarried, and between the ages of 19 and 25.

The Tucson Woman's Club Scholarship—The Tucson Woman's Club has established a scholarship of \$100, to assist in the education of a worthy student.

Prizes

The Alpha Kappa Psi Cup—Alpha Kappa Psi, Honorary Commerce Fraternity, offers a cup to the most outstanding Sophomore Commerce student. The choice is based on scholarship, personality, and Campus activities.

The Phebe M. Bogan Memorial Poetry Prize—The Rimers' Club, in memory of Mrs. Phebe M. Bogan, offers a prize of \$20 for the best original poem submitted in the Phebe M. Bogan Contest. This contest is open to all regularly enrolled students of the University and is under the direction of a member of the Department of English.

The Chi Omega Prize—The Zeta Beta Chapter of Chi Omega offers a prize of \$25 each year to the girl who has done the most outstanding work in the department of economics.

The Byron Cummings Medals—Dr. Byron Cummings offers a gold medal to each student who represents the University of Arizona in an intercollegiate debate and a silver medal to each student who represents the University in the Junior College debates.

The Delphian Award—The Tucson Delphian Chapter, in order to encourage better speech, has given a silver loving cup to the University on which is to be engraved each year the name of the woman student who has done the most outstanding work in public speaking.

The Delta Sigma Rho Forensic Awards—The local chapter of Delta Sigma Rho offers each year a gold medal to the student who represents the University of Arizona in the oratorical contest of the Pacific Forensic League, and a gold medal to the student who represents the University of Arizona in the extemporaneous speaking contest of the Pacific Forensic League.

Home Economics Club Cup—The Home Economics Club has given a silver loving cup on which is inscribed each year the name of the student doing the most outstanding work in the Home Economics Department.

The Merrill P. Freeman Medals—Under the will of the late Dr. Merrill P. Freeman two medals, one for men and one for women, are annually awarded by the administration of the University to members of the graduating class. Scholarship, character, and qualities of leadership are considered in making the awards.

The Inter-Fraternity Scholarship Cup—The Inter-Fraternity Council has given a cup which is awarded each year to the fraternity having the highest scholarship for the year.

The Julia Atkinson Keyes Freshman Mathematics Prize—To stimulate a high quality of work in Freshman Mathematics, Professor Julia Atkinson Keyes offers a prize of \$50 to be awarded on Honor Day, June, 1932, to the student passing with the highest degree of excellence a 3-hour competitive examination given on the first Saturday in May. The competition will be open only to Freshmen who have been enrolled in the Department of Mathematics at the University of Arizona for both semesters and have not in any institution, or institutions, of collegiate rank, been twice registered in any one of the three subjects, algebra, trigonometry, and analytic geometry during more than half the time of the course in that subject. Applications to take the examination must be in on or before April 15. The competition will be in charge of a committee of three elected by the Department of Mathematics.

The Mortar Board Cups—Each year the local Mortar Board awards two cups, one to the Freshman girl and one to the Sophomore girl with the highest record of all-around attainment.

Phi Beta Kappa—Phi Beta Kappa is a national honorary fraternity which has for its object the encouragement of scholarship. Elections are made each year from the Senior class in the College of Letters, Arts, and Sciences.

The Phi Delta Kappa Prizes—The Alpha Zeta Chapter of Phi Delta Kappa offers a Senior prize of \$15 and a Junior prize of \$10 to men who have done superior work in the Department of Education. For the specific conditions of the award those interested should apply to the Dean of the College of Education.

Phi Delta Phi Scholarship Award—The Samuel L. Pattee Inn, the Tucson Chapter of the national legal fraternity, Phi Delta Phi, in order to promote high standards of scholarship and to arouse individual interest in scholarly attainment, has placed in the reading room of the College of Law of the University of Arizona a plaque bearing a large silver shield engraved, Phi Delta Phi Scholarship Award, and nine small silver plates on one of which will be engraved each year the name of the graduating Senior of the College of Law whose course includes at least one full year of residence study in the College of Law of the University of Arizona and who is certified by the Registrar of the University and by the Faculty of the College of Law to have the highest scholarship average for the full 3 years of his regular course of law study.

Phi Kappa Phi Honor Society—Phi Kappa Phi, a national university honor society, to encourage high standards and a spirit of fellowship among leaders in both liberal and practical education, confers membership as an honor on a limited number of faculty members, alumni, and Seniors who have deserved recognition in any department of knowledge recognized in the curricula of American universities.

Phi Kappa Phi Freshmen Awards—Phi Kappa Phi, national university honor society, gives certificates of merit to the ten students who make the highest scholastic records in their Freshman year.

The Phi Lambda Upsilon Cup—The Arizona Chapter of Phi Lambda Upsilon, National Honorary Chemical Fraternity, offers a silver loving cup to the student making the highest grade in a competitive examination covering the field of first-year chemistry. The competition is open to all regular Freshman students registered in Chemistry 1a-1b or 2a-2b during the current year.

The Pi Lambda Theta Cup—The Arizona Chapter of Pi Lambda Theta, National Honorary Educational Fraternity, offers a cup each year to the Sophomore girl in the College of Education who has the highest scholarship record and is the most outstanding in Campus activities.

The Powell Saber—Capt. Hiram M. Powell, late Commandant of Cadets, during his lifetime presented annually a saber to the most efficient Senior Cadet Officer. Mrs. Jane M. Powell continued this award after Captain Powell's death. Since the death of Mrs. Powell the award is given by Miss Marjorie Powell, daughter of Captain and Mrs. Powell in memory of her parents.

The President's Cup and Scholarship—In order to maintain high standards of character and scholarship and to secure more thorough work on the part of Freshman students, the President's Cup and Scholarship are awarded annually to the high school whose entire Freshman group maintains the highest average in scholarship during the Freshman year in the University. No high school shall be considered a competitor unless it has a representation of at least three students in the Freshman class of the University during both semesters. The scholarship of \$50 is available to a graduate selected by the high-school faculty upon matriculation in the University as a member of the succeeding Freshman class.

The University Cup and Scholarship—In order to maintain high standards of character and scholarship and to secure more thorough work on the part of Freshman students, the University Cup and Scholarship are awarded annually to the high school that has prepared the group of three students that stands highest in scholarship during both semesters of the Freshman year in the University. Each student must complete a minimum of 30 units for the year. The scholarship of \$50 is available to a graduate selected by the high-school faculty upon matriculation in the University as a member of the succeeding Freshman class.

The Charles F. Rogers Cup—Dean Charles F. Rogers, of the College of Music, offers a silver loving cup each year to the music major having the highest scholarship standing for the year, and who takes the most active interest in the musical activities of the school.

The Scabbard and Blade Medals—The local Company of the Scabbard and Blade awards each year gold medals to the Honor Sophomore and the Honor Freshman in Military Science and Tactics.

The Fred Newton Scott Prose Competition—The Fred Newton Scott Prose Competition for the encouragement of written prose among undergraduates of the University of Arizona, was established in 1928 by a gift of \$2,000 made by Dr. Scott. A prize of \$100 taken from the income derived from this sum is awarded annually for the best piece of original writing in any of the prose forms, submitted by an undergraduate student of the University of Arizona to the committee appointed by the President to administer the competition. If the prize is won by a Junior or Senior, the best piece of prose submitted by a Freshman or Sophomore may be given honorable mention.

The Hattie Ferrin Solomon Award—Mrs. Charles Solomon offers a silver cup which is to be awarded each semester to the group of women students having the highest scholarship for the semester. This cup is to be permanently held by the group winning it three successive times.

Sigma Xi—The Society of the Sigma Xi is a national honor society for the promotion and encouragement of research. Elections are made from the graduate students and faculty in recognition of research ability.

The Ella A. Stearns Award—Mrs. Ella A. Stearns of Portland, Oregon, has given a vase to Maricopa Hall, and each year the name of the girl in Maricopa Hall having the highest scholarship record is to be inscribed upon the vase.

The Tau Beta Pi Cup—Tau Beta Pi, Honorary Engineering Fraternity, offers a cup to the Sophomore engineering student having the highest scholastic record for his Freshman year.

The Tucson Players Award—The Tucson Players have presented the University of Arizona with two cups which are to be awarded each year to the young man and the young woman showing greatest excellence in dramatic activities. The cups will be engraved with the names of the winners each year.

The Alpha Kappa Psi Scholarship Medallion—Alpha Kappa Psi, Honorary Commerce Fraternity, offers a medallion to the Junior Commerce student who has made the highest scholastic average for the first two years of college work.

CLASS HONORS

Scholarship honors are conferred annually for the purpose of encouraging scholarship that is sound in every point. They are non-competitive, and are awarded to every student attaining a required proficiency. Students, other than those in the College of Law, who attain the required standard of excellence are awarded, as Freshmen, honorable mention, and in the other classes, Sophomore, Junior, or Senior Honors. Students in the College of Law, qualifying similarly, are awarded either First-year, Second-year, or Third-year Honors.

To be eligible for honors, students other than second- and third-year students in the College of Law, must carry at least 30 units of work (second- and third-year students in the College of Law must carry at least 24 units), and attain a grade G of 2, or less than 2, where G is given by the following formula:

$$G = \frac{1(N_1) + 2(N_2) + 3(N_3) + 4(N_4) + 4.5(N_D) + 5(N_5)}{N_1 + N_2 + N_3 + N_4 + N_D + N_5}$$

HONORS CONFERRED AT GRADUATION

Special Honors

Special honors in three grades are awarded in recognition of superior scholarship in the work leading to the bachelor's degree. These honors are awarded at Commencement and inscribed on the diplomas of the recipients.

First: **With Highest Distinction** is awarded to the three graduates whose academic standing in the class is highest.

Second: **With High Distinction** is awarded to those students whose academic standing ranks them in the highest one-twentieth of the remainder of the class.

Third: **With Distinction** is awarded to those other students whose academic standing ranks them in the highest one-tenth of the remainder of the class.

In computing these honors the formula for simple arithmetical average, adopted by the University Faculty as the honor formula, is the basis, and all work in residence enters into the computation, except in the College of Law where the residence work in law is considered. In order to be eligible the graduate must have completed at least 60 units of work at the University of Arizona.

The Juris Doctor degree, in so far as University Honors are concerned, is considered as an undergraduate degree, and candidates for such a degree who complete a minimum of 48 units in residence in law studies with sufficiently high scholarship may be awarded University Honors.

Graduate Honors

Upon recommendation of the Graduate Study Committee, candidates for advanced degrees may be graduated **With Distinction** in recognition of outstanding scholarship.

GIFTS TO THE UNIVERSITY

Gifts to the University may take the form of scholarships, material equipment, or endowment. Those wishing advice as to the needs of the University should address the President of the University of Arizona, Tucson, Arizona.

Suggested Forms of Bequests

For the convenience of those wishing to make bequests to the University, the following forms are suggested:

I give, devise, and bequeath to the University of Arizona _____
or

I give, devise, and bequeath to the University of Arizona _____
dollars for the establishment of a scholarship at the University of Arizona
to be known as the _____ Scholarship. The investment of the fund
and the award of the scholarship shall be in the hands of those entrusted
with the responsibility by the Board of Regents of the University of
Arizona.

UNIVERSITY ORGANIZATIONS

STUDENT BODY ORGANIZATION

For the purpose of assuming the privileges and responsibilities of self-government and the direction and control of student enterprises, the students are organized under the title, The Student Body Organization.

ASSOCIATED WOMEN STUDENTS

As each girl registers in the University of Arizona, she automatically becomes a member of the Associated Women Students. The object of this organization is to regulate all matters pertaining to the student life of its members which do not fall under the jurisdiction of the Faculty or the Student Body Organization.

HONORARY AND PROFESSIONAL ORGANIZATIONS

Phi Kappa Phi—National Honorary Scholastic Society (University)
Phi Beta Kappa—National Honorary Scholastic Society (College of Letters, Arts, and Sciences.)
The Society of Sigma Xi—Scientific.
Phi Delta Kappa—Educational. Men.
Pi Lambda Theta—Educational. Women.
Theta Tau—Engineering.
Tau Beta Pi—Engineering.
American Association of Engineers—Engineering.
American Society of Civil Engineers—Civil Engineering.
Alpha Kappa Psi—Commerce. Men.
Alpha Epsilon—Commerce. Women.
Delta Sigma Rho—Forensic.
Alpha Zeta—Agriculture.
Phi Alpha Delta—Law. Men.
Phi Delta Phi—Law. Men.
Kappa Pi—Law. Women.
Phi Lambda Upsilon—Chemistry.
Scabbard and Blade—Military.
Sigma Delta Psi—Athletic.
Phi Mu Alpha—Music. Men.
Sigma Alpha Iota—Music. Women.
Kappa Kappa Psi—Music. Band.
Mortar Board—Senior Women.
Pi Delta Epsilon—Journalistic.
Hammer and Coffin—Journalistic.
Theta Alpha Phi—Dramatic.
Pi Epsilon Delta—Dramatic.
Kappa Omicron Phi—Home Economics.

FRATERNITIES AND SORORITIES

Fraternities—Kappa Sigma, Sigma Alpha Epsilon, Sigma Nu, Sigma Chi, Phi Delta Theta, Pi Kappa Alpha, Delta Chi, Zeta Beta Tau, Beta Chi (local), Beta Kappa, Delta Sigma Lambda, Alpha Tau Omega, Omicron Phi Omicron (local), Phi Gamma Delta.

Sororities—Pi Beta Phi, Kappa Alpha Theta, Kappa Kappa Gamma, Gamma Phi Beta, Delta Gamma, Chi Omega, Alpha Phi, Phi Omega Pi, Alpha Chi Omega, Delta Zeta.

The interrelations of fraternities and sororities are controlled by the Women's Panhellenic Association and the Men's Interfraternity Council.

Each of the residence halls has its own organization for governmental and social purposes.

OTHER ORGANIZATIONS

"A" Club—Athletic.

Women's Athletic Association—Athletic.

Wranglers—Literary.

Bobcats—Senior Men's Honorary Society.

Chain Gang—Junior Men's Honor Society.

F. S. T.—Junior Women's Honorary Society.

Varsity Villagers—Social.

University Players—Dramatic.

Women's Press Club—Literary.

Departmental Organizations—A number of the departments of the University have departmental organizations, some open to all students in the department, some composed of students majoring in the department, and some having but a limited elected membership.

THE RELIGIOUS LIFE OF THE UNIVERSITY

Opportunities for religious worship in Tucson are ample. The churches of the city are the First Baptist; First Christian; University Christian; First Congregational; Grace Episcopal; Grace Lutheran; First Methodist Episcopal; University Methodist Episcopal South; Trinity Presbyterian; Saint Augustine's Cathedral; All Saints; Seventh Day Adventist; Church of Jesus Christ of the Latter Day Saints; First Church of Christ, Scientist; Temple Emmanuel; and a number of missions. Students are welcome at all the churches of the city. Several churches have trained workers devoting time to a special program for students.

THE STUDENT FORUM

The purpose of the Student Forum is to stimulate and coördinate the religious and social welfare activities of the Campus and to this end encourages and promotes any group of students or faculty members that wish to meet informally to study and discuss some phase of human life that will enrich the individual or group.

Some of the activities that have been emphasized are chapel services, open forums on religion, economics, politics, and international and social problems, faculty-student "get togethers," volunteer social service, and an all-University Circus.

An executive committee is made up of two students and one faculty member from each of the affiliated organizations, which are the Newman Club, Y.M.C.A., and Y.W.C.A. The executive committee elects a chairman at large and a full-time executive secretary, subject to the approval of the President of the University.

Individual Organizations of the Student Forum

The Newman Club is composed of Catholic students united in one bond of devotion to God, to church, and to country. Bi-monthly meetings are held and topics of a religious and cultural nature are considered. Every third Sunday of the month following early Mass and communion the Catholic students breakfast together and have a devotional program.

The Y.M.C.A. and Y.W.C.A. are fellowships of students and faculty who are trying to follow principles of right living and high idealism. They are composed of a membership of all students who desire to

participate in the individual or joint programs sponsored by these organizations. They also function as a clearing house for the Protestant churches of the city. An Advisory Board and Student Cabinet direct the activities. Both the Y.M.C.A. and Y.W.C.A. are affiliated with the National Student Christian Associations and the World Christian Federation. Each year delegates are sent to the various conferences sponsored by these student movements.

The Forum is instrumental in placing a number of students who are in need of part-time employment, particularly in the city of Tucson. Men and women students who desire to apply for such work should call or write the Employment Secretary, Student Forum Office. The placement of students in part-time positions on the University Campus is administered through the offices of the Dean of Men and the Dean of Women.

STUDENT PUBLICATIONS

The **Arizona Wildcat** is an official publication of the Student Body Organization, and is issued every Friday during the college year.

The **Desert** is the University Yearbook, published each spring by the Junior Class.

The **Kitty-Kat**, official humor magazine of the Student Body Organization, is published once each month during the college year.

The **Manuscript**, medium of publication for short stories, essays, plays, and poems contributed by students, is issued four times during the college year by the Women's Press Club of Chi Delta Phi.

ALUMNI ACTIVITIES

Alumni Association—The Alumni Association is functioning under a constitution which was adopted in May, 1923. The organization includes in its membership both graduates and former students. The usual officers are provided for, and in addition, Regional Directors who are appointed by the executive committee. It is the duty of the Regional Directors to develop local interest in respect to the undertakings of the University and the policies of the Alumni Association.

The voting privilege is restricted to those holding active membership, for which a life membership fee of \$10 is charged. Provision is made for the qualification, as associate members, of those students of the University who are credited with 20 or more units of collegiate work, earned in residence. Officers are elected at the annual meeting of the Association held during Commencement Week.

The officers of the Association for 1931-1932 were:

Alumni Association Officers

President.....	John C. Hobbs, '23
Vice-President.....	Hazel McCoy Schwalen, '20
Secretary-Treasurer.....	A. Louis Slonaker, '21

Executive Committee

Jane Rider, '11	Lawson Smith, '28
C. U. Pickrell, '17	Sam Mansfield, ex'98

Advisory Board

1-Year Term	2-Year Term
Helen Mahoney, '24	George Hill, '24
A. J. O'Connor, '24	T. P. Riordan, '25
	Bertha R. Koch, '21
3-Year Term	
E. R. Thurman, '23	
A. T. Barr, '21	
Asa Porter, '16	

Alumni Secretary—The duties of the Alumni Secretary are stated in the constitution of the Association as follows: To prepare a register containing the names and addresses of all alumni and former students of the University of Arizona; to edit and publish such news-letters or other publications as may be authorized by the Association; to serve as a medium of communication between the University and the alumni and among the alumni. Louis Slonaker, '21, is Alumni Secretary. The Alumni Office is Room 202, Agriculture Building.

REQUIREMENTS FOR GRADUATION

General Statement—The University offers 4-year courses of literary and scientific study leading to the degrees of Bachelor of Arts and Bachelor of Science. Four-year courses of more technical study lead to the degree of Bachelor of Science in the specified fields of agriculture, business administration, home economics, and civil, electrical, mechanical, or mining engineering. A 3-year course in law is offered in the College of Law, which, when based on two or more years of pre-legal academic study, leads to the degree of Bachelor of Laws (LL.B.), and, when based upon completion of the course required for an Arts degree, may lead to the degree of Juris Doctor (J.D.). The College of Education offers a 4-year course leading to the degree of Bachelor of Arts in Education or of Bachelor of Science in Education. The College of Music offers a 4-year course leading to the degree of Bachelor of Music.

The requirements for advanced degrees, and for special professional degrees, are stated under "Graduate Studies," page 121.

The Unit System—Credit toward degrees is given by means of a unit system which assigns to each course of instruction offered a certain number of units or credits. A unit usually represents 1 hour of classroom work a week for a semester, and assumes 3 hours of application; it may stand for 1 hour of classroom work and 2 hours of preparation, or for 3 hours of laboratory work, or for such distribution as the particular course may demand.

Number of Units Required for Degrees—Candidates for degrees must meet the requirements both in number and kind of units, as outlined in the catalogue for the year of matriculation, or for the year of graduation, except that students who withdraw from the University for more than one semester, will be graduated under the catalogue for the year in which they re-enter, or for the year of graduation.

Students who transfer from one college of the University to another, must meet the requirements of the catalogue for the year in which the transfer is made, or for the year of graduation.

The number of units required for graduation varies with the course chosen, as shown in the following summary:

Degrees	Units Required
Bachelor of Arts.....	125
Bachelor of Science.....	125
Bachelor of Science in Business Administration.....	125
Bachelor of Arts in Education.....	125
Bachelor of Science in Education.....	125
Bachelor of Music.....	125
Bachelor of Science in Agriculture.....	130
Bachelor of Science in Vocational Agriculture.....	130
Bachelor of Science in Home Economics.....	130
Bachelor of Science in Vocational Home Economics.....	130
Bachelor of Science in Civil Engineering.....	145
Bachelor of Science in Electrical Engineering.....	145
Bachelor of Science in Mechanical Engineering.....	145
Bachelor of Science in Mining Engineering.....	145
Bachelor of Laws (Arts and Sciences, 60; Law, 78).....	138
Juris Doctor (Arts and Sciences, 125 (Degree); Law, 78).....	203

All courses leading to a degree must include 4 units of military science and tactics and 1 unit of physical education for men, and 4 units of physical education and 1 unit of social fundamentals for women.

Quality of Work—A student pursuing his entire course in this University must attain a grade of better than 4 in 80 percent of the minimum

number of units required for the bachelor's degree sought, and in the colleges of Letters, Arts, and Sciences, and Education, must meet a similar requirement in courses completed in his major subject. The number of units to be completed with a grade above 4, by students carrying the entire course in residence, is as follows: For degrees in the College of Mines and Engineering, 116 units; in the College of Agriculture, 104 units; in the College of Letters, Arts, and Sciences, 100 units; in the College of Education, 100 units; in the College of Law, 62 units of law; in the College of Music, 100 units. A student transferring advanced credits to this University must attain a grade of better than 4 in 80 percent of the units which such student must secure by courses of study pursued in this University in order to meet the minimum requirements of this University for the bachelor's degree sought, and in the colleges of Letters, Arts, and Sciences, and Education, must meet a similar requirement in his major subject.

Residence—All candidates for a bachelor's degree must do the work of the Senior year in residence at this University, provided that candidates for degrees other than that of Bachelor of Laws, who already have had at least a full year's work in residence in this institution, may do as much as 4 units of Senior work in *absentia*. Senior work in all Colleges except the College of Law is defined to be the last 30 units, and in the College of Law as the last 24 units, of work done by a student in fulfilling the requirements for graduation. The minimum length of residence for graduation is 36 weeks.

Application for Graduation—Juniors are expected to file at the Registrar's office an application for candidacy for a degree by May 15 of the Junior year. In the event that such applications are not so filed, a fee of \$2 will be charged. Blank forms are obtained at the office of the Registrar.

A Special Student, registered in a college other than the College of Law, who is at least 25 years of age, may, by permission of the Faculty, become a candidate for a degree, subject to the fulfillment of such requirements regarding entrance deficiencies as may be determined by the Faculty.

**REQUIREMENTS FOR DEGREES
IN THE SEVERAL
COLLEGES**

COLLEGE OF AGRICULTURE

The general course in agriculture is organized to give a broad foundation in the sciences and allied subjects and then, through a system of group requirements, to lead up to a specialized training in one field of agricultural endeavor. This is the foundation required for those who desire to go on in university or college teaching, government or experiment station research, or it may lead directly to research or administrative positions in agricultural enterprises. Where the necessary capital is available it also prepares for the direct return to the farm. For those who desire to teach agriculture in secondary schools, the course in Vocational Agriculture, page 70, is provided.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

Required Freshman and Sophomore work.....	57 units
Required from the major group and technical subjects.....	46* units
Electives (from which 10 must be chosen from humanities and language).....	27 units
Total required for graduation.....	130 units

The list of science requirements will be given under each major group. The 10 units in the humanities and language should be selected from the courses in economics, education, history, philosophy, psychology, English, or modern language. Students planning to enter the research field should start a modern language, preferably German or French, in the Sophomore year, and may defer one of the science courses in order to do this.

A major group must be chosen not later than the beginning of the Junior year. In planning his work the student will advise with his major professor with reference to courses and their proper sequence.

The major may be chosen in any of the following fields of work:

Agricultural chemistry and soils	Dairy husbandry
Agronomy	Entomology
Animal husbandry	Horticulture
Applied biology	Poultry husbandry

COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

Freshman Year

First Semester		Second Semester	
Subject	Units	Subject	Units
Eng. 1a (Composition).....	3	Eng. 1b (Composition).....	3
Chem. 1a or 2a (General).....	4	Chem. 1b or 2b (General).....	4
Bot. 1, (Gen.) or (Math.).....	4	Zool. 4 (Elem.) or (Math.).....	4
Military Science 1a.....	1	Military Science 1b.....	1
Phys. Ed. 25.....	½	Phys. Ed. 27.....	½
Plant Industry 1 (Agron. and Hort.).....	4	An. Industry 1 (A. H., D. H., and P. H.).....	4
Total.....	16½	Total.....	16½

* Students of agriculture meet the minor requirement in their required work in biology or chemistry.

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Physics 17a (Gen. Phys.).....	4	Physics 17b (Gen. Phys.).....	4
Bact. 7 (Gen. Bact.).....	4	Bot. 3 or Zool. 144.....	4
Chem. 50 (Org.).....	3	Econ. 1a (Intro. to).....	3
Military Science 2a.....	1	Military Science 2b.....	1
Electives.....	5	Electives.....	5
Total.....	17	Total.....	17

SUGGESTED COURSES FOR MAJOR GROUPINGS

(From which 30 units must be selected in addition to 16 units in major subject.)

Plant Industry Majors

Chem. 54; Ag. Chem. 101, 111, and 121; Bot. 8 and 128—2, 4, 123, 132 and 142—5, 145 or 155; Ag. Eng. 105; Ent. 101 and 102; Econ. 195a; Geol. 19.

Animal Industry Majors

Chem. 52, 54, 103 (omitting 50), 115; Zool. 8, 45, 147; Bact. 157; Bot. 8; Econ. 195a, 195b; Agr. Chem. 101, 111; Agr. Eng. 1, 105; Agron. 101; Dairy Husb. 103 or Poultry Husb. 11 or Animal Husb. 113 and 104.

Agricultural Chemistry and Soils Majors

Chem. 3, 54, and 115; Math. 22 and 24; Agr. Eng. 105 and 110; Bot. 123, 5 and 8; Hort. 2 and 3; Agron. 101 and 102; Geol. 19.

Applied Biology Major

Chem. 103 (omitting 50); Agr. Chem. 101; Zool. 44, 57, or 146; Hort. 2; Ent. 101; Bot. 4, 6, 8, 100, 105, 122, 123, 124, 132, 133, 142, 145, 234.

French and German

Students who plan to do graduate work will find that a reading knowledge of French and German will be desirable, or even necessary.

COURSES FOR TEACHERS OF VOCATIONAL AGRICULTURE AND HOME ECONOMICS

Students desiring to qualify as teachers of vocational agriculture or home economics must complete a 4-year technical course in the College of Agriculture, including the courses in education specified in the courses of study outlined for their respective fields.

The following courses lead to the degree of Bachelor of Science with a major in agriculture or home economics, a state secondary certificate and to certification for teaching vocational agriculture or home economics under the Smith-Hughes Act.

COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN VOCATIONAL AGRICULTURE**Freshman and Sophomore Years**

The same as the general course in agriculture except that Psychology 1 and Agricultural Engineering 1 take the place of the electives in the second semester of the Sophomore year.

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Animal Husb. 104 (Nutr.).....	3	Political Sci. 100 (Const.).....	3
Ag. Chem. 101 (Soil Physics).....	4	Bot. 8 (Genetics).....	3
Educ. 14 (Ed. Psych.).....	3	Educ. 140 (Vocational Ed.).....	2
Educ. 112 (H. S. Methods).....	3	Ag. Eng. 105 (Irrig. Pract.).....	3
Electives.....	3	*Ag. Chem. 111 (Soil Chem.).....	2
		Electives.....	3
Total.....	16	Total.....	16

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Agronomy 107 (Farm Man.).....	3	Bot. 5 (Pathology).....	4
Entomology 101 (General).....	4	Ag. Ed. 197a (Teach. Agr.).....	4
*Ag. Chem. 121 (Soil Bact.).....	2	Ag. Ed. 198 (Teach. Farm Shop).....	2
Electives.....	6	Ag. Ed. 130a (Supvd. Teach.).....	3
		Electives.....	3
Total.....	15	Total.....	16

**COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE
IN VOCATIONAL HOME ECONOMICS****Freshman and Sophomore Years**

(The same as the general courses in home economics.)

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Bact. 7 (Gen. Bact.).....	4	Zool. 144 (Mamm. Phys.).....	4
H. E. 105 (Home Arch.).....	3	H. E. 115 (Home Furn.).....	3
Ed. 14 (Ed. Psych.).....	3	Econ. 1a (Introd. to).....	3
H. E. 101 (Meal Plan).....	2	H. E. 106 (Household Econ.).....	3
H. E. 144 (Adv. Cloth.).....	2	Ed. 112 (H. S. Methods).....	3
Electives.....	3-4	Electives.....	2
Total.....	17-18	Total.....	18

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
H. E. 102 (Nutr.).....	4	Ed. 140 (Voc. Ed.).....	2
Ed. 197g (H. E. Methods).....	3	H. E. 136 (The Family).....	3
†H. E. Ed. 130b (Stud. Teach.).....	3-5	H. E. 126 (Child Dev.).....	3
H. E. 116 (Home Mgt.).....	3	†H. E. Ed. 130b (Stud. Teach.).....	3-5
Electives.....	3	Electives.....	3-5
Total.....	16-18	Total.....	16

DEPARTMENT OF HOME ECONOMICS

Three courses in home economics are offered with the following students in mind:

Students who wish a broad cultural education for home making, and those who wish a background in the necessary sciences and arts which will prepare them for specialization in some field of endeavor such as college teaching, commercial positions, social service, institution management, or extension work.

Students preparing to teach home economics in grades or secondary schools. (See above, Voc. Home Econ. Course.)

Students who wish to specialize in food and nutrition for the following purposes:

1. Graduate study leading to advanced degrees.

* Students in vocational agriculture register for lectures only which carry 2 units credit.

† Students register for H. E. 130b one semester only.

2. Research work in university or commercial field.
3. Teaching foods and nutrition in high school or college.
4. Position as nutrition specialist, dietitian, or public health worker.

The requirements for the degree of Bachelor of Science with a major in home economics total 130 units as follows:

General college work.....	57 units
Home economics.....	42 units
Electives.....	31 units
Total.....	130 units

A minor in home economics for students in other colleges may consist of 20 units chosen in consultation with the head of the department.

Suggested electives in other departments:

Botany 1 (General)	P. E. 84, (First Aid)
Zoology 4 (El. Zool.)	Speech 77, (Principles of Speech)
Zoology 137 (Public Hygiene)	Art 100a (History and Appreciation)
Zoology 67, (Personal Hygiene)	Music 1a, (Appreciation of Music)
Zoology 111, (Evolution)	Political Science 100, (Constitution)
Zoology 112, (Heredity)	Education 106, (The High School)

Suggested electives in Home Economics Department: H. E. 15, 104, 111, 112, 121, 122, 202, 212.

GENERAL COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN HOME ECONOMICS

Freshman Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Chem. 1a or 2a (Gen.).....	4	Chem. 1b or 2b (Gen.).....	4
Eng. 1a (Fresh. Comp.).....	3	Eng. 1b (Fresh. Comp.).....	3
Foreign Lan. or Hist.....	4-3	Foreign Lan. or Hist.....	4-3
H. E. 2 (Nutrition).....	2	H. E. 4 (Textiles).....	2
Social Fund. (Women).....	½	H. E. 5 (Costume Design).....	2
Phys. Ed. 1a.....	1	Social Fund. (Women).....	½
Art 1a (Art and Design).....	2	Phys. Ed. 1b.....	1
Total.....	16½-15½	Total.....	16½-15½

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Chem. 50 (Organic).....	3	Chem. 52 (Household).....	3
Eng. 27a (Eng. Lit.).....	3	Eng. 27b (Eng. Lit.).....	3
H. E. 1a (Food Selection).....	3	H. E. 1b (Foods).....	3
H. E. 44 (Clothing).....	3	H. E. 44b (Clothing).....	3
Sociol. 81 (Introduction).....	3	Psych. 1a (Elem.).....	3
Phys. Ed. 2a (Light gym).....	1	Phys. Ed. 2b (Light gym).....	1
Total.....	16	Total.....	16

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Bot. 7 (Gen. Bact.).....	4	Zool. 144 (Mamm. Phys.).....	4
H. E. 105 (Home Arch.).....	3	Econ. 1a (Intro. to).....	3
H. E. 101 (Meal Plan.).....	2	H. E. 115 (Home Furn.).....	3
H. E. 144 (Adv. Cloth.).....	2	H. E. 106 (Household Econ.).....	3
Electives.....	6-7	Electives.....	4-5
Total.....	17-18	Total.....	17-18

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
H. E. 102 (Nutr.).....	4	H. E. 136 (The Family).....	3
H. E. 116 (Home Mgt.).....	3	H. E. 126 (Child Dev.).....	3
Electives.....	10	Electives.....	10
Total.....	17	Total.....	16

COURSE IN HOME ECONOMICS WITH A MAJOR IN FOODS AND NUTRITION

Required Freshman and Sophomore work.....	62 units
Scientific work selected from Junior and Senior list with 16 units in major subject.....	46 units
Free electives.....	22 units
Total.....	130 units

Freshman Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Chem. 1a or 2a (Gen.).....	4	Chem. 1b or 2b (Gen.).....	4
Eng. 1a (Composition).....	3	Eng. 1b (Composition).....	3
Zool. 4 (El. Zoology).....	4	Zool. 8 (Anatomy).....	4
H. E. 2 (Nutrition).....	2	H. E. 1b (Foods).....	3
H. E. 1a (Foods).....	3	Phys. Ed.	1
Phys. Ed. 1a.....	1		
Total.....	17	Total.....	15

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Chem. 50 (Organic).....	3	Chem. 52 (Household).....	3
Chem. 3 or Phys. 17a or Psych. 1a.....	4-3	Chem. 54 (Quant.).....	3
German. French or Eng. 27a.....	4-3	H. E. 101 (Meal Planning).....	3
Phys. Ed.	1	German. French, or English 27b.....	4-3
Econ. 1a (Intro. to).....	3	Phys. Ed.	1
Electives.....	2	Zool. 144 (Mamm. Phys.).....	4
Total.....	17-15	Total.....	18-17

Suggested Courses for Major Group

(From which 30 units must be selected, in addition to 16 units in major subject.)

Chem. 3, 115; Psych. 1a, 105, 111, 115, 118, 120; Physical Ed. 193; Physics 17; Math. 90; Bot. 67; Zool. 111, 112, 146, 147; Bact. 7, 157.

Suggested Electives

Speech 77; Econ. 81; Music 1; Advanced German and French; H. E. 23, and 115; History 100.

COLLEGE OF EDUCATION

The chief purpose of the College of Education is to enable the University to meet the needs of the State in the preparation, training, and certification of teachers, supervisors, and administrative school officers.

The courses of study are based upon the assumption that every teacher or school officer needs and should have: (a) a broad and liberal education; (b) thorough and substantial scholarship in the subjects he intends to teach; (c) supplemental to this education, adequate professional training and study designed to give a knowledge of the pupils to be taught, the problems to be met in the art of teaching, and the new meanings of the subjects of instruction. For the prospective teacher, this policy places the emphasis upon the subjects he intends to teach. The student selects a **major subject** and one or more **minor subjects** which he plans to teach, and takes education as an auxiliary professional study. Those seeking training as supervisors and school executives, however, should select education as their **major subject**, either as part of a 4-year course leading to a degree or, preferably, in addition to such a course.

As organized at present, the College of Education, with the cooperation of other colleges in the University, offers courses along the following lines, each course preparing for a definite type of position.

I—Division of Secondary Education, preparing:

- (a) Teachers and heads of departments in academic subjects in high schools and junior high schools.
- (b) Principals for junior and senior high schools.
- (c) Athletic coaches and teachers of physical education in junior and senior high schools.

II—Division of Supervision and Administration, preparing:

- (a) Supervisors, superintendents, and principals for city school systems.
- (b) Supervisors, superintendents, and principals for county (rural) school systems.
- (c) Supervisors of physical education in public schools.

III—Division of Educational Research:

- (a) Directors of research for school systems.
- (b) Directors of educational and vocational guidance.

TEACHERS OF PHYSICAL EDUCATION

The State Board of Education has made the teaching of physical education in all public schools of the State compulsory. In order to meet the potential demand that may develop as a result of this ruling the College of Education offers its students the opportunity of selecting physical education for men or physical education for women as their major subject. Summaries of the requirements in these courses will be found below. Detailed descriptions of the courses will be found under the departments of Physical Education for Men and Physical Education for Women, respectively.

TEACHERS' CERTIFICATES

Graduation from the College of Education is accepted by the State Board of Education in Arizona as fulfilling all requirements for certification of teachers for any public-school position, elementary and secondary. The requirements of the College of Education also meet the standards of the North Central Association of Colleges and Secondary Schools in respect to professional study in education and the proper

selection of subject-matter courses for purposes of high-school teaching. In view of the prevailing tendency in the various states to increase the number of units in education required for certification, students are advised to secure credit in not less than 20 or 21 semester units in education, and in addition Psychology 1a (Elementary Psychology).

Elementary-school certificates are now granted only to those who have completed 3 full years of work beyond the high school. Graduates of a 2-year course in an approved normal school or teachers' college may qualify for an elementary certificate by completing an additional 30 semester hours of third-year college work in a standard college or university. Teachers now holding 2-year Arizona certificates must meet this requirement prior to January 1, 1940. The College of Education offers excellent opportunity to secure this third year of work under thoroughly trained instructors.

Detailed information relating to certificates in Arizona may be secured from the Dean of the College of Education.

REQUIREMENTS FOR THE DEGREES OF BACHELOR OF ARTS IN EDUCATION AND BACHELOR OF SCIENCE IN EDUCATION *

Candidates for graduation from the College of Education who have selected physical education or some field of science as their major subject will receive the degree of Bachelor of Science in Education. Those who have selected other subjects as their majors will receive the degree of Bachelor of Arts in Education. The requirements for graduation follow:

I. A major for students in the College of Education is the principal subject which the student desires to teach. It must be selected with the advice of the Dean of the College of Education. It consists of a minimum of 24 units in the subject selected. The specific requirements for the major are listed under the several departments.

A **supporting minor** consists of 20 units in a group of subjects selected to supplement the major. It must be selected with the advice of the head of the department in which the major is chosen.

A **teaching minor** consists of 15 to 20 units in a single subject which the student plans to teach. The minor subject is chosen in conference with the Dean of the College of Education. A supporting minor may or may not fulfill the requirements of a teaching minor.

II. Students in the College of Education must have a major and a teaching minor. They may be required to select a teaching minor in addition to the supporting minor.

III. Mature students who have had experience in teaching and who desire to prepare for supervisory or administrative positions, and students transferring from normal schools or teachers' colleges with a large number of units in education should select education as their **major subject** and select as **teaching minor subjects** some other subjects which have bearing upon their chosen fields of work. Education may be selected as a **minor subject** only with the permission of the Dean of the College of Education.

IV. The **major subject** should be selected not later than the beginning of the Sophomore year, and the work done in the **major subject** must be distributed through at least five semesters. The **teaching minor** must be selected not later than the beginning of the Junior year.

V. Subject to the restrictions above, a student may change his **major subject** at the beginning of any semester by filing with the Registrar a

* Deviations from any of the requirements that follow, may be made only with the advice and consent of the Dean of the College of Education.

request approved by the heads of the two departments concerned and the Dean of the College of Education.

VI. Students registered in the College of Education may select their majors or teaching minors in the following subjects:

Art	German	Physical Education for
*Biology	History	Women
Botany	Political Science	Physics
Chemistry	Mathematics	Psychology
Classical Literature	Music (minor)	Sociology
Economics	Physical Education for	Spanish
English	Men	Zoology
French		

PROFESSIONAL STUDIES

I. Each candidate for graduation must present a minimum of 17 units in education as indicated in the outlines below, and **in addition** Psychology 1a (Elementary Psychology).

II. Each candidate for graduation must have credit in the constitutions of the United States and of Arizona. This requirement may be satisfied by taking Political Science 100, either in class or by correspondence (or Political Science 51 and Political Science 62), or by passing the state examinations in these subjects.

SPECIFIC LIMITATIONS

Candidates for graduation from the College of Education are subject to the following restrictions:

I. Not more than 48 units may be taken for credit in any one department.

II. At least 40 of the units offered in satisfaction of the requirements for a degree must be in courses numbered 100 or over.

III. Except as indicated in the summaries below a maximum of 8 units in applied music and 16 units in military science will be accepted toward a degree.

COURSES IN THE COLLEGE OF EDUCATION

All students in the College of Education should plan their work carefully in accordance with the general sequence outlined below.

Those taking Education as a major will find the required courses listed under Education. Descriptions of all courses will be found under the respective departments.

Freshman Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
English 1a (Fresh. Comp.)	3	English 1b (Fresh. Comp.)	3
Education 2a (Intro. to Ed.)	1	Education 2b (Intro. to Ed.)	1
Foreign Language	4	Foreign Language	4
Science (See Summary I)	4	Science	4
Mil. Sci. 1a, P.E. 25 or 26 (Men)	1½	Mil. Sci. 1b, P.E. 27 or 29 (Men)	1½
Social Fund. (Women)	½	Social Fund. (Women)	½
P. E. 1a (Women)	1	P. E. 1b (Women)	1
†Elective	2-3	†Elective	2-3
Total	15½-16½	Total	15½-16½

* The major in Biology consists of 24 units selected from the biological sciences, in addition to Botany 1 and Zoology 4, and including Botany 2 or 4 or 5, Zoology 8 or 44 or 45, and Entomology and Economic Zoology 104. Students interested in this major should consult the Dean of the College of Education.

† Six units in social science are required for graduation. They may be taken at any time. See Summaries below.

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Literature (Eng. or Amer.)	3	Literature (Eng. or Amer.)	3
Psychology 1a (Elem. Psy.)	3	Education 14 (Ed. Psy.)	3
Foreign Language	4	Foreign Language	4
Military Sci. or Phys. Ed.	1	Military Sci. or Phys. Ed.	1
*Major and minor subjects	—	*Major and minor subjects	—
Elective	—	Elective	—
Total	15-17	Total	15-17

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Education 106 (The High School)	—	Education 112 (Gen. H. S. Meth.)	—
or	—	or	—
Education 112 (Gen. H. S. Meth.)	3	Education 106 (The High School)	3
*Major and minor subjects	—	*Major and minor subjects	—
Elective	—	Elective	—
Total	16-17	Total	16-17

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
†Educ. 197 (Teachers' Course)	3	†Educ. 130 (Prac. Teaching)	1-5
*Major and minor subjects	—	*Major and minor subjects	—
Elective	—	Elective	—
Total	16-17	Total	16-17

SUMMARIES OF COURSES

The following summaries represent the specific requirements in each of the courses indicated. (See footnote, page 75.)

Summary I

For teachers of academic subjects:

Subjects	Units
Education: 2a, 2b, 14, 106 (or 107 or 135), 112 (or 113 or 132), 130, 197	17-19
English: 1a, 1b, and 6 units of literature	12
Foreign language: French, German, Greek, Latin or Spanish—one language	16
Military science and physical education (men)	—
and physical education (women)	5
Psychology 1a	3
Science: Astronomy, biology (botany, entomology, zoology), chemistry, geology, mathematics, mineralogy, or physics—one subject	8
Political Science: 100 (See Professional Studies, page 76)	3
Social science: Archaeology, economics, sociology, history, or political science. In not more than two subjects.	6
Total required units	70-72
Total elective units	55-53
Total	125

Note: The major and minor subjects as described in Requirement 1, page 75 may be included entirely in the elective group above or may be included partly in the elective group and partly in the required group.

* See page 75, "Requirements." also Note under Summary I.

† Some of these courses may be taken in the second semester of the Junior year; others, the first semester of the Senior year. (See description of courses.)

‡ Practice teaching may be arranged for either semester of the Senior year, depending upon the student's program and the available opportunities for the work. Students who are unable to obtain practice teaching must make up the requisite number of units in education in some other courses approved by the Dean.

Summary II

For teachers and directors of Physical Education for men.

Subjects	Units
Zoology: 4, 8, 57	12
Education: 2a, 2b, 14, 106, 112, 197p, 130	15-19
English: 1a, 1b, and 6 units of literature	12
Foreign language: French, German, Greek, Latin, or Spanish—one language	16
Military Science: 1a, 1b, 2a, 2b	4
Physical Education: 25 (or 26), 27 (or 29)	1
Physical Education 150, 152, and additional to make	24
Political Science: 100 (See Professional Studies, page 76)	3
Psychology 1a	3
Social Sciences: Archaeology, economics, history, or political science. In not more than two subjects	6
Total required units	96-100
Electives	29-25
Total for Graduation	125

Summary III

For teachers and directors of Physical Education for Women.

Subjects	Units
Zoology: 4, 8, 57; Botany: 67, 137	16
Social Science: (See Summary I)	3
Education: 2a, 2b, 14, 106 (or 107 or 135), 112 (or 113 or 132), 130	14-16
English: 1a, 1b, 77, and 6 units of literature	15
Social Fundamentals	1
Home Economics: 2	2
Physical Education: 1a, 1b, 2a, 2b	4
Physical Education	24-45
Theory courses	12-17
Methods and materials courses	4-10
Activity courses above the 4 required units	8-18
Political Science: 100 (See Professional Studies, page 76)	3
Psychology: 1a, 115	6
Total required units	88-90
Total elective units	37-35
Total for Graduation	125

Physical Education for Women

All women majoring in physical education must build up their majors from the following sequence with the advice of their major professor. They must, however, meet all the requirements listed on page 75 and 76 and in Summary III, above.

Freshman Year

First Semester		Second Semester	
Subject	Units	Subject	Units
English 1a	3	English 1b	3
Education 2a	1	Education 2b	1
Zoology 4	4	Physical Education 1b	1
Home Economics 2	2	Social Fundamentals	1½
Social Fundamentals	½	Phys. Educ. activity course	1
Physical Education 1a	1	Elective	9
Phys. Educ. activity course	1		
Elective	3	Total	15½
Total	15½		

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Literature (Eng. or American).....	3	Literature (Eng. or American).....	3
Psychology 1a.....	3	Education 14.....	3
Physical Education 2a.....	1	Zoology 8.....	4
Phys. Educ. activity course.....	1	Physical Education 2b.....	1
Phys. Educ. 75a.....	2	Phys. Educ. activity course.....	1
Phys. Educ. 76.....	2	Phys. Educ. 75b.....	2
Phys. Educ. 82.....	2	Phys. Educ. 83.....	2
Elective	2		
Total.....	16	Total.....	16

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Education 106 (or 107 or 135).....	3	Education 112 (or 113 or 132).....	3
Physical Education 123a.....	1	Physical Education 154.....	2
Physical Education 80a.....	2	Physical Education 123b.....	1
Physical Education 152.....	2	Physical Education 80b.....	2
Physical Education 155a.....	2	Physical Education 155b.....	2
Zoology 57.....	4	Botany 67.....	2
Elective	3	English 77.....	3
		Elective	2
Total.....	17	Total.....	17

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Psychology 115.....	3	*Education 130.....	3-5
Physical Education 153.....	2	Physical Education 156.....	2
Phys. Educ. activity course.....	1	Physical Education 84.....	1
Botany 137.....	2	Phys. Educ. activity course.....	1
*Education 130.....	3-5	Political Science 100.....	3
Elective	4-6	Elective	5-7
Total.....	17	Total.....	17

TRADE AND INDUSTRIAL EDUCATION

In order to meet the specific needs and conditions of trade and industrial teachers, supervisors and directors, and mechanic arts teachers, the College of Education offers courses leading to the degree of Bachelor of Industrial Education. This degree is granted upon the satisfactory completion of the requirements set forth in Summary IV, page 80.

Credit towards the bachelor's degree is granted for successful teaching, executive, research, and practical experience up to a maximum of 52 units, under specified conditions.

The master's degree will be granted in accordance with the regular provisions applying to that degree. A summary of requirements appears on page 122.

Entrance Requirements

The course is open only to employed teachers, supervisors, and directors of trade and industrial education and mechanic arts.

Candidates must be high school graduates or, in lieu thereof, must meet the special entrance requirements as set up by the Special Committee on Industrial Education, which are designed to determine the ability of the candidate to carry the course of study satisfactorily.

Transfer of Credits

The University will accept credit for credit work done in any other

* This course may be taken either semester, depending on the student's program and available opportunities for work.

college or university of recognized standing, which has been accumulated in recent years.

Projected Registration, Correspondence and Extension Courses

In accordance with general provisions of the University catalogue, qualified students may register for courses to be done **in absentia** under projected registration, correspondence, or University Extension, when such courses are being offered and are available.

Summary IV

For Teachers, Supervisors and Directors of Trade and Industrial Education and Mechanic Arts

	Units
Humanities and Sciences (See Note 1).....	16
(Summary of fields and courses available may be had from Dean of the College.)	
Psychology: Elementary or Industrial.....	4
Education: 14 (Ed. Psychology); 106 (The High School); 140 (Vocational Education, Philosophy of); 130 (Practice Teaching).....	11-12
Industrial Education: Job analysis, special methods, organization of subject matter, shop organization and management.....	12
Electives in Industrial Education.....	12-18
Trade and industrial techniques; 5 years of practical shop work must have been acquired in industry (5 units per year is granted for this experience. Administrative, supervisory, or research experience secured in industry or the public schools will be accredited within the above limits of 25-52 units).....	25-52
Total units of required work.....	80-120
Electives (See Note 3).....	45- 5
Total for graduation.....	125

Notes—

(1) Required units in Humanities and Science can be satisfied by credits earned in residence, by correspondence, and by examination under the usual University regulations.

(2) A maximum of ten units will be given for successful teaching experience secured under administrative supervision since 1920.

(3) Electives are to be chosen by students with the approval of the advisory committee for industrial education.

Summary of Requirements for the Master's Degree

Required major in industrial education subjects, including thesis.....	20 units
Recommended minor subjects.....	10 units
Total.....	30 units

COLLEGE OF LAW

The University of Arizona College of Law is a member of the Association of American Law Schools and is rated by the American Bar Association as an accredited institution. Graduates of the University of Arizona with the law degree are therefore accredited in Texas, New Mexico, and other states requiring of legal educational institutions such membership and rating for accredited standing. In Texas graduates in law of the University of Arizona may on motion be admitted to the practice of law.

ADMISSION

Students applying for admission to the College of Law must be at least 20 years of age, and, if candidates for a law degree, must present to the registering officer of the College a certificate of the University Registrar certifying that the applicant has completed all pre-legal requisites pertaining to such degree. Courses of law taken by students before the pre-legal requirements for the desired law degree have been fully met will not be credited as part of the law courses applicable toward the degree.

Students commencing the study of law will be admitted to the College of Law only at the beginning of the fall semester. Students who have completed satisfactorily one full semester or more of law study in the University of Arizona or in some other approved law school may enter at the beginning of either semester.

CANDIDATES FOR DEGREES

Students desiring to enter the College of Law as candidates for a law degree must have complied with the general requirements for admission to the College of Letters, Arts, and Sciences of the University of Arizona, and in addition thereto,

Candidates for the Degree of Bachelor of Laws

by work in residence must have secured in some College of the University of Arizona other than the College of Law, or in some other college or university approved by standard regional accrediting agencies, sixty (60) semester hours of credit for college work, of which not less than fifty (50) credit hours must have been carried with a grade of "3" or better, which said sixty (60) hours shall be exclusive of credit earned in non-theory courses in military science, hygiene, domestic arts, physical education, vocal or instrumental music, shop work, or other courses without intellectual content of substantial value, and shall be applicable toward the academic degree of Bachelor of Arts (B.A.) or Bachelor of Science (B.S.).

Candidates for the Degree of Juris Doctor

who enter the University of Arizona College of Law for the first time subsequent to the academic year 1930-1931, must have secured from the University of Arizona, or from some other accredited college or university, prior to the commencement of their study of law, the degree of Bachelor of Arts (B.A.) or Bachelor of Science (B.S.).

Candidates for said degree, who entered the University of Arizona prior to the academic year 1931-1932, must either have secured the academic degree, Bachelor of Arts or Bachelor of Science, prior to registering in the College of Law, or must meet the conditions set forth in prior

catalogues of this University under the "Combined Course of Study for Students Desiring the B.A. and the J.D. Degrees."

It is suggested that students pursuing pre-legal courses of study, whether candidates for the degree of Bachelor of Laws, or for the degree of Juris Doctor, in selecting their elective courses of study choose courses open to them in economics, sociology, political science, English, history, philosophy, and psychology.

SPECIAL STUDENTS

A limited number of students with less than the academic credits required of candidates for a law degree may be admitted as special students. An applicant for admission as a special student must be at least twenty-three (23) years of age, and his experience and educational training must have been such as, in the judgment of the Law Faculty, have specially equipped him for the successful study of law. The number of special students admitted to the College of Law each year is limited to 10 percent of the average number of students admitted by the College of Law as beginning regular students during the 2 preceding academic years. Application for admission as such special student must be made to the Dean of the College of Law well in advance of the beginning of the regular academic year. Such applications will be considered and acted upon at the first meeting of the Law Faculty after September 1 of each year. Special students are not candidates for a law degree.

ADMISSION TO ADVANCED STANDING

A student transferring from another accredited school or college of law will be given credit for the courses of law study therein pursued only upon presentation of an official certificate showing the satisfactory completion of

1. The pre-legal course of study required for admission to its College of Law by the University of Arizona of a student for the law degree sought by such transferring student;

2. The courses of law study for which credit is requested.

COURSES OF STUDY LEADING TO THE DEGREES OF BACHELOR OF LAWS AND JURIS DOCTOR

First Year—Required

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Law 2a Contracts.....	3	Law 2b Contracts.....	3
Law 3 Development of Law.....	1	Law 5 Agency.....	3
Law 6 Personal Property.....	2	Law 7 Rights in Land.....	3
Law 8 Criminal Law.....	3	Law 38 Code Pleading.....	3
Law 37 Common Law Pleading.....	3	Law 41b Torts.....	3
Law 41a Torts.....	3		
Total.....	15	Total.....	15

Second Year—Required

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Law 110a Equity.....	3	Law 110b Equity.....	3
Law 118a Evidence.....	3	Law 118b Evidence.....	3
Law 139 Titles.....	3	Law 140 Wills, Administration.....	3
Total.....	9	Total.....	9

Elective Courses for Second- and Third-Year Students

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Law 101 Legal Bibliography.....	1	Law 136 Trusts.....	3
Law 103 Practice.....	2	Law 107b Domestic Relations*.....	1
Law 107a Domestic Relations*.....	1	Law 109b Legal Ethics†.....	1
Law 109a Legal Ethics†.....	1	Law 121 Sales†.....	3
Law 124 Public Service Companies†.....	3	Law 116 Conflict of Laws*.....	2
Law 129 Water Law*.....	2	Law 125 Bills and Notes†.....	3
Law 127 Credit Transactions†.....	3	Law 130 Mining Law*.....	2
Law 126 Partnership*.....	2		
Total.....	15	Total.....	15

Third Year—Required

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Law 143a Constitutional Law.....	3	Law 143b Constitutional Law.....	3
Elective			
Law 145a Practice Court†.....	3	Law 145b Practice Court†.....	3
Law 149 Future Interests.....	3	Law 147 Private Corporations.....	3
Total.....	9	Total.....	9

Maximum Units—Students in the College of Law may not register for more than fifteen (15) units of work.

Students finding it necessary to engage in gainful occupations for self-support while pursuing their law course must decrease proportionately their load of law study.

Requirements for the Law Degree

To secure a degree in law from the University of Arizona, a candidate for such degree must:

1. Have met fully all pre-legal requirements established by the University of Arizona for the admission to its College of Law of students as candidates for a law degree: (See page 81.)
2. Have spent at least three full academic years in resident study of law in accredited institutions. When part of such study has been done in other and accredited law schools, the work of the third or Senior year, comprising not less than twenty-four (24) semester units of law credits, (see "Residence," page 65) must be done in residence in this University;
3. Have secured by and during such three (3) or more years of resident study not less than seventy-eight (78) semester units of credit of satisfactory grade in courses of law study (see "Quality of Work," page 64), in which must be included the courses of law study above designated as "Required."

The Degree of Bachelor of Laws

will be conferred by the University of Arizona upon students who, having registered as candidates for such degree, have successfully met the above requirements, and upon students who, having registered for the degree of Juris Doctor (see below), have not attained in their law courses the standard of excellence required for the Juris Doctor degree, but have met the requirements for the degree of Bachelor of Laws.

The Degree of Juris Doctor

will be conferred by the University of Arizona upon those students regularly matriculated in its College of Law as candidates for such degree,

* Offered in 1932-1933 and alternate years.

† Offered in 1933-1934 and alternate years.

‡ Prerequisites: Law 37, 38, 118a, 118b.

Who, having been granted the degree of Bachelor of Arts or Bachelor of Science by this University or by an accredited institution, have thereafter satisfactorily completed approved courses of law study and obtained therefor in the College of Law credits totaling not less than seventy-eight (78) semester units; or,

Who, having matriculated in this University prior to the academic year 1931-1932, have satisfactorily pursued the 6-year combined course of study (see prior catalogues) offered by this University in its Colleges of Letters, Arts, and Sciences and of Law leading to this degree:

Provided, however, that in the case of all candidates for the degree of Juris Doctor,

(a) A grade of 2 or better in not less than 75 percent of the last twenty-four (24) units of law study must be obtained, which twenty-four (24) units must be taken in the University of Arizona;

(b) Such candidates must throughout their entire law course demonstrate an excellency of scholarship meriting in the judgment of the Law Faculty the award of such degree.

COMBINED COURSE OF STUDY FOR STUDENTS DESIRING THE ACADEMIC DEGREE AND THE BACHELOR OF LAWS DEGREE

For students matriculating in the University of Arizona subsequent to the academic year 1930-1931, the University offers in its colleges of Letters, Arts, and Sciences and of Law a combined course whereby its students may secure the academic bachelor's degree and the degree of Bachelor of Laws in the period of 6 years. Students desiring to take advantage of this combined course register in the College of Letters, Arts, and Sciences for 4 years and in the College of Law for 2 years. The work of the Senior year under the registration in the College of Letters, Arts, and Sciences is done, however, under the supervision of the Law Faculty.

Students registering for this combined course will be awarded the academic bachelor's degree under the following conditions:

They must be regularly matriculated in the University, and must successfully complete all the work required in the College of Letters, Arts, and Sciences for graduation with the academic bachelor's degree, except a possible maximum of thirty (30) semester units of electives. This academic course must include:

(a) A major in the College of Letters, Arts, and Sciences selected by the student and approved by the major professor and Dean of that College.

(b) All other subject and group requirements established in the College of Letters, Arts, and Sciences; (see "Group Units Required," page 85.

(c) Not to exceed thirty (30) semester units of law in courses to be determined by the Law Faculty.

(d) Academic electives to meet the one hundred twenty-five (125) units required for graduation from the College of Letters, Arts, and Sciences.

(e) Students transferring from other institutions may not register for the work in law under this combined course without first meeting the residence requirements of 30 units of pre-legal credits in the College of Letters, Arts, and Sciences.

Upon receipt of the academic bachelor's degree in this combined course, the student will be admitted into the College of Law as a candidate for the degree of Bachelor of Laws under the conditions above set forth.

COLLEGE OF LETTERS, ARTS, AND SCIENCES

REQUIREMENTS FOR THE DEGREES OF BACHELOR OF ARTS AND BACHELOR OF SCIENCE

The 4-year curriculum of the liberal college is designed for students who seek culture and scholarship as a part of intelligent living and as a foundation for later, more intensive specialization. The first 2 years are designated the **lower division** and the last 2 years the **upper division** of the College. In the **lower division** the subject matter and the methods of instruction are planned so as to round out the students' understanding of a wide range of human interests and to insure reasonable facility in the use of basic tools of thought and communication. The aim in the **upper division** is increased mastery in a limited field, the field of the students' technical or professional interests. To secure this concentration the major and minor requirements for the degrees have been formulated.

A student who has 56 units of credit is a Junior or upper-division student.

No regular student shall be permitted to register for an upper-division course until he has attained Junior standing.

No credit in lower-division subjects shall be allowed to count toward an advanced degree.

LOWER-DIVISION SCHEDULE

Freshman Year

English 1a, 1b (Freshman Composition).....	3	units each semester
*Foreign Language.....	4	units each semester
†From Group IV (History or Economics).....	3	units each semester
From Group VI (Science or Mathematics).....	4	units each semester
Physical education, and military science or social fundamentals.....	1½	units each semester
Total.....	15½	units each semester

Sophomore Year

‡English (Literature).....	3	units each semester
*Foreign Language.....	4	units each semester
Group IV if not taken in Freshman year plus major or minor or free electives.....	7-9	units each semester
Physical education or military science.....	1	unit each semester
Total.....	15-17	units each semester

GROUP UNITS REQUIRED

Candidates for the degree of Bachelor of Arts or Bachelor of Science must meet group requirements as listed on the following page.

* A reading knowledge of French and German is usually required for advanced degrees.

† Freshmen planning to major in science should postpone Group IV and take two courses in Group VI. Others may defer the Group IV requirement until the Sophomore year and in its place elect from any courses open to Freshmen in any department of the University.

‡ Pre-medical students may substitute a pre-medical required subject for Sophomore English.

For the Degree of Bachelor of Arts

- Group I*—(English) 12 units, including English 1a, 1b, and 6 units of literature.
Group II—(Latin, Greek)
Group III—(Spanish, French, German) } 16 units in one subject.
Group IV—(Archæology, economics, history, philosophy, political science, psychology, sociology) 6 units, 1 subject.
Group V—For men, military science, 4 units; physical education, 1 unit. For women, physical education, 4 units; social fundamentals, 1 unit.
Group VI—(Astronomy, biology, botany, chemistry, geology, mathematics, physics, zoology) 8 units, 1 subject.

Total group units required	49
Total elective units	76
Total	125

The major and minor may lie wholly within the 76 electives, or be included, in part, in the 49 required units.

For the Degree of Bachelor of Science

- Group I*—(English) 12 units, including English 1a, 1b, and 6 units of literature.
Group III—(French, German, Spanish) 16 units, 1 subject.
Group IV—(Archæology, economics, history, philosophy, political science, psychology, sociology) 6 units, 1 subject.
Group V—For men, military science, 4 units; physical education, 1 unit. For women, physical education, 4 units; social fundamentals, 1 unit.
Group VI—(Astronomy, biology, botany, chemistry, geology, mathematics, physics, zoology) 24 units, including 8 in mathematics and 16 units in not more than 2 other subjects.

Total group units required	65
Total elective units	60
Total	125

The major or minor may lie wholly within the 60 elective units, or be included, in part, in the 65 required units.

Exception to Language Requirement

Students who have had 4 years of one high-school language, or the equivalent as shown by examination, and who pass successfully a 1-year course of upper-division literature in the same language, are exempt from further language requirements. This applies to both the Bachelor of Arts and the Bachelor of Science degrees.

Limitation of Units for B.A. or B.S. Degree

Candidates for the degree of Bachelor of Arts or Bachelor of Science may not present more than the number of units specified in the several classes of subjects enumerated below.

In any department included in the list of possible majors in this College: 48 units.

In lower-division courses: 85 units.

In professional or vocational departments a total of 12 units. The departments and divisions of departments so designated are as follows: Agriculture and Home Economics Education; Agricultural Chemistry; Agricultural Engineering; Agronomy; Animal Husbandry; Civil Engineering; Dairy Husbandry; Education; Business Administration; Electrical Engineering; Entomology; Horticulture; Mechanic Arts; Mechanical Engineering; Mining Engineering and Metallurgy; in Music, Band and Orchestral Instruments, Piano, School Music, Violin, Voice; Poultry Husbandry. Courses starred in any of these departments are

not subject to this limitation; they are considered non-professional.

In military: 16 units.

In home economics: 20 units.

In law: 30 units in the Senior year for candidates for degrees of B.A. and LL.B.

In physical education: 8 units above P. E. 2b for women, above P. E. 27 for men.

These allowances are not to be taken as additive, but proportional portions may be offered, as all of one, two halves, three thirds, etc., of the numbers specified for the departments listed. Example: Law 10 units, military 5 units, professional 4 units; or professional 6 units, military 8 units.

Majors and Minors

A major is defined as a minimum of 24 units in a student's field of intensive study.

A supporting minor is defined as 20 units in a group of subjects selected to supplement the major.

For a definition of the teaching minor see College of Education, (page 75.)

Not later than the beginning of the Junior year each student shall file with the Registrar his choice of a subject for a major, and of a subject or subjects for a supporting minor. The major shall consist of not less than 24 units in one of the departments listed below. Not more than 48 units may be taken in any one department. At least 16 units shall be in upper-division work. Certain departments exclude from the major the basic first-year course. These departments indicate this fact in their statement of requirements for the major. The supporting minor shall consist of not less than 20 units, chosen from related departments, at least 10 of which shall be in one department. The major and the minor must be selected in conference with the head of the department in which the major is chosen.

The work on the major subject must be distributed through at least four semesters. A student may not change his major except by filing with the Registrar at the beginning of a semester a petition approved by the two major professors concerned and the Dean of the College. (For information regarding the teaching minor see page 75.)

These requirements for major and minor do not apply to candidates for the degree of Bachelor of Science in Business Administration.

All schedules of courses must be approved by the Dean of the College, after having been approved by the major professor.

The following is a list of majors and recommended minors in this college:

MAJORS AND MINORS

Archaeology.....	Geology, history, social science, language, music, art.
Art.....	English, history, psychology, archaeology, French, Spanish.
Astronomy.....	Physics, mathematics.
Botany.....	Chemistry, geology, mathematics, physics, psychology, zoology.
Chemistry.....	Mathematics, physics, biology, geology, metallurgy, agricultural chemistry, food courses in home economics.
Classical Literature...	English, French, German, Spanish, philosophy, history.

Economics.....	Archaeology, biology, English, history, philosophy, political science, psychology, sociology, mathematics.
English.....	History, Latin, French, German, philosophy, psychology.
French.....	Classical literature, English, German, history, philosophy, Spanish.
German.....	Classical literature, English, French, history, philosophy, Spanish.
Geology.....	Chemistry, physics, metallurgy, mineralogy.
History.....	Economics, political science, foreign languages, English, philosophy.
Political Science.....	Economics, history, modern or ancient languages.
Mathematics.....	Astronomy, physics, chemistry, geology, philosophy, biology, economics.
Music.....	Philosophy, history, English, modern languages, psychology.
Philosophy.....	History, literature, mathematics, psychology, sociology, economics, ancient or modern language, English, art.
Psychology.....	Biology, mathematics, philosophy, physics.
Physics.....	Chemistry, mathematics, astronomy, philosophy, geology, biology, engineering.
Spanish.....	Classical literature, English, French, German, history, philosophy.
Sociology.....	Archaeology, biology, economics, philosophy, political science, psychology.
Zoology.....	Botany, chemistry, geology, mathematics, physics, psychology.

Specialized Courses of Study

Specialized courses of study are courses specifically outlined in such a manner as to include certain subjects directly related to the major. Such courses of study are endorsed on the principle that students should be encouraged to arrange their work in accordance with a definite purpose. In these courses of study, not more than 40 semester hours in any department are counted toward the fulfillment of the requirements for the degree, nor are more than 60 semester hours prescribed in any group of departments, exclusive of the credit in the required work for the standard Letters, Arts, and Sciences course.

At present the following special courses of study are outlined: course of study in business administration as outlined on page 89; combined courses of study for those desiring Bachelor of Arts and Bachelor of Laws degrees as outlined on page 84; courses of study in science for pre-medical and pre-dental students, as follows:

COURSES OF STUDY FOR PRE-MEDICAL AND PRE-DENTAL STUDENTS

The courses outlined in the Department of Zoology and other departments of the University offer opportunities to students to complete the pre-medical and pre-dental requirements of any medical or dental school.

The minimum requirement for entrance to medical schools is 60 semester hours of college work in institutions approved by the Council on Medical Education and Hospitals. This requirement is in addition

to the completion of a 4-year course of at least 15 units in a standard accredited high school. However, a majority of the leading medical colleges require 1 or 2 years more of pre-medical collegiate preparation than the minimum requirement of the Association of American Medical Colleges.

The following schedule of subjects is based on the average pre-medical requirements existing in medical schools:

SPECIALIZED COURSES OF STUDY

Courses of study for pre-medical and pre-dental students.

Outline of Subjects Required

Biological science.....	16 units
Chemistry.....	12 units
English.....	6 units
Physics.....	8 units
French or German.....	12-16 units

Subjects Strongly Urged

Advanced courses in biology.....	4-6 units
Additional courses in chemistry.....	3-6 units
Psychology.....	3-6 units

Other Suggested Electives

English (additional), economics, history, sociology, political science, logic, mathematics, Latin, drawing.

Students registering for pre-medical or pre-dental work in the University of Arizona should consult the Adviser of Pre-medical Students, Department of Zoology, and plan their schedules of work in accordance with the specific requirements of the particular medical school they wish to attend.

A scholastic aptitude test for medical students is given once each year by the Department of Zoology for the Association of American Medical Colleges. Each pre-medical student should take this test during his Senior year or last year of residence. Many medical schools require this test as one of the prerequisites to admission.

COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

Students who desire to fit themselves by a combination of cultural and professional studies for positions as executives, accountants, teachers of commercial subjects in high schools, for consular and foreign service and for retail merchandising, should register for the prescribed 4-year course leading to the degree B.S. in Business Administration outlined below.

Freshman Year

First Semester		Second Semester	
Subject	Units	Subject	Units
Bus. Adm. 6 (Intro. to Bus.) or		Bus. Adm. 11 (Econ. Geog.) or	
Bus. Adm. 11 (Econ. Geog.).....	3	Bus. Adm. 6 (Intro. to Bus.).....	3
English 1a (Fresh. Comp.).....	3	English 1b (Fresh. Comp.).....	3
Foreign Language.....	4	Foreign Language.....	4
Military 1a (Science and Tactics).....	1	Military 1b (Science and Tactics).....	1
Math. 70a.....	4	Math. 70b.....	4
Phys. Ed. 25.....	½	Phys. Ed. 25.....	½
Total.....	15½	Total.....	15½

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Econ. 2a (Principles of Econ.)	3	Econ. 2b (Principles of Econ.)	3
Bus. Adm. 55 (Stat. Meth.)	4	Bus. Adm. 55 (Stat. Meth.)	4
or		or	
Sociology 81	3	Sociology 81	3
Bus. Adm. 31a (Prin. of Acct.)	3	Bus. Adm. 31b (Prin. of Acct.)	3
English Literature 27a or 29a	3	English Literature 27b or 29b	3
*Foreign Language	4	*Foreign Language	4
Military 2a (Science and Tactics)	1	Military 2b (Science and Tactics)	1
Elective:		Elective:	
Psychol. 1a (Elem. Psych.)	3	Psych. 120 (Applied Psych.)	3
Total	15 to 18	Total	15 to 18

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Bus. Adm. 171a (Bus. Org. and Mgt.)	3	Econ. 148 (Money and Banking)	3
Bus. Adm. 161a (Prin. of Mark)	3	Bus. Adm. 171b (Bus. Org. and Mgt.)	3
Bus. Adm. 120a (Business Law)	3	Bus. Adm. 120b (Business Law)	3
Elective	8	Elective	8
Total	17	Total	17

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Econ. 203 (Adv. Econ. Theory)	3	†Bus. Adm. 211b (Seminar)	2
or		or	
†Bus. Adm. 211a (Seminar)	2	Econ. 203 (Adv. Econ. Theory)	3
Elective	14 to 15	Elective	14 to 15
Total	17	Total	17

The above courses are distributed as follows:

Required general college work	41 units
Required general work in economics	16 units
Required general work in Business Administration	33 units
Major requirement Business Administration	12 units
Free electives (at least 3 non-professional)	23 units

Total required for graduation 125 units

MAJOR REQUIREMENTS FOR B.S. IN BUSINESS ADMINISTRATION

Every student in business administration must select a major not later than the beginning of his Junior year. To fulfill the major requirement a minimum of 12 units in business administration in addition to the courses specified in the outline above must be selected from one of the major groups below.

Accounting—Business Administration 131a, 131b, 133, 134, 136a, and 136b.

Agricultural Marketing—Business Administration 138, 161b, 164, 195a and 195b.

Finance—Business Administration 130, 131a, 131b, 138, 141, and 142.

General Business—Business Administration 130, 133, 138, 141, 161b, and 174.

Merchandising—Business Administration 138, 141, 161b, 163, and 164.

Public Control—Business Administration 121a, 121b, 138, 141, and 174.

* In the course leading to the degree of Bachelor of Science in Business Administration students presenting 2 or more high-school entrance credits in one foreign language are required to complete 8 additional units in the same language. Students taking only 8 units of a foreign language in the University must select in lieu thereof 8 units in other non-professional courses. Students electing a foreign language not a continuation of their high-school work must complete 16 units.

† Only one semester required.

Insurance—Business Administration 151a, 151b, and 6 units chosen from the following: 141, 142, and Economics 145. Students preparing for the Chartered Life Underwriters examination should confer with their major professor at the beginning of the Junior year.

Teaching Commercial Subjects—Students planning to teach commercial subjects in high schools must elect at least 13 units in education, including Education 14, 106, 112, 130, and 197. Psychology 1a, which is a prerequisite to these courses should be taken during the Sophomore year. The selection of the 12 units for the major in business administration may be made with the advice of the department for preparation to teach particular commercial subjects in high schools.

HONORS GROUP

As an experiment the following plan of encouraging superior students who are capable of doing independent work is being tried. Should the plan prove successful, these privileges will be extended to a larger group.

Each year an honors group which shall comprise at any one time not more than three Junior and five Senior students may be appointed.

It is desired that application be made in person some time before registration. To be eligible for consideration students must have a scholastic average of 2 and have completed all specific course requirements for graduation. Applications must contain an exact statement of the work proposed and must be accompanied by written approval of major professor, dean, and parents. From the list of applicants, appointments will be made on a basis of scholarship, qualities of initiative, intellectual honesty, and character.

One or more members of the staff will act as advisers for each student. Conferences must be held at such time, and of such length and nature, as may be needed to guide the student in his chosen field of work.

Students shall register at the usual registration time, but will be excused from the usual routine of class attendance and semester examinations. In their place each student shall submit a thesis and take a comprehensive examination covering his field of study, this examination to be either oral or written, or both, as the committee may elect.

COLLEGE OF MINES AND ENGINEERING

REQUIREMENTS FOR THE DEGREES OF BACHELOR OF SCIENCE IN CIVIL ENGINEERING, ELECTRICAL ENGINEERING, MECHANICAL ENGINEERING, AND MINING ENGINEERING

The engineering curricula are all rather rigidly prescribed and deviations therefrom may be made only with the permission of the Faculty. The Freshman year is the same in all these curricula, and an attempt is then made to give the students such information as will enable them, at the beginning of the Sophomore year, to select wisely the branch of engineering that will probably prove most congenial and which they are best qualified to follow. The choice between mechanical and electrical engineering does not have to be made until the beginning of the Junior year.

The College offers 4-year courses leading to the degrees of Bachelor of Science in civil, electrical, mechanical, and mining engineering. The requirements for graduation in each of the engineering curricula are outlined in the pages that follow.

Freshman Year (Common to all Engineering courses.)

First Semester				Second Semester			
	Lec.	Lab.	U.		Lec.	Lab.	U.
Chem. 1a or 2a (Gen.)	3	3	4	Chem. 1b or 2b (Gen.)	3	3	4
Econ. 1a (Prin. of Econ.)	3	0	3	Econ. 1b (Prin. of Econ.)	3	0	3
English 1a (Fresh. Comp.)	3	0	3	English 1b (Fresh. Comp.)	3	0	3
Math. 20 (Alg.)	3	0	3	Math. 25 (Anal. Geom.)	4	0	4
Math. 24 (Trig.)	2	0	2	Math. 81 (Calculations)	1	0	1
Me. A. 1 or 31 (Eng. Draw.)	0	9	3	Me. A. 2 (Desc. Geom.)	1	6	3
Mil. 1a. (Sci. and Tac.)	0	3	1	Mil. 1b (Sci. and Tac.)	0	3	1
P. E. 25 (Gen. Cym.)	0	2	½	P. E. 27 (Indiv. Ath.)	0	2	½
Totals	14	17	19½	Totals	15	14	19½

COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN CIVIL ENGINEERING

This course is designed to give the student a broad training in the fundamentals of civil engineering. By building on this foundation, he should be able to succeed in any of the specialized branches of the profession, such as structural, highway, irrigation, railroad, or sanitary engineering. The curriculum may be analyzed as follows:

Subjects	Units
Mathematics, physics, chemistry, and geology or astronomy	44
Social studies	12
Electrical and mechanical engineering and mechanic arts	20
Civil engineering	52
Elective	4
Military	4
Physical education	1
Total	145

Sophomore Year

First Semester				Second Semester			
	Lec.	Lab.	U.		Lec.	Lab.	U.
C. E. 1 (Elem. Surv.)	2	6	4	C. E. 2 (Top. and M'e S'r.)	2	3	3
C. E. 25 (Mat'l's. Const.)	2	0	2	Math. 100b (Int. Calc.)	4	0	4
Math. 100a (Dif. Calc.)	4	0	4	Math. 112a (Anal. Mech.)	3	0	3
Me. E. 21 (Mechanisms)	1	6	3	Me. A. 4 (Forge)	0	6	2
Mil. 2a (Sci. and Tac.)	0	3	1	Mil. 2b (Sci. and Tac.)	0	3	1
Physics 1a (Engineering)	3	5	5	Physics 1b (Engineering)	3	5	5
Totals	12	20	19	Totals	12	17	18

Junior Year

First Semester				Second Semester			
	Lec.	Lab.	U.		Lec.	Lab.	U.
C. E. 103 (Adv. Surv.)	1	6	3	C. E. 110 (R. R. Surv.)	1	6	3
C. E. 114L (Test. Lab.)	0	2	1	C. E. 111L (Hyd. Lab.)	0	2	1
C. E. 114R (Mech. Mat'l's)	3	0	3	C. E. 111R (Hydraulics)	3	0	3
C. E. 125 (Graph. Stat.)	0	6	2	C. E. 122 (Highways)	2	0	2
E. E. 126aR (Dir. Cur.)	2	0	2	C. E. 126 (Theory Struc.)	1	6	3
E. E. 126aL (Dir. Cur.)	0	3	1	E. E. 126bR (Alt. Cur.)	2	0	2
Geol. 101R (Phys. Geol.)	3	0	2	E. E. 126bL (Alt. Cur.)	0	3	1
or				M. E. 126 (Stm., Gas Pow.)	3	0	3
Astron. 101a (Eng. Ast.)	(1)	(3)	(2)				
Math. 112b (Anal. Mech.)	3	0	3	Totals	12	17	18
Elective			1				
Totals	12*	17*	18				

Senior Year

First Semester				Second Semester			
	Lec.	Lab.	U.		Lec.	Lab.	U.
C. E. 106R (Concrete)	1	6	3	C. E. 108 (Bridges)	1	6	3
C. E. 106L (Cem. and Conc. Lab.)	0	3	1	C. E. 113 (Irrig. Des.)	2	6	4
C. E. 107 (Steel Mills)	1	6	3	C. E. 124 (Pavements)	2	0	2
C. E. 115 (Bus. Law for Egrs.)	2	0	2	C. E. 130 (Foundations)	1	0	1
C. E. 127 (Water Supply and Sewerage)	3	0	3	Elective			6
Elective			5	Totals	6*	12*	16
Totals	7*	15*	17				

COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE
IN ELECTRICAL ENGINEERING

This course is designed to train the student thoroughly in the fundamentals of modern electrical engineering. The curriculum may be analyzed as follows:

Subject	Units
Mathematics, physics, and chemistry	48
Social studies	12
Civil and mechanical engineering and mechanic arts	33
Electrical engineering	31
Elective	16
Military	4
Physical education	1
Total	145

* Plus electives.

For descriptions of courses offered in the department of civil engineering see page 144.

Freshman Year
(Common to all Engineering courses)
Sophomore Year

<i>First Semester</i>				<i>Second Semester</i>			
	Lec.	Lab.	U.		Lec.	Lab.	U.
C. E. 1 (Elem. Surv.).....	2	3	3	Math. 100b (Int. Calc.).....	4	0	4
Math. 100a (Dif. Calc.).....	4	0	4	Math. 112a (Anal. Mech.).....	3	0	3
Me. A. 3 (Pat. Mak.).....	0	6	2	Me. A. 4 (Forge).....	0	6	2
Me. E. 21 (Mechanisms).....	1	6	3	Me. E. 22 (Mach. Draw.).....	1	6	3
Mil. 2a (Sci. and Tac.).....	0	3	1	Mil. 2b (Sci. and Tac.).....	0	3	1
Physics 1a (Engineering).....	3	5	5	Physics 1b (Engineering).....	3	5	5
Totals.....	10	23	18	Totals.....	11	20	18

Junior Year

<i>First Semester</i>				<i>Second Semester</i>			
	Lec.	Lab.	U.		Lec.	Lab.	U.
C. E. 114R (Mech. Mat'ls).....	3	0	3	C. E. 111R (Hydraulics).....	3	0	3
E. E. 100a (Theory Circ.).....	4	0	4	E. E. 100b (Theory Circ.).....	4	0	4
E. E. 101a (Elec. Lab.).....	0	3	1	E. E. 101b (Elec. Lab.).....	0	3	1
Math. 112b (Anal. Mech.).....	3	0	3	E. E. 125b (Seminar).....	1	0	1
Me. E. 123 (Heat Eng.).....	3	0	3	Me. E. 132 (Power Plants).....	2	0	2
Phys. 104 (Elec. Meas.).....	1	3	2	Me. E. 139 (El. Exp. Eng'g.).....	0	2	1
Elective.....	—	—	2	Phys. 103 (Electron Tubes).....	1	3	2
Totals.....	14*	6*	18	Elective.....	—	—	4
				Totals.....	11*	8*	18

Senior Year

<i>First Semester</i>				<i>Second Semester</i>			
	Lec.	Lab.	U.		Lec.	Lab.	U.
E. E. 102a (Th'y of Mach.).....	3	0	3	E. E. 112b (Elec. Comm.).....	3	0	3
E. E. 113a (A. C. Theory).....	3	0	3	or E. E. 113b (Th'y Trans.)...(3)	(0)	(0)	(3)
Phys. 110 (Fund. Radio).....	2	0	2	E. E. 106b (Elec. Lab.).....	0	6	2
E. E. 106a (Elec. Lab.).....	0	6	2	E. E. 107b (Design).....	0	6	2
E. E. 107a (Design).....	0	6	2	E. E. 104b (Elec. Pow. Equip.).....	2	0	2
Me. E. 127a Mech. Lab.).....	0	3	1	Me. E. 127b (Mech. Lab.).....	0	3	1
E. E. 125a (Seminar).....	1	0	1	Elective.....	—	—	7
Elective.....	—	—	3	Totals.....	5*	15*	17
Totals.....	9*	15*	17				

**COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE
IN MECHANICAL ENGINEERING**

This course deals with engines and other machinery, and with mechanical appliances. A student who has satisfactorily completed it should be able to engage in design work, installation, or operation and maintenance. The curriculum may be analyzed as follows:

Subject	Units
Mathematics, physics, chemistry, and metallurgy.....	45
Social studies.....	12
Civil and electrical engineering.....	20
Mechanical engineering and mechanic arts.....	49
Elective.....	14
Military.....	4
Physical education.....	1
Total.....	145

* Plus electives.

For descriptions of courses offered in the department of electrical engineering see page 163.

Freshman Year
(Common to all Engineering courses)

Sophomore Year

<i>First Semester</i>				<i>Second Semester</i>			
	Lec.	Lab.	U.		Lec.	Lab.	U.
C. E. 1 (Elem. Surv.)	2	3	3	Math. 100b (Int. Calc.)	4	0	4
Math. 100a (Dif. Calc.)	4	0	4	Math. 112a (Anal. Mech.)	3	0	3
Me. A. 3 (Pat. Mak.)	0	6	2	Me. A. 4 (Forge)	0	6	2
Me. E. 21 (Mechanisms)	1	6	3	Me. E. 22 (Mach. Draw.)	1	6	3
Mil. 2a (Sci. and Tac.)	0	3	1	Mil. 2b (Sci. and Tac.)	0	3	1
Physics 1a (Engineering)	3	5	5	Physics 1b (Engineering)	3	5	5
Totals	10	23	18	Totals	11	20	18

Junior Year

<i>First Semester</i>				<i>Second Semester</i>			
	Lec.	Lab.	U.		Lec.	Lab.	U.
C. E. 114R (Mech. Mat'ls)	3	0	3	C. E. 111R (Hydraulics)	3	0	3
C. E. 125 (Graph. Stat.)	0	6	2	Me. A. 105b (Mach. Shop)	0	6	2
Math. 112b (Anal. Mech.)	3	0	3	Me. E. 124 (Hyd. Mach.)	3	0	3
Me. A. 105a (Mach. Shop)	0	6	2	Me. E. 125b (Mach. Des.)	0	6	2
Me. E. 123 (Heat Engines)	3	0	3	Me. E. 132 (Pow. Plants)	2	0	2
Me. E. 125a (Mach. Des.)	0	6	2	Me. E. 139 (El. Exp. Eng'g.)	0	2	1
Elective	—	—	3	Met. 116 (Alloys and H. Trt.)	2	0	2
Totals	9*	18*	18	Totals	10*	14*	18

Senior Year

<i>First Semester</i>				<i>Second Semester</i>			
	Lec.	Lab.	U.		Lec.	Lab.	U.
C. E. 115 (Bus. Law for Engrs.)	2	0	2	Me. E. 144 (Gas. Eng.)	2	0	2
E. E. 126aR (Dir. Cur.)	2	0	2	C. E. 130 (Foundations)	1	0	1
E. E. 126aL (Dir. Cur.)	0	3	1	E. E. 126bR (Alt. Cur.)	2	0	2
Me. E. 142 (Mech. Tech.)	2	0	2	E. E. 126bL (Alt. Cur.)	0	3	1
Me. E. 127a (Mech. Lab.)	0	6	2	Me. E. 127b (Mech. Lab.)	0	6	2
Me. E. 129 (Eng. Des.)	0	6	2	Me. E. 130 (Pow Plant Des.)	0	6	2
Me. E. 131 (Thermodynamics)	3	0	3	Me. E. 145 (Seminar)	1	0	1
Elective	—	—	3	Met. 115 (Met. Oper.)	1	0	1
Totals	9*	15*	17	Totals	7*	15*	17

AERONAUTICAL ENGINEERING AND AVIATION

The University of Arizona does not offer a course or degree in Aeronautical Engineering. Students desiring to perfect themselves in this work should take the first 2 years of the mechanical engineering curriculum and then transfer to some institution which offers the degree desired.

Students who wish to take the 2 years of college work required for admission to a United States Military Ground School should take the following course:

Freshman Year
(Common to all Engineering courses)

Sophomore Year

<i>First Semester</i>				<i>Second Semester</i>			
	Lec.	Lab.	U.		Lec.	Lab.	U.
Math. 100a (Dif. Calc.)	4	0	4	Math. 100b (Int. Calc.)	4	0	4
Physics 1a (General)	3	5	5	Physics 1b (General)	3	5	5
C. E. 1 (Elem. Surv.)	2	3	3	Eng. 77 (Pub. Speak.)	3	0	3
Astr. 101 (Engineering)	1	3	2	Met. 116 (Alloys and H. Trt.)	2	0	2
Geol. 112R (Physiography)	2	0	2	M. E. 150 (Aviation)	2	0	2
Mil. 2a (Sci. and Tac.)	0	3	1	Mil. 2b (Sci. and Tac.)	0	3	1
Totals	12	14	17	Totals	14	8	17

* Plus electives.

For descriptions of courses offered in the department of mechanical engineering see page 192.

COURSE LEADING TO THE DEGREE OF BACHELOR OF SCIENCE IN MINING ENGINEERING

This course is designed to furnish the broadest foundation for the practice of mining engineering that it is possible to obtain in 4 years. Because of the number and diversity of the subjects that must be studied, no specialization is possible, and the graduate is equally well prepared to follow mining engineering proper, metallurgy, ore dressing, or mining geology. The mature student who has definitely selected the branch of the profession which he intends to follow will, therefore, find it very advantageous to remain for a fifth year during which he may concentrate his attention upon relatively advanced courses in his specialty. The curriculum may be analyzed as follows:

Subject	Units
Mathematics, physics, and chemistry.....	53
Social studies.....	12
Geology and mineralogy.....	20
Mining engineering, metallurgy, and ore dressing.....	18
Civil, electrical, and mechanical engineering.....	21
Elective.....	16
Military.....	4
Physical education.....	1
Total.....	145

Freshman Year (Common to all Engineering courses)

Sophomore Year

<i>First Semester</i>	Lec. Lab. U.	<i>Second Semester</i>	Lec. Lab. U.
Chem. 3 (Qual. Anal.).....	1 9 4	Chem. 4 (Grav. Anal.).....	1 9 4
Math. 100a (Dif. Calc.).....	4 0 4	Math. 100b (Int. Calc.).....	4 0 4
Mil. 2a (Sci. and Tac.).....	0 3 1	Mil. 2b (Sci. and Tac.).....	0 3 1
Mineralogy 11 (Cry. and B. P. Analysis).....	2 6 3	Miner. 12 (Det. Min.).....	2 6 3
Physics 1a (General).....	3 5 5	Physics 1b (General).....	3 5 5
Min. E. 101 (Develop.).....	3 0 2	Min. E. 102 (Exploit.).....	2 0 1
Totals.....	13* 23* 19	Totals.....	12* 23* 18

Junior Year

<i>First Semester</i>	Lec. Lab. U.	<i>Second Semester</i>	Lec. Lab. U.
Chem. 101 (Vol. Anal.).....	1 6 3	C. E. 2 (Top. and M'e. Surv.).....	2 3 3
C. E. 1 (Elem. Surv.).....	2 3 3	C. E. 111R (Hydraulics).....	3 0 3
Geol. 101 (Phys. Geol.).....	3 3 3	Geol. 102 (Hist. Geol.).....	2 3 3
Math. 112a (Anal. Mech.).....	3 0 3	Math. 112b (Anal. Mech.).....	3 0 3
Met. 102L (Assaying).....	0 6 2	Met. 111 (Gen. and Cop.).....	2 6 2
Met. 102R (Assaying).....	1 0 1	Min. E. 103b (Operations).....	3 0 2
Min. E. 103a (Operations).....	3 0 2	Miner. 114 (Petrology).....	0 6 2
Totals.....	13 18 17	Totals.....	15 12 18

Senior Year

<i>First Semester</i>	Lec. Lab. U.	<i>Second Semester</i>	Lec. Lab. U.
C. E. 114R (Mech. M'tls.).....	3 0 3	Geol. 105 (Field).....	1 6 3
Geol. 103 (Ore Dep.).....	3 0 3	M. E. 126 (St. and Gas. Pow.).....	3 0 3
Met. 107R (Ore Dress.).....	3 0 3	Met. 107L (Ore Dress.).....	0 6 2
Min. E. 105a (Design).....	0 6 2	Met. 112 (Lead, Zinc).....	2 0 1
Elective.....	— 6	Min. E. 105b (Design).....	0 6 2
Totals.....	9* 6* 17	Elective.....	— 6
		Totals.....	6* 18* 17

* Plus electives.

For a description of courses offered in the department of mining engineering and metallurgy see page 197.

COLLEGE OF MUSIC

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF MUSIC IN PIANO, VOICE, BAND AND ORCHESTRAL INSTRUMENTS, THEORY, AND SCHOOL MUSIC

To meet the requirements for admission to the College of Music, the student, in addition to the general requirements (page 33), must pass an examination in the preparatory course in the chosen applied field.

Admission Requirements in the Applied Field

Piano—Students wishing to enter the Freshman course in piano must be able to pass a satisfactory examination in the following preliminary course: scales, four octaves, majors and minors with all forms; Heller Etudes Op. 25 or Czerny Studies Op. 299; Bach's Short Preludes and Fugues, and the easier Sonatas of Haydn and Mozart.

Violin—Students wishing to major in violin must pass an examination in the following: scales and arpeggios in two octaves, the studies of Kayser Book Three, Mazas Vol. II, or others of similar grade. They must also have a thorough knowledge of the first five positions and be able to play such compositions as the concertos by Accolay, Seitz, and Ortmann. Entering students must have at least a working knowledge of the preparatory piano course. Any deficiencies in this respect must be made up.

Voice—To enter this course students are required to show by examination, in the presence of the vocal faculty, technical and musical development equivalent to 1 year of study in voice. This includes the proper breath control, correct tone production, and tone placing through the medium range of the voice. Entering students must have at least a working knowledge of the preparatory piano course. Any deficiencies in this respect must be made up.

School Music—Students wishing to enter the Freshman year of the school-music course must meet the same preliminary requirement in their major applied work as outlined above for piano, violin, and voice. Admission with major in other orchestral and band instruments is possible by arrangement with the Dean of the College.

Band and Orchestral Instruments—Admission requirements for entrance to the course in band and orchestral instruments may be obtained by writing to the Dean of the College.

Theory—The entrance requirements to the theory course are the same as those in piano.

Elective Credits for Entrance

Of the 4 high-school units in music acceptable for entrance to the University College of Music, 1 or 2 units may be in theoretical subjects (appreciation and history; theory and harmony), 1 or 2 may be in piano or orchestral and band instruments, and 1 may be in chorus, glee club, band, or orchestra. Each unit in piano, voice, band and orchestral instruments, chorus, glee club, band or orchestra in order to be accepted, must be accompanied by a unit in a theoretical music subject.

Only 1 unit may be presented in voice.

Classification of Students

The College of Music is open to all students in the University who seek instruction in music.

All students are registered in the College under one of the following classifications:

1. Students who are candidates for a degree.
Those students who have fully met the academic requirements for entrance from high school and have also passed a satisfactory examination before a committee of the Music Faculty in the preliminary applied course, are candidates for the degree.
2. Students classified as Freshmen Conditional.
Students may enter the College of Music as Freshman Conditional, provided they have met the regular academic requirements from an accredited high school, but have not passed the examination in the preliminary course in applied music. The student may carry the applied preliminary course along with the regular Freshman course with the exception of the major applied subject, and upon completing the preliminary course will be admitted as a candidate for a degree.
3. Special students in music.
University students who do not wish to elect a curriculum leading to a degree in music may take such subjects as they desire with the consent of the instructor.

A candidate for a degree of Bachelor of Music must pass examinations at the close of the Junior and Senior years in the chosen major applied field. These examinations will be before a committee of the Music Faculty appointed by the Dean.

A candidate for a degree coming from another accredited institution must complete a minimum of 30 units in residence, 8 of which will be in the applied major subject with the Head of the Department unless permission is otherwise granted by the Dean of the College. This work must be in advance of the 2-year applied preliminary course.

Candidates for a degree in an applied field are required to give a public recital in the Junior and Senior years.

Candidates for the degree in School Music are required to give a satisfactory performance in a public student recital before graduation.

COURSES OF STUDY

The Degree of Bachelor of Music

1. Courses in piano, voice, orchestral and band instruments leading to the degree of Bachelor of Music.
2. Course in theory leading to the degree of Bachelor of Music.
3. Course in school music leading to the degree of Bachelor of Music.

The Degree of Master of Music

The College of Music offers post-graduate courses in piano, voice, band and orchestral instruments, violin, and school music, leading to the degree of Master of Music. For a detailed outline of the requirements for this degree see Graduate Studies, page 122.

DEFINITION OF TERMS

1. Applied Music is the practical study of piano, voice, and orchestral and band instruments in individual and class lessons.
2. Theory is a group name for harmony, composition, and allied subjects and is given in class lessons.
3. Ensemble is the concerted performance of two or more instruments or of voices such as a cappella choir, oratorio, glee clubs, opera, orchestra, bands, piano ensemble, and violin ensemble.

For a description of courses offered in the College of Music see page 200.

GENERAL REGULATIONS

Lessons missed by the student will not be made up unless he has notified the instructor 24 hours before the regular time of the lesson, that he will not be able to take the lesson.

In case of protracted illness refunds may be made, but no illness of less than 2 weeks' duration will be considered "protracted." In case of illness of 2 weeks or over, the loss will be refunded to the student provided a physician's certificate of disability be presented to the Dean.

Lessons missed by the instructor will be made up within the semester.

Lessons falling on a legal holiday will not be made up.

Lessons falling on a school holiday will be made up if the student makes a special appointment with his instructor before the holiday.

If a student wishes to discontinue a study of piano, voice, or violin, or any of the theoretical courses, he must notify the Registrar's office and obtain a drop card. In case of a student dropping one of these courses, no refund will be turned in for less than one-half a semester's lessons.

Freshman students must adhere strictly to the course as outlined in the University catalogue unless exception is approved by the Dean of the College.

Music majors who are candidates for a Bachelor of Music degree are required to take one ensemble activity without credit each semester during residence as laboratory work in their applied field. They may, however, take an additional ensemble activity for credit, but only four (4) units of such credit may be applied toward the Bachelor of Music Degree. Ensemble activities include a cappella choir, oratorio, opera, glee club, band, orchestra, piano ensemble, and violin ensemble. Consult detailed course outlines, pages 100 to 109 (inc.), as to which ensemble activities candidates for the various Bachelor of Music degrees may elect.

No student taking any one of the applied courses is allowed to appear in any public performance without the consent of the Dean of the College and the Head of the Department in which the applied work is being taken.

All music majors and students in survey of music literature and appreciation classes, history of music, piano, voice, and violin are required to attend all artist concerts which are held under the auspices of the College of Music unless excused by the Dean. A nominal fee is charged for admission to the Artists' Series. At the beginning of each semester a ticket is given to each student which must be presented and punched at these concerts. The tickets will be collected at the close of the semester.

In addition to the above, music majors are required to attend the artist-faculty concerts.

No student is allowed to use the pianos in the Music Hall unless tuition has been paid for their use. Pianos may be used only by those taking work in the College.

Pianos may be rented for practice at the following rates:

\$ 4.00 for 1 hour practice per day.
\$ 7.00 for 2 hours practice per day.
\$10.00 for 3 hours practice per day.
\$11.00 for 4 hours practice per day.

This charge is for a period of 18 weeks.

The rates of tuition for strictly individual lessons in voice, piano, orchestral or band instruments are:

FEES FOR INDIVIDUAL LESSONS—MUSIC MAJORS

Voice with Dean Rogers.....	\$65.00
Voice with Rollin Pease.....	65.00
Piano with Julia Rebeil.....	65.00
Piano with Elenore Altman.....	65.00
Piano with Elizabeth Cook.....	55.00
Piano with Audrey Camp Clampitt.....	45.00
Violin with Roy Williams.....	45.00
Voice with Ada Pierce Winn.....	45.00
Band Instruments with Joseph O. DeLuca.....	55.00

The above rates are for three lessons per week in applied music. Only two of these lessons may be taken in any one department. Music majors taking only one lesson per week will pay at same rate as non-music majors.

FEES—NON-MUSIC MAJORS

	(1 lesson per week)	(2 lessons per week)
Voice with Dean Rogers.....	\$40.00	\$70.00
Voice with Rollin Pease.....	40.00	70.00
Piano with Julia Rebeil.....	40.00	70.00
Piano with Elenore Altman.....	40.00	70.00
Piano with Elizabeth Cook.....	35.00	60.00
Piano with Audrey Camp Clampitt.....	30.00	56.00
Violin with Roy Williams.....	30.00	56.00
Voice with Ada Pierce Winn.....	30.00	56.00
Band Instruments with Joseph DeLuca.....	35.00	60.00

This rate of tuition is for a period of 17 weeks.

Applied lessons will commence the week following registration.

Registration Fee—Special students, permitted to register without credit in applied subjects, are required to pay a registration fee of \$10 in addition to the above fees.

The University Concert Band

The Concert Band is under the direction of Joseph O. DeLuca, who was for many years soloist and guest conductor with John Philip Sousa's Band. He is nationally known as a composer. The College of Music owns a complete set of first-class instruments for the use of this band. A credit of 1 unit is given per semester for this course.

The University Military Band

The Military Band is under the supervision of the Department of Military Science and Tactics. It furnishes music for all military ceremonies and assemblies. A set of instruments is provided by the War Department. A credit of 1 unit is given per semester; this course may be taken in place of military training the Freshman and Sophomore years.

The University Orchestra

The University Orchestra is composed of selected students from the University and is trained under the direction of the Instructor of Violin. As there is a large demand for well-trained orchestral players, this training affords students opportunity not only to become acquainted with the best orchestral works, but also to obtain the necessary training and experience to qualify for present-day requirements. A credit of 1 unit per semester is given.

The Oratorio Society

The University Oratorio Society, under the direction of the Dean of the College of Music, is composed of 300 voices and orchestra from the University and City of Tucson. The greater oratorios are studied and given public performance. One unit of credit is allowed members of this organization.

The University A Cappella Choir

A group meeting for the study of madrigals and motets of the sixteenth and seventeenth centuries; under faculty direction. One unit of credit is given.

The University Glee Clubs

The Men's Glee Club and the Women's Glee Club give frequent concerts at home and throughout the State. Both organizations are under the direction of members of the College Faculty.

RECITALS

Student Criticism Classes

These classes meet frequently under the direction of a member of the Music Faculty. At each class the students are given opportunity to appear upon recommendation of their individual teachers. Only music students and faculty members are admitted to these performances.

Student Recitals

These recitals are held twice a month. They are open to all music students, parents, and faculty members. Only students who do satisfactory work in the criticism class are permitted to appear in these recitals. They are under the personal direction of the Head of the Piano Department.

Public Concerts

These concerts are given by the Faculty, advanced students, orchestra, oratorio, trio, and visiting artists. They are open to the public.

Opera

The Opera Class and the Glee Clubs of the University, under the direction of the Dean of the College of Music, study and give public performances of the well known standard operas. One unit of credit is allowed to members of the opera class.

Music Festival

Each spring the College of Music sponsors a series of concerts by Faculty, advanced students, and other musical organizations of the University. The festival is held in March.

Artists' Course

In order that the students may not only be provided with ample facilities for study under competent instructors, but may have the opportunity of hearing the best in music by world renowned artists, the College of Music sponsors an Artists' Course which all music students are required to attend.

The artists for the season 1930-1931 were: Richard Bonelli, baritone; Fernando Germani, organist; Royal Russian Chorus; Nathan Milstein,

violinist; Mexican Tipica orchestra; Jose Iturbi, pianist; Russian Cosack Chorus. The artists for the season of 1931-32 were: Efrem Zimbalist, violinist; Yascha Yushny's "The Blue Bird"; Mischa Levitzki, pianist; Dusolina Giannini, soprano; John Charles Thomas, baritone; Palmer Christian, organist; and Mary Wigman, dancer.

College of Music Recognition

The College of Music is accredited with all the national accrediting organizations. This College is a member of the National Association of Schools of Music and is accredited by that organization. The requirement for entrance and for graduation as set forth in the catalogue are in accordance with the published regulations of the National Association of Schools of Music.

Fraternities

The year 1927 witnessed the installation at the University of Arizona College of Music of the Alpha Upsilon chapter of Phi Mu Alpha, national music fraternity. In the early fall of 1927 the Alpha Beta chapter of Sigma Alpha Iota, national women's music fraternity, was installed. During the second semester of 1928-1929, a local chapter of Kappa Kappa Psi, national honorary band fraternity, was installed. These chapters take an active part in the music activities of the Campus and College.

GROUP UNITS REQUIRED

All candidates for the degree of Bachelor of Music must take the course prescribed and distribute them as follows:

For the Degree of Bachelor of Music in Theory

Group I.—English (including 1a-1b and 6 units of literature)	12 units
Group II.—Foreign language (Italian, French, German)	8 units
Group III.—Physical Education, Military Science, Social Fundamentals	5 units
Group IV.—Science (one subject)	8 units
Group V.—Humanities	8 units
Group VI.—Ear Training and Sight Singing (4), History of Music (4), Conducting (1)	9 units
Group VII.—Applied Music	32 units
Total required	82 units
Total elective	43 units
	125 units

The major (Theory) of 24 to 40 units, will lie wholly within the elective units.

Theory Majors

Harmony	10 units
Form and Analysis	4 units
Composition I and II	8 units
Canon and Fugue	2 units
Orchestration	4 units
Total	28 units

For the Degree of Bachelor of Music in Piano—Voice—Violin

Group I.—English (including Eng. 1a-1b and 6 units of literature)	12 units
Group II.—Foreign language (Italian, French, German)	16 units
Group III.—Physical Education, Military Science, Social Fundamentals	5 units
Group IV.—Science (one subject)	8 units
Group V.—Humanities	8 units
Group VI.—Ear Training and Sight Singing (4), History of Music (4), Conducting (1)	9 units

Group VII.—Harmony (10), Form and Analysis (4), Composition (4), Canon and Fugue (2)	20 units
Total required	78 units
Total elective	47 units
	125 units

The elective major (applied music subjects) of 24 to 40 units will be wholly within the elective units.

Major in Piano

Music 28a-b-c-d	16 units
Music 128a-b-c-d	16 units
Total	32 units

Major in Voice

Music 58a-b-c-d	16 units
Music 158a-b-c-d	16 units
Piano	6 units
Total	38 units

Major in Violin

Music 16a-b-c-d	16 units
Music 116a-b-c-d	16 units
Piano	4 units
Total	36 units

For the Degree of Bachelor of Music in School Music

Group I.—English (including Eng. 1a-1b and 6 units of literature)	12 units
Group II.—Foreign language (Italian, French, German, Spanish)	8 units
Group III.—Physical Education, Military Science, Social Fundamentals	5 units
Group IV.—Science (one subject)	8 units
Group V.—Humanities	8 units
Group VI.—Education (Ed. 14, 112, 106, 130, 197m)	15 units
Group VII.—Applied Music (28), Harmony (10), Ear Training and Sight Singing (4), Conducting (2)	44 units
Total required	100 units
Total elective	25 units
	125 units

The major, School Music (8 units) and Theoretical Music (16 units) will lie wholly within the elective units.

Major

School Music (Music 176, 177, 178, 179)	8 units
Theoretical Music (Music 7, 108, 110, 114)	16 units
Total	24 units

For the Degree of Bachelor of Music in Band and Orchestral Instruments

Group I.—English (including Eng. 1a-1b and 6 units of literature)	12 units
Group II.—Foreign language (Italian, French, German, Spanish)	16 units
Group III.—Physical Education, Military Science, Social Fundamentals	5 units
Group IV.—Science (one subject)	8 units
Group V.—Humanities	8 units
Group VI.—Ear Training and Sight Singing (4), History of Music (4), Conducting (1)	9 units
Group VII.—Harmony (10), Composition (4), Canon and Fugue (2), Orchestration (8), Form and Analysis (4)	28 units
Total required	85-86 units
Total elective	40-39 units
	125 units

The major (applied music—band and orchestral instruments)—of 24 to 40 units, will lie wholly within the elective units.

DEGREE OF BACHELOR OF MUSIC IN THEORY

Freshman Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 28a (Piano).....	4	Music 28b (Piano).....	4
Music 3a (Harmony I).....	3	Music 3b (Harmony I).....	3
Language (It., Fr., Ger.).....	4	Language (It., Fr., Ger.).....	4
English 1a (Freshman Comp.).....	3	English 1b (Freshman Comp.).....	3
Music 5a (E. T. and S. S. I.).....	1	Music 5b (E. T. and S. S. I.).....	1
P. E., Mil., and Soc. Fund.....	1½	P. E., Mil., and Soc. Fund.....	1½
Total.....	16½	Total.....	16½

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 28c (Piano).....	4	Music 28d (Piano).....	4
Music 4a (Harmony II).....	2	Music 4b (Harmony II).....	2
English 27a or 29a.....	3	English 27b or 29b.....	3
Music 7a (History of Music).....	2	Music 7b (History of Music).....	2
Music 6a (E. T. and S. S. II).....	1	Music 6b (E. T. and S. S. II).....	1
Phys. Ed. 2a or Mil. 2a.....	1	Phys. Ed. 2b or Mil. 2b.....	1
Electives.....	4	Electives.....	4
Total.....	17	Total.....	17

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 123a (Piano).....	2	Music 128b (Piano).....	2
Music 16a, 18a, or 58a (Violin B. O. or Voice).....	2	Music 16b, 18b, or 58b (Violin B. O. or Voice).....	2
Music 108a (Form and Analysis).....	2	Music 108b (Form and Analysis).....	2
Music 110a (Composition I).....	2	Music 110b (Composition I).....	2
Music 114a (Orchestration I).....	2	Music 114b (Orchestration I).....	2
Electives.....	5	Electives.....	5
Total.....	15	Total.....	15

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 128c (Piano).....	2	Music 128d (Piano).....	2
Music 16c, 18c, or 58c (Violin or Voice).....	2	Music 16d, 18d, or 58d (Violin or Voice).....	2
Music 111a (Composition II).....	2	Music 112 (Canon and Fugue).....	2
Music 159 or 117 (Conducting).....	1	Music 111b (Composition II).....	2
Electives.....	8	Electives.....	6
Total.....	15	Total.....	14

Students desiring to teach may include in the total of available electives 15 units in education.

A recital of original compositions must be given public performance during the second semester of the Senior year.

Students majoring in Theory are required to take (without credit) one of the following ensemble activities each semester during Junior and Senior years: a cappella choir, oratorio, glee club, opera, orchestra, band, piano ensemble, or violin ensemble.

DEGREE OF BACHELOR OF MUSIC IN VIOLIN**Freshman Year**

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 16a (Violin).....	4	Music 16b (Violin).....	4
Music 3a (Harmony I).....	3	Music 3b (Harmony I).....	3
Language (It., Fr., Ger.).....	4	Language (It., Fr., Ger.).....	4
English 1a (Composition).....	3	English 1b (Composition).....	3
Music 5a (E. T. and S. S. I).....	1	Music 5b (E. T. and S. S. I).....	1
P. E., Mil., and Soc. Fund.....	1½	P. E., Mil., and Soc. Fund.....	1½
Total.....	16½	Total.....	16½

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 16c (Violin).....	4	Music 16d (Violin).....	4
Music 4a (Harmony II).....	2	Music 4b (Harmony II).....	2
Language (It., Fr., Ger.).....	4	Language (It., Fr., Ger.).....	4
English (27a or 29a).....	3	English (27b or 29b).....	3
Music 6a (E. T. and S. S. II).....	1	Music 6b (E. T. and S. S. II).....	1
Music 27a (Piano).....	1	Music 27b (Piano).....	1
Phys. Ed. 2a or Mil. 2a.....	1	Phys. Ed. 2b or Mil. 2b.....	1
Electives.....	2	Electives.....	2
Total.....	18	Total.....	18

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 116a (Violin).....	4	Music 116b (Violin).....	4
Music 108a (Form and Analysis).....	2	Music 108b (Form and Analysis).....	2
Music 7a (History of Music).....	2	Music 7b (History of Music).....	2
Music 111a (Composition).....	2	Music 110b (Composition).....	2
Music 27c (Piano).....	1	Music 27d (Piano).....	1
Electives.....	4	Electives.....	4
Total.....	15	Total.....	15

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 116c (Violin).....	4	Music 116d (Violin).....	4
Music 117 (Conducting).....	1	Music 112 (Canon and Fugue).....	2
Electives.....	9	Electives.....	7
Total.....	14	Total.....	13

Students desiring to teach may include in the total available electives 15 units in education.

A recital is required in the second semesters of the Junior year and Senior year.

Violin majors must take orchestra or violin ensemble (without credit) each semester of the Junior and Senior years as laboratory work in the applied field.

DEGREE OF BACHELOR OF MUSIC IN BAND AND ORCHESTRAL INSTRUMENTS**Freshman Year**

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Applied Music Major (Inst.).....	2	Applied Music Major (Inst.).....	2
Multiple Minor (Instruments).....	2	Multiple Minor (Instruments).....	2
Music 3a (Harmony I).....	3	Music 3b (Harmony I).....	3
Language (It., Fr., Ger., Span.).....	4	Language (It., Fr., Ger., Span.).....	4
English 1a (Composition).....	3	English 1b (Composition).....	3
Music 5a (E. T. and S. S. I).....	1	Music 5b (E. T. and S. S. I).....	1
P. E., Mil., and Soc. Fund.....	1½	P. E., Mil., and Soc. Fund.....	1½
Total.....	16½	Total.....	16½

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Applied Music Major (Inst.)	2	Applied Music Major (Inst.)	2
Multiple Minor (Instruments)	2	Multiple Minor (Instruments)	2
Music 4a (Harmony II)	2	Music 4b (Harmony II)	2
Language (It., Fr., Ger., Span.)	4	Language (It., Fr., Ger., Span.)	4
English (27a or 29a)	3	English (27b or 29b)	3
Music 6a (E. T. and S. S. II)	1	Music 6b (E. T. and S. S. II)	1
Phys. Ed. 2a or Mil. 2a	1	Phys. Ed. 2b or Mil. 2b	1
Electives	2	Electives	2
Total	17	Total	17

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Applied Music Major (Inst.)	2	Applied Music Major (Inst.)	2
Multiple Minor (Instruments)	2	Multiple Minor (Instruments)	2
Music 108a (Form and Analysis)	2	Music 108b (Form and Analysis)	2
Music 110a (Composition)	2	Music 110b (Composition)	2
Music 114a (Orchestration I)	2	Music 114b (Orchestration I)	2
Music 7a (History of Music)	2	Music 7b (History of Music)	2
Electives	3	Electives	3
Total	15	Total	15

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Applied Music Major (Inst.)	2	Applied Music Major (Inst.)	2
Multiple Minor (Instruments)	2	Multiple Minor (Instruments)	2
Music 214a (Orchestration II)	2	Music 109b (Canon and Fugue)	2
Music 117 (Conducting)	1	Music 214b (Orchestration II)	2
Electives	8	Electives	6
Total	15	Total	14

Students desiring to teach may include in the total available electives 15 units in education.

One piano lesson a week for 2 years, or its equivalent in playing ability is required of all students majoring in this department.

Band and orchestral instruments majors must take band or orchestra (without credit) each semester of the Junior and Senior years as laboratory work in the applied field.

A recital is required in the second semesters of the Junior year and Senior year.

DEGREE OF BACHELOR OF MUSIC IN PIANO**Freshman Year**

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 28a (Piano)	4	Music 28b (Piano)	4
Music 3a (Harmony I)	3	Music 3b (Harmony I)	3
Language (It., Fr., Ger.)	4	Language (It., Fr., Ger.)	4
English 1a (Composition)	3	English 1b (Composition)	3
Music 5a (E. T. and S. S. I)	1	Music 5b (E. T. and S. S. I)	1
P. E., Mil., and Soc. Fund.	1½	P. E., Mil., and Soc. Fund.	1½
Total	16½	Total	16½

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 28c (Piano).....	4	Music 28d (Piano).....	4
Music 4a (Harmony II).....	2	Music 4b (Harmony II).....	2
Language (It., Fr., Ger.).....	4	Language (It., Fr., Ger.).....	4
English (27a or 29a).....	3	English (27b or 29b).....	3
Phys. Ed. 2a or Mil. 2a.....	1	Phys. Ed. 2b or Mil. 2b.....	1
Electives	4	Electives	4
Total.....	18	Total.....	18

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 128a (Piano).....	4	Music 128b (Piano).....	4
Music 108a (Form and Analysis).....	2	Music 108b (Form and Analysis).....	2
Music 110a (Composition).....	2	Music 110b (Composition).....	2
Music 7a (History of Music).....	2	Music 7b (History of Music).....	2
Electives	5	Electives	5
Total.....	15	Total.....	15

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 128c (Piano).....	4	Music 128d (Piano).....	4
Music 159 or 117 (Conducting).....	1	Music 112 (Canon and Fugue).....	2
Electives	9	Electives	7
Total.....	14	Total.....	13

Students desiring to teach may include in the total available electives 15 units in education.

A recital is required in the second semesters of the Junior year and Senior year.

Piano majors are required to take piano ensemble (without credit) each semester of the Junior and Senior years as laboratory work in the applied field. Upon recommendation of the major professor one of the following ensemble activities may be substituted for piano ensemble: a cappella choir, oratorio, glee club, orchestra, band, or violin ensemble.

DEGREE OF BACHELOR OF MUSIC IN VOICE**Freshman Year**

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 58a (Voice).....	4	Music 58b (Voice).....	4
Music 3a (Harmony I).....	3	Music 3b (Harmony I).....	3
Language (It., Fr., Ger.).....	4	Language (It., Fr., Ger.).....	4
English 1a (Composition).....	3	English 1b (Composition).....	3
P. E., Mil., and Soc. Fund.....	1½	P. E., Mil., and Soc. Fund.....	1½
Music 5a (E. T. and S. S. I).....	1	Music 5b (E. T. and S. S. I).....	1
Total.....	16½	Total.....	16½

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 58c (Voice).....	4	Music 58d (Voice).....	4
Music 4a (Harmony II).....	2	Music 4b (Harmony II).....	2
Language (It., Fr., Ger.).....	4	Language (It., Fr., Ger.).....	4
English (27a or 29a).....	3	English (27b or 29b).....	3
Music 6a (E. T. and S. S. II).....	1	Music 6b (E. T. and S. S. II).....	1
Music 27a (Piano).....	1	Music 27b (Piano).....	1
Phys. Ed. 2a or Mil. 2a.....	1	Phys. Ed. 2b or Mil. 2b.....	1
Electives	2	Electives	2
Total.....	18	Total.....	18

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 158a (Voice).....	4	Music 158b (Voice).....	4
Music 108a (Form and Analysis).....	2	Music 108b (Form and Analysis).....	2
Music 7a (History of Music).....	2	Music 7b (History of Music).....	2
Music 110a (Composition).....	2	Music 110b (Composition).....	2
Music 27c (Piano).....	1	Music 27d (Piano).....	1
Electives.....	5	Electives.....	5
Total.....	16	Total.....	16

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music 158c (Voice).....	4	Music 158d (Voice).....	4
Music 27e (Piano).....	1	Music 159 (Conducting).....	1
Electives.....	8	Music 112 (Canon and Fugue).....	2
Total.....	13	Music 27f (Piano).....	1
		Electives.....	4
		Total.....	12

Students desiring to teach may include in the total available electives 15 units in education.

A recital is required in the second semesters of the Junior and Senior years.

Voice majors must register for a cappella choir, oratorio, or opera (without credit) each semester during residence in the Junior and Senior years.

DEGREE OF BACHELOR OF MUSIC IN SCHOOL MUSIC**Freshman Year**

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music (Applied Major).....	2	Music (Applied Major).....	2
Music (Applied Minor).....	1	Music (Applied Minor).....	1
Music 3a (Harmony I).....	3	Music 3b (Harmony I).....	3
Music 5a (E. T. and S. S. I).....	1	Music 5b (E. T. and S. S. I).....	1
Language (It., Fr., Ger., Span.).....	4	Language (It., Fr., Ger., Span.).....	4
English 1a (Composition).....	3	English 1b (Composition).....	3
P. E., Mil., and Soc. Fund.....	1½	P. E., Mil., and Soc. Fund.....	1½
Total.....	15½	Total.....	15½

Sophomore Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music (Applied Major).....	2	Music (Applied Major).....	2
Music (Applied Minor).....	1	Music (Applied Minor).....	1
Music 4a (Harmony II).....	2	Music 4b (Harmony II).....	2
English (27a or 29a).....	3	English (27b or 29b).....	3
Music 6a (E. T. and S. S. II).....	1	Music 6b (E. T. and S. S. II).....	1
Psychology 1a (Elem.).....	3	Education 14 (Educ. Psy.).....	3
Phys. Ed. 2a or Mil. 2a.....	1	Phys. Ed. 2b or Mil. 2b.....	1
Electives.....	4	Electives.....	4
Total.....	17	Total.....	17

Junior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music (Applied Major).....	2	Music (Applied Major).....	2
Music (Inst. Class).....	1	Music (Inst. Class).....	1
Music 7a (History of Music).....	2	Music 7a (History of Music).....	2
Education 106.....	3	Education 112.....	3
Music 108a (Form and Analysis).....	2	Music 108b (Form and Analysis).....	2
Music 114a (Orchestration).....	2	Music 114b (Orchestration).....	2
Music 176 (Primary Music).....	2	Music 177 (Intermediate Music).....	2
Electives.....	2	Electives.....	2
Total.....	16	Total.....	16

Senior Year

<i>First Semester</i>		<i>Second Semester</i>	
Subject	Units	Subject	Units
Music (Applied Major)	2	Music (Applied Major)	2
Music 178 (Secondary Music)	2	Music 179 (Inst. Music)	2
Education 130	3	Political Science 100	3
Education 197m	3	Music 110b (Composition)	2
Music 110a (Composition)	2	Music 117 (Conducting)	1
Music 159 (Conducting)	1	Electives	4
Electives	2		
Total	15	Total	14

Either the applied major or applied minor must be in piano.

The 28 units of applied music required for graduation may be apportioned as follows: piano 16, voice 4, string and wind instruments 4, electives 4; or voice 16, piano 8, string and wind instruments 4; or violin, or individual band or orchestral instruments 16, piano 8, voice 2, string and wind instruments 2.

School Music majors must take oratorio, opera, glee club, a cappella choir, orchestra, band, or violin ensemble (without credit) each semester during Junior and Senior years as laboratory work in the applied field.

Candidates for the degree in school music are required to give a satisfactory performance in a public student recital before graduation.

**GENERAL DEPARTMENTS
OF THE
UNIVERSITY**

SCHOOL OF MILITARY SCIENCE AND TACTICS

The Seventh State Legislature (1925) by enactment authorized the establishment of the School of Military Science and Tactics at the University of Arizona.

A Cavalry Unit of the Senior Division of the Reserve Officers Training Corps is maintained under the provisions of Section 40-47, Act of Congress (National Defense Act), dated June 4, 1920. The purpose of the courses provided in military science and tactics is to train students, in conjunction with their academic studies, to become Reserve Officers of Cavalry in the United States Army. The courses are conducted by Regular Army Officers. Graduates of the Unit are appointed Cavalry Reserve Officers by the President of the United States. Honor Graduates of the Unit, who are also graduates of the University, are eligible for commissions in the Regular Army, without mental examination provided vacancies exist. Graduates of the Unit, who are graduates of the University, are eligible for commissions in the Regular Army upon passing examination in one prescribed subject, provided vacancies exist.

Marksmanship, horsemanship, and the development of qualities of leadership, useful in all walks of life, form an important part of the training offered.

The Advanced Course is elective and is limited to students who have successfully completed the Basic Course. Advanced Course Students receive from the United States quarterly in cash what is known as commutation of subsistence, during the entire period of enrollment including summer vacation period. The total amount of cash received by the student from the Government on this account amounts to about \$175 for the 2 years. In consideration of this monetary allowance, the student is required to sign a contract with the Government agreeing to continue the Advanced Course until completion or withdrawal from the University and to attend the required Summer Training Camp. Travel expenses to and from camp are paid by the Government. While in camp students are paid 70 cents a day.

Completion of the Basic Course, and of the Advanced Course, when entered upon by the student, is a requirement for graduation unless exemption is granted in accordance with Government provisions.

For uniform requirements see page 50.

Appropriate credits are allowed by this University for prior military training at accredited institutions.

For a description of courses offered in the department of military science and tactics see page 196.

HEALTH ADMINISTRATION

Each student is required to take a physical examination at the beginning of his first semester, and annually thereafter.

For the benefit of the registered students the University maintains on the Campus an Infirmary, having a staff of a physician and a resident trained nurse. The University Physician and the health committee keep in touch with students, and are promptly informed of all sickness and injuries, and endeavor to see that no one suffers from lack of proper care and treatment.

Medical services include physical examination, prescription of corrective gymnastics, the giving of medical advice, and the caring for cases of acute illness which may develop while students are in attendance at the University, provided that such cases can be cared for at the University Infirmary or at the student's place of residence. The University does not accept students with contagious or infectious diseases. When such cases develop they must be isolated and cared for in accordance with the laws of the State of Arizona. Students coming to the University with chronic ailments are informed of their condition and advised, but the University does not provide care or treatment for such cases.

Emergency cases, after first-aid care, may subsequently apply to the University Physician for attention. In cases where students require hospitalization for serious injuries or operations which cannot be performed at the University Infirmary, adequate facilities are to be found in Tucson. All expenses, including services for attending physicians, must be borne by the student. No operation is performed without the consent of the parent or guardian, except in emergencies.

Students are permitted of their own volition to engage at their own expense other physicians or nurses or the University Physician in a private capacity, but under such circumstances students cannot be admitted to the University Infirmary.

PHYSICAL EDUCATION FOR MEN

The University authorities encourage sports on the athletic fields and in the gymnasium in such amount and of such character as are compatible with the educational aims of the University. Intercollegiate contests are held with the leading colleges and universities of Arizona, California, New Mexico, Texas, and occasionally with institutions in Nevada, Colorado, and Utah. All athletics are under the direct control of the Director of Athletics and Physical Education for Men.

The University is a member of the Border Intercollegiate Athletic Conference and upholds strict rules of eligibility. One year of residence is required of Freshmen and athletes transferring from an institution of collegiate rank, in order to compete in varsity competition. Freshman teams are encouraged and have separate coaches in all major sports.

The varsity football team plays a schedule of nine games. The basketball schedule usually contains about 15 games, and baseball about the same number. The track team has four meets each year. Cross-country running, polo, and tennis are minor sports.

The University has the largest and best gymnasium in the entire Southwest. An extensive intramural program is being rapidly developed, since the climate permits so many forms of outdoor athletics throughout the academic year. The orthopaedic department has made progress in preventive as well as the corrective work not only in relation to those individuals who are exempt from military training because of some physical defect, but in relation to the serious students who wish health plus. The program in required physical education, as shown below, aims not only to develop the physical well-being but to develop a deep-seated carry-over spirit because of the educational phases emphasized in all courses offered.

All men students are required to pass a complete physical examination, as conducted by the University Physician. As a result of this examination, or any subsequent periodic examinations, and the advice of the University Physician, work in physical education adapted to the needs of each individual student is assigned. Those students excused from military training because of some disease, defect, or disability that can be remedied by physiotherapeutic measures are required to register for individual gymnastics. University credit is given for all courses in physical education. Students not able to swim 100 yards are required to register in Physical Education 26. The remaining students with Freshman standing and Sophomores exempt from military training will register for their respective courses in physical education.

A locker fee of \$2, to cover the cost of the use of lockers and towels, is charged each semester for students registered in any physical education course for men. One dollar is refunded at the close of each semester if the towel is returned and the locker has not been damaged.

The first year in physical education is required of Freshmen.

For a description of courses offered in the Department of Physical Education for Men see page 209.

INTRAMURAL ATHLETICS FOR MEN

Intramural athletics are founded upon the fact that every man enjoys the thrill of participating in sports. A relatively small number possess outstanding skill which places them on varsity teams, but the majority must depend upon some other means of gratifying their desire for sport. Therefore, the intramural program has been planned to give every man

an opportunity to compete in a sport or sports suitable to his taste and ability.

Arizona has developed an extensive system of intramural athletics which furnishes exercise and recreation in the form of competitive sports for all men who care to take part and who are not at the time the sport is offered on a varsity or Freshman squad. The program covers a large field of sports which extend over the entire school year. Competition is entirely voluntary and a friendly rivalry exists among the competing organizations.

It is the desire of the Department of Athletics and Physical Education of the University of Arizona to achieve or promote the following aims or objectives through intramural sports: (1) health, (2) recreation, (3) general participation, (4) development of varsity material, (5) knowledge of sports, (6) permanent interest in sports throughout college and later life. Among extra-curricular activities, intramural athletics are of major importance. There has been a decided growth in general participation and a wonderful development of interest in intramural athletics at this institution in the last few years. Seventy percent of the total number of men at the University of Arizona participate in some kind of voluntary intramural athletics.

Schedule of Intramural Sports

Sport	No. men competing last year	Approximate date of starting
Fall swimming meet.....	49	Oct. 3 and 4
Freshmen basketball.....	136	Oct. 10—Nov. 1
Tennis	75	Oct. 11—Dec. 9.
Fall track meet	59	Nov. 2, 3, and 4
Basketball	228	Nov. 14—Jan. 18.
Cross Country Run (course 3.5 miles)	74	Nov. 18.
Baseball	141	Feb. 1—Mar. 4.
Track and field meet.....	77	Mar. 6—13.
Volley ball	120	Mar. 14—Apr. 12.
Indoor baseball.....	169	Apr. 17—May 22.
Swimming	58	May 15, 16, 17.

Individual Sports

Foul shooting.....	Sept. 26—Oct. 7.
Handball	Mar. 13—Apr. 20.
Horse shoe pitching.....	Apr. 17—May 17.
Sigma Delta Psi.....	Mar. 13—May 18.

PHYSICAL EDUCATION FOR WOMEN

REQUIRED PHYSICAL EDUCATION

Physical education is required of all lower-division women students registered for 6 or more units of University work. Each girl, after thorough medical and physical examinations, is assigned to the type of activity best suited to her. She may choose the sport she wishes if she is normally healthy and strong, if not she is assigned to modified sports or corrective gymnastics or to a health-education class.

The University aims to save for each girl certain periods during the week which cannot be encroached upon by other demands. It is arranged to give each girl time for healthful, vigorous activity vital to youth, and instruction in recreative skills which may be engaged in throughout life as well as adding definitely to happiness while on the Campus. (Physical Education 1a, 1b, 2a, and 2b.) Locker and towel fee, \$2 each semester.

INTRAMURAL PROGRAM

A program of intramural sports and games is carried out each year. Hockey, swimming, baseball, basketball, tennis, track athletics, marksmanship, archery, and horseshoes are directed by the Physical Education Staff at 4:30 daily. This recreation is open to all women students without registration.

The Women's Athletic Association nominally controls this phase of the activity program. It has made big strides in developing initiative and leadership among the girls in the past few years. Competition through the meeting of teams, or by telegraph or written records is carried on with other universities and colleges in tennis, archery, marksmanship, etc.

For a description of courses offered in the Department of Physical Education for Women see page 212.

**GRADUATE STUDIES
IN THE
SEVERAL COLLEGES**

GRADUATE STUDIES

The University offers graduate courses in such departments as are adequately equipped for advanced work. The following degrees are conferred: Master of Arts, Master of Science, Master of Music, Engineer of Mines, Metallurgical Engineer, Mining Geologist, and Doctor of Philosophy.

ADMISSION

Graduates of the University of Arizona and of other institutions of equal rank, may be admitted to graduate courses for which they are prepared. Graduate credit will be granted only to those students meeting the minimum requirement of 12 undergraduate units in the major subject or in prerequisites to the subject. Applicants from other institutions must file with the Registrar an official transcript of all undergraduate work done, graduate work taken, if any, and degrees received. Admission to graduate study and acceptance of graduate credits from other institutions must first be approved by the Registrar. If so approved, applicant should confer with the Chairman of the Graduate Study Committee and the major professor concerning preliminary requirements that may have to be satisfied and as to graduate courses that should be taken. An additional amount of undergraduate work will be required from a graduate of another institution, where a course of study is not equivalent to that prescribed by this University.

Admission to graduate study does not imply admission to candidacy for an advanced degree and gives no right or claim to be so admitted. Such candidacy is determined after the student has demonstrated by work done here, that he has the ability to do work of graduate character with originality and independence. A mere accumulation of "credits" or "grades" is not sufficient.

In exceptional cases a student of Senior standing, who has practically completed the requirements for graduation, may also register for graduate work if recommended by the head of the department, the Dean of the College, and approved by the Graduate Study Committee. For such registration a graduate study card is filled out in addition to the usual registration card.

GRADES IN GRADUATE COURSES

Courses numbered from 100-199, which are accepted for graduate credit, must be carried with a grade of 1 or 2. In no course will a grade of 4 carry credit toward an advanced degree.

REGISTRATION FOR GRADUATE WORK

All graduate students must register each semester for the work undertaken during that semester. A fee of \$2 per unit (including thesis units) with a minimum of \$6 is payable each semester by a candidate for a degree carrying work in absentia. Correspondence work will not be accepted for an advanced degree. Extension courses will be accepted for graduate credit only when they are of recognized graduate character and are given at places where library or laboratory conditions are particularly favorable for such courses. Applications for graduate credit for extension courses must be presented in writing to the Graduate Study Committee and bear the approval of the head of the department concerned.

On approval of the Graduate Study Committee and the head of the department concerned, the phrase "in residence" may be so interpreted as to cover thesis work done off the Campus under the direct supervision and guidance of a member of the Faculty.

REQUIREMENTS FOR THE DEGREES OF MASTER OF ARTS AND MASTER OF SCIENCE

The degrees of Master of Arts (M.A.) and Master of Science, (M.S.) will be conferred only for work done in residence by students who have received the bachelor's degree from this institution or from one of similar standing. For either of the degrees, 30 units of graduate work completed in a period of not more than 6 years, are required. Not less than 15 units, and not more than 20 units, must be in a major subject or subjects. Two or more closely allied subjects may be combined to form a major if approved by the Graduate Study Committee. The major and minor subjects shall include only upper-division and graduate courses, and at least 20 units of graduate work must be completed by the student while in residence at the University of Arizona. Immediately after registration each applicant for one of these degrees must submit his course of study for the year to his major professor and to the Chairman of the Graduate Study Committee for approval. In case of students of superior rating, courses taken during the last semester of the Senior year in excess of undergraduate requirements may be counted toward an advanced degree. Graduate credit will be allowed only upon petition in advance to the Graduate Study Committee. This petition must be endorsed by the professor in charge of the course and by the Dean of the college concerned.

A satisfactory thesis in the major field is required. The title and an outline of the thesis must be submitted to the Graduate Study Committee on or before November 15 of the college year in which the student expects to receive the degree, and two typewritten copies of the completed thesis must be submitted to the head of the department in which the major work has been done, not later than May 10 of that year. Instructions relating to the make-up of the thesis may be obtained from the Chairman of the Graduate Study Committee. At the time that the completed thesis is submitted, a deposit of \$5 must be made with the University Comptroller to cover the cost of binding the two copies for the Library. On or before the last day of the first semester, an applicant for the master's degree the following June must fill out and submit to the Graduate Study Committee an application to be advanced to candidacy for the degree sought. The blank applications may be obtained from the Chairman of the Graduate Study Committee.

A candidate for one of these degrees must, on or before May 20, pass a written and an oral examination in the major and minor subjects. At the oral or final examination, the Graduate Study Committee shall be represented, and all members of the faculties have the privilege of being present. Any candidate who fails in his final examination may, upon recommendation of the head of the department involved, be granted a second examination after lapse of at least 6 months. The results of the second examination are final.

The head of the department in which the candidate for the master's degree does his major work shall be regarded as his major professor unless some other member of the department is so designated by him. The head of the department shall approve the thesis and he, or someone selected by him, shall act as chairman of the committee which conducts the final oral examination. The examining committee shall be appointed by the Chairman of the Graduate Study Committee upon consultation with the heads of the departments concerned, and shall consist of at least three members representing the major and minor departments and the Graduate Study Committee.

In order to pass the final oral examination the candidate must receive

the approval of the departments concerned and the representative of the Graduate Study Committee.

REQUIREMENTS FOR THE DEGREE OF MASTER OF MUSIC

The requirements for the degree of Master of Music are the same as those outlined above for the degree of Master of Arts or Master of Science except that a public recital is required in place of the preliminary written examination in the major field.

SPECIAL PROFESSIONAL DEGREES

The professional degree of Civil Engineer (C.E.), Electrical Engineer (E.E.), Mechanical Engineer (M.E.), Metallurgical Engineer (E.Met.), Mining Engineer (E.M.), Mining Geologist (Min. Geol.), may be conferred upon graduates of this institution or other institutions of equal standing who have met the requirements for the Bachelor of Science degree in the appropriate departments subject, however, to the following conditions:

1. The degree shall be granted upon the basis of experience rather than upon academic study alone.

2. The student must have had at least 4 years of acceptable professional work in the branch of engineering in which the degree is sought. One year, and one year only, of acceptable graduate work (which may or may not have led to a graduate degree) may be accepted in lieu of 2 years of practical experience, and at least 1 year of experience must have been in responsible charge of work.

3. The Faculty of the College of Mines and Engineering shall be the judge of the acceptability of the experience record of a candidate for one of the degrees.

4. The Faculty of the College of Mines and Engineering may, if it so desires, require the submission of a satisfactory thesis or report in addition to the amount of experience outlined, and the acceptability of such thesis or report shall be determined by the said Faculty. The form of the thesis, if one is submitted, must conform to the specifications for thesis as outlined by the Committee on Graduate Studies.

The degree of Administrative Engineer of Mines (A.E.M. or Administrative Metallurgical Engineer (A.E.Met.) is conferred upon students who have completed to the satisfaction of the Faculty of the College of Mines and Engineering, the course in the Administration of Mineral Industries offered by that College. This course comprises approximately 6 months' study, on the Campus, of business administration, finance, economics, etc., and more than 2 months' work in the plants and offices of some of the largest Arizona mining companies. Two-weeks periods of campus and field work alternate during the second semester. Admission to this course, which is directed by Dr. E. P. Mathewson, is granted only to men who already hold bachelor's degrees in mining or metallurgical engineering. Furthermore, they must have had several years' successful experience during which they have demonstrated that they possess the qualities required for success in executive work, and they must either be selected or highly endorsed by their employers.

REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

Departments which are properly equipped and which possess special advantages for original investigation may accept prospective candidates for the degree of Doctor of Philosophy (Ph.D.). The degree is granted in recognition of high attainment and ability in a chosen field, as

evidenced by passing examinations in the fundamental and secondary subjects, and by the production of a satisfactory dissertation or thesis.

I. Prerequisites:

The student must have received the bachelor's degree from this University or one of equal rank. He must show evidence of a satisfactory amount of under-graduate work in subjects proposed for advanced study. At or before the beginning of the final year of work for the degree, the departments of French and German must testify as to the proficiency of the student in these languages for purposes of research.

II. Conditions of Candidacy:

At least 3 years of study with a minimum of 60 units of approved graduate work exclusive of thesis, is necessary.* The first 2 years, or the last year, must be spent in residence at this University. The applicant will choose a major subject and either one or two supporting minor subjects. Not less than 36 units must be in the major field. On or before October 1 of the last year of study, a statement of all work offered for the degree and an outline of the proposed dissertation, approved by the department in which the major work lies, must be in the hands of the Graduate Study Committee for their action. On or before November 1 of the last year of study, the student must have passed the language requirements and the preliminary examinations in his major and minor fields. The latter may be oral, or both oral and written, at the discretion of the professors concerned. When these regulations have been met, the applicant will be advanced to candidacy for the degree of Doctor of Philosophy.

III. Dissertation:

The completed dissertation, accepted by the department of the major, must be in the hands of the Graduate Study Committee on or before May 1, previous to the final examination. The dissertation must be a work of original research and constitute an actual contribution to the fund of existing knowledge.

Prior to the awarding of the degree, every successful candidate shall deposit in the University Library ten printed copies of his dissertation or in lieu of this submit two typed copies and deposit with the University Comptroller \$75 to cover cost of printing.†

IV. Final Examination:

In case the candidate has met the required standards of scholarship, and has shown the required ability in research, he must submit to an oral examination in his major and minor fields, as well as to a defense of his dissertation.

This examination will be open to the public and will be held between May 1 and May 15 of the academic year in which the candidate presents himself for the degree. The exact time and place will be announced at least 10 days in advance.

* If the student has already received the master's degree from this University or one of equal rank, the residence and units of credit so received may be counted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

† If the dissertation has been accepted for publication in a recognized journal or its equivalent, the editor's official statement of such acceptance will suffice. In this case, a deposit of \$25 will be required and as soon as the ten reprints have been received at the University Library, the deposit will be refunded.

**DESCRIPTION
OF
COURSES OF INSTRUCTION**

EXPLANATORY NOTES AND KEY TO ABBREVIATIONS AND SYMBOLS

Description of Courses—Descriptions of all courses offered in the University may be found in the following pages under an alphabetical arrangement of departments listed without respect to college organization.

Classification of Courses—The number by which a course is designated is intended to indicate the relative advancement of the course. Courses numbered 1 to 99 inclusive are primarily lower-division courses for Freshmen and Sophomores. Courses numbered 100 to 199 inclusive are primarily upper-division courses for Juniors and Seniors, and the courses numbered 200 and upward are courses primarily for graduate students.

Year Courses; Double Numbers—A course designated by a double number (for example, Economics 1a-1b) is continued through two successive half-years. The student will use the first number in registering for the course during its first half-year, and the second number during its second half-year. A final report will be made by the instructor at the end of each half-year, with final credit for the first half of the course, except as otherwise noted.

Starred Courses—Courses marked with a star (*) are designated as non-professional or non-vocational for students in the College of Letters, Arts, and Sciences. (See page 85.)

Abbreviations—The credit value of each course in semester units is indicated for each semester by a numeral in parenthesis following the title. A semester unit is 1 hour of the student's time at the University, weekly, during one half-year, in lecture or recitation, together with the time necessary in preparation therefor; or a longer time in laboratory or other exercises not requiring preparation. The session during which the course is given is shown as follows: "I," first half-year; "II," second half-year; "Yr.," throughout the year. The capitals "R" and "L" designate recitation and laboratory.

Cancellation of Courses—The Faculty reserves the right to cancel any class not elected by an adequate number of students.

Prerequisites—A student registering for a course must meet the prerequisites, or otherwise satisfy the instructor of his ability to take that course.

Required Course for Freshmen Women

Social Fundamentals. ($\frac{1}{2}$ - $\frac{1}{2}$) Yr. Dean of Women, special lecturers. Required of all Freshman women students. Factors in right living and social adjustment; personal hygiene; nutrition; costume; social usage; the choice of an occupation; personal and ethical problems. One hour a week.

AGRICULTURAL AND HOME ECONOMICS EDUCATION

Associate Professors Klemmedson (Head of the Department), Jones.

AGRICULTURAL EDUCATION

- 130a. Supervised Teaching of Vocational
Agriculture. (3) II. Klemmedson

A practical application under classroom and field conditions of the principles of agricultural education. This includes teaching in all-day, part-time, and evening classes; supervision of projects and farm practice work and community activities. Required of all prospective vocational agricultural teachers. Prerequisites, Education 14, 112, 197a, and a satisfactory attainment in subject matter. Field trip fee, \$7. Not for post-graduate credit.

198. Teaching of Farm Mechanics. (2) II. Klemmedson

Special methods in teaching farm mechanics. General aims; organization of teaching content; instruction; teaching materials; farm mechanics shop and its equipment; records and reports. Prerequisite, Education 112. One lecture and one 3-hour laboratory period. Laboratory fee, \$3. Not for post-graduate credit.

202. Advanced Agricultural Education. (2) II and
Summer Session

For teachers having one or more years of teaching experience. Usually conducted by visiting professors. The content will vary each year and students will thus benefit by the ideas brought by well-known men in vocational agricultural education.

203. Methods in Part-Time and Evening Class
Instruction. (2) II and Summer Session. Klemmedson

Open to experienced teachers or graduates. The objective is to develop ability to promote and conduct part-time and evening classes in vocational agriculture. Each teacher will prepare plans for his next year's part-time and evening class program.

204. Supervision and Administration of Vocational
Agriculture. (2) II and Summer Session. Klemmedson

Open to experienced teachers and graduates. Designed to meet the needs of local supervisors, directors and administrators of vocational agricultural departments and schools.

- The Teaching of Agriculture. (4) II. Klemmedson

For description see Education 197a.

HOME ECONOMICS EDUCATION

- 130b. Student Teaching in Vocational
Home Economics. (3-5) I or II. Jones

Observations, assisting, supervision of home projects, and supervised teaching in grade or high-school classes in home economics. Conference hours to be arranged. Prerequisites or parallel, Education 197g and satisfactory subject-matter attainment. Not for post-graduate credit.

201. Problems in Teaching Home Economics. (2) II. Jones

A study of the pupil in home economics, special problems of method, promotional and management problems. Study habits, pupil difficulties, personal-ity problems, the Home Economics Club, formulation and giving of tests, the evening school and part-time class, the planning and giving of demonstrations, building up the home economics department, etc. Prerequisite, Education 197g or its equivalent.

210. Seminar in Home Economics Education. (2) II.

Jones

Recent investigations in Home Economics Education. Discussion of special interests of the group: curriculum problems in home economics, management of critic teaching, helping the problem pupil, etc. Readings and individual or group problems. Primarily for experienced teachers or graduate students.

The Teaching of Home Economics. (3) I.

Jones

For description see Education 197g.

AGRICULTURAL CHEMISTRY AND SOILS

Professor Buehrer (Acting Head of the Department), Burgess.

Assistant Professor H. V. Smith.

Instructor Greene.

101. Soil Physics. (4) I. Smith

The formation, genesis, and classification of soils; the suitability of the various types for agricultural purposes; the physical properties of soils and their measurement; soil colloids and organic matter as related to physical properties; soil moisture; soil, air and temperature inter-relationships. Three lectures and one 3-hour laboratory period. Prerequisites, Chemistry 1b or 2b or equivalents, and Physics 17b. Laboratory fee, \$2.50; field trip fee, \$2. Not for post-graduate credit.

102a-102b. Agricultural Chemical Analysis. (3-3) Yr. Greene

Selected work in the chemical analyses of soils, fertilizers, insecticides, feeding stuffs, and plant and animal products; a study of the methods adopted by the Association of Official Agricultural Chemists, and other special methods. Prerequisite, Chemistry 54, or 101. Three 3-hour laboratory periods with conferences. Laboratory fee, \$8.

111. Soil Chemistry. (3) II. Buehrer-Greene

The essential elements of plant food and their sources; relation of organic matter and base exchange to soil fertility; manufacture, composition, and use of commercial fertilizers; alkali soils from the standpoint of base exchange, and their reclamation; irrigation waters, their composition and use. Prerequisites, Chemistry 50, 54, and Agricultural Chemistry 101. Two lectures and one 3-hour laboratory period. Laboratory fee, \$3.

121. Soil Microbiology. (3) I. Greene

The occurrence of bacteria, fungi, actinomycetes, protozoa, and other lower forms of life in soils. Quantitative studies of the biochemical activities of these soil micro-organisms with respect to fertility; their action on the insoluble mineral plant foods; fermentation of crop residues, green and farm manures; ammonification, nitrification, nitrogen fixation, and sulfification. Prerequisites, Chemistry 54, Agricultural Chemistry 111, and Bacteriology 7. One lecture and two 3-hour laboratory periods. Laboratory fee, \$3.

131. Applied Colloid Chemistry. (2) I or II. Buehrer

The general principles of colloid chemistry, including adsorption, protective action, coagulation and swelling, and their applications to soil studies and plant nutrition. Two lectures per week. Prerequisites, Chemistry 50, 54, and Physics 17b.

201. Seminar in Soil Science. (1) II. Staff

Assigned readings, abstracting of recent literature and special problems relating to soil fertility. Open to graduate students and others who have completed Agricultural Chemistry 121.

211. Research in Agricultural Chemistry and Soils. (3-3) Yr. Staff

The chemical laboratories and facilities of the Agricultural Experiment Station are open both semesters and during the summer to competent students for research.

AGRICULTURAL ENGINEERING

Professor G. E. P. Smith (Head of the Department).

Associate Professor Schwalen.

Instructor Steenbergen.

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1. Agricultural Shop Practice. (2) II. Klemmedson
Carpentry, forging, leather work, and metal soldering. Two 3-hour laboratory periods. Laboratory fee, \$3.
105. Irrigation Practice. (3) II. Schwalen
Preparation of fields; methods of irrigation; use and waste of water; efficiency of irrigation; duty of water. Prerequisite, Civil Engineering 1. Two recitations and one 3-hour laboratory period. Laboratory fee, \$1; field trip fee, \$2.50.
106. Groundwater Supplies and Pumping for Irrigation. (2) II. Steenbergen
The occurrence, source, movements, measurements, and safe yield of groundwater; well-drilling and development; pumping machinery. One recitation and one 3-hour laboratory period. Open to Juniors and Seniors. Field trip fee, \$3.
107. Irrigation Systems. (2) II. Smith
Water supply and storage; conveyance and distribution works; irrigation economics; organization of districts. Prerequisites, Agricultural Engineering 105 and 110. One lecture and one 3-hour laboratory period.
110. Land Drainage. (2) I. Schwalen
Principles of land drainage, especially drainage on irrigation projects; gravity systems; drainage by pumping; effects and economy of canal-lining. Prerequisite, Civil Engineering 1. Two lectures. Field trip fee, \$6.
201. Research and Thesis in Water Supply and Irrigation. (2-4) I or II. Smith
Prerequisites, Agricultural Engineering 105 and 106.

AGRONOMY

Professor Hawkins (Head of the Department).

Associate Professor Briggs.

Assistant Professor Matlock.

1. Plant Industry—Field Crops. (4) I. Briggs

Fundamental factors in the production and management of crops. Prerequisite to all other courses in agronomy. Two lectures and two 3-hour laboratory periods for the first half of semester. Students continue with Horticulture 1 for balance of semester. Laboratory fee, \$5.

101. Forage Crops. (3) I. Briggs

The principal forage crops of the United States with particular reference to the Southwest, including legumes, corn, sorghums, and grasses. Prerequisite, Botany 1. Two lectures and one 3-hour laboratory period. Laboratory fee, \$1.

102. Cereal Crops. (3) II. Matlock

The cereals, methods of culture and market demands. Purity tests and seed germination. Prerequisite, Botany 1. Two lectures and one 3-hour laboratory period. Field trip fee, \$1.

103. Cotton Production. (3) I. Hawkins

Soil, climatic, and cultural factors involved in the production of cotton with particular reference to the irrigated lands of the Southwest. Prerequisite, Botany 1. Field trip fee, \$3.50.

104. Alfalfa Production. (3) II. Briggs

Production and marketing of alfalfa with particular reference to the varieties and methods adapted to the irrigated conditions of the Southwest. Prerequisite, Botany 1. Two lectures and one 3-hour laboratory period. Laboratory fee, \$2.

105. Dry-Farming. (3) I.

Cultural practices and crops adapted to dry-farming; soil and climatic conditions in the various dry-farming regions of the world. Lectures and library work. Prerequisites, Agricultural Chemistry 102, Botany 1. Not for post-graduate credit.

106. Crops Judging. (1) II. Matlock-Briggs

The factors involved in determining quality in seeds. Practice and competitive judging of seeds, grain, and sheaf-samples. Prerequisite, Botany 1. One 3-hour laboratory period. Laboratory fee, \$2. Not for post-graduate credit.

107. Farm Management. (3) I.

Purchase, equipment, and management of farms with reference to financial returns; marketing associations. Two lectures and one 3-hour laboratory period, including field trips. Field trip fee, \$5. Not for post-graduate credit.

201. Seminar in Agronomy. (2) II. Staff

Special problems relating to field-crop production. Conferences and discussions.

202a-202b. Research and Thesis in Agronomy. (2 to 4) I or II. Staff

The laboratory and facilities in agronomy are open throughout the year to competent persons for research and special investigation.

ANIMAL HUSBANDRY

Professor Stanley (Head of the Department).

Associate Professor Scott.

1. Animal Industry. (4) II. Stanley

The fundamental principles underlying livestock management and production; development of animal husbandry. Given first half of semester—remainder of semester divided between dairy husbandry and poultry husbandry. Prerequisite to all courses in animal husbandry.

2. Livestock Production. (3) I. Scott

The practical problems arising in the production, care and management of livestock. Special emphasis will be given to those practices particularly adapted to Arizona conditions. Two lectures and one laboratory period.

101. Advanced Livestock Judging. (3) I. Scott

A detailed study in judging the various breeds of livestock. Trips are made to stock farms, and students are required to attend the State Fair. One lecture, two 3-hour demonstrations. Field trip fee, \$7. Not for post-graduate credit.

102. Range Livestock Production. (3) I. Stanley

Ranch organization and methods of management; use of land, cost of production and problems confronting the range livestock industry in the Southwest. Three lectures. Given in 1932-33 and alternate years.

103. The Breeds of Livestock. (2) I. Scott

Characteristics of the breeds of farm animals; origin, history, and development; introduction to America; adaptability to southwestern conditions. Record association and pedigree studies. Two lectures. Given in 1932-33 and alternate years. Not for post-graduate credit.

104. Principles of Animal Nutrition. (3) I. Scott

The physiology of animal nutrition; functions and values of the various nutrients; classification of feeds according to their composition, digestibility, and food values. Prerequisites, Chemistry 50 or Chemistry 103a. Three lectures.

105. Animal Diseases. (3) II. Stanley

Causes of diseases and methods of prevention; errors in feeding and in care of animals; sanitation of stables, feeding pens, and pastures; simple operations. Three lectures. Given in 1932-33 and alternate years. Prerequisite, Bacteriology 7. Not for post-graduate credit.

106. Wool and Mohair. (3) II. Scott

Measurement, physical structure, and chemical composition of the fibers; sorting, grading, commercial grades, determination of shrinkage, scouring, and terms used in market reports; processes in manufacture of textiles. One lecture and two 3-hour laboratory periods. Laboratory fee, \$3. Prerequisite, Chemistry 1b.

113. Animal Breeding. (3) II. Scott

The practical application of the principles of genetics to methods of animal breeding. Prerequisite, Botany 8. Three lectures. Given in 1931-32 and alternate years.

114. Feeding Livestock. (3) I. Stanley

Selection and use of feeds for special purposes; balanced rations; methods of feeding, and experimental work in feeding livestock. Three lectures. Field trip fee, \$7. Given in 1932-33 and alternate years. Prerequisite, Chemistry 1b.

115. Marketing Livestock and Livestock Products. (3) II. Stanley-Scott

Systems of marketing livestock; slaughtering livestock; the packing industry; the preservation and distribution of meat and other livestock products. Two lectures and one laboratory period. Prerequisites, Animal Husbandry 2 and Economics 1a.

- 202a-202b. Seminar in Animal Husbandry. (2-2) Yr. Stanley-Scott
212. Research in Animal Husbandry.
(2 to 4) I or II. Stanley-Scott
The satisfactory completion of a research problem in animal husbandry.

ARCHAEOLOGY

Professor Cummings (Head of the Department).

Assistant Professor Province.

Instructors Fraps, Hawley.

The major: 24 units exclusive of Archaeology 1a-1b and inclusive of 101a-101b, 103, 104, 105a-105b, 210a-210b.

The supporting minor should be chosen from the following: geology, history, social science, language, music, art.

1a-1b. Anthropology. (3-3) Yr.

Fraps

The development of the human race from its known earliest beginnings to the present time. The physical characteristics, the accomplishments, and the consequent classification of the great groups of man. 1a, Primitive Man on the Eastern Hemisphere. 1b, Primitive Man on the Western Hemisphere. 1a is prerequisite to 1b. Field trip fee for 1b, \$5.

101a-101b. American Archaeology. (3-3) Yr.

Cummings

(a) The prehistoric inhabitants of southwestern United States, the cave people, pithouse people, and the cliff, mesa, and valley pueblos. (b) A study of the prehistoric people of Mexico and Central America, dealing with the development of the Archaic, Toltec, Mayan, Aztec, and other lesser cultures in the republics to the south of the United States. Prerequisite, 1a-1b.

103. Greece. (3) I.

Fraps

The principal monuments and ruined cities of the Greek world illustrating the development of the religious, social, and political customs, and the literature, art, and architecture of the ancient Greeks. Prerequisite, course in Greek History.

104. Rome. (3) II.

Fraps

The principal cities and monuments of the ancient Romans illustrating their early development. Prerequisite, course in Roman History.

105a-105b. Ethnology. (3-3) Yr.

Province

(a) The great divisions of the human race, including physical characteristics and social and religious customs. (b) Large groups of the American Indian population, stressing the tribes of Arizona and the Southwest. Prerequisite, 1a-1b. Field trip fee for 105b, \$3.

107. Asia. (2) I.

Fraps

The ruins of the chief ancient cities of western Asia are studied, tracing their influence upon civilization.

108. Egypt. (2) II.

Fraps

The prehistory of Egypt and the development of its mighty empire as revealed by archaeological investigations.

201a-201b. South American Indian Tribes. (2-2) Yr.

Cummings

(a) The various Indian tribes of South America, ancient and modern, tracing their probable origin, their physical characteristics, and their customs. (b) The Pre-Inca and the Inca populations of Peru, Ecuador, Bolivia, and Chile. Prerequisites, 1a-1b, 105a-105b.

202a-202b. Physical Anthropology. (3-3) Yr.

Province

(a) Development of the human race; measurements and comparison of its branches, and of types of prehistoric Americans. (b) The living tribes of the Southwest and the mixed population resulting from crossing of the Indian with the white race. Prerequisites, 1a-1b, 105a-105b.

210a-210b. Seminar in Archaeology. (3-3) Yr.

Cummings

Special fields in American archaeology, varied from year to year. In 1932-33 the themes will deal with the origin and development of the pueblo peoples of the Southwest. Open to Seniors and post-graduates. Two lectures and two laboratory periods. Prerequisites, 1a-1b, 101a-101b.

ART

Associate Professor Kitt * (Head of the Department).
Instructor Harris.

The major: 24 units including Art 1a-1b, 2a-2b, 100a-100b, 101a-101b.
The supporting minor should be chosen from: history, psychology, archaeology, French, Spanish, or music.

The teaching minor must include Art 1a-1b, 2a-2b, 100a-100b or 101a-101b.

Note: For majors in art not more than 12 units of laboratory work shall count toward an A.B. degree.

1a-1b. Art and Design. (2-2) Yr.

Harris

The fundamental principles underlying all art, both in design and pictorial work. Good proportions and spacing with the meaning of lines. Work in water-color is begun. Emphasis upon observation. Two 3-hour laboratory periods, half of which time is spent in lecture and criticism. Laboratory fee, \$1 each semester.

2a-2b. Drawing. (3-3) Yr.

Harris

Charcoal drawing from casts for training the eye to see proportions and for developing the necessary skill to execute them. Quick lead-pencil sketches from life. Two 3-hour laboratory periods of which half is spent in lectures and criticisms, and 1 hour devoted to lectures on perspective and anatomy. Laboratory fee, \$1 each semester.

100a-100b. History and Appreciation of Art. (3-3) Yr.

Kitt

The great art movements of the past, their influences and effects, with a study of the men making them, through the Renaissance. Three 1-hour lectures. Given in 1932-33 and alternate years. Prerequisite, History 17a-17b.

101a-101b. History of Modern Art. (3-3) Yr.

Kitt

The great schools of art from the Renaissance to the present time, with an analytical study of the principles involved. Three 1-hour lectures. Given in 1931-32 and alternate years.

102a-102b. Still Life and Landscape in Color. (3-3) Yr.

Kitt

Study of proper technique. Study for ability to see and apply color with its relation to Arizona landscape. Two 3-hour laboratory periods, including 3 hours devoted to lectures and criticisms. Outside studies required. Prerequisite, 1a-1b. Admission by consent of instructor.

103a-103b. Life Class. (2-2) Yr.

Kitt

Anatomy and proportion of the human body. Fundamental for all advanced art work. Prerequisites, 2a-2b and in each case consent of the instructor. Students pay for the models. Two 3-hour laboratory periods, including 3 hours of lecture and criticisms. Not for post-graduate credit.

Teaching of Art. (3) II.

For description see Education 1971.

RELATED COURSES IN OTHER DEPARTMENTS

Rome Economics:

5 Costume Design.

15 Historic Costume.

115 Interior Decoration.

* On sabbatical leave, 1932-33.

ASTRONOMY

Professor Douglass (Head of the Department).
Associate Professor Carpenter.

The major: 24 units including Astronomy 1a-1b, 2a-2b, 101, and Mathematics 100a-100b, 112a-112b or Physics 106a-106b, 104, 115.

Mathematics and physics should be begun during the Freshman and Sophomore years.

The supporting minor should be chosen from: physics, mathematics.

1a-1b. Descriptive Astronomy. (2-2) Yr. Carpenter

A non-mathematical course. The structure of the stellar universe and of the place of man and of the earth in it. One evening hour each week is spent in study of the constellations or in telescopic observation. Open to all students. With the consent of the instructor 1b may be taken without 1a. See note under 2a-2b. Two lectures and 1 hour observing period.

2a-2b. Astronomical Laboratory. (2-2) Yr. Carpenter

Supplement to course 1, best taken at the same time. Two 3-hour laboratory periods. The afternoon session is devoted to laboratory exercises bearing upon the material of course 1, the evening session to study of the constellations and observation with the telescope and with several types of astronomical measuring instruments. Courses 1a-1b and 2a-2b when taken simultaneously fulfill the science requirement. Laboratory fee, \$1.

101. Engineering Astronomy. (2) I. Douglass

Latitude, longitude, meridian, and time observations and their reduction, in theory and in practice, with particular reference to the astronomical use of the engineering transit. Prerequisite, plane trigonometry. Text: Hosmer, *Practical Astronomy*. Course 101a is required of Juniors in civil engineering not electing Geology 101R. Laboratory fee, \$1. Not for post-graduate credit.

111a-111b. Stellar Astronomy. (3-3) Yr. Carpenter

The system of the stars in greater detail than in course 1, with special emphasis upon the physical background of the subject. The application of radiation theory to astronomy, the sun as a typical star, stellar evolution, stellar motions and distribution; nebulae and clusters. Prerequisites, 1b or its equivalent, a knowledge of the fundamentals of the spectroscopy, and of differential and integral calculus.

121a-121b. Special Study. (1 to 3) I or II. Carpenter

Selected topics not extensively covered in courses announced above. Primarily for majors and minors in astronomy, but may be taken by others with an adequate knowledge of physics and mathematics. By special permission the course may be repeated for credit.

210. Seminar. (1 to 4) I or II. Douglass-Carpenter

Open to Seniors and graduate students and to others with the consent of the instructor. The subject matter will depend upon the needs and interests of the students, and with the consent of the department may be repeated for credit.

211. Tree Ring Interpretation. (2) II. Douglass

The growth rings of trees in relation to solar and climatic changes, and their use in problems of environment and dating. Laboratory, 2- to 3-hour period includes actual practice in selecting trees, radii, and rings for their climatic record; dating and measuring rings; the production of curves of growth and their analysis in terms of cycles; observations of weather elements and other factors. Lectures, 1 hour, cover the outline of laboratory work as given and the contacts with (a) astronomy, (b) meteorology, (c) ecology, (d) archaeology, (e) geology, and other sciences. The 2 units may be taken separately.

212. Research. (1 to 3) I or II. Staff

Tree ring interpretation. Photometry and related problems.

BOTANY AND BACTERIOLOGY

Professors Shantz (Head of the Department), Thornber, Bryan, J. G. Brown, Hemenway.

Associate Professors Pressley, Streets, McGinnies.

Assistant Professors M. E. Caldwell, Bakhuyzen, Nichol.

Instructor Love.

The major: 24 units of botany exclusive of Botany 1 and 2.

The minor: 20 units chosen in consultation with the head of the department from not more than three subjects in the following list: agronomy, chemistry, economic zoology, entomology, geology, horticulture, mathematics, physics, physiology, or zoology. At least 10 units must be offered in one subject.

BOTANY

Courses Primarily for Lower-Division Students

1. Botany, General. (4) I or II. Staff

A general course, intended primarily to give a view of the field of botany and its importance to man. Prerequisite to all other courses in this department. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$5.

2. Anatomy. (4) I. Hemenway

A general study of the anatomy of ferns and seed plants. Prerequisite Botany 1. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$5.

3. Physiology. (4) II. Bakhuyzen

An experimental study of plant functions; absorption, nutrition, respiration, and reproduction. Plant production under different conditions. Prerequisite, Botany 1 and Chemistry 1b or 2b. Two lectures, and two 3-hour laboratory periods. Laboratory fee, \$6.

4. Taxonomy. (4) II. Thornber

Identification and relationships of native and cultivated species. Characteristics of the more important families, with particular attention to the unique Arizona flora. Prerequisite, Botany 1. Two lectures and two 3-hour laboratory periods. Laboratory and field trip fee, \$2.

6. Ecology. (4) I. McGinnies-Shantz

Plants in relation to their environment, plant communities, factors affecting the distribution of plants, and the origin, development, and structure of vegetation. Prerequisite, Botany 1. Two lectures and two 3-hour laboratory periods. Field trip fee, \$5.

8. Genetics. (3) II. Bryan-Pressley

Fundamental principles of breeding. Heredity and variation. Attention is given to the principles upon which the improvement of plants and animals depends. Prerequisite, Botany 1 or Zoology 4. Two lectures and one 3-hour laboratory period. Laboratory fee, \$3.

16. Range and Forest Preservation
and Utilization. (4) II. McGinnies

Types of ranges, important forage plants, range weeds, and poisonous plants, relative palatability of the more common species, economical utilization of vegetation, and results of over-grazing. Two lectures and 3 hours' field work. Prerequisite, Botany 1. Fee, \$7.

Courses Primarily for Upper-Division Students

122. Morphology of Lower Plants. (4) I. Hemenway

The algæ, fungi, and bryophytes. Two lectures and two 3-hour laboratory periods. Prerequisite, Botany 2. Laboratory fee, \$5.

132. **Morphology of Vascular Plants. (4) II.** Hemenway
Pteridophytes and seed plants. Two lectures and two 3-hour laboratory periods. Prerequisite, Botany 2. Laboratory fee, \$5.
142. **Histological Technique. (3) II.** Hemenway
Principles and methods of histological technique of plants. Prerequisite, Botany 2. One lecture and two 3-hour laboratory periods. Laboratory fee, \$8.
123. **Advanced Physiology. (4) I.** Bakhuyzen
Special problems in plant physiology, including growth, mineral nutrients, photosynthesis, movement of materials, and enzymes. Two lectures and two 3-hour laboratory periods. Prerequisite, Botany 3. Laboratory fee, \$5.
133. **Physiology of Protoplasm. (2) I.** Bakhuyzen
The morphology and physiology of protoplasm. Colloidal behavior of the protoplasm as an explanation of life-processes, such as growth, osmotic properties of the cell, permeability, respiration, photosynthesis, etc. Two lectures. Prerequisite, 8 units of chemistry and 16 units of botany or zoology.
124. **Advanced Plant Classification. (4) I.** Thorner
Advanced systematic study of the Arizona flora with emphasis on grasses and composites. Laboratory work and discussions of phylogenetic problems. Prerequisite, Botany 4. Laboratory fee, \$2.
105. **Pathology. (4) I.** Brown-Streets
The principal groups of parasitic fungi and the plant diseases caused by them, together with methods of control. External factors causing pathological conditions in plants. The commoner plant diseases throughout the country. Prerequisites, Botany 1 and Bacteriology 7. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$5.
135. **Mycology. (4) II.** Brown
The morphology and classification of the fungi. Prerequisites, Botany 1, 122, and Bacteriology 7. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$3.
145. **Diseases of Cereals, Fiber, and Forage Crops. (4) I.** Streets
Important bacterial and fungal diseases affecting cereal, fiber and forage crops. Special emphasis upon diseases prevalent in the Southwest. Prerequisite, Botany 5. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$3.
155. **Diseases of Fruit Trees, Nut Trees, and Truck Crops. (4) II.** Streets
This course and the succeeding one parallel Botany 145, have the same prerequisite, class hours, laboratory fee, and command the same credit.
165. **Diseases of Forest Trees, Shade Trees, and Ornamentals. (4) II.** Streets
126. **Range Ecology. (4) I.** McGinnies
The physical and biological factors influencing the production of range vegetation. Prerequisites, Botany 3 and 4. Two lectures and two 3-hour laboratory periods. Laboratory and field trip fee, \$5.
128. **Plant Breeding. (3) II.** Bryan-Pressley
Critical examination by means of lectures and laboratory work of the various theories of heredity as presented by leading plant breeders and geneticists. Prerequisites, Botany 3 and 8. Two lectures and one 3-hour laboratory period. Laboratory fee, \$3.
100. **Botanical Discussions. I or II.** Staff
Required of all majors and graduate students.

Courses Primarily for Graduate Students

243. **Physiological Response of Plants to Environment. (2) II.** Bakhuyzen
The effect of extreme environmental conditions on physiological behavior. The protoplasmic responses of water balance or hydrature to extreme conditions. Two lectures. Prerequisite, Botany 3.
234. **Classification of Desert Plants. (4) I or II.** Thornber
Special groups of Arizona desert plants. Prerequisite, Botany 124. Laboratory fee, \$5.
225. **Pathological Histology and Cytology. (4) I.** Brown
Histological and cytological changes induced in the host by parasites belonging to the plant kingdom and by unfavorable environmental and physiological conditions. Some attention is given to the cytology of parasitic fungi. Prerequisites, Botany 3, 5, 122, 132 and 142. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$5.
275. **Physiology of Parasitism. (4) I.** Brown
The physiological interrelations of host and parasite; physiological changes in the host induced by parasitic plants. Special attention to plants of the Southwest. Prerequisites, Botany 123 and all courses in plant pathology or their equivalent. Laboratory fee, \$5.
236. **Vegetation and Environment. (2) I.** Shantz
Plant communities, their classification, history, and methods of recognition. Methods of measuring the factors of the habitat and the response of vegetation to direct and indirect factors. Prerequisite, Botany 126. One lecture and one 3-hour laboratory period. Laboratory fee, \$2.
246. **Plant Geography. (2) II.** Shantz
The correlation of the major plant communities of the world with climatic conditions, soil conditions, natural production, agricultural production, and crop potentiality. Prerequisite, Botany 126. One lecture and one 3-hour laboratory period. Laboratory fee, \$2.
209. **Advanced Studies. (2-4) I or II.** Staff
In consultation with head of department and the instructor, work may be arranged in any field of botany or bacteriology not covered in the listed courses if the student is qualified.
201. **Special Discussions. (1) I or II.**
Required of students registered in Botany 200 in the same field of work. Morphology (Hemenway), physiology (Bakhuyzen), taxonomy (Thornber), pathology and mycology (Brown or Streets), ecology (McGinnies or Shantz or Hemenway or Nichol), bacteriology (Caldwell), plant breeding (Bryan).
200. **Research. (4-6) I or II.**
Students registering in Research should also register in Botany 201 (in the same field of work). Work is offered in the following fields: Morphology (Hemenway), physiology (Bakhuyzen or Shantz), taxonomy (Thornber), pathology and mycology (Brown or Streets), ecology (McGinnies or Shantz or Hemenway or Nichol), bacteriology (Caldwell), plant breeding (Bryan and Pressley).
In consultation with the head of the department work may be arranged with:
Cooperrider, C. K., Range Examiner, Southwest Forest and Range Experiment Station.
Pearson, Gustaf Adolph, Director, Southwest Forest and Range Experiment Station.
Shreve, Forrest, Assistant Director, Laboratory of Plant Physiology, Carnegie Institution.
Crider, Franklin J., Director of the Boyce Thompson Southwestern Arboretum.
Culley, Matt J., Associate Range Examiner, Southwest Forest and Range Experiment Station.

BACTERIOLOGY

7. General Bacteriology. (4) I. M. E. Caldwell
The fundamental facts of bacteriology. Characteristics of several groups of bacteria and some of the common yeasts and molds. Experiments also deal with industrial and hygienic applications. Prerequisite, Chemistry 1b or 2b; recommended, Zoology 4 and Botany 1. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$10.
67. Personal Hygiene. (2) II. M. E. Caldwell
The more important problems of the preservation and promotion of individual health. Prerequisites, Zoology 4 and 57. Two lectures.
137. Public Hygiene. (2) I. M. E. Caldwell
A general survey of the attack upon the control of community hygiene problems, water and food supplies, sewage disposal, infant and maternal welfare, tuberculosis, insect-borne diseases, etc. Prerequisites, Zoology 4, 8 or 45 and 57, or equivalent.
157. Pathogenic Bacteriology. (4) II. M. E. Caldwell
The characteristics of pathogenic bacteria. Laboratory technique is emphasized in the study of pure cultures, isolation and identification of unknown bacteria from pathological material, and assignments or problems (with collateral reading) to demonstrate fundamental laws of infection and immunity. Prerequisites, Zoology 4, 8 or 45, 144 and Bacteriology 7. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$10.

For Research see Botany 200.

CHEMISTRY

Professors Anderson (Head of the Department), Roberts.

Associate Professor Sands.

Assistant Professor Nugent.

Instructor Russell.

The major: 3, 4, 101, 103a-103b, 106a, and either 107a or 106b.

The supporting minor should be chosen from : mathematics, physics, biology, geology, metallurgy, agricultural chemistry, food courses in home economics.

The teaching minor must include: Chemistry 1a-1b (or 2a-2b), 3, and 6 additional units.

Note: In addition to the regular laboratory fee, a breakage deposit of \$2.50 is required of students in all laboratory courses, except courses 3, 4, 54, and 101, where the deposit is \$5. See page 49.

1a-1b. General Chemistry. (4-4) Yr. Roberts and assistants

Training in scientific methods of experimentation, observation, and reasoning. The fundamental principles of chemistry and of the properties of the metallic and non-metallic elements and their compounds. Prerequisite, high-school chemistry. Three lectures and one 3-hour laboratory period. Laboratory fee, \$5 each semester.

2a-2b. Introductory General Chemistry. (4-4) Yr. Anderson and assistants

This course is similar to 1a-1b but is adapted to the needs of students who have not had high-school chemistry. Three lectures and one 3-hour laboratory period. Laboratory fee, \$5 each semester.

3. Qualitative Analysis. (4) I. Sands

Emphasis is placed on the laws of equilibrium and solutions. Laboratory work in the separation and identification of common metals and acids. One lecture and three 3-hour laboratory periods. Prerequisite, Chemistry 1b or 2b. Laboratory fee, \$6.

4. Gravimetric Analysis. (4) II. Nugent

Presented in the light of recent theories of ionization and solution, illustrated by typical gravimetric determinations. In the laboratory emphasis is upon careful and intelligent technique, and upon integrity and accuracy in reporting results. Prerequisite, Chemistry 3. One lecture and 9 hours of laboratory work. Laboratory fee, \$6.

50. Organic Chemistry for Students in Home Economics and Agriculture. (3) I. Sands

The compounds of carbon accompanied by laboratory preparation of typical group representatives. Two lectures and one 3-hour laboratory period. Prerequisite, 1b or 2b. Laboratory fee, \$6.

52. Applied Chemistry for Home Economics and Agriculture Students. (3) II. Sands

Elementary biochemistry as a foundation for courses in nutrition. During the last third of the term the class is divided into two parts; Agriculture students continue biochemistry, Home Economics students take up textiles, cleaning, dyeing, and other phases related to household problems. Two lectures and one 3-hour laboratory period. Prerequisite, Chemistry 50. Laboratory fee, \$5.

54. Elementary Quantitative Analysis. (3) II. Nugent

Typical determinations in both gravimetric and volumetric analysis, to meet the needs of students in biology, geology, and agriculture. Prerequisite, 1b or 2b. One lecture and two 3-hour laboratory periods per week. Laboratory fee, \$5.

101. Volumetric Analysis. (3) I. Nugent

The processes of neutralization, oxidation-reduction, and precipitation. The accuracy of various methods examined. Prerequisite, Chemistry 4. One lecture and two 3-hour laboratory periods. Laboratory fee, \$5.

103a-103b. General Organic Chemistry. (4-4) Yr. Anderson

The general principles and theories of organic chemistry accompanied by the laboratory preparation and examination of organic compounds. Three lectures and one 3-hour laboratory period. Prerequisites, upper-division rank and Chemistry 1b or 2b. It is advisable that students take Chemistry 3 and 4 before 103a. Laboratory fee, \$6 each semester.

105. Engineering Chemistry. (3) I. Nugent

The various phases of chemical engineering practice: distillation, evaporation, filtration, extraction, combustion, flow of heat, based on physico-chemical principles and illustrated by typical industrial processes in both organic and inorganic chemistry. Prerequisites, Chemistry 101, 103a, and 106a. Chemistry 106a may be taken concurrently. Three lectures per week. Given in 1932-33 and alternate years.

106a-106b. Physical Chemistry Lectures. (3-3) Yr. Roberts

The fundamental principles and theories of physical chemistry. Emphasis on the solution of problems. Prerequisites for 106a, Chemistry 4, and Physics 1b or 17b. Students who have not received credit for Chemistry 101 must take that course simultaneously. Prerequisite for 106b, Mathematics 100b. Three lectures.

107a-107b. Physical Chemistry Laboratory. (2-2) Yr. Roberts

Designed to illustrate the principles studied in 106a-106b. Open only to students who have received credit for 106a-106b or the equivalent or who register for 106a-106b concurrently. Laboratory fee, \$5 each semester.

109. Advanced Quantitative Analysis. I or II. Nugent

A laboratory conference course for experience in practical analytical work. Each subdivision represents 2 units of work. A student may not register for more than 2 units in a semester, except by special permission.

- (a) Water Analysis.
- (b) Fuel, Oil and Gas Analysis.
- (c) Steel and Alloy Analysis.
- (d) Ore and Rock Analysis.
- (e) Analysis of Copper Metallurgical Products.
- (f) Special Physico-Chemical Methods of Analysis.
- (g) Ultimate Organic Analysis.

Prerequisites, Chemistry 4 and 101. Two 3-hour laboratory periods per week, with occasional conferences, hours to be arranged. Laboratory fee for each sub-division, \$5.

111. Advanced Inorganic Chemistry. (3) I. Nugent

Selected topics of inorganic chemistry: the periodic law, theories of valence, the nature of chemical affinity, the relationship between the properties of substances and the ionic radii, the concept of ionic potential, the theory of oxidation-reduction processes, peroxides, per-acids and their salts, etc. Prerequisite, Chemistry 4. Three lectures per week. Given in 1933-34 and alternate years.

115. Biochemistry. (4) II. Sands

The chemistry of plant and animal life including the carbohydrates, lipins, proteins, blood, functions of the digestive organs and enzymes, intermediary metabolism and excretion. Laboratory work in physiological substances and processes with quantitative blood and urine analysis. Prerequisites, Chemistry 52 or 103a and 54. Two lectures and two 3-hour laboratory periods. Fee, \$6.

120. Colloid Chemistry. (2) I. Nugent

The preparation, classification, and behavior of dispersed systems, including the study of the chemical, electrical, optical, and other physical properties of substances in the colloid state. Prerequisite, Chemistry 50 and 54, or their equivalent. Two lectures per week.

201. Chemical Thermodynamics. (3) I.**Roberts**

The principles of thermodynamics and their application to chemistry. Three lectures per week. Prerequisite, 106b. Hours to be arranged. Given in 1931-32 and alternate years.

202a-202b. Advanced Organic Chemistry. (3-3) Yr.**Anderson**

Organic chemistry dealing in detail with such topics as the carbohydrates organic nitrogen compounds, stereo-chemistry, and recent theories of organic chemistry. Three lectures per week. Prerequisite, 103b. Hours to be arranged.

203. Advanced Organic Preparations. (2) I.**Anderson**

A laboratory conference course preparatory to research. The preparation of typical organic compounds. Two 3-hour laboratory periods. Prerequisite, 103b. Laboratory fee, \$8. Hours to be arranged.

204. Electrochemistry. (3) II.**Nugent**

Applied to such phenomena as conductance, transference, electromotive force, standard potentials, liquid potentials, polarization, etc. Three lectures per week. Prerequisites, 106b and 107b. Hours to be arranged.

212a-212b. Research. Yr.**Staff**

A thesis required of students taking an advanced degree, and based on research in organic, inorganic, physical, or biochemistry. The units of credit depend upon the amount of work done. Laboratory fee, \$1 per unit.

215a-215b. Seminar. (1-1) Yr.**Staff**

Instructors and advanced students meet each week to discuss recent contributions to chemistry. Open for credit to Seniors and graduate students.

CIVIL ENGINEERING

Professor Kelton (Head of the Department).

Associate Professor Borgquist.

Assistant Professor Park.

1. Elementary Surveying. (3 or 4) I or II. Park

Use, care and adjustment of surveying instruments; computations; adjustment of surveys; areas; mapping; deeds; U. S. System of Land Surveys; determination of meridian by observation on Polaris. Lectures, recitations, and field work. Prerequisites, Mathematics 24 and Mechanic Arts 1. Required of all engineering students. Two recitations and one or two 3-hour periods of field or drafting work. Laboratory fee, \$1 per unit.

2. Topographical and Mine Surveying. (3) II. Park

By transit-stadia method; mapping; introduction to plane table surveying; surveying for engineering works; solar observations; patent surveys; underground surveying. Open to students who have taken Civil Engineering 1. Required of civil and mining engineering students. Two recitations and one 3-hour period of field work. A 2-day field trip is required about the first of May. Laboratory fee, \$5.

25. Materials of Construction. (2) I. Borgquist

The fundamental properties of materials used by the engineer, the quarrying and cutting of stone, the methods of manufacture of bricks, cements, limes and plasters, iron and steel, and the effect of different methods of manufacture upon the quality of the material, the properties of different types of wood and methods of preservation, specifications and standard tests for materials. Two lecture-recitation periods. Prerequisite, Sophomore standing.

103. Advanced Surveying. (3) I. Park

Triangulation work, including measurement of base lines, measurement of angles, adjustment and computation of triangulation systems. Plane table work and advanced topographic surveying. Open to students who have taken Civil Engineering 2. Required of civil engineering students. One lecture-recitation period and two 3-hour field or office periods. Laboratory fee, \$5.

106R. Reinforced Concrete Construction. (3) I. Kelton

Concrete construction and design, including beams, girders, slabs, columns, footings, retaining walls, and buildings. Prerequisite, Civil Engineering 126. One lecture-recitation period and two 3-hour drafting and office periods. Laboratory fee, \$1.

106L. Materials Testing Laboratory. (1) I. Kelton

Testing of cements and plain and reinforced concrete. Required of Senior civil engineering students. Laboratory fee, \$2.

107. Steel Mill Buildings. (3) I. Kelton

Graphical and analytical determination of stresses in roof trusses, steel bracing, transverse bents, and structural steel detailing. Prerequisite, Civil Engineering 126. One lecture-recitation period and two 3-hour periods of drafting. Laboratory fee, \$1.

108. Bridge Design. (3) II. Kelton

The continuation of 107, including in particular steel bridge design with drawings, stresses due to moving loads, and influence diagrams. Prerequisite, Civil Engineering 107. One recitation and two 3-hour periods of drafting. Laboratory fee, \$1.

110. Railroad Engineering. (3) II. Park

Reconnaissance and preliminary surveys; simple, easement and vertical curves; grade compensation for curvature; profiles; earthwork surveys and computations, including mass diagrams and haul; paper and field location. Prerequisite, Civil Engineering 103. One recitation and two 3-hour field or drafting periods. Laboratory fee, \$5.

- 111R. Hydraulics. (3) I or II. Borgquist
Hydrostatic pressures in reservoirs and tanks; velocity and discharge from orifices, weirs, tubes, and pipes; flow in pipes, sewers, and canals; measurement of flow in ditches and rivers. Prerequisites, Mathematics 100b and 112a.
- 111L. Hydraulic Laboratory. (1) II. Borgquist
A laboratory and field study of the flow of water through orifices, weirs, channels, and pipes, and determination of coefficients pertaining to same. Required of Junior civil engineering students. Laboratory fee, \$2.
113. Irrigation Structures. (4) II. Kelton
Principles and details relating to the design, construction, and maintenance of irrigation works, and to the diversion and measurement of water for use in irrigation. Prerequisites, Civil Engineering 2, 111R and 106R. Two recitations and two 3-hour drafting periods. Laboratory fee, \$1.
- 114R. Mechanics of Materials. (3) I or II. Borgquist
Analysis and computation of stresses and strains in bodies subjected to tension, compression, and shear; the common theory of bending, including shearing forces, distribution of normal and shearing stresses, equation of the elastic curve, and the determination of slopes and deflections in beams; stresses due to a combination of bending and axial loads; the theory of columns, and its application under working conditions; stresses and deformation in shafting subjected to torsion. Three lecture-recitation periods. Prerequisite, Mathematics 112a.
- 114L. Materials Testing Laboratory. (1) I or II. Borgquist
Laboratory work in the testing of materials used in engineering construction, including brick, wood, iron, and steel. Laboratory fee, \$2.
115. Business Law for Engineers. (2) I. Kelton
Fundamental features of law with which the engineer is concerned, contracts, specifications, workmen's compensation, procedure in making public improvements, professional registration of engineers, etc. Open to Senior engineering students only.
116. Advanced Civil Engineering Problems. (2 to 5) I or II. Staff
Assigned work on an investigation, design, or original research. No student is permitted to register in this subject unless his previous work has been of high grade. Open to Senior students in civil engineering.
122. Highway Engineering. (2) II. Park
Economic highway location and construction, including curvature, grades, relation of excavation to embankment and drainage; adaptation of the railroad method of location survey to highway location surveys; highway laws, plans and specifications. May be taken only in conjunction with or subsequent to Civil Engineering 110. Two recitations.
124. Pavements. (2) II. Borgquist
Methods of construction of flexible and rigid pavements, for both rural and city use, together with administrative problems of finance, classification, and organization. Two recitations. Open to Senior engineering students only.
125. Graphic Statics. (2) I. Kelton
Determination of reactions and stresses in trusses of mill buildings, towers, etc., under miscellaneous conditions of loading. Two 3-hour drafting periods. Prerequisite, Mathematics 112a. Laboratory fee, \$1.
126. Theory of Structures. (3) II. Kelton
Continuation of 125 and preliminary to Senior design courses 107 and 108. Influence lines, concentrated load systems, eccentric riveted joints, plate girders. One lecture period and two 3-hour drafting periods. Prerequisite, Civil Engineering 125. Laboratory fee, \$1.
127. Water Supply and Sewerage. (3) I. Borgquist
The design of water supply and sewerage systems and purification plants. Methods of development and distribution of water for cities. Requirements for present and future needs. Sewage disposal. Three lectures. Prerequisite, Civil Engineering 111R.

130. Foundations of Bridges and Buildings. (1) II. Borgquist

The bearing power of soils; construction methods of excavation; caissons, both open and pneumatic types; the adaptation of various types of footings and foundations to different kinds of structures; the use of piles in foundations; etc. Open to Senior engineering students only. One lecture-recitation period.

200. Advanced Civil Engineering Problems. (2 to 5) I or II. Staff

Individual problems in investigation, research, or design. Open to graduate students, and in exceptional cases to Seniors of high scholastic standing, who have completed the requirements for the B.S.C.E. degree.

CLASSICAL LITERATURE

Professor Fowler (Head of the Department).

The major: 24 units above 1b, including 15a-15b, 107a-107b or 108-108b, 221a.

The supporting minor shall consist of 20 units advised from: English, French, German, Spanish, philosophy, history.

The teaching minor consists of not less than 15 units above 1b and must include 2a-2b, and 15a-15b. Students offering 2 years of Latin for entrance must take 15a-15b, 105a-105b.

LATIN

1a-1b. Beginners' Course in Latin. (4-4) Yr. Fowler

2a-2b. Roman Literature, Elementary Course. (4-4) Yr. Fowler
Selections from the writings of Cicero, Ovid, Virgil, and Pliny. Prerequisite, 1b or equivalent.

15a-15b. The Writing of Latin. (1-1) Yr. Fowler
A practical course in Latin composition. Prerequisite, 2b.

105a-105b. Roman Literature, Advanced Course. (3-3) Yr. Fowler
In the first semester, selections from the writings of Terence, Cicero, and Livy; in the second semester, selections from the Odes and Epodes of Horace and Martial's Epigrams. Lectures on relations of authors to their times. Prerequisite, 2b. Not for post-graduate credit.

107a-107b. Pre-Augustan Literature. (3-3) Yr. Fowler
The first semester, selections from the *Roman Comedy* and from Cato; the second semester, selections from the works of Lucretius, and Cicero. Prerequisite, 105b. Given in 1932-33 and alternate years.

108a-108b. Augustan and Post-Augustan Literature. (3-3) Yr. Fowler
First semester, selections from the works of Livy, Horace, and the Elegiac Poets; the second semester, selections from the works of Tacitus, Juvenal, and Apuleius. Prerequisite, 105b. Given in 1933-34 and alternate years.

221a-221b. Seminar in Latin. (2-4) Either semester. Fowler
Readings in the literature and study of special problems by the individual student, under the direction of the instructor. Open to those who have taken at least four of the upper-division courses in Latin.

The Teaching of Latin. (3) II. Fowler
For a description of the course see Education 197h. Required of students in the College of Education majoring in Latin or classical languages.

GREEK

51a-51b. Elementary Greek. (4-4) Yr. Fowler
A beginners' course in the Greek language and literature, including selections from Plato and the New Testament.

152a-152b. Attic and Homeric Greek Literature. (4-4) Yr. Fowler
Reading and interpretation of selections from Attic and Homeric Greek literature. Prerequisite, 51b.

GENERAL LINGUISTICS

231a-231b. Introduction to the Study of Language. (2-2) Yr. Fowler

The fundamental concepts of language, such as the origin of language, the classification of languages, the classification of speech sounds, phonetic change, analogy, semantic change, morphology, and syntax. Designed for the benefit of students specializing in any of the languages.

DAIRY HUSBANDRY

Professor W. S. Cunningham (Head of the Department).

Associate Professor R. N. Davis.

1. Animal Industry. (4) II.

Cunningham

The dairy industry with particular attention to the production and handling of dairy products. See Animal Husbandry 1 and Poultry Husbandry 1. Three lectures and one 3-hour laboratory period. Laboratory fee, \$3.

2. Dairy Fundamentals. (3) I.

Cunningham

Profitable dairying, and dairy sanitation; properties of milk; operation of cream separators; testing milk; and butter-making. Two lectures, one 3-hour laboratory period. Laboratory fee, \$3. Given in 1932-33 and alternate years.

101. Market Milk. (3) II.

Davis

The classes of market milk, methods used in clean milk production, systems of milk inspection, and scoring of dairies. Prerequisites, Dairy Husbandry 2, Bacteriology 7. Two lectures, one 3-hour laboratory period. Laboratory fee, \$3. Given in 1932-33 and alternate years.

102a-102b. Dairy Products. (3-3) Yr.

Davis

The theory and practice of butter-making, pasteurization, starters, cream ripening, cheese-making, manufacture of ice cream and ices, and the theory of the manufacture of condensed milk and milk powder, factory management, marketing dairy products. Dairy Husbandry 2 is either prerequisite or may be taken concurrently with 102a. Two lectures and one 3-hour laboratory period. Laboratory fee, \$5 each semester. Given in 1931-32 and alternate years.

103. Dairy Management. (3) I.

Cunningham

Dairy farm management; methods of feeding; developing dairy herds; dairy equipment; registration of animals; official testing. Three lectures.

104. Types and Breeds of Dairy Cattle. (3) II.

Cunningham

Particular attention given to the development of noted families within the breeds, and to advanced judging. Two lectures and one 3-hour demonstration period. Field trip fee, \$3. Given in 1931-32 and alternate years.

201. Advanced Testing and Inspection of
Dairy Products. (2) I.

Davis

Advanced work is given in the testing of dairy products including tests for adulterations, moisture, casein, and preservatives. The practical phases of bacteriological and chemical studies of milk, butter, cheese, and ice cream. Designed to fit students to do technical work with dairy products. Prerequisites, Dairy Husbandry 2 and Bacteriology 7. Two 3-hour laboratory periods. Laboratory fee, \$3. Given in 1932-33 and alternate years.

204a-204b. Seminar in Dairy Husbandry. (2-2) Yr. Cunningham-Davis

Assigned readings and special problems relating to the dairy industry and providing a basis for research work.

214. Research in Dairy Husbandry. (3-3) Yr.

Cunningham-Davis

Graduate students specializing in dairy husbandry may undertake research work which will be embodied in a thesis.

ECONOMICS, SOCIOLOGY, AND BUSINESS ADMINISTRATION

Professors E. J. Brown (Head of the Department), Howard.

Associate Professors Conrad, Schmidt, Wood, Herrick.

Assistant Professors Baker, Gray, Spengler.

Instructor * Pettengill.

ECONOMICS

The major: 24 units exclusive of Economics 1a-1b, or Economics 2a-2b, and including Sociology 81, Economics 148, 203, 210a or 210b, and 12 additional upper-division units in economics. Courses in business administration may not be counted as part of the 12 additional upper-division units in economics.

The supporting minor should be chosen from: archaeology, biology, English, history, philosophy, political science, psychology, sociology, mathematics.

The teaching minor must include Economics 1a-1b, 81, 148, and 3 to 8 units of upper-division work.

1a-1b. Introduction to Economics. (3-3) Yr. Staff

The nature of wealth, its production and consumption; the localization of industry; forms of business organization; influence which determines prices and price levels; money and banking systems; forces which determine the distribution of wealth and income; practical problems dealing with labor, transportation, taxation, tariff, and monopolies; plans of social reform such as profit-sharing, single tax, cooperation, and socialism.

Not open to students majoring in economics and business administration. *This course or Economics 2a-2b is a prerequisite to all upper-division courses in economics.* Open to Freshmen.

2a-2b. Principles of Economics. (3-3) Yr. Staff

Similar to Economics 1a-1b for students majoring in economics or business administration. Prerequisites, Business Administration 6 and Sophomore standing. *This course or Economics 1a-1b is prerequisite to all upper-division courses in economics.*

103a. Economic History of Europe. (3) I. Schmidt

Foundations of European economic life, the manor, commerce and industry during the Middle Ages, mercantilism, industrial revolution, commercial expansion and imperialism, labor legislation, social insurance, the World War and its aftermath.

103b. Economic History of the United States. (3) II. Schmidt

Economic aspects of the Colonial Period; winning of political and commercial independence; development of agriculture, manufactures, commerce, transportation, banking and currency; labor movement; immigration; World War and reconstruction.

105. Labor Problems. (3) I. Gray

Economic and social conditions of wage earners in the United States, causes of industrial unrest. History and development of labor organizations, conflict between labor and capital. Policies and methods of strikes and lockouts, injunctions, trade agreements, workmen's insurance, profit-sharing, cooperation, labor legislation, etc.

117a. International Economic Relations. (3) II. Spengler

International relations arising from the economic interests and practices of nations, including tariffs, commercial treaties, imperialism, colonial policies,

* On leave 1932-33.

economic penetration, open and closed door, intervention, foreign investments, economic problems arising from the World War.

117b. International Trade and Finance. (3) II. Pettengill

Theories of international trade, foreign exchange, balance of trade, related aspects of modern methods and trends in foreign trade, foreign investments, the machinery of international finance. Not offered in 1932-33.

121a-121b. Transportation. (2-2) Yr. Gray

History of transportation; organization; finance; theory of rates; rate structures; regulation by the states and the Federal Government; railroad services; freight, passenger, express, mail, baggage business; traffic management.

145. Public Finance. (3) I. Baker

Collection, administration, and expenditure of funds by governments. Taxation, public debts, budgets.

148. Money and Banking. (3) I or II. Brown

Money—Nature and functions of money; analysis of the factors affecting prices; a brief history of paper currency and silver legislation. Banking—Procedure in organizing state and national banking systems as modified by the Federal Reserve Act; functions of banks; preparation and analysis of bank statements; loans and granting credit; principles of foreign exchange; analysis of foreign banking systems.

149. Advanced Problems in Money and Banking. (3) II. Brown

Major problems in money and banking which are either not considered or inadequately considered in Economics 148. Prerequisite Economics 148. Given in 1932-33 and alternate years.

172. Trusts and Combinations. (3) II. Brown

Forms of combinations in the United States and abroad, their legal and economic status, justification, and limitations. Given in 1933-34 and alternate years.

174. Public Utilities. (3) II. Gray

The development, financing, rate making, management, and control of public utility enterprises.

195a. Agricultural Economics. (3) II. Wood

The principles and problems of economics as applied to agriculture. The present agricultural situation, its causes and suggested remedies. Students in the College of Agriculture may substitute this course for Economics 1b. Given in 1933-34 and alternate years.

203. Advanced Economic Theory. (3) I or II. Schmidt-Baker

A survey of economic theory. Open to Seniors and graduate students.

207. History of Economic Thought. (3) II. Baker

Economic facts and forces, their origin and growth, the rise of the science of economics. Prerequisite, Economics 203.

210a-210b. Seminar in Economics. (2-2) Yr. Staff

Theoretical and applied problems of economics. Preparation of scientific papers, collection of material, preparation for research. Open to Seniors and graduate students.

215a-215b. Problems in Economics. (2-6) Yr. Staff

Open only to graduate students with the privilege of repetition upon change of subject matter. Students admitted upon consent of department. Definite requirements as to lectures, readings, or research.

SOCIOLOGY

Major in Sociology: The major must include Economics 1a-1b, Sociology 81, 181a-181b, 287a or 287b and 12 additional units of Sociology, 6 units of which may be taken from the following group: Psychology

115, Archaeology 105a, Philosophy 120, Economics 105.

The supporting minor should be chosen from archaeology, botany, zoology, economics, history, philosophy, political science, or psychology.

81. Introduction to Sociology. (3) I or II. Conrad

Social attitudes and institutions; the underlying causes of modern family, economic, race, criminal, and other social problems; the scientific method applied to social analysis and control. Not open to Freshmen. Prerequisite for all upper-division courses.

181a-181b. Principles of Sociology. (2-2) Yr. Conrad

Social population, social stratification and such social processes as socialization, conflict, cooperation, accommodation, etc. Given in 1933-34 and alternate years.

182a-182b. Social Adjustment. (2-2) Yr. Conrad

Causes and effects of personal and group disorganization and maladjustments and the means of their correction. Prerequisite, Sociology 81. Given in 1932-33 and alternate years.

183a-183b. Social Evolution and Social Progress. (2-2) Yr. Conrad

A discussion of social heritages, problems of social change, and theories of social progress. Open to Seniors and graduate students. Given in 1932-1933 and alternate years. Prerequisite, Sociology 81.

185. Rural Sociology. (3) II. Conrad

The development and problems of rural society; analysis of rural institutions and the deficiencies of rural life; means for the more adequate socialization and organization of the rural community.

287a-287b. Seminar in Sociology. (2-2) Yr. Conrad

Advised for students taking a major in Sociology. Open to Seniors and graduate students.

BUSINESS ADMINISTRATION

There is no general major in business administration. Majors in economics, sociology, and other departments in the College of Letters, Arts, and Sciences may count but 12 unstarred units of business administration toward graduation. Students who desire to register for the 4-year course leading to the degree of Bachelor of Science in Business Administration will follow the outline of required studies shown on page 89 and will select one of the majors suggested there.

*6. Introduction to Business. (3) I or II. Schmidt

A survey of the fundamental characteristics and functions of modern business with a brief historical account of their development. Not open to upper-division students who have had Economics 1a-1b. This course is a prerequisite to Economics 2a-2b.

*11. Economic Geography. (3) I or II. Herrick

The world's resources, their distribution, use, and conservation. The struggle for raw materials. Climate and civilization. Two lectures and one 2-hour laboratory period devoted to visual education or field trips.

*31a-31b. Principles of Accounting. (3-3) Yr. Howard

The fundamental principles underlying the accounting for sole proprietorships, partnerships, and corporations. Two lecture hours and one 3-hour laboratory period. Prerequisite to all advanced courses in accounting and finance except Economics 148.

- *55. Statistical Methods in Business. (4) I or II. Herrick
Collection, tabulation, and analysis of statistical material; graphic presentation of numerical data. Three lecture hours and one 3-hour laboratory period. Not open to Freshmen.
- 120a-120b. Business Law. (3-3) Yr. Parnell
The fundamental principles of the law of contracts, agency, negotiable instruments, sales partnership and corporations, together with a brief introduction to the study of law.
130. Principles of Business Forecasting. (3) II. Herrick
Economics of the business cycle; the stock market, banking transactions, money market, and indices of production as business barometers; important American and foreign index numbers and economic services. Prerequisites, Business Administration 31a-31b, 55, and 148. Given in 1933-34 and alternate years.
- 131a-131b. Intermediate Accounting. (3-3) Yr. Howard
Theory and practice of partnership and corporation accounts; problems of valuation; consignments; branch house accounts; accounting for insolvent concerns; statements of sources and applications of funds; form, content, and interpretation of financial reports.
133. Cost Accounting. (3) II. Herrick
The field and purpose of cost accounting; methods and principles involved in handling and accounting for materials and direct labor; the calculation and distribution of overhead expenses, systems of cost accounts adaptable to various manufacturing enterprises. Given in 1933-34 and alternate years.
134. Auditing Theory and Practice. (3) I. Howard
Qualifications, duties, and responsibilities of the public auditor; principles and procedure involved in audits; detection of errors and fraud with explanation of remedies tending to minimize the same; working papers and reports. Prerequisite, Business Administration 131a. Given in 1933-34 and alternate years.
- 136a-136b. Advanced Accounting. (3-3) Yr. Howard
Annuities; revaluation of capital assets; special problems of depreciation; consolidated statements; brief survey of federal income tax procedure. Given in 1932-33 and alternate years.
138. Financial and Accounting Control. (3) I. Herrick
Application of accounting principles to the control of industrial enterprises. The determination of tendencies by analysis of financial statements to serve the needs of the investor, manager, banker, credit man, or professional accountant. Prerequisite, Business Administration 31b. Two units credit to students who are taking or have completed more than 1 year of accounting.
141. Business Finance. (3) I. Spengler
The financial problems met in the organization and conduct of a business, including promotion, securities issued, methods of their disposal, relations to banks, internal management, re-organization. Prerequisite, Business Administration 31b.
142. The Stock Market and Investments. (3) II. Spengler
The investment market, financial agents and institutions, stock exchange, stock market, investments of securities; methods of laws of investment and speculations; relative merits of railway stocks and bonds; municipal bonds; industrial, irrigation, and mining securities; and real estate. Prerequisite, Business Administration 141.
- 151a-151b. Insurance Theory and Practice. (3-3) Yr. Herrick
First semester: phases of insurance of most general application; life, fire, and automobile.
Second semester: casualty insurance covering health, accident, compensation, liability, burglary, credit, etc., together with a brief consideration of marine and title insurance.
- 161a. Principles of Marketing. (3) I. Wood
Description and evaluation of the services and methods of middlemen in the distribution of farm products and manufactured goods from producer to

consumer; cooperative marketing; trends in modern retailing; costs of marketing.

161b. Market Management. (3) II. Wood

The organization, policies, and work of the selling, advertising, credit, purchasing, and research departments of manufacturing and wholesale firms. Supplemented by problems taken from going concerns. Prerequisites, Business Administration 31b, 161a. Offered in 1932-33 and alternate years.

163. Retail Store Management. (3) II. Wood

The organization and management of retail enterprises. Two lectures and one 2-hour laboratory period. Given with the cooperation and assistance of down-town merchants who offer their stores as laboratories and give some of the lectures. Prerequisites, Business Administration 31b, 161a. Offered in 1933-34 and alternate years.

164. Principles of Advertising. (3) I. Wood

The place of advertising in business; psychological and research methods; effective use of copy, headlines, illustration, color, border, type, and layout; selection of media; the advertising agency; advertising problems of manufacturers, wholesalers, and retailers. Prerequisite, Business Administration 161a.

171a-171b. Business Organization and Management. (3-3) Yr. Brown

Considerations determining the choice, location, and form of business; policy formation; principles underlying sound organization; scientific plans for the operation and control of the various functions of business. Prerequisite, Business Administration 31b.

195b. Marketing Farm Products. (3) II. Wood

Services and methods of middlemen in distributing agricultural products from farmers to consumers, including transportation, storage, and financing; weaknesses of the present system, proposals for improvement; principles of organization and operation of farmers' cooperative associations. Given in 1932-33 and alternate years.

211a-211b. Seminar in Business Administration. (2-2) Yr. Staff

Theoretical and applied problems of business; preparation of scientific papers; collection of material; preparation for research. Open to Seniors and graduate students.

220a-220b. Problems in Business Administration. (2-6) Yr. Staff

Open only to graduate students with the privilege of repetition upon change of subject matter. Students admitted upon consent of the department. Definite requirements as to lectures, reading, or research.

The following courses may be counted as Business Administration: Economics 121a, 121b, 149, 172, 174.

EDUCATION

Professors Clarson (Head of the Department), Larson.

Lecturers Rose, Leshner.

Associate Professor Walker.

Assistant Professor Garretson.

Assistant Supervisor of Practice Teaching Peak.

The major: Education 14, 101, 106 or 107 or 135, 110, 112 or 113 or 132, 139, and additional courses sufficient to constitute a total of 24 to 40 semester hours to be selected with the advice of the department and depending upon the purposes of the individual students. Under-graduates admitted from normal schools or teachers' colleges and specializing in certain fields of education may, with the advice and consent of the department, exceed the maximum number of hours permitted for the major.

Graduate students majoring in education should arrange their courses with a view to their bearing upon one of the following fields: Educational psychology, high-school teaching, high-school administration, city-school administration, supervision, and educational research. Graduate students wishing to major or minor in education must offer 15 units in education or the equivalent, as a prerequisite.

The starred (*) courses in the department have been designated as non-technical or non-professional.

***2a-2b. Introduction to Education. (1-1) Yr.**

Clarson

Representative features of public education in America; its development, its organization, its administration, and its policies. Information relating to the work of our public schools that either the teacher, or the citizen who does not intend to teach, should have. Required of Freshmen in the College of Education. Restricted to lower-division students.

14. Educational Psychology. (3) I or II.

Walker

How to bring about most certainly and economically the changes in the behavior of the individual which are desirable in the educational process. The native equipment of the child. Processes involved in building upon or changing this equipment; selection of general principles of learning, a summary of methods for the measurement of progress in school subjects. Required of all students in the College of Education. Prerequisite, Psychology 1a, or its equivalent.

***101. History of Education. (3) I.**

Larson

A general survey of the history of education. Education among savages and barbarian peoples; origin and development of universities; effect of the scientific movement; influence of philanthropy and private initiative; education and nationalism; changing educational purposes and practices. A comparative study of the educational systems of the leading foreign nations and an evaluation of modern tendencies.

***102. Library Methods and Management. (2) II.**

Lutrell

Classification and cataloguing; the more common reference books, bibliographies, indexes, and public documents; sales catalogues and book selection, special reference to the needs of teachers in charge of school libraries. Lectures, exercises, preparation of bibliographies. Not for post-graduate credit.

104. The Registrar in Administration. (3) I.

Leshner

The function of the Registrar with particular reference to college and university organization. Administrative relationship, scope of duties, office

methods and practice. Open to a limited number of upper-division students. Experience in typewriting is desirable. Two periods of lecture and recitation and one 3-hour laboratory period.

105. Principles of Personnel Guidance. (2) II. Jones

For deans and advisers of girls and social and religious workers dealing with the adolescent girl. The position of dean or adviser of girls, its present status and function; qualifications and training; correlation with other departments; phases of activity, including problems of adjustment and orientation, the social program, extra-curricular activities, vocational guidance, health, employment, academic work, and discipline; case methods, office procedure and records. Special emphasis on high-school problems, including aspects of guidance in preparation for college adjustment and the relations between high-school and college personnel officers. Prerequisites, Psychology 1a, Education 106 or equivalent.

106. The High School. (3) I or II. Garretson

For all preparing for teaching or for administrative work in secondary schools. The historical development of the American high school; its relation to other divisions of the school system; college entrance requirements and proposed reorganizations; the high-school pupil, adolescent characteristics, individual differences, elimination, and guidance; the program of studies; objectives, methods of planning curricula, and the justification and content of courses. A brief treatment of extra-curricular activities. Prerequisite, 3 units in education.

107. The Elementary School. (3) I. Larson

The purpose and curriculum of the elementary school. Accepted and proposed aims, analysis and evaluation of objective studies and proposals concerning the elementary-school course of study. Available courses studied and criticized, and a defensible curriculum proposed. Prerequisite, 3 units in education.

***110. Social Phases of Education. (3) II. Larson**

The social-civic theory of education to develop perspective and an understanding of administrative and other practices. Education as adjustment, its relation to group life and the fundamental life needs, criteria of educational values, the place of vocational and other types of formal education in organized society, self-expression and the development of personality.

112. General High-School Methods. (3) I or II. Garretson

For prospective high-school teachers. The actual problems of teaching with especial reference to the principles of educational psychology. Teaching personality and its development; job analysis of teaching; types of teaching; discipline; lesson planning; visual instruction; supervised study; measurements, marking; questioning; appreciation, projects, socialized procedure, and other methods of teaching; teacher rating; and improvement of teachers in service. Required of all students in the College of Education. Prerequisite, Education 14.

113. General Elementary-School Methods. (3) II. Larson

Methods of the elementary grades. The recitation, drill, review, problem, project, socialized procedure, measurement, discipline, motivation, and visual instruction. Methods of teaching reading, writing, spelling, arithmetic, and other specific elementary-school subjects. Prerequisite, Education 14, or its equivalent.

**123. Extra-Curricular Activities
in Junior and Senior High Schools. (2) I. Garretson**

For teachers and administrators. The purposes of extra-classroom activities, advisers, meetings, the home room, student councils, student publications, athletics, clubs, assemblies, commencement, honor societies, parties, and dances, stimulation and limitation of participation, and financial accounting and control. The technique of administration of various extra-curricular activities. Prerequisite, 3 units in education. Given in 1932-33 and alternate years.

125. Vocational and Educational Guidance. (2) I. Walker

Guidance in the junior and senior high schools. Primary consideration to problems confronting the teacher in organizing and administering guidance programs. Given in 1933-34 and alternate years.

130. Observation and Supervised Teaching. (3 to 5) I or II. Garretson

Practical application under classroom conditions of the principles of education. By cooperative arrangement with the Tucson schools, students teach under direct supervision. Within the limits of the opportunities available this course is required of all Seniors in the College of Education. Prerequisites, Education, 112, 106, a teachers' course in the student's major subject, and a satisfactory attainment in subject matter. Not for post-graduate credit. Hours to be arranged.

132. General Junior High-School Methods. (3) II. Garretson

The actual problems of teaching the junior high-school subjects and the problem of dealing with junior high-school pupils. Prerequisite, Education 14. Given in 1933-34 and alternate years.

135. The Junior High School. (3) I. Garretson

The junior high school as a distinct unit of organization; the origin and development of the idea; its functions and administrative organization; the problems of guidance and student activities; curriculum development and reconstruction; and the problems of the administration and the technique of instruction. Prerequisite, 3 units in education. Given in 1933-34 and alternate years.

137. Arizona State School System and School Law. (2) I. Rose

The principles and problems of public education in Arizona. Organization of the Arizona school system, the special factors which influence it, the code relating to schools and a comparison of this code with other state codes and ideal codes. Prerequisite, 3 units in education. Given in 1933-34 and alternate years.

139. The Improvement of Teaching Through Tests. (3) I. Walker

The principles underlying the making and using of informal objective examinations. Opportunities for practice in making and scoring such examinations. A very brief study of statistical method; the procedures used in standardizing test material. A survey of the standard tests now available in his teaching field will be made by each individual in the class. Prerequisite, Education 14 or its equivalent. Students desiring graduate credit should register for Education 225a. Material fee, \$1.00.

140. Vocational Education. (2) II. Klemmedson

The historical development and administration of vocational education, state and federal legislation, the conduct of continuation and adult schools, teacher-training and other problems. Required of those preparing to teach agriculture or home economics. Open to others.

150. Mental Hygiene. (2) II. Walker

The principles of mental hygiene and their application to personal and social needs. The roles played by natural drives and environmental factors in determining normal behavior as well as in determining disorders of adjustment leading to abnormal behavior. The possibilities and means of re-education and re-adjustment.

152. Psychology of Elementary-School Subjects. (2) I. Walker

An application of the principles of psychology and of the laws of learning to the various activities which enable children to develop knowledge, skills, and attitudes in the several subjects of the curriculum. Prerequisites, Psychology 1a and Education 14 or equivalents. Given in 1932-33 and alternate years.

The Teaching of High-School Subjects.

All specific methods courses, or courses in the teaching of the several high-school subjects, are listed under this general number, Education 197, with the designating subscripts as indicated below. These courses carry credit in *education only*, not in the several subject-matter departments. Education 112 is a prerequisite for all of these courses. Required of students in the College of Education. Open to Juniors and Seniors. No graduate credit is allowed for any of the courses numbered 197.

- 197a. The Teaching of Agriculture. (4) II. Klemmedson

Specific methods in teaching vocational agriculture. Responsibilities and special activities of the teacher of agriculture; organization and presentation of subject matter; arrangement and equipment of rooms; organizing

and conducting supervised practice work, projects, and agricultural clubs; publicity; records and reports. Prerequisite, Education 112. Three lectures and one 3-hour laboratory period. (See Agricultural and Home Economics Education.) Laboratory fee, \$1.

197b. The Teaching of Biological Science. (3) II. Gunthorp

Aims and educational value of biological sciences in the secondary schools. Contents of the courses, literature, and methods of teaching elementary botany, zoology, and physiology. Outlines of courses, plans and presentation of lessons; selection of apparatus, purchase of supplies. Use and care of the microscope and its accessories. One hour lecture and two 3-hour laboratory periods. Prerequisites, 12 units of biology and Education 112.

197d. The Teaching of English. (3) I. Frasier

An attempt to define the field of high-school English and its various divisions. Aims, methods, and devices, principles governing the selection and use of texts. Blocking out courses. Prerequisites, Education 112 and 12 units in English.

197e. The Teaching of French. (3) II. Fenley

Various methods of teaching languages as applied to French; selection of texts; outlining of courses for high schools; a review of grammar and phonetics from the point of view of the high-school teacher. Prerequisites, Education 112 and 12 units in French.

197f. The Teaching of Social Science. (3) II. Leonard

Aims of teaching history; the apparatus and exercises best adapted to meet conditions; textbooks; charts; lesson plans; class exercises; collateral reading. Prerequisites, Education 112 and 12 units in social science.

197g. The Teaching of Home Economics. (3) I. Jones

Application of general principles of education to the teaching of Home Economics. Objectives: selection and organization of subject matter; methods of teaching and their relation to subject matter; textbooks, references, and illustrative material; equipment; problems of management. Observation of junior and senior high-school classes in Home Economics. Prerequisites, Junior standing, Education 106. (See Agricultural and Home Economics Education.)

197h. The Teaching of Latin. (3) II. Fowler

Objectives of the high-school course in Latin; the content of the high-school course in Latin; principles and methods of instruction; a brief review of Latin grammar. Prerequisites, Education 112 and 12 units in Latin.

197i. The Teaching of Mathematics. (3) II. Keyes

A survey of carefully chosen textbooks in junior high-school mathematics, algebra, and geometry. Lesson-planning and methods of attacking geometry originals. Prerequisites, Education 112 and Mathematics 25 or its equivalent. Given in 1933-34 and alternate years.

197j. The Teaching of Physics. (3) II. Life

A review of the developments of the science of physics with a view to emphasizing the discoveries made and the processes used that have a special bearing on encouraging and assisting the student in a modern study of the subject. Modern texts, reference books, and laboratory manuals. Methods of conducting the recitation and laboratory work. Manipulation, care, use, and repair of apparatus. Prerequisites, Education 112, and 12 units in physics. Two hours lecture and one 3-hour laboratory period. Laboratory fee, \$1.

197k. The Teaching of Spanish. (3) I. Nicholson

Methods of language instruction and their adaptation to the teaching of Spanish in Arizona and the Southwest; selection of texts, outlining courses for high schools, lesson planning with incidental grammar review. Wilkins, *Spanish in the High Schools*. Prerequisites, Education 112, Spanish 110b.

197l. The Teaching of Art. (3) I. Kitt

The needs of art in the schools, its aim and object; methods of presenting it. Practical drill in presenting the subject and outlines for the work in the different grades. Prerequisites, Education 112 and 12 units in art.

197m. The Teaching of Music. (3) I. Schultz

The high-school course of study in music: subject matter, content, suitable texts and methods of conducting and teaching classes in high-school appreci-

ation and history, theory and harmony, and voice culture; the quiz, test, and examination in music subjects; grades in music work. Prerequisites, Education 112 and 12 units in music.

197p. The Teaching of Physical Education. (3) I or II. Picard

Methods and purpose of *teaching* physical education, the equipment necessary, the proper setting, supervised practice of student leaders. Suggestions in lesson and program formation, organization, and administration. Applications of educational principles to physical education. Prerequisites, Education 112 and 12 units in physical education.

201. Current Problems in Education. (2) II. Clarson

A systematic study of the nature of the problems and the methods of attacking and solving them as found in current educational literature, research studies, school reports, and school surveys. For Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Required of all graduate students having education as a major or a minor.

207a-207b. Philosophy of Education. (2-2) Yr. Rose

A critical study of the data which recent scientific research has furnished us with reference to the nature of the learning process, the evaluation and interpretation of this material as to its bearing upon a philosophy of teaching method. Such study of educational sociology as is necessary to determine the leading objectives in teaching. Opportunity to make application of the principles of teaching derived in this course to elementary, secondary, or university teaching. For Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Given in 1932-33 and alternate years.

211a-211b. Statistical Methods in Education. (2-2) Yr. Walker

211a. Elementary methods of dealing quantitatively with school data and data resulting from experimental investigations. Various measures of central tendency, spread, reliability, and relationships; methods of finding them; practical applications and interpretations of them; a study of simple correlation. Required of all graduate students majoring in education.

211b. The application of the common procedure of statistics, including multiple and partial correlation, to specific school and research problems. For Seniors and graduate students. Prerequisite, Education 211a.

213a-213b. High-School Administration. (3-3) Yr. Larson

Administrative problems in modern high schools. The first part deals primarily with the problems of organization, administration, and supervision; the second part with the curriculum and its relationships. Open to Seniors and graduate students. Prerequisite, Education 106 or its equivalent.

214. Personnel Problems in School Administration. (2) I. Larson

Teacher selection, pension systems, salary schedules, teacher rating, teacher tenure, means for professional growth, analysis of duties and means for determining the efficiency of principals, the selection, training, and rating of janitors, and the essential principles of proper organization of personnel. For Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Given in 1933-34 and alternate years.

218a-218b. City School Administration. (2-2) Yr. Larson

Organization and functions of city boards of education; the work of the superintendent; the proper organization of a city-school system; the selection, supervision, and improvement of the teaching staff; salary schedules; child accounting; buildings; records and reports; educational publicity. Open to Seniors and graduates. Prerequisite for Seniors, 6 units in education. Given in 1932-33 and alternate years.

219. School Finance. (2) II. Rose

Sources of school support, the economical and equitable distribution of school funds, systems of accounting, financial records, and reports. Open to Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Given in 1933-34 and alternate years.

220. State School Administration. (3) I. Larson

The more important phases of school legislation and educational reform in the various states. The Federal Government and its policy with respect to education; state organization, administration, and financial policy; the various units of administration and supervision—county, township, special

districts; the state and the teacher—certification, tenure, and pensions; compulsory attendance and child labor legislation; textbooks and state courses of study; state control of school environment. For Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Given in 1933-34 and alternate years.

221. School Surveys. (2) I. Larson

An advanced course in administration, conducted on the seminar plan and offering to mature students an opportunity to learn the method of scientific school administration through the intensive study of one or two examples of survey work and the application of the principles thus derived to a concrete case of survey work done by the student himself. Largely individual work. For Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Offered in 1933-34 and alternate years.

222. Rural School Administration. (3) II. Larson

The rural school problem from the standpoint of administration and supervision. The problems of supervision under Arizona conditions. For Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Given in 1933-34 and alternate years.

224. Supervision. (2) II. Larson

For supervisors, principals, and superintendents. The necessary qualities and training of supervisors; essential activities of supervision; general and special supervision; organization and administration of program of supervision; the relation of administrators, supervisors, and teachers; the specific technique of supervision applied to the student's own field; objective studies of supervision. For Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Given in 1932-33 and alternate years.

225a-225b. Educational Measurements. (2-2) Yr. Walker

Course 225a includes and is in part identical with Education 139 and is not open to students who have had that course. Prerequisite, Education 211a, which should either precede or accompany the course. The work of the second semester (225b) deals with the more technical points of interpretation and use of test scores. Open to students who have credit in 139 or 225a. Material fee, \$1 each semester.

226. Problems in Guidance. (2) II. Walker

Counseling and organization of guidance in public schools, class conducted as a seminar, using largely the case study as the method of procedure. Analysis of cases, study and application of the underlying principles of guidance and counseling. For Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Given in 1932-33 and alternate years.

230. Seminar in Educational Psychology. (2) II. Walker

Problems of educational psychology. The content of the course will depend upon the interests of the class. Prerequisites, Psychology 1a and 6 units in education, including Education 14 or its equivalent. For Seniors and graduate students. Given in 1933-34 and alternate years.

237. The Principalship. (2) II. Larson

The administrative and supervisory problems of the principal of a ward school, or of a small school system. Organization, grading, promotion, subject matter, and school records. Content varied to meet the needs of the class. Prerequisite, Education 112 or teaching experience. Open to Seniors and graduate students. Given in 1933-34 and alternate years.

240. Educational Research. (2) I. Clarson

A seminar course for advanced students majoring in education. Various methods of research: historical, statistical, and experimental. Representative studies of each type. If time permits, each student will select and pursue to a conclusion some problem, involving individual research. For Seniors and graduate students. Prerequisite for Seniors, 6 units in education. Required of all graduate students with education as a major.

250. Advanced Studies in Education. (2-4) I or II. Staff

For students who wish to carry on independent study or research under the supervision of a member of the staff. Conference hours to be arranged.

*** TRADE AND INDUSTRIAL EDUCATION**

80. Radio Construction and Repair. (2)

To meet the demand upon mechanic arts instructors for more information in this rapidly developing type of work. The principles of radio, the construction of receiving and transmitting sets, and their upkeep and repair. Laboratory equipment will be available to actually construct sets and put them into operation, as would be done in the manual training shop.

81. Automobile Repair. (2)

Organized primarily to instruct mechanic arts teachers in the principles of automobile repair and upkeep such as may be taught mechanic arts high-school classes. Demonstrations, lectures, and actual practice.

160n. Special Methods in Industrial Education. (2)

To assist the instructors in acquiring a better technique in the instructing process, the presentation of the formal lesson, and the application of teaching methods to type jobs. For shop teachers and supervisors of mechanic arts or vocational classes.

160o. Visual Education and Illustrative Methods and Technique. (2)

Various ways in which subject material may be taught more effectively in trade and mechanic arts classes, through the use of visual education devices. Actual construction of visual material. Open to all teachers and administrative members of trade and industrial and mechanic arts education.

161. Promotional Methods in Vocational Education. (2)

The many ways by which vocational education services may be known to those who can profit by them; the comparative efficiency of these methods; necessary salesmanship involved prior to the actual organization of the classes. Open to teachers, supervisors and directors of vocational education.

162. Safety and First Aid Methods. (2)

Designed to equip teachers with the necessary knowledge of safety and first aid needed in conducting their classes, the arrangement of equipment, and its safeguarding. Open to all teachers of vocational and mechanic arts subjects.

180. Objectives in Mechanic Arts. (2)

The fundamental objectives of mechanic arts work in our public school system; a discussion of ways and means by which these objectives may be obtained. Open to teachers, principals, supervisors, and superintendents who are connected with mechanic arts work.

181. Personnel Problems for Indian School Vocational Teachers. (2)

Planned especially for vocational and mechanic arts teachers in the Indian School service. It will cover problems which are present and need to be solved in training in the Indian Service; especially helpful now in view of the new policies of the Indian Service relative to vocational education.

182. Job Analysis. (2)

A job analysis of the trade including: determining the divisions of blocks of the trade; listing the jobs in each block; classifying the jobs; arranging the jobs according to a learning difficulty scale. Registration limited to those who have had at least 3 years as wage earners in the occupation that they are to teach.

183. Shop Organization and Management. (2)

Designed to help teachers in their responsibilities other than that of instructing, such as students' responsibilities, shop layout, records and reports, tool-room organization, discipline, handling supplies and equipment, and other problems of like nature. Open to teachers and supervisors of vocational or mechanic arts classes.

273. Supervision of Trade and Industrial Education. (2)

An analysis and discussion of the supervisory responsibilities and problems in regard to equipment and supplies, personnel, and community relation-

* Selections from these and similar courses are offered each summer.

ships. Registration limited to administrators, supervisors, principals, and directors of vocational or mechanic arts education.

274. Administration of Vocational Education. (2)

Administrative and executive problems of those in charge of vocational education analyzed and discussed. Open only to administrators, supervisors, and directors of vocational education.

275. Organization and Administrative Problems
of Evening Schools. (2)

Organization methods, the underlying reasons for Federal and State policies, type schools, qualifications of teachers, organization plan and records and reports. Open to supervisors, directors, school officials, and teachers who have responsibilities in conducting evening schools.

280. Efficiency in Vocational Education. (2) Klemmedson

Every phase of the vocational education program, such as executive administration, selection of students, qualifications of teachers, functioning curriculum, analyzed and discussed to determine ways of making them more efficient and economical. Open to teachers and executives concerned with the more efficient operation of trade and industrial and mechanic arts classes.

ELECTRICAL ENGINEERING

Professor J. C. Clark (Head of the Department).

Instructors Decker, Polk.

100a-100b. Theory of Circuits and Machines. (4-4) Yr. Clark-Decker

The principles of direct and alternating currents, direct current machines, and simple alternating current machines. Four 1-hour periods. Prerequisites, Chemistry 1a and 1b, Physics 1a and 1b, Mathematics 100a, 100b. Electrical Engineering 100a is prerequisite to Electrical Engineering 100b.

101a-101b. Electrical Laboratory. (1-1) Yr. Decker

Work with circuits and machines illustrating Electrical Engineering 100a and 100b. Training in the writing of engineering reports. One 3-hour period. Prerequisites the same as for Electrical Engineering 100a and 100b. Fee, \$2 each semester. Not for post-graduate credit.

102a. Theory of Machines. (3) I. Decker

Alternating current machines. Three 1-hour periods. Prerequisite, Electrical Engineering 100a and 100b.

104b. Electrical Power Equipment. (2) II. Decker

The electrical equipment of power plants and transmission systems. Open only to Senior electrical engineers. Two 1-hour periods. Field trips. Prerequisites, Electrical Engineering 102a, 113a. Field trip fee, \$10. Not for post-graduate credit.

106a-106b. Electrical Laboratory. (2-2) Yr. Decker

Laboratory work illustrating Electrical Engineering 102a. Alternating current machinery and circuits. The writing of engineering reports. Open to Senior electrical engineering students who have completed their Junior electrical engineering courses. 106a is prerequisite to 106b. Two 3-hour laboratory periods. Laboratory fee, \$4 each semester. Not for post-graduate credit.

107a-107b. Design of Electrical Machines. (2-2) Yr. Clark

The design of several typical machines undertaken, not with the idea of obtaining information on empirical methods of design, but in order to consolidate the student's grasp of fundamentals. Two 3-hour calculating periods. Prerequisite, Electrical Engineering 100b. Electrical Engineering 107a and 102a are prerequisite to Electrical Engineering 107b.

112b. Electrical Communications Engineering. (3) II. Polk

The engineering principles underlying telephony and telegraphy, with special emphasis upon wire transmission theory and upon modern telephone equipment. Three 1-hour periods. Prerequisite, Electrical Engineering 113a.

113a. Alternating Current Theory. (3) I. Polk

A continuation of alternating current theory begun in 100b. Application of complex algebra; analysis of multi-frequency waves; circuit analysis; single-phase and polyphase; harmonics in polyphase circuits; unbalanced three-phase circuits; inductance and capacitance of parallel conductors. Three 1-hour periods. Prerequisite, 100b.

113b. Theory of Electrical Transmission. (3) II. Clark

Mathematical theory of electrical transmission over parallel conductors. Analytical and graphical solution of transmission problems. Three 1-hour periods. Prerequisites, Electrical Engineering 102a, 113a.

125a-125b. Seminar. (1-1) Yr. Clark

Topics of general interest, supplementing the contents of other courses. Written abstracts of current electrical literature. Occasional moving picture expositions of electrical equipment, methods, etc. One 1-hour period. Student membership in the A. I. E. E. or application thereof, is a prerequisite for either semester of this course. Not for post-graduate credit.

126aR-126bR. Elements of Electrical Engineering. (2-2) Yr. Polk

Direct and alternating current circuits and machinery. Fitted to the needs of students in non-electrical branches of engineering. Two 1-hour lecture

periods. Prerequisites, Chemistry 1a and 1b, Mathematics 100a and 100b, and Physics 1a and 1b. 126aR is prerequisite to 126bR. Not for post-graduate credit.

126aL-126bL. Electrical Laboratory. (1-1) Yr. Polk

Work with circuits and machines illustrating Electrical Engineering 126a and 126b. Training in writing reports. One 3-hour period. Prerequisites the same as for Electrical Engineering 126aR and 126bR. Laboratory fee, \$2 each semester. Not for post-graduate credit.

130. Engineering Economics. (2) II. Clark

Business problems which require knowledge of engineering for their solution. The matter that determines the scope and the content of the course is the analysis of the problem of investment. Factors involved in the success of this analysis: first cost and operation cost, public and private corporations, business statistics, forecasts, valuation, estimating, etc. Prerequisite, Senior standing in any engineering course.

150. Special Problems. (1 to 3) I or II. Clark

Analytical and experimental work to meet the needs of Senior electrical engineering students. Prerequisites, Electrical Engineering 102a and 106a.

200. Graduate Seminar. (1 to 5) I or II. Clark

Work meeting the desires of individual graduate students can generally be arranged for those who are properly prepared.

201. Advanced Power Transmission. (3) I. Clark

Problems dealing with the more complicated phenomena of transmission such as skin effect, inductive interference, distribution of voltage, current and power in networks, and transients.

ENGLISH

Professors Pattison (Head of the Department), Perry, Lockwood, Frazier, Tucker.

Associate Professors Cable. Solve.

Assistant Professors Thrift, Dudley, Morrow, J. W. Smith, Hamilton.

Instructors Fuller, Summers, Morgan, Padgett.

COMPOSITION AND LITERATURE

The major: 24 units exclusive of English 1a-1b and 27a-27b, and including 6, 127a, 129a or 129b, 131a, 137, and two semesters of advanced composition (5, 7, 101, 102, or 104) one of which must be upper-division work.

The supporting minor should be chosen from: history, Latin, French, German, philosophy, psychology, English (Speech or Dramatics or a combination of these).

The teaching minor must include: English 6, 27a, 27b, 131a, 29a (or 127a or 129a, or 129b, or 137) and one semester of advanced composition (5, 7, 101, 102, or 104). A combined major and minor in English may be taken so as to include 18 units in speech or dramatics or a combination of these.

Note: Any student found notably deficient in the writing of clear and correct English may be asked at any time to take special work, without credit, until the deficiency is removed.

1a-1b. Freshman Composition. (3-3) Yr. Frazier and Staff

The study and practice of good writing, with emphasis on exposition. Short and long themes, collateral reading, conferences. Required of all Freshmen.

5a-5b. Journalism. (3-3) Yr. Solve

News writing, editorial writing, feature writing, make-up. Prerequisite, 1b. 5a or equivalent is prerequisite to 5b.

6. Modern Grammar and Modern Usage. (3) I or II. Frazier

Required of all majors and teaching minors. Prerequisite, 1b.

7. Sophomore Composition. (3) II. Solve

The writing of long weekly papers in connection with the reading of Nineteenth and Twentieth Century prose. Prerequisite, 1b.

23. Business English. (3) II. Smith

Open to students in Business Administration. Prerequisite, 1b. Given in 1932-33 and alternate years.

27a-27b. Survey of English Literature. (3-3) I or II. Dudley and Staff

This course is prerequisite to all upper-division courses in literature. Not open to Freshmen without special permission. 27a is prerequisite to 27b.

29a-29b. American Literature. (3-3) Yr. Lockwood

Wide reading of both prose and poetry. Not open to Freshmen, or, without special permission, to Seniors. 29a is prerequisite to 29b.

101. Magazine Writing. (3) I. Solve

Composition for those who wish practice in rather advanced writing. Open to Juniors, Seniors, and graduates who have the approval of the instructor.

102. Biographical Writing. (3) II. Perry

The application of various methods in the writing of biographical sketches.

- 104a-104b. Narration. (3-3) Yr. Perry
Original stories based on close study of the technique of a few leading writers. 104a or equivalent is prerequisite to 104b.
- 127a-127b. The Romantic Movement in English Literature. (3-3) Yr. Lockwood
127a: Burns, Wordsworth, Coleridge, and Lamb.
127b: Byron, Shelley, Keats, and Hazlitt. 127a is prerequisite to 127b.
- 129a-129b. Victorian Literature. (3-3) Yr. Pattison
129a: Tennyson and Browning. 129b: Victorian prose; Arnold, Macaulay, Carlyle, Pater, Newman, Ruskin, Huxley, Stevenson.
130. The English Novel. (3) I. Tucker
The history, structure, and significance of the novel. Readings and papers. Given in 1933-34 and alternate years.
- 131a-131b. Shakespeare. (3-3) Yr. Tucker
131a: *Introductory Course*. The life and times of Shakespeare; rapid reading of several representative plays.
131b: A careful study of three plays. Prerequisite, English 131a.
134. Modern Drama. (3) I. Perry
The chief dramatic writers of the last half century.
137. Chaucer. (3) II. Frazier
The *Prologue*, selected *Canterbury Tales*, and some of the minor poems. Emphasis upon Chaucer's narrative skill and upon the historical and social background of his age.
- 138a-138b. Old English. (3-3) Yr. Hamilton
The language, with reading of representative prose and poetry, including a study of *Beowulf*. Not given in 1933-34.
139. Milton. (3) I. Dudley
Selected poetry and prose. Given in 1933-34 and alternate years.
140. Eighteenth Century Prose. (3) II. Tucker
The literary, social, and political movements of the period. Given in 1932-33 and alternate years.
- 142a-142b. The English Lyric. (2-2) Yr. Solve
An historical study, supplemented by work in the theory and art of versification. 142a: The lyric from its beginning to the modern period. 142b: The modern lyric. Not offered in 1932-33.
- 150a-150b. The Literature of the Bible. (2-2) Yr. Pattison
The most notable portions of the Bible, with historical and social backgrounds.
- 220a-220b. Comparative Literature. (3-3) Yr. Solve
The masterpieces of Europe, showing the growth and interrelations of literary forms, ideas, and moods, with special reference to their influences upon English literature. First semester: Greek, Roman, and Italian literature; second semester: Spanish, French, and Germanic literature.
- 215a-215b. Literary Criticism. (3-3) Yr. Perry
The theory of criticism. Important critical documents. Preparation of papers applying the principles of criticism. Open to Seniors and graduates.
- 233a-233b. The English Drama to 1642, Omitting Shakespeare. (3-3) Yr. Solve
Open to Seniors and graduates. 233a: The origin of the drama; miracles; moralities; interludes; the predecessors of Shakespeare. 233b: Contemporaries and successors of Shakespeare. Not given in 1933-34.
- 240a-240b. Seventeenth Century Prose. (3-3) Yr. Pattison
- 250a-250b. Research and Thesis Writing. (2 to 4) Yr. Staff
Introduction to research. Open to graduate students of any department.

The Teaching of English. (3) I.

Frazier

For description see Education 197d. Required of students in the College of Education majoring in English.

SPEECH

Speech 77 is prerequisite to all other courses in Speech except 190 and the Speech Clinic.

Speech Clinic. Individual attention in the elimination or improvement of articulatory, voice, or emotional difficulties of speech is given in regularly scheduled private conferences. This is purely a service division; at the present time the clinic is able to accommodate only students who are enrolled in speech courses.

77. Principles of Speech. (3) I or II.

Cable, _____

Orientation in the field of speech; practice in pantomime, original speaking, declamation, interpretative reading, etc. The development of distinct utterance, thinking and speaking before an audience.

78. Voice and Action. (3) I or II.

Cable, _____

Mastery of voice and body in speech situations. Voice improvement, stimulation of the imagination and emotional development and control. Students sectioned on the basis of their interest in original speech-making or in interpretative reading. Prerequisite, Speech 77. The two courses furnish a year of basis training in the principles of speech.

179a-179b. Argumentation and Debate. (3-3) Yr.

Cable

179a. The proposition, definition, analysis; bibliography and notes; briefing; the construction of argumentative speeches; debate strategy. Practiced in a weekly 2-hour period. Prerequisite, Speech 77.

179b. Evidence, arguments, fallacies, refutation, and their application in a regular schedule of debates throughout the semester.

Open to Sophomores by permission of the instructor. Not for post-graduate credit. Given in 1933-34 and alternate years.

185a-185b. Advanced Public Speaking. (3-3) Yr.

Cable

185a. Emphasis on speech composition. Prerequisite, Speech 78; Psychology 1a is advised.

185b. Emphasis on speech composition. Prerequisite, Speech 78. Given in 1932-33 and alternate years. Not for post-graduate credit.

190. English Phonetics and Pronunciation. (2) I.

Cable

English speech sounds and their relation to the organs of speech; fundamental principles underlying pronunciation; analysis of articulatory characteristics; drill in speech improvement. Adapted to the needs of teachers, supervisors of reading, directors of school dramatics, students of foreign languages, and those desiring to improve their speech. No prerequisite. Not for post-graduate credit.

193. Voice Science. (2) II.

Cable

The anatomy, physiology, and physics of the voice. Prerequisite, Speech 77. Not for post-graduate credit. Not offered in 1932-33.

DRAMATICS**21a-21b. Stagecraft. (2-2) Yr.**

Theory and practice to meet the needs of those who intend to specialize in drama.

22a-22b. Dramatic Production. (3-3) Yr.

Morrow

The rudiments of acting and play production, including stage movement, stage make-up, and dramatic values. One-act and full length plays. Psychology 1a, though not prerequisite, is advised.

120. Play Writing. (2) II.

Morrow

Practical play writing, required readings, analysis and criticism. Not for post-graduate credit. Not given in 1932-33.

122a-122b. Advanced Dramatic Production. (3-3) Yr.

Analysis of plays with a view of production: participation in acting and directing. Advanced technique of acting. A survey of costuming. Work of the outstanding actors and producers. Prerequisite, 22b, and Psychology 1a (in 1932-33 Psychology 1a may be taken with 122a). Not for post-graduate credit.

123a-123b. Development of Theatrical Art. (3-3) Yr.

Morrow

Theatrical art from its beginning. Not given in 1932-33. Not for post-graduate credit.

124a-124b. Appreciation of Drama. (3-3) Yr.

Drama as a literary form, as a means of expression and as an interpretation of life as expressed by the outstanding playwrights of America and Europe. Not for post-graduate credit. Prerequisites, 122a, 122b; but 122 and 124 may be taken at the same time.

ENTOMOLOGY AND ECONOMIC ZOOLOGY

Professors Vorhies (Head of the Department), Ball.

Assistant Professors Wehrle, Nichol.

Senior Research Biologist Taylor.

*101. General Entomology. (4) I.

Wehrle

An introduction to the structure, relationships, and classification of insects. Each student will be required to make a small collection for study, and to add to the general collection of the department. Lecture, recitation, laboratory, and field work. Prerequisite, Zoology 4; for graduates, Zoology 44. Laboratory fee, \$2.

102. Economic Entomology. (4) II.

Wehrle

Insect pests of field, garden, and orchard; their life histories, habits, identification, and methods of control. Laboratory and practical field work. Prerequisite, Entomology 101. Laboratory fee, \$4.

*103a-103b. Systematic Entomology. (3-3) Yr.

Ball

The classification of insects into families and genera, and technique of preparing and mounting special groups. One lecture and two laboratory periods. Prerequisite, Entomology 101. Laboratory fee, \$3.

*104. Ornithology. (3) II.

Vorhies

The structure, classification, and economic relationships of birds, designed to give a working knowledge of avian fauna for teaching or museum work; or as a foundation for advanced work in the field of economic vertebrate zoology or of game management. Two lectures and one laboratory or field period. Prerequisite, Zoology 4; recommended, Zoology 45. Laboratory fee, \$2.50.

*105. Mammalogy. (4) II.

Vorhies

An introduction to the study of mammals offering training in this group like that afforded by the course in Ornithology. Two lectures and two laboratory or field periods. Prerequisite, Zoology 4; recommended, Zoology 45. Laboratory fee, \$4. Not offered in 1932-33.

112. Medical and Veterinary Entomology. (3) II.

Wehrle

Insects and other arthropods in relation to disease in man and domestic animals. Two lectures and one laboratory period. Prerequisite, Zoology 4. Laboratory fee, \$2.50.

*113a-113b. Special Problems in Entomology. (2 to 4) I or II. Staff

Properly qualified students, after consultation with instructors, are accepted for a limited amount of special work in classification of insects. Laboratory fee, \$1 per unit.

*115a-115b. Special Problems in Economic Zoology. (2-4) I or II. Staff

Properly qualified students, upon consultation with instructors, may be accepted for limited field problems in ornithology, mammalogy, or herpetology.

202a-202b. Economic Research. (2-4) I or II.

Wehrle

*203a-203b. Taxonomic Research. (2-4) I or II.

Ball

205a-205b. Research in Economic Zoology.

Vorhies-Taylor

FRENCH

Professor Otis (Head of the Department).

Associate Professor S. B. Brown

Assistant Professor Fenley.

Instructor Sougey.

The major: 24 units above 1b, including 101a-101b, 105a-105b, 107, 108; Spanish 205a-205b (Romance Philology) may be included.

The supporting minor should be chosen from: art, classical literature, English, German, history, philosophy, Spanish.

The teaching minor consists of 15 units above 1b and must include 3a-3b, and 5a-5b. Students offering 2 years of French for entrance must include 101a-101b.

Requirement for the major in Romance Languages: (For students in the College of Letters, Arts, and Sciences), 40 units in French and Spanish which must include French 101a-101b, 102a-102b, and Spanish 103a-103b, 109a-109b, and 110a-110b.

1a-1b. Elementary French. (4-4) Yr.

Staff

Fraser, Squair, and Carnahan, *Brief French Grammar*. Spink: *Le Beau Pays de France*. Composition and oral practice. Reading of Dumas, *Le Comte de Monte Cristo*.

3a-3b. Advanced French. (4-4) Yr.

Staff

Carnahan, *Alternate French Review Grammar and Composition Book*. Mérimée, *Colomba or Carmen*; Hugo, *Les Misérables*; Balzac, *Le Père Goriot*; Loti, *Pêcheurs d'Islande*; Parker, *Favorite French Stories*. Conversation. Prerequisite, French 1a-1b or 2 years of high-school French.

5a-5b. Advanced Composition and Conversation. (2-2) Yr.

Shanks and Méras, *French Composition for College*; Pattou, *Causeries en France*. Drill. Lectures and conversation in French on current events in France. Prerequisite, French 3b.

101a-101b. Survey of French Literature

Through the 18th Century. (3-3) Yr.

Otis

Lectures in French on the history of French literature. Reading of selections of medieval literature, Rabelais, Montaigne. Stress on Seventeenth Century literature. Descartes, Pascal, Corneille, Molière, Racine, La Fontaine, La Rochefoucauld, Montesquieu, Voltaire, Diderot, and the *Encyclopédistes*, Regnard, Lesage, Marivaux, Sedaine, Beaumarchais, Abbé Prévost, Rousseau. Prerequisite, French 3b.

102a-102b. French Civilization. (3-3) Yr.

Fenley

Lectures, discussions, and reports in French. The underlying racial, social, and economic factors from prehistoric times to beginning of Twentieth Century. Bainville, Guignebert, Duruy and available source books. Prerequisite, 101b, or may be taken with French 101a-101b.

105a-105b. Nineteenth Century and

Contemporary French Novel. (2-2) Yr.

Brown

Mme. de Staël, Chateaubriand, Hugo, Constant, Sand, Stendhal, Mérimée, Balzac, Flaubert, Daudet, Edmond and Jules de Goncourt, Zola, de Maupassant, Bourget, Paul Margueritte, J. H. Rosny, Prévost, Tinayre, Barrès, Huysmans, Loti, France, Bazin, Bordeaux, Philippe, Mille, Roland. Prerequisite, French 101b, or may be taken with French 101a-101b.

107. Nineteenth Century and

Contemporary French Poetry. (2) I.

Brown

Lamartine, Hugo, Vigny, Musset, Gautier, Leconte de Lisle, Baudelaire, Sully Prudhomme, de Herédia, Verlaine, and contemporary poets. Prerequisite, French 101a-101b, or may be taken with French 101a.

108. Nineteenth Century and Contemporary French Drama. (2) II. Brown
Hugo, Alexander Dumas, Vigny, Delavigne, Musset, Scribe, Dumas fils, Augier, Sardou, Bècque, Lemaitre, Porto-Riche, Hervieu, Brieux, Curot, Ros-tand, Lavedan, Bernstein, Bataille, Claudel, Guitry. Prerequisite, French 101b, or may be taken with French 101b.
- 201a-201b. Old French Literature. (3-3) Yr. Otis
A literary presentation of French literature to the Fifteenth Century, and the development of an ability to read Old French. Selections in various dialects of the medieval writers. *Aucassin et Nicolette, les Lais de Marie de France, Le Chevalier au Lion* of Chrétien de Troyes.
- 203a-203b. French Philology. (3-3) Yr. Otis
Phonology and morphology of the French language. Prerequisite, French 101b.
- 220a-220b. Seminar. (3-3) Yr. Staff
Research problems. Subject chosen according to the interest and ability of students. Graduate students and Seniors with consent of staff.
- The Teaching of French. (3) II. Fenley
For description see Education 197e. Required of students in the College of Education majoring in French.

Note: French 101, 102, 105, 107, 108 are conducted in French.

GEOLOGY AND MINERALOGY

Professors B. S. Butler (Head of the Department), G. M. Butler, Stoyanow, R. J. Leonard, Short, F. N. Guild (Emeritus).

Associate Professor Wilson.

Instructor ———.

The major: 24 units in addition to Mineralogy 11 and 12, and Geology 101 which are prerequisite: Geology 102, 103, 104, 105, 107; Mineralogy 111, 114, 115, 116.

The supporting minor should be chosen from: chemistry, physics, metallurgy, paleontology, mineralogy.

Prerequisites to the major: Chemistry 1a, 1b, 3 and 54; Physics 17a and 17b; Mathematics 20, 24, and 25; Mechanic Arts 1; Civil Engineering 1 and 2.

Attendance at a fortnightly geological conference is expected of all geology majors who are taking upper-division courses.

GEOLOGY

19a-19b. General Geology. (4-4) Yr. Wilson

A lecture and laboratory course open to all students of whom Geology 101 and 102 are not required. For those who desire a generalized knowledge of the fundamentals of geology; it includes the elementary principles that deal with the physical features of the earth and a survey of earth history. Three lecture hours and one 3-hour laboratory period. Fee, \$1.00 each semester. Field trips: Oct. 17, 18, 19, 20, 31; Nov. 1, 2, 3, 14, 15, 16, 17, 28, 29, 30; Dec. 1; March 6, 7, 8, 9, 20, 21, 22, 23; April 3, 4, 5, 6, 17, 18, 19, 20.

101. Physical Geology. (3) I. Leonard

The principles of dynamic and structural geology. Lectures and recitations, laboratory work on interpretation of topographic maps, and short field trips. Text: Pirsson and Schuchert's *Text Book of Geology*, Part I. Prerequisite, Chemistry 1a-1b. Laboratory fee, \$2. Field trips: Oct. 24; Nov. 10, 24. Field trip fee, \$2. Not for graduate credit.

101R. Physical Geology. (2) I. Leonard

Same as 101, without laboratory. Required of all Juniors in civil engineering electing the geology option. Not for graduate credit.

102. Historical Geology. (3) II. Stoyanow

The principles of stratigraphy and of organic evolution, and geologic history. Laboratory work. Study of geologic atlases and index fossils. Field trips continued. Text: Pirsson and Schuchert's *Text Book of Geology*, Part II. Prerequisite, Geology 101. Laboratory fee, \$2. Field trips: Feb. 15; March 14; April 19. Field trip fee, \$3. Not for graduate credit.

103. Ore Deposits. (3) I. B. S. Butler

A study of metalliferous deposits with particular reference to their geological relations and origins. Text: Emmon's *Principles of Economic Geology*, with Lindgren's *Mineral Deposits* as collateral reading. Reading may be required also of reports on selected mining districts and study of specimens of rocks and ores. Lectures, recitations, and field trips. Required of all students taking the mining engineering course. Prerequisites, Mineralogy 12, 114; Geology 102. Two field trips to be arranged. Field trip fee, \$7.

104. Non-Metalliferous Deposits. (3) II. B. S. Butler

Modes of occurrence, distribution, and origin of the principal non-metallic mineral products, including mineral fuels, building materials, etc. Text: Ries' *Economic Geology*. Lectures and recitation with collateral reading. Prerequisites, Mineralogy 12, 114; Geology 102. Field trips may be arranged if practicable, with fee proportioned to character of trips.

105. Field Geology. (3) II. Wilson

Field work, lectures, and recitations covering the various methods of geological surveying. Geological maps are made, materials for laboratory study collected, and reports prepared. Required of all students taking mining engineering course. Prerequisites, Geology 102, Mineralogy 114, Civil Engineering 1, Mechanical Engineering 1. Two 3-hour field or laboratory periods and one lecture hour. The field work alone (constituting course 105R) may be taken for 2 units credit. Field trip fee, \$12.

106a-106b. Field Exercises. (1 or 2) Yr. Staff

Field geology. Work to be arranged by individual instructors with approved students. Field work all day each Saturday will be required. Prerequisite, Geology 19a-19b or 101. May be taken either semester.

107. Invertebrate Paleontology. (3) I. Stoyanow

The general principles of paleontology, and the structure, relationships, and geological significance of the principal types of fossil invertebrates. Methods of collecting fossils and their preparation for identification. Two lectures and one laboratory or field period. Prerequisite, Geology 19b or 102. Laboratory fee, \$2.

108. Geology of North America. (2) I. Leonard

General physiography, stratigraphy, and structural and igneous geology of North America. Prerequisite, Geology 19b or 102. Not offered in 1932-33.

109. Geology of Arizona. (2) II. Stoyanow

The physiography, geologic structure, formations, index fossils, geologic history, and literature of Arizona. Lectures and laboratory and library work. Prerequisites, Geology 102 and 107, Mineralogy 114. Two lectures or equivalent.

111. Summer Field Geology. (3 to 6) Summer Session, Leonard, Staff

Practice in topographic surveying, geological mapping, and mining geology. Four to 8 weeks in camp in the mountainous belt of Yavapai County in west-central Arizona, beginning June 8, 1932. Prerequisites, Civil Engineering 1 and Geology 102. This course (3 units) or an equivalent is required of geology majors.

112. Physiography. (2) II. Wilson

The evolution and description of land forms, open to all students who have taken Geology 19a or its equivalent. Like 19a, it serves as a cultural course intended for persons who seek a broader understanding of natural landscapes and for those who propose to teach physiography, geography, or other natural sciences. Two lectures a week.

121. Methods in Structural Geology. (2) I. Wilson

The methods of working out and interpreting structure, especially as affecting ore bodies and occurrence of coal, oil, and underground water. The solution of fault problems, the construction of underground contour maps and, in general, the interpretation, in terms of three dimensions, of observations made at the earth's surface, or in mine workings, and of records obtained by drilling. One lecture and one laboratory period. Prerequisite, Geology 101.

122. Petroleum Geology. (2) I. Stoyanow

The fundamental principles of oil geology. Geology of American and foreign oil areas. Two lectures. Prerequisite, Geology 102.

201a-201b. Ore Deposits of the Rocky Mountains. (2-2) Yr. B. S. Butler

The principal mining districts in Utah, Colorado, Arizona, New Mexico, and Mexico, with particular reference to processes and principles. Lectures and seminar. Prerequisites, Geology 103 and 104 or equivalents. If practicable, field trips will be arranged to some of the most interesting districts. Instructions will be based partly on reading of U. S. Geological Survey reports with collateral library work.

202a, b, c, d. Economic Geology Seminar. (1-1-1-1) Yr. B. S. Butler

Discussion of current literature and special problems. Varied by occasional lectures. Prerequisites, Geology 103 and 104 or equivalents.

203a-203b. Advanced Mineral Deposits. (2-4) Yr. B. S. Butler

For graduate students. Arranged to meet needs of students. Study of reports on mining regions with occasional lectures. One or two units laboratory may be taken. Prerequisite, Geology 103. Fee, \$1 per laboratory unit.

206. Research. (1 to 4) I or II. Staff

Problems in structure, stratigraphy, paleontology, or ore deposits. Fee, \$1.00 per unit of laboratory work. Open to Seniors by special permission.

207. Stratigraphy and Advanced Paleontology. (3) II. Stoyanow

Designed to prepare a student for independent work in paleontology and stratigraphy. Two lectures and one laboratory or field period. Prerequisite, Geology 107. Laboratory fee, \$10.

208. Metamorphic Geology. (2) II. Leonard

The conditions, processes, and results of metamorphism, particularly emphasizing rock alteration associated with ore deposits. Two lectures. Prerequisites, Mineralogy 114 and 115.

MINERALOGY
11. Crystallography and Blowpipe Analysis. (3) I. G. M. Butler-Leonard

The student is required to become thoroughly familiar with the crystal systems and forms through the study of crystal models and natural crystals. Practice in "blowpipe analysis" operations, experimental work upon known, and analysis of unknown substances. Prerequisite Chemistry 1b or 2b. Laboratory fee, \$5. Each student must provide himself with a hand lens.

12. Determinative Mineralogy. (3) II. Leonard

About 175 mineral species are studied. Emphasis upon identification of minerals by physical characteristics with the aid of a hand lens and pocket knife. The end sought is the recognition in the field of those minerals likely to be encountered in mining operations, rather than ability to classify any mineral by complicated laboratory methods. Each student determines over 2,500 individual specimens. Prerequisite, Mineralogy 11. Laboratory fee, \$5.

113. Advanced Determinative Mineralogy. (2) I. Leonard

Mineral species are determined by rough measurement of crystal angles, crystal habits of common minerals emphasized, advanced laboratory methods of blowpipe analysis are tried, and about 60 additional species are considered. Prerequisite, Mineralogy 12. Laboratory fee, \$2.

114. Petrology. (2) II. G. M. Butler

The characteristics of the more common rocks and their reasonably accurate field identification, without the use of microscopic thin section. Portions of the laboratory periods are used for lectures and oral quizzes. Prerequisite, Mineralogy 12.

115. Optical Mineralogy. (2 or 3) I. Short

The microscopic study of the rock-forming minerals. Prerequisites, Geology 102, Mineralogy 12, Chemistry 54, and Physics 17b. Physics 106 is recommended. Laboratory fee, \$2.50.

116. Petrography. (2) II. Short

The preparation and study of thin sections of rocks. Prerequisites, Mineralogy 114 and 115. Laboratory fee, \$2.50.

207. Crystallography. (1 to 4) I or II. Short

Measurements, projection, and drawing of crystals. Prerequisites, Mineralogy 115 and Mathematics 25. Three to 12 hours laboratory work. Laboratory fee, \$2.50.

208. Thesis and Research. (1 to 4) I or II. Staff

Graduate students may carry on investigations in this department in crystal measurements, optical mineralogy, or the study of polished specimens of ore. Three to 12 hours laboratory work. Laboratory fee, \$2 per unit.

209. The Microscopic Study of Opaque Minerals. (1) I. Short
The preparation of polished specimens of ores, the study of methods of identification of ore minerals by means of the reflecting microscope, photomicrography, and the study of a type collection of polished ore specimens. Laboratory fee, \$2.50.
210. Paragenesis of Silicate Minerals. (2) II. Short
A lecture course to supplement Mineralogy 116, in which a study is made of the classification, origin, and geologic significance of the silicate minerals. The study of phase rule diagrams, and other geochemical methods. Prerequisites, Mathematics 25, Mineralogy 115, and Chemistry 54. Chemistry 106b is recommended.
211. Advanced Opaque Microscopy. (2) II. Short
Advanced identification of ore minerals by microchemical methods and microscopic study of suites of ore specimens from representative mining districts. Paragenesis of ore and gangue minerals. Prerequisite, Mineralogy 209. Laboratory fee, \$5.

GERMAN

Professor Carrington (Head of the Department).
Instructor McCarty.

The major: 24 units above 1b, including 16 upper-division units.

The supporting minor should be chosen from: classical literature, French, history, philosophy, Spanish.

The teaching minor consists of 15 units above 1b and must include 3a-3b, and 101a or 102a. Students offering 2 years of German for entrance must include 5a-5b.

1a-1b. Elementary German. (4-4) Yr. Carrington-McCarty

The use of simple spoken or written German. Drill in pronunciation and in grammatical forms and practice in conversation, composition, and the reading of easy texts.

3a-3b. Second Year German. (4-4) Yr. Carrington

This course is a continuation of 1b. Vocabulary, grammar, and reading preparatory to more advanced work. Prerequisite, 1b or 2 years of high-school German.

5a-5b. Composition and Conversation. (2-2) Yr. Carrington

This course is intended to supplement the work of 1a-1b and 3a-3b and aims especially to develop facility in written and oral expression.

101a-101b. Selected Works of Lessing. (3-3) Yr. Carrington

Minna von Barnhelm, Emilia Galotti, Nathan der Weise, and other works that present Lessing as critic and reformer. Prerequisite, 3b, or its equivalent. Given in 1933-34 and alternate years.

102a-102b. Selected Works of Schiller. (3-3) Yr. Carrington

The poet's most famous dramas. Readings and supplementary lectures on Schiller's storm and stress period and his writings on æsthetics. Prerequisite 3b. Given in 1932-33 and alternate years.

104a-104b. Schurz and Wagner as Revolutionists. (2-2) Yr. Carrington

The works of Schurz and Wagner and the conditions which led to the revolution of 1848. Prerequisite, 2 years of college German. Given in 1933-34 and alternate years.

107a-107b. Goethe's Faust, Parts I and II. (2-2) Yr. Carrington

In connection with the study of this work as poetry, an attempt is made to show how it reflects the inner experiences of the poet. Prerequisite, the same as for 103. Given in 1932-33 and alternate years.

108a-108b. Scientific German. (2-2) Yr. McCarty

Intended for science students, adapted, as far as possible, to the needs of the individual students. Prerequisite, German 3b or in exceptional cases, 3a. Not for graduate credit.

201a-201b. Middle High German. (2-2) Yr. Carrington

Middle High German grammar in its relation to that of modern German; reading of the Nibelungenlied and of such authors as Hartman von Aue and Walther von der Vogelweide. Open to graduate students and by special permission to Seniors. Given in 1933-34 and alternate years.

HISTORY AND POLITICAL SCIENCE

Professor Hubbard (Head of the Department).
Associate Professors, Leonard, Wedel, Houghton.

HISTORY

The major: 24 units including History 1a-1b or 11 and 12 or 17a-17b; also 16 units of upper-division work. (1a-1b must be chosen if the student has not had American History in Junior or Senior year of high school.)

The supporting minor should be chosen from: economics, political science, foreign languages, English, philosophy.

The teaching minor must include 1a-1b, 17a-17b, and additional courses to total at least 15 units.

Note: On the completion of History 1a-1b or 11 and 12 or 17a-17b as introductory courses, or Political Science 51 and 62, upper-division courses may be chosen.

1a-1b. Expansion of the American People. (3-3) Yr. Leonard

The political and social development of the American people from 1776; the analysis of the various complex forces which have resulted in the ideas and institutions of the day; the westward movement; the development of western democracy; the social and political changes following the Civil War; the settlement of the Far West. Open to all students. Two lectures and one quiz section.

11. Development of the English Nation. (3) I. Hubbard

From the earliest times to the end of the Tudor period. The influence of Church and Continental relations; development of English social and political institutions. Intended to give students a clear idea of the Constitution as developed to the close of the period.

12. Development of English Party Government. (3) II. Hubbard

Beginning with the close of the Tudor period, the events and legislation causing and directing the growth of English political parties. The prerogative of the crown, the development of the cabinet system, elections, methods of legislation, and the reform bills of the Nineteenth Century.

17a-17b. General European History. (3-3) Yr. Wedel

The social, economic, and political development of Europe from the middle ages to the present time. Especially offered for those who have not had a general course in the high school.

103a-103b. Medieval History. (3-3) Yr. Hubbard

Europe from the fall of the Roman Empire in the West to the time of the Reformation; the origin and development of the various European states, and of the religious, social, and political institutions. Given in 1932-33 and alternate years.

105a-105b. Nineteenth Century Europe. (3-3) Yr. Hubbard

The liberal reform movement of Europe; the evolution of constitutional government; various movements toward national unity; the rise of modern Italy and modern Germany; the Franco-Prussian War; English reform bills of 1832, 1867, and other political developments. Given in 1933-34 and alternate years.

109. Greek History. (3) I. Hubbard

Greece to the death of Alexander. The development of the political, social, and economic life of the Greek people. Given in 1933-34 and alternate years.

110. Roman History. (3) II. Hubbard

Rome to the fall of the Empire. Its political history as a basis for the organization of the Republic and the Empire; the social and economic

development of the people. Emphasis upon the relation of Rome to the Mediterranean world. Given in 1933-34 and alternate years.

113a-113b. Modern Europe. (3-3) Yr. Hubbard

From the beginning of the Reformation to the Napoleonic period. European civilization of the Sixteenth, Seventeenth, and Eighteenth centuries, including an intensive study of the French Revolution. Given in 1932-33 and alternate years.

115a-115b. The Twentieth Century. (2-2) Yr. Wedel

International relations before 1914, the causes and results of the wars of the century; the Russian Revolution; and the new map of Europe.

117a-117b. Constitutional History
to the Civil War. (2-2) Yr. Wedel

Origin and development of the constitutional idea. One purpose of the course is to direct the student to collect and organize source material. Open only to students having had 1a-1b. Given in 1933-34 and alternate years.

119a-119b. Later History of the United States. (2-2) Yr. Wedel

The United States since the Civil War. Open only to students having had History 1a-1b. Given in 1932-33 and alternate years.

121. The Latin-American Colonies. (2) I. Leonard

Survey of Spanish institutions and culture introductory to a sketch of the course of discovery, exploration, and settlement of Latin America; the form of government, social organization, economic conditions, works of the Church, intellectual status, and the struggle for independence.

122. The Latin American Republics. (2) II. Leonard

Progress toward stability, prosperity, and international recognition; relations with Europe and the United States; geography and resources; social, political, and financial situation; industrial and commercial relations.

130a-130b. The History of the West. (3-3) Yr. Leonard

The settlement and development of the West, and its influence upon national and international affairs at each stage. Emphasis on the Trans-Mississippi West.

210a-210b. Seminar. (2 to 4) Yr. Staff

Advised for students taking a major in history and political science. Open only to graduate students and Seniors.

205a-205b. Problems in History. (2 to 4) Yr. Staff

Open only to graduate students, with privilege of repetition upon change of subject matter. Students admitted upon consent of department. Definite requirements as to lectures, reading, or research.

The Teaching of Social Science. (3) II. Leonard

For description see Education 197f. Required of students in the College of Education majoring in history.

POLITICAL SCIENCE

The major: 24 units, 16 of which must be upper-division courses.

The supporting minor should be chosen from: economics, history, modern or ancient languages, and must include History 1a-1b or 11, 12 or 17a-17b. Economics 1a-1b are required for those intending to teach.

51. National Government of the United States. (3) I. Houghton

The Constitution and its amendments; the structure of the Federal Government; distribution of powers; checks and balances; the powers of the executive, legislative, and judicial departments; governing of territories and colonies, civil rights and their guarantee. Not open to Freshmen.

62. State and County Government. (3) II. Houghton
The organization and functions of state and county government; special reference to Arizona. The origins of state government; its relation to the Federal Government; the state constitutions; state finances; the executive, legislative, and judicial departments. Not open to Freshmen.
100. National and State Constitutions. (3) II. Houghton
Devised to meet the state requirements for a teacher's certificate. For Seniors intending to teach. Not open to students having had 51 or 62.
- 131a-131b. European Governments. (3-3) Yr. Wedel
Political institutions and growth of governments with particular emphasis on the government of England; followed by a review of the governments of France, Italy, Switzerland, German Republic, Belgium, and the newer governments of Central Europe; comparisons with the government of the United States. Not open to students who have credit for 31a-31b.
153. Municipal Government. (2) I. Houghton
The mayor and council, commission and city manager plan; political and legal character of the municipality; city planning; social welfare; taxes and finance; municipal courts; public improvements; the relation of the city to the state; individual rights and responsibilities. Given in 1933-34 and alternate years.
154. American Parties and Party Methods. (2) I. Houghton
The rise, growth, and principles of American major and minor parties; economic, political, and social conditions in their relation to party development; the spoils system; patronage; official personnel and machinery; nominating systems; party platforms. Given in 1932-33 and alternate years.
155. American Foreign Policy. (3) I. Houghton
The beginnings; the system of neutrality; freedom of the seas; question of the fisheries; origin and development of the Monroe Doctrine; territorial expansion; expatriation; international arbitration; Pan-Americanism; the Open Door; the Panama Canal; Pacific and Caribbean questions; the diplomacy of the World War. Given in 1933-34 and alternate years.
156. International Law. (3) II. Houghton
Origin and development of International Law; leading treaties and conventions; the community of nations; the diplomatic and consular services; rights and duties of states in times of peace and war; laws of war and neutrality as affected by the World War; mandates.
164. International Relations. (3) I. Houghton
Evolution of the modern national state. Development of international contracts. Diplomacy and consular service. Forces which have led to the development of international cooperation and international government. Arbitration, the League of Nations and the World Court. Given in 1932-33 and alternate years.
- 203a-203b. Advanced Political Theory. (3-3) Yr. Houghton
The works and times of the great political theorists, with special attention to the Greek City-State and the beginnings of democracy; the political significance of the Roman Empire; the conflict between Empire and Papacy; the era of absolutism; and the development of constitutionalism and modern democracy. Special reference to American theory second semester. Prerequisite, 6 units in upper-division history or political science.
- 207a-207b. Problems in Political Science. (2 to 6) Yr. Houghton
Open only to graduate students with privilege of repetition upon change of subject matter. Students admitted upon consent of department. Definite requirements as to lectures, reading, or research.

HOME ECONOMICS

Professors Mather (Head of the Department), Smith.

Associate Professor Ranney.

Assistant Professors Gallatin, Hartley, Jones.

Instructors Moore, Lynott.

FOODS AND NUTRITION

1a-1b. Selection and Preparation of Foods. (3-3) Yr. Lynott

The nature, chemical composition, use and cost of foods; methods of preparation, principles of selection, processes of manufacture, and food legislation. Chemical changes brought about by cooking of foods. Concurrent registration with Chemistry 50 and 52. One lecture and two 3-hour laboratory periods. Laboratory fee, \$5 each semester.

2. Introduction to Nutrition. (2) I. Smith

Selection of an adequate diet for health. The requirements of the body for energy, protein, minerals, and vitamins. Demonstrations of animal-feeding experiments. Required of physical education and home economics majors, elective for others. No prerequisite. Two lectures. For men and women.

3. Food Preparation. (2) II. Lynott

For non-home-economics students. The selection and preparation of simple meals and refreshments for social occasions. Classification, composition, and general properties of foodstuffs. No prerequisites. No credit to majors. Open to students in any college. Two 3-hour laboratory periods. Laboratory fee, \$5.

13. Camp Cookery (For Men). (1) II. Lynott

The selection and preparation of foods for camps. Practical work in the laboratory and out of doors. One 3-hour laboratory period a week. Laboratory fee, \$5.

101. Meal Planning and Table Service. (2) I. Lynott

Practical methods in selection, preparation, and serving of meals. Types of service suitable for family meals and for special functions. Problems of production and distribution of foods and economic conditions affecting cost of foods. Prerequisite, 1b. Two 3-hour laboratory periods. Laboratory fee, \$7.50.

102. Nutrition and Dietetics. (4) I. Hartley

Fundamental principles of human nutrition. Food requirements of adults, children, and infants. The nutritive value of proteins, fats, carbohydrates, mineral elements, and vitamins. Application in planning of dietaries. Prerequisite, Chemistry 52, Home Economics 1b, Zoology 144. Two lectures and 6 hours laboratory work. Laboratory fee, \$7.50. Not for post-graduate credit.

111. Institution Management. (3) II. Moore-Lynott

Organization and equipment of lunch rooms and cafeterias. Foods from the standpoints of quality, grade, cost, and methods of buying. Menus and problems involved in selection and preparation of food in quantity. Prerequisite, 1b. One lecture and two 3-hour periods. Given in 1931-32 and alternate years. Not for post-graduate credit. Laboratory fee, \$5.

112. Nutrition Work with Children. (2) II. Hartley

Standards of judging nutrition. Cause and effect of malnutrition and methods of combating it. Planning and execution of children's dietaries in connection with University Nursery School. Teaching nutrition to children in public schools. Prerequisite, 102. One lecture and one 3-hour laboratory period. Laboratory fee, \$2.50.

121. Food Demonstration. (2) II. Lynott

The preparation of food before an audience; of practical value to those who wish to become teachers, extension workers, or commercial demonstrators. Prerequisite, Senior standing. Two 3-hour laboratory periods. Laboratory fee, \$7.50. Given in 1932-33 and alternate years.

122. Readings in Nutrition. (2) I or II. Hartley
Readings and reports. Two conference hours. Open to Seniors. Prerequisite, 102.
131. Experimental Cookery. (2) I. Lynott
Cooking processes as affected by temperature, altitude, preparation and manipulation of ingredients. Conferences and laboratory work (6 hours). Prerequisites, Chemistry 52, Home Economics 1b. Laboratory fee, \$7.50.
202. Investigations in Nutrition. (4) I. Hartley
Methods; animal-feeding experimentation; metabolism; digestion. Introduction to research problems. Open to Seniors and graduates. Prerequisites, 102, Chemistry 54, and Chemistry 115. Two lectures and 6 hours laboratory. Laboratory fee, \$7.50.
212. Diet in Disease. (3) II. Hartley
Adaptation of diet to disorders of nutrition. Two lectures and one 3-hour laboratory period. Open to Seniors and graduates. Prerequisite, 102. Laboratory fee, \$2.50.
222. Seminar in Nutrition. (2-2) Yr. Smith-Hartley
Current literature. Special attention to recent advances in knowledge of proteins and vitamins. Readings and reports. Graduate students. Prerequisite, fundamental work in nutrition and related sciences.
231. Problems in Experimental Cookery. (2-4) I or II. Lynott
Conferences and individual laboratory work. For graduate students. Prerequisite, 131. Hours to be arranged. Laboratory fee, \$7.50.
252. Research. Smith-Hartley
Candidates for master's degree are required to present a thesis based upon research work. Research problems which the department is equipped to handle will be assigned to qualified students. Credits and fee proportionate to problem involved.

TEXTILES AND CLOTHING

4. Textiles. (2) I or II. Gallatin
Important fibers and fabrics. Discrimination developed in the selection of house furnishings and clothing. Microscopic and chemical tests. The economic, legal, and social aspects of the textile industry. Two lectures.
23. Clothing Selection. (2) I. Gallatin
For non-home-economics students to develop judgment in the selection and purchasing of appropriate and artistic clothing. No prerequisites. No credit to home economics majors. Two lectures.
33. Clothing Construction. (2) II. Gallatin
For non-home-economics students. The hygienic, æsthetic, and economic selection and construction of clothing. No prerequisites. No credit to home economics majors or minors. Two 3-hour laboratory periods. Laboratory fee, \$2.50.
- 44a-44b. Clothing. (3-3) Yr. Ranney
The fundamental principles governing the designing, selection, and construction of garments (in washable materials). Drafted and commercial patterns; costs, standards, and health factors in relation to clothing emphasized. Prerequisites, Art 1a, and Home Economics 5. One lecture and two 3-hour laboratory periods. Laboratory fee, \$2.50 each semester.
104. Buying Textiles and Clothing. (3) I or II. Ranney
Planned to familiarize the student with types and qualities as related to raw materials, processes of construction, special brands, and standardization. Rayon, hosiery, glove-silk fabrics, gloves, shoes, and furs are the topics considered. Prerequisite, 4.
144. Advanced Clothing. (2) I. Ranney
Design and color in the planning, selection, and construction of costumes for different occasions and different types of individuals. Problems worked out in wool and silk. Prerequisite, 44b. Two 3-hour laboratory periods. Fee, \$2.50. Not for post-graduate credit.

APPLIED ART AND DESIGN

5. **Costume Design. (2) II.** Gallatin
 Art in dress; the application of the principles of color, harmony, and design; individual requirements in color and line. Prerequisite, Art 1a. One lecture and one 3-hour laboratory period.
15. **History of Costume. (2) I.** Ranney
 Period costume as an expression of the artistic, social, and historic life of the time; of special interest to students of dramatics and pageantry. Recommended prerequisites, 5 or 23, and European History.
105. **Home Architecture. (3) I.** Gallatin
 Sites; types of architecture; financing; materials; construction; heating; lighting; ventilating and plumbing. Prerequisite, Art 1a or equivalent. Two lectures and one 3-hour laboratory period. Not for post-graduate credit.
115. **Home Furnishings. (3) II.** Gallatin
 Interiors and the selection and arrangement of furnishings from the standpoint of beauty and economy. Prerequisite, Art 1a or equivalent. Two lectures and one 3-hour laboratory period. Not for post-graduate credit.

HOUSEHOLD ADMINISTRATION

106. **Economics of the Household. (3) II.** Mather
 The economics of the household; organization and management of time, energy, and income; standards of living, family expenditures, personal and family budgets and accounts. Prerequisites, Junior standing. Three lectures.
116. **Home Management Laboratory. (3) I.** Mather
 Students live in Home Management house and apply principles learned in other home economics and related courses; selection and arrangement of equipment; marketing, budgeting and recording food expenditures on different income levels; care of the home and family relationships. Prerequisite, Senior standing. Two lectures and one conference hour per week.
126. **Child Development. (3) II.** Jones
 The physical, social, mental and emotional development of the child. Emphasis on heredity, environment, and habit formation. Discussion confined largely to the pre-school child but will include problems of the pre-adolescent and adolescent ages. Observation of the University Nursery School children. Prerequisite Home Economics 2, Psychology 1a or satisfactory equivalents, and Senior standing. Laboratory fee, \$2.
136. **The Family. (3) II.** Mather
 The origin and development of the family as an institution; analysis of the factors leading to successful family life and a professionally minded parenthood; relations of parents and children; a consideration of some of the more important agencies for parent education. Open to men and women. Three lectures.
250. **Extension Work in Home Economics. (3) I.** Mather
 A survey of the field in home economics work carried on under the Smith-Lever Act; state and county plans for administration; organization and personnel; subject matter, with demonstrations for definite project work receives attention. Field work is done where possible. Open to Seniors and graduates. Three lectures per week and conference hours by assignment.

HOME ECONOMICS EDUCATION

For description see Agricultural and Home Economics Education, page 127.

Freshman Requirement

- Social Fundamentals. ($\frac{1}{2}$ - $\frac{1}{2}$) Yr.** Dean of Women-Special Lecturers
 Required of all Freshman women students. Factors in right living and social adjustment; personal hygiene; nutrition; costume; social usage; the choice of an occupation; personal and ethical problems. One hour a week.

HORTICULTURE

Professor Kinnison (Head of the Department).

Assistant Professors Wharton, Finch.

1. Plant Industry. (4) I.

Finch

The methods of plant propagation and nursery practice with particular reference to fruit, garden, and ornamental plants. Two lectures and two 3-hour laboratory periods for the last half of the semester. Students take Agronomy 1 the first half of the semester. Plant propagation second half of semester. Laboratory fee, \$2.50.

3. Vegetable Gardening. (3) I.

Wharton

The principal vegetable crops grown in the home and market garden. Each student will be required to plan, plant, and care for a market garden plot on the University Farm as a part of the laboratory work. Prerequisites, Horticulture 1, Botany 1. Laboratory fee, \$3. Given in 1932-33 and alternate years.

101. Subtropical Horticulture. (2) II.

Kinnison

Subtropical fruits of commercial importance in the Southwest, including the persimmon, walnut, pecan, avocado, fig, olive. Two lectures. Prerequisites, Horticulture 1, Botany 3. Given in 1933-34 and alternate years.

102. Commercial Horticulture. (3) I.

Wharton

The commercial production of fruit crops, including grading, packing, storing, and orchard management. One Saturday field trip. Two lectures and one 3-hour laboratory period. Laboratory fee, \$2. Prerequisites, Horticulture 1, Botany 3. Given in 1932-33 and alternate years.

103. Truck Farming. (3) II.

Wharton

The most approved methods of growing, handling, and marketing the leading truck crops in Arizona, such as lettuce, cantaloupes, Irish potatoes, sweet potatoes, asparagus, and onions. Two lectures and one 3-hour laboratory period. Laboratory fee, \$3. Prerequisite, 3. Given in 1932-33 and alternate years.

104. Systematic Pomology. (3) I.

Wharton

The principles underlying pomological nomenclature, variety description, classification, and adaptation. The characteristics of both trees and fruits with reference to their group relationships. Practice in describing and identifying varieties of fruits, placing exhibits, and judging. Two lectures and one 3-hour laboratory period. Laboratory fee, \$5. Required of majors in horticulture. Prerequisite, Botany 4. Given in 1933-34 and alternate years.

105. Landscape Gardening. (3) II.

Kinnison

The principles of landscape art with reference to beautifying homes, school grounds, and park areas; characteristics of ornamentals. Two lectures and one 3-hour laboratory period. Laboratory fee, \$2.50. Given in 1932-33 and alternate years. Prerequisites, Horticulture 1, Botany 4. Not for post-graduate credit.

106. Date Culture. (3) I.

Kinnison

The propagation, growing, harvesting, processing, and marketing of the date. Three lectures. Given in 1933-34 and alternate years. Prerequisites, Horticulture 1, Botany 3.

107. Grapes and Small Fruits. (3) II.

Wharton

Grapes and small fruits, with reference to climatic, soil, and water requirements; variety adaptation and cultural practices. Two lectures and one 2-hour laboratory period. Laboratory fee, \$3. Given in 1933-34 and alternate years. Prerequisites, Horticulture 1, Botany 3.

108. Citriculture. (3) I.

Kinnison

The commercial production of citrus fruits. Questions of temperature and moisture, including climatic and soil requirements. Three lectures. Given in 1932-33 and alternate years. Prerequisites, Horticulture 1, Botany 3.

109. Field Studies in Horticulture. (1) I. Staff
Problems encountered in commercial orchard and truck-farm management. Field trips will be made to the more important horticultural districts of the State. Required of all majors in horticulture. Transportation to be taken care of by individual student or on the mileage basis. Not for post-graduate credit.
201. Seminar in Horticulture. (2) II. Staff
Readings of literature in horticulture. Required of Seniors and graduate students in horticulture.
202. Research in Horticulture. (2 to 4) I or II. Staff
Special work under the professor in charge. For graduate students.

LAW

Professors Feghtly (Dean of the College), Curtis, C. H. Smith.
Associate Professors *McCormick, Thomas.

2a-2b. Contracts. (3-3) Yr.

Offer and acceptance; consideration; contracts under seal; contracts for the benefit of third persons; assignment of contracts; joint obligations; the Statute of Frauds; performance of contracts; illegal contracts; discharge of contracts. Williston's *Cases on Contracts*, Third Edition.

3. Development of Law. (1) I.

Curtis

The nature and sources of law; theories of its origin; comparison of early with modern law; the systems of ancient law; European law; English law; influence of the civil law upon the development of the common law; contributions of the legal educational institutions and organizations of the Middle Ages; utilization of legal principles and methods for adjustment of international disputes; organization and work of the World Court.

5. Agency. (3) II.

Thomas

Relation; appointment; liabilities of principal, liabilities of agent; parties to writings; undisclosed principal; delegation and termination of agency. Goddard's *Cases on Agency*.

6. Property—Personal Property. (2) I.

Curtis

Distinction between real and personal property; rights of action based on possession or on ownership; possessory interests in chattels; acquisition of ownership; fixtures; emblements. Bigelow's *Cases on Personal Property*.

7. Property—Rights in Land. (3) II.

Curtis

Easements; covenants running with the land; public rights; franchises; rents. Bigelow's *Cases on Rights in Land*.

8. Criminal Law. (3) I.

Smith

Criminal procedure, nature and elements of crime, specific crimes, defenses. Sayre's *Cases on Criminal Law*, Abridged Edition.

37. Pleading and Practice—Common Law. (3) I.

Curtis

Forms of action; declaration and the necessary allegations therein; demurrers and dilatory pleas; pleas in bar; amendments, aider, and replender; parties to action; effect of nonjoinder and misjoinder. Keigwin's *Cases on Common Law Pleading*.

38. Pleading and Practice—Code. (3) II.

Curtis

The merger of law and equity; abolishment of distinction between courts of law and courts of equity; rejection of common law forms; joinder of parties; joinder of causes of action; complaint and its necessary allegations; demurrers, amendments, and aider; answers, denials, and affirmative defenses; counterclaim; reply. Keigwin's *Cases on Code Pleading*.

41a-41b. Torts. (3-3) Yr.

Feghtly

The damage element; corporal harms; sensory and mental harms; loss of liberty or life; domestic relations; right of action for tortious death; harms to profitable relations through violence, defamation, unfair trade, infringement of trade-mark, copyright, or patent; proprietary harms as shown in trespass, conversion, and disseisin; nuisance; malicious prosecution, invasion of right of privacy. Causation element; active and culpable causation; proximate and remoteness; negligence *per se*; acting at peril. Excuse element; defense of person or property; leave and license; contributory negligence; last clear chance; assumption of risk; paramount community interests, trade rivalries and competition; strikes and boycotts; free discussion and criticism; free resort to courts; freedom of official action; statutory rights. Wigmore's *Cases on Torts*.

101. Legal Bibliography. (1) I.

Thomas

Practical study in the character of and relation between repositories of the law, English and American; the use of statutes, digests, encyclopedias, reports, annotations, citators, etc. Analysis of fact situations, and individual

* On sabbatical leave, 1932-33.

problem solutions in the law library; evaluations of precedents; construction of statutes; the trial brief. Eldean's *How to Find the Law*.

103. Practice. (2) I. Thomas

Cases illustrating progressive steps in trial procedure; the process, requisites as to form, service, and return; jurisdiction by constructive service and by appearance; judgments by default; continuances; examination and challenge of jurors; qualifying, offering, and objecting to evidence; withdrawal of case from the jury by demurrers to evidence; motions to direct verdict, and non-suit; arguments of counsel; submission of case to the jury, and instructions; verdicts; trials to the court; grounds and motions for new trial; bills of exception. Hinton's *Cases on Trial Practice*, Second Edition.

107a-107b. Domestic Relations. (1-1) Yr. Thomas

Cases illustrating situations arising on breach of promise to marry, and on marriage, divorce, and separation; problems incident to the marital relation in matters of property, contracts, torts, crimes, and the duty to support; rights and obligations as between parent and child. Madden's *Cases on Domestic Relations*. Given in 1932-33 and alternate years.

109a-109b. Legal Ethics. (1-1) Yr. Thomas

History of the legal profession; qualifications for and methods of admission to practice; disciplinary procedure; ethical duties with relation to the courts, other attorneys, and clients, in civil and criminal cases; solicitation of business; pecuniary transactions; canons of the American Bar Association. Given in 1933-34 and alternate years.

110a-110b. Equity Jurisdiction. (3-3) Yr. Smith

Nature of equity jurisdiction; specific performance of contracts; relief for and against third persons, equitable conversion by contract; partial performance with compensation; consideration; marketable title; part performance and the Statute of Frauds; laches, fraud, misrepresentation, mistake, and hardship as defenses to specific performance; bills for an account; the nature of the jurisdiction over particular torts; equitable proceedings against torts; protection of public and social interests; bills of interpleader; bills of peace; bills *quia timet*; reformation and rescission for mistake; injunction against writing or speaking; protection of interests of personality; protection of political relations. Ames' *Cases on Equity Jurisdiction*, Vols. 1 and 2; Chafee's *Cases on Equitable Relief Against Torts*; Pound's *Cases on Equitable Relief Against Defamation and Injuries to Personality*, Second edition.

116. Conflict of Laws. (2) II. Curtis

The principles of international private law; jurisdiction *in rem* and *in personam* in connection with effect of foreign judgments; creation, recognition, and enforcement of rights in reference to law of foreign state; extra-territorial applicability of laws with respect to person and property. Given in 1932-33 and alternate years.

118a-118b. Evidence. (3-3) Yr. Feghtly

Rules of admissibility of evidence; real and circumstantial evidence, character; testimonial capacity; impeachment and rehabilitation of witness; admissions and confessions; best evidence rule; hearsay rule and its exceptions; inapplicability of hearsay rule; testimonial and documentary discovery; authentication of documents; privileged relations and communications; burden of proof and presumptions; parole evidence rules; interpretation of legal acts. Wigmore's *Cases on Evidence*, Second Edition.

121. Sales. (3) II. Curtis

Subject matter of sales; executory and executed sales; bills of lading, seller's lien and right of stoppage *in transitu*; factor's acts; warranty and remedies for breach; Statute of Frauds. Woodward's *Cases on Sales*, Second Edition. Given in 1933-34 and alternate years.

124. Public Utilities. (3) I. McCormick

The public callings. The obligation to serve without discrimination, at reasonable rates and with adequate facilities. Regulation at common law and under modern statutes; regulation through commissions. Interstate utilities and the Interstate Commerce Act. The Carrier. The Inn. Sleeping-car companies. Telegraph companies. Other utilities. Robinson's *Cases on Public Utilities*. Given in 1933-34 and alternate years.

125. Bills and Notes. (3) II. Feghtly

A consideration of negotiable instruments and their origin; formal requisites; acceptance, endorsement, extinguishment; nature of the obligation;

defenses; Smith and Moore's *Cases on Bills and Notes*, Second Edition. Given in 1933-34 and alternate years.

126. Partnership. (2) I. Smith

Formation of partnership, partnership property, powers of partners, partnership obligations, causes of dissolution, liquidation and settlement. Crane and Magruder, *Cases on Partnership*, Shorter Selection. Given in 1932-33 and alternate years.

127. Credit Transactions. (3) I. Smith

Accommodation contracts, mortgages, pledges, conditional sales, dealers' financing, use of credit, security holders' remedies. Sturgis, *Cases on Credit Transactions*. Given in 1932-34 and alternate years.

129. Water Rights. (2) I.

Extent of Riparian Rights and Liberties, use for power, domestic use, irrigation, pollution; appropriation; method of initiating appropriation rights; ditch rights; relative rights of diverters, carriers and users, transfer of appropriation rights; rights in diffused and underground waters; interstate streams, federal and state powers of control. Bingham's *Cases on Water Rights*. Given in 1932-33 and alternate years.

130. Mining Law. (2) II. Feghtly

Mining titles with reference to mining rights. Costigan's *Cases on Mining Law*, Revised Edition. Given in 1932-33 and alternate years.

136. Trusts. (3) II. Smith

Nature and requisites of a trust; appointment of trustee; duties of and accounting by trustee; removal or resignation of trustee; nature of *cestui que trust's* interest; transfer of trust property by trustees or *cestui que trust*; extinguishment of trust. Scott's *Cases on Trusts*.

139. Property—Title to Real Property. (3) I. Curtis

Possessory titles; prescription; accretion; mode of conveyance; execution of deeds; the property conveyed; creation of easements by implication; estates created; covenants for title; estoppel by deed; fraudulent conveyances; recording. Aigler's *Cases on Title to Real Property*.

140. Property—Wills and Administration. (3) II. Smith

Testamentary capacity; kinds of wills; execution, revocation, republication and revival of wills; descent of property; probate of wills and administration of estates. Costigan's *Cases on Wills and Administration*, Second Edition.

143a-143b. Constitutional Law. (3-3) Yr.

Nature and sources of American constitutional law; express powers; implied powers; citizenship; privileges and immunities of citizenship; due process of law; police power; regulation of commerce; interstate commerce; money, and war. Hall's *Cases on Constitutional Law*.

145a-145b. Practice Court. (3-3) Yr. Thomas

So far as is possible to do so, the student will meet the conditions of actual practice. He will be required to choose the form of action, to prepare the pleadings, to institute the action, to raise the questions of law and argue the same on motion and demurrers, to prepare the case for trial, to examine witnesses, to raise and argue questions as to the competency of the witnesses and the admissibility of the evidence, to plead the case before the jury, to argue questions arising upon motions subsequent to the return of the verdict, to prepare bills of exceptions, transcripts of the record, and writs of error, to prepare briefs and argue the questions thereon before the court on appeal. Instruction in legal bibliography. Prerequisites, Law 37, 38, 118a-118b.

147. Private Corporations. (3) II.

Nature of private corporations; powers, authority, and obligations; rights, duties, and liabilities of promoters, shareholders, directors and officers; rights of creditors and others against corporations; formation, organization, and dissolution of corporations; irregular incorporation; nature of corporate stock; sale and transfer of stock; purchase by corporation of corporate stock; *ultra vires* acts and their effects; legislative control and regulation of corporations. Warren's *Cases on Private Corporations*.

149. Property—Future Interests. (3) I.

Feghtly

Future interest in real and in personal property; right of entry for condition broken; doctrines of escheat and reverter; reversions, vested and contingent remainders, and executory interests; Rule in Shelly's Case; construction of limitations; powers; Rule against Perpetuities; illegal conditions and restraints. *Kale's Cases on Future Interests*, American Case Book Series.

MATHEMATICS

Professors Leonard (Head of the Department), _____,
Associate Professor Graesser.
Assistant Professors Keyes, Miller, Shaw, Boldyreff.
Instructor Mewborn.

The major: 24 units including 100a-100b, and a thesis. 16 units must be upper-division work.

The supporting minor shall consist of 20 units advised from: astronomy, biology, chemistry, economics, geology, metallurgy, mineralogy, philosophy, physics.

The teaching minor must include: 20 or 22, 24, 25, and additional courses to total at least 15 units.

Note: Students who present their entrance credits in algebra and find that they are unable to carry successfully a college course in algebra are expected to take a semester course, offered either semester, in sub-collegiate mathematics (Math. X) 5 hours a week. M. to F., without credit.

10. Solid Geometry. (3) I. Mewborn

For those who did not have the subject in high school and who are planning to specialize in mathematics. Not open to those who presented solid geometry for entrance. Prerequisite, one entrance credit in plane geometry.

20. College Algebra. (3) I or II. Keyes-Boldyreff-Miller-Shaw

Prescribed for all engineering courses. Prerequisite, 1½ entrance credits in algebra.

22. Special College Algebra. (3) I or II. Keyes-Boldyreff-Miller-Shaw

For students who are deficient in algebra and who wish to take courses in the College of Mines and Engineering or advanced courses in mathematics. Prerequisite, one entrance credit in algebra. Three college units and one-half entrance credit.

24. Plane Trigonometry. (2) I or II. Miller-Keyes-Boldyreff

Prescribed for all engineering courses. Prerequisites, 1½ entrance credits in algebra and 1 entrance credit in geometry.

25. Analytic Geometry. (4) I or II. Miller-Shaw-Mewborn

Prescribed for all engineering courses. Prerequisites, 1½ entrance credits in geometry and Mathematics 20 and 24. Students taking this course the first semester will be allowed to enter 100a also.

70a-70b. Mathematics for Business and

Theory of Investments. (4-4) Yr. Graesser-Miller-Boldyreff

(a) Preparatory to the study of mathematical theory of investments and elementary statistics. Selected topics from algebra, logarithms, and the slide rule. Prerequisites, one entrance credit in algebra and one entrance credit in plane geometry. Students who have credit for Mathematics 20 or an equivalent will be allowed only 2 additional units of credit for this course.
(b) The theory of interest and annuities with its application to financial problems and practice in the use of tables of the compound interest functions. Prerequisites, 70a or 20, or 22, and a knowledge of logarithms.

81. Calculations. (1) I or II. Leonard-Miller-Graesser

Application of approved methods for calculating, including the use of the slide rule. Prescribed for all engineering courses. Prerequisites, Mathematics 20 and 24. Intended to supplement Mathematics 24 and to accompany 25. Students desiring credit for a similar course will be required to give a satisfactory demonstration of their skill.

- 100a-100b. Calculus. (4-4) Yr. Boldyreff-Graesser-Shaw**
 Fundamental principles and formulæ of the calculus, with their applications including tables of integrals. May be started either semester. Prescribed for all engineering courses. Students taking Mathematics 100b the second semester will be allowed to enter Mathematics 112a also. Prerequisite, 25.
- 103. Elementary Statistics. (4) II. Graesser**
 The introductory course and prerequisite for each of the specialized courses given by the several departments. Prerequisite, 70a or 20, or 22.
- 112a-112b. Analytical Mechanics. (3-3) Yr. Leonard**
 The mathematical treatment of the fundamental principles of dynamics, statics, etc. Some attention given to graphical methods. Prescribed for all engineering courses. Prerequisites, 100b, and Physics 1a.
- 120. Analytical Geometry of Space. (2) I. Boldyreff**
 Fundamental formulæ and a brief study of surfaces, curves, and their equations. Prerequisite, 25. Given in 1932-33 and alternate years.
- 126. Advanced Algebra. (2) I. Shaw**
 A sequel to Mathematics 20 or 22, including permutations and combinations, inequalities, exponential and logarithmic series, partial and continued fractions, and topics from theory of equations. Prerequisite, Mathematics 20 or 22. Given in 1933-34 and alternate years.
- 161. Spherical Trigonometry. (2) II. Boldyreff**
 Fundamental principles and formulæ, with application to surveying and astronomy. Prerequisites, Mathematics 24 and 10 or one-half entrance credit in solid geometry. Given in 1932-33 and alternate years.
- 191a-191b. Theory of Statistics. (3-3) Yr. Graesser**
 Averages, dispersion, theory of sampling, correlation and curve fitting. The course offers an introduction to the work of Karl Pearson. Prerequisites, 100a and 103. Given in 1932-33 and alternate years.
- 200a-200b. Advanced Calculus. (3-3) Yr. Graesser-Shaw**
 A continuation of Mathematics 100b, including such topics as the Gamma Function, Green's Theorem, Calculus of Variation, Cauchy's Residues, and Elliptic Integrals. Prerequisite, 100b. Given in 1933-34 and alternate years.
- 211. Theory of Functions of a Complex Variable: Shaw
 as Applied to Electrical Engineering. (2) II. Leonard**
 The complex quantity in electrical engineering problems. Prerequisites, Mathematics 250 and Electrical Engineering 100a. Given in 1932-33 and alternate years.
- 221a-221b. Theory of Functions of a Complex Variable. (3-3) Yr. Graesser**
 Calculus of complex numbers; rational functions; elementary transcendental functions; conformal mapping; linear fractional transformations; infinite series; Riemann surfaces. Prerequisite, 100b. Given in 1933-34 and alternate years.
- 226. Theory of Equations. (3) II. Shaw**
 Solution of the cubic and the quartic equation, Rolle's and Sturm's theorem; symmetric functions of the roots, algebraic invariants and covariants. Famous construction problems of antiquity. Prerequisite, Mathematics 126. Given in 1933-34 and alternate years.
- 240. History of Mathematics. (3) I. Shaw**
 The development of this branch of exact science. Prerequisite, 100b. Given in 1933-34 and alternate years.
- 250. Ordinary Differential Equations. (3) II. Shaw-Graesser-Boldyreff**
 An elementary study of differential equations and their applications. Prerequisite, 100b. Given in 1932-33 and alternate years.
- 261a-261b. Theory of Infinite Series. (3-3) Yr. Shaw**
 Infinite series and products, infinite determinants, infinite continued frac-

tions, infinite integrals, asymptotic series, and higher transcendental functions. Prerequisite, 100b. Given in 1933-34 and alternate years.

281. Elementary Theory of Numbers. (2) II. Shaw-Leonard

A study of selected topics. Prerequisite, 100b. Given in 1933-34 and alternate years.

292a-292b. Calculus of Finite Differences. (3-3) Yr. Shaw

Fundamental theorems and applications including differencing, interpolation, finite integration, approximate summation, Bernoulli's series and difference equations. Prerequisite for 292a, 100b. Prerequisites for 292b, 250 and 292a. Given in 1932-33 and alternate years.

299. Seminar in Mathematics. (1-4) Yr. Staff

Among the lines of work that may be developed are: Theoretical Mechanics (Leonard); Theory of Probability (Graesser); Theory of Functions of a Complex Variable (Graesser); Higher Plane Curves (Shaw); Projective Geometry (Shaw); Partial Differential Equations (Graesser); Algebraic Numbers (Shaw); Higher Algebra (Shaw); Vector Analysis (Boldyreff); Differential Geometry (Boldyreff). Open to graduate students and also to Seniors with consent of the instructor.

The Teaching of Mathematics. (3) II. Keyes

For description see Education 197i. Required of students in the College of Education majoring in mathematics.

MECHANIC ARTS

Professor Darrow (Head of the Department).
Assistant Professor Jimerson.
Instructor Phelps.

1. Engineering Drawing. (3) I or II. Jimerson
Elements of mechanical drawing: lettering, tracing, blue printing; making and reading of working drawings; commercial drafting room practice. Required of all engineering students. Three drafting room periods, including one recitation per week. Drawing fee, \$1.
2. Descriptive Geometry. (3) II. Jimerson
Elements of descriptive geometry, including problems in warped surfaces and intersections of solids. Required of all engineering students. Prerequisite, M. A. 1 or equivalent. One 1-hour recitation and two 3-hour drafting room periods. Drawing fee, \$1.
3. Pattern Making. (2) I or II. Phelps
Bench and machine work in wood; elements of pattern making, and lectures on foundry work. Two 3-hour shop periods. Laboratory fee, \$3 in addition to a deposit of \$3.
4. Forge Work. (2) I or II. Phelps
Forge work in iron and steel; including tool making, hardening, tempering, case hardening, and annealing; characteristics of iron and steel. Two 3-hour shop periods. Laboratory fee, \$3 in addition to a deposit of \$3.
24. Architectural Drawing. (2 or 3) I or II. Darrow
Elementary architectural drafting, with application to practical house architecture, including plans, elevations, details, and specifications, also free-hand lettering, tracing, and blue printing. Two 3-hour drawing room periods. Fee, \$1.
27. Lettering. (1) I or II. Darrow
An intensive course in lettering including mechanical and free-hand work in the different styles of alphabets. Fee, \$1.
31. Advanced Engineering Drawing. (3) I or II. Jimerson
For Freshman engineering students who have had one year or more of mechanical drawing in an approved high school. Similar to, but more advanced than, M. A. 1. Three drafting room periods, per week, including one recitation per week. Drawing fee, \$1 per week.
32. Advanced Mechanical Drawing. (2) I or II. Jimerson
For other than engineering students. Elementary descriptive geometry, intersection and development of solids, detail working drawings, assemblies, sectioning, gears and cams. Prerequisite, M. A. 1. Two 3-hour drafting periods. Drawing fee, \$1.
- 105a-105b. Machine Shop Laboratory. (2, 3, or 4) I or II. Darrow
Machine shop practice; construction, and care of machinery; machine tools; modern industrial practice. Prerequisite, Mechanic Arts 4. Two 3-hour shop periods. Fee, \$1.50 per unit, in addition to a deposit of \$3. Not for post-graduate credit.
- 106a-106b. Advanced Metal Working. (2-2) Yr. Darrow
Similar to, but more advanced than 105b. For students preparing to teach industrial subjects in secondary schools. Prerequisite, M. A. 105a, 105b. Two 3-hour shop periods. Deposit of \$3 in addition to a fee of \$3 each semester.
112. Technical Sketching. (1) I or II. Darrow
One 3-hour drawing room period, one unit. Fee, \$1. Not for graduate credit.
115. Cabinet Work (Elementary). (2) I. Darrow
Two 3-hour shop periods. Laboratory fee, \$3 in addition to a \$3 deposit. Not for graduate credit.

116. Cabinet Work (Advanced). (2) II. Darrow
Continuation of 115. Two 3-hour shop periods. Laboratory fee, \$3 in addition to a \$3 deposit. Not for graduate credit.
118. Advanced Pattern Work. (1) I. Darrow
Continuation of 3. One 3-hour shop period. Fee, \$1.50 in addition to a \$3 deposit. Not for graduate credit.
119. Advanced Pattern Work. (1) II. Darrow
Continuation of 118. One 3-hour shop period. Fee, \$1.50 in addition to a \$3 deposit. Not for graduate credit.
125. Wood Turning. (2) I or II. Darrow
Elementary and advanced work in wood turning; working with both soft and hard woods; application of commercial, ornamental, and decorative ideas in wood turning. Two 3-hour shop periods. Fee, \$3 in addition to a \$3 deposit. Not for graduate credit.

MECHANICAL ENGINEERING

Professor M. L. Thornburg (Head of the Department).

Assistant Professor P. M. Thornburg.

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21. Mechanism. (3) I. P. M. Thornburg
Theory and design of linkages, gears, cams, screws, and other machine elements. The relative motions of machine parts. Graphical methods are followed throughout. Required of students in mechanical, civil, and electrical engineering. Prerequisites, Mechanic Arts 1 and 2. One 1-hour recitation period and two 3-hour drafting room periods. Drawing fee, \$1.
22. Machine Drawing. (3) II. P. M. Thornburg
Machine drawing, shafts, bearings and lubrication, pulleys, belts, clutches, standard machine parts, fastenings, etc. Required of students in mechanical and electrical engineering. Prerequisite, Mechanical Engineering 21. One 1-hour recitation period and two 3-hour drafting room periods. Drawing fee, \$1.
123. Heat Engines. (3) I. M. L. Thornburg
An elementary course in the theory of steam and other heat engines. Problems in application of thermodynamic theories. Required of students in mechanical and electrical engineering. Prerequisites, Physics 1a, Chemistry 1a. Three 1-hour recitation periods. Not for graduate credit.
124. Hydraulic Machinery. (3) II. M. L. Thornburg
Theory and design of water-handling machinery; hydraulic turbines, centrifugal pumps, reciprocating pumps, air lifts, and the piping for distribution. Problems in performance and efficiency and in the selection of equipment for specific purposes. Preceded or accompanied by Civil Engineering 111. Three 1-hour recitation periods. For the laboratory tests see Mechanical Engineering 127a, 127b, 139.
- 125a-125b. Machine Design. (2-2) Yr. P. M. Thornburg
Design of machinery and machine parts. Conditions of construction and operation. Proportioning of parts for strength and efficiency. Required of students in mechanical engineering. Two 3-hour drafting room periods. Prerequisites, Civil Engineering 114R and Mechanical Engineering 22. Drawing fee, \$1 for each semester. Not for graduate credit.
126. Steam and Gas Power Engineering. (3) II. P. M. Thornburg
The theory and practice of power production for commercial and construction plants, with particular attention to the needs of civil and mining engineers. Required of students in civil and mining engineering. Three 1-hour recitations. Prerequisites, Physics 1a and 1b and Chemistry 1a and 1b. Not for graduate credit.
- 127a-127b. Mechanical Laboratory. (1 or 2) Yr. M. L. Thornburg
Testing different types of engines, boilers, pumps, injectors, and other apparatus. Investigation of problems arising in the design, selection, or operation of machinery. Reports of tests and inspections. Required of students in mechanical and electrical engineering. One or two 3-hour laboratory periods. Prerequisites, Mechanical Engineering 123 and 139. Laboratory fee, \$3 per unit each semester.
129. Engine Design. (2) I. M. L. Thornburg
Design of the main features of a steam or gas engine, pump, or compressor, with the completion of as many working details as the time permits. Required of students in mechanical engineering. Prerequisites, Mechanical Engineering 123, 125a, and 125b. Two 3-hour drafting room periods. Drawing fee, \$1.
130. Power Plant Design. (2) II. M. L. Thornburg
Selections and layouts with special reference to the application of the principles developed in thermodynamics, offered in the first semester. Prerequisites, Mechanical Engineering 123, 125a, 125b, and 131. Two 3-hour drafting room periods. Drawing fee, \$1.

131. **Thermodynamics. (3) I.** M. L. Thornburg
An extension of Mechanical Engineering 123 taking up present day tendencies in the development of steam engines and boilers, steam turbines, internal combustion motors, etc. Required of students in mechanical engineering. Prerequisites, Mechanical Engineering 123, and Mathematics 20 and 24. Three 1-hour recitation periods.
132. **Power Plants. (2) II.** M. L. Thornburg
The economic design and operation of power and pumping plants. Problems involving the selection of equipment to perform a given duty with probable minimum expense. Required of students in mechanical and electrical engineering. Prerequisite, Mechanical Engineering 123. Two 1-hour recitation periods.
139. **Elementary Experimental Engineering. (1) II.** P. M. Thornburg
Engineering laboratory practice. One 3-hour laboratory period per week. Prerequisite, Mechanical Engineering 123. Laboratory fee, \$1. Not for graduate credit.
142. **Mechanical Technology. (2) I.** P. M. Thornburg
General processes and methods as practiced in the industries. Taught with special reference to the needs of the superintendent or manager. Required of students in mechanical engineering. Two hours of recitations or lectures.
144. **Gas Engines. (2) II.** P. M. Thornburg
The modern internal combustion engine, gas producers, and the utilization in them of solid, powdered, and liquid fuels. Required of students in mechanical engineering. Prerequisite, Mechanical Engineering 123. Two hours of lectures or recitations.
145. **Seminar in Mechanical Engineering. (1) II.** M. L. Thornburg
Required of fourth-year students in mechanical engineering. One 1-hour conference period.
150. **Aviation. (2) I or II.** M. L. Thornburg
Aeronautics, theory of flight, design and construction of aircraft, meteorology and other engineering features of aviation. Two 1-hour lectures. Prerequisite, Civil Engineering 114R.
201. **Seminar in Mechanical Engineering.** M. L. Thornburg
(2 to 5) I or II.
The character of the work given in this course may vary from year to year in accordance with the wishes of the students and the facilities of the department. Open to graduates and in unusual cases to Seniors.

MILITARY SCIENCE AND TACTICS

Professor Holderness (Head of the Department).

Assistant Professors Garr, Mauger, Farwick.

Instructors Beck, Falconer, Murphy.

Election of Courses: Students electing the Reserve Officers' Training Corps courses do so for only 2 years at a time. The first election is for the 2-year basic course, after which, if the student be recommended for further training, he may elect the advanced course. Completion of the basic course shall, when entered upon by a student, be a prerequisite for graduation as regards such student, unless he shall be discharged in accordance with Government provisions. Completion of the advanced course is a requirement of the student's contract and is likewise a requirement for graduation.

BASIC COURSES *

1a-1b. First Year. (1-1) Yr.

Holderness and Staff

Practical and theoretical instruction in: military courtesy and discipline, equitation, cavalry drill, rifle marksmanship, the National Defense Act and the R. O. T. C., military hygiene and first aid, and scouting and patrolling. Three hours per week.

2a-2b. Second Year. (1-1) Yr.

Holderness and Staff

Practical and theoretical instruction in: equitation, cavalry drill, cavalry weapons, musketry, employment of cavalry. Three hours per week.

ADVANCED COURSES

103a-103b. First Year. (3-3) Yr.

Holderness and Staff

Practical and theoretical instruction in: equitation, cavalry drill, cavalry weapons, selection and care of animals, map reading and military sketching, pistol marksmanship, employment of cavalry. Five hours per week. Not for graduate credit.

104a-104b. Second Year. (3-3) Yr.

Holderness and Staff

Practical and theoretical instruction in: equitation, cavalry drill, military history and policy, administration, military law, Officers' Reserve Corps regulations, field engineering, employment of cavalry. Five hours per week. Not for graduate credit.

MINING ENGINEERING AND METALLURGY

Professors Ehle (Head of the Department), G. M. Butler, Chapman,
J. B. Cunningham, Mathewson.

MINING ENGINEERING

101. Development. (2) I. Ehle

Boring and drilling by means of the earth-auger, drive-pipe, drop-tool, and by diamond and other forms of rotary drills; hand drilling; machine drills, their proper selection, care and use. Explosives, their nature, proper care, and use; the principles of blasting. Mechanical excavators. Shaft sinking, tunneling and drifting in both rock and soft ground, costs. The principles governing the generation and use of compressed air. Required of all students taking the course in mining engineering. Three 1-hour lectures. Not for graduate credit.

102. Exploitation. (1) II. Ehle

A detailed study of methods used for the economical development and removal of ore from the various types of deposits, both surface and underground; support of excavations by artificial means, costs of mining. Required of all students taking the course in mining engineering. Two 1-hour lectures. Not for graduate credit.

103a-103b. Operations. (2-2) Yr. Ehle

Surface and underground transportation, hand tramming, pneumatic, electric, and steam haulage; gravity and engine planes; various systems of rope haulage; surface tramways and aerial rope-ways. Hoisting, including a detailed discussion of the various types of mine hoists and their adaptability to conditions of depth, output, and motive power; costs of transportation. Head-frames, cages, cars, skips, ore bins, and standard safety devices used on hoists.

Drainage, the sources of mine water and the means of preventing its entry into workings; the control of underground water; the use of hoisting equipment in the removal of water; the various types of pumps, and their adaptability to conditions of depth, duty, and capacity, costs of drainage.

Ventilation of mines; air requirements of men and animals and provisions of the law in different states; natural ventilation; the induction of air currents by artificial methods and means used for their distribution and control; efficiency of ventilating apparatus. Required of all students taking the course in mining engineering. Three 1-hour lectures.

105a-105b. Design of Mine Plant. (2-2) Yr. Ehle

Practical training in the solution of problems involving selection, design, and construction of the ordinary structures used in mining, such as head-frames, ore bins, skips, cages, etc. The student is given certain hypothetical data from which he makes calculations and designs equipment which best meets the conditions outlined. Two 3-hour laboratory periods. Required of all students in mining engineering.

119. Mine Examination and Reports. (1) II. G. M. Butler

The sampling, the calculation of the tonnage, and the valuation of ore bodies; sampling and valuation of placer deposits; the preparation of reports and a discussion of engineering ethics. Prerequisite, completion of the Freshman, Sophomore, and Junior work in mining engineering. Two 1-hour lectures.

208. Mining Laboratory. (2) II. Ehle

Manipulations incident to mining operations. The different makes of machine drills, and their actual operation and testing; dressing, tempering, and sharpening of drill steel for hand and machine work; blasting operations; the framing and assembling of mine timbers; other mining operations. This course should fit a student to take a place without embarrassment among practical miners. Two 3-hour laboratory periods. Laboratory fee, \$5.

METALLURGY

102R. Fire Assaying. (1) I or II. Cunningham

The theory of assaying ores and metallurgical products for gold, silver, and lead by the fire method. Slags and the calculation of charges for the

various classes of ores to be treated. The regular iron nail, scorification, and combination methods of assay will be studied in detail. One lecture. Not for graduate credit.

102L. Fire Assaying Laboratory. (2) I or II. Cunningham

Assays of the following: pure and impure ores of blend, pyrite, tellurides, etc.; mattes and slags; high-grade silver sulphides; silver, lead, and copper bullions; cyanide solutions and correction assays; ores and products containing metallics; assays of fluxes. Two 3-hour laboratory periods. To be preceded or accompanied by Chemistry 4. Laboratory fee, \$15. Not for graduate credit.

107R. Ore Dressing. (3) I. Chapman

Breaking, crushing, and grinding of ores; classifying and screening operations; concentration methods including flotation, jigs, tables, magnetic, electrostatic and air machines; milling methods as practiced in the various mining districts of the world. Required of all students in mining engineering. Three lectures.

107L. Ore Dressing Laboratory. (2) II. Cunningham

Laboratory practice of the principles and methods studied in course 107R. The student is given the opportunity to practice with the various crushing and grinding machines and to test ores for concentration by various machines, including tables, jigs, flotation, and electro-magnetic. Two 3-hour laboratory periods. Laboratory fee, \$3. Prerequisites, Metallurgy 102 and 107R. Not for graduate credit.

111. General Metallurgy and Metallurgy of Copper. (2) II. Cunningham

The theory and practice of roasting, blast furnace matte smelting, pyritic smelting, reverberatory matte smelting, smelting native copper ores, converting of copper matte, furnace and electrolytic refining of copper, and leaching methods as applied to copper ores. Required of all students taking mining engineering.

112. Metallurgy of Lead and Zinc. (1) II. Cunningham

An extension of Metallurgy 111. It consists of a study of the various smelting and refining processes adapted to the treatment of lead and zinc ores. Required of all students taking mining engineering. Prerequisite, Metallurgy 111. Two lectures.

114. Hydro-Metallurgical Laboratory. (2) I. Cunningham

Laboratory work along leaching lines, dealing mainly with ores of gold, silver, copper, and zinc. Testing gold and silver ores for cyanide and amalgamation processes, including percolation and all slime methods. Acid leaching of copper and zinc ores. Prerequisites, Metallurgy 102 and 107R and preceded or accompanied by Chemistry 101. Two 3-hour laboratory periods. Laboratory fee, \$10. Not for graduate credit.

115. Metallurgical Operations. (1) II. Chapman

The principles and practice of metallurgical processes dealing mainly with those in use in the Southwest. For mechanical, electrical, and civil engineers, many of whom practice their profession in metallurgical plants. Not open to students in mining engineering or geology. Required of all students of mechanical engineering. One lecture. Not for graduate credit.

116. Alloys and Heat Treatment. (2) II. Chapman

Properties of metals and alloys, including iron, steel, and a few of the important non-ferrous alloys. Structure changes and changes in physical properties due to heat treatment and mechanical stress. For students in mechanical engineering. Two lectures. Not for graduate credit.

117. Metallurgy of Iron and Steel. (1) II.

Properties of iron and steels, production of pig iron, steel, and wrought iron. One lecture.

119R. Metallography and Heat Treatment. (1) I. Chapman

Properties of metals, constitution of alloys and metallurgical products, equilibrium diagrams. Structure and physical changes due to heat treatment. For students in metallurgy. One lecture period.

- 119L. Metallography and Heat Treatment
Laboratory. (1) I. Chapman
Preparation and microscopic examination of metals and alloys. One 3-hour laboratory period. Laboratory fee, \$1.50.
120. Hydro-Metallurgy. (2) I. Cunningham
Leaching methods of extracting metals from ores and metallurgical products. The major portion of the course deals with modern leaching methods as used for ores of copper, gold, silver, and zinc. Two lectures.
208. Metallurgy of the Less Common Metals. (1) II. Chapman
Metallurgy of nickel, mercury, tin, antimony, platinum, tungsten, and molybdenum. One lecture.
210. Metallurgical Design. (3) II. Chapman-Cunningham
A metallurgical problem such as may confront the student on entering the practical field. One lecture and two 3-hour laboratory periods.
- 211a, b, c. Advanced Metallurgy and
Ore Dressing. (1 to 5) II. Chapman-Cunningham
Advanced classroom or laboratory work, or both, in (a) hydro-metallurgy; (b) ore dressing; (c) pyro-metallurgy. Details subject to arrangement. Open to graduate students in metallurgy and to Senior students in mining engineering.
213. Advanced Metallography and
Heat Treatment. (1 to 5) II. Chapman
For men desiring to take more work in metallography and heat treatment than is offered in course 119. The work may be pursued along microscopic lines, defective metal testing, or advanced microscopic work on metallurgical products.
- 250a. Seminar in Administration of
Mineral Industries. (3) I. Mathewson
Mine, mill, smelter operation, and management. For graduate students in mining engineering and metallurgy but open also to graduate students in other engineering courses and Senior students in mines and engineering. Three lectures.
- 250b. Seminar and Field Work in Administration
of Mineral Industries. (8) II. Mathewson
Open only to candidates for the degrees of Administrative Engineer of Mines or Administrative Metallurgical Engineer. For information regarding these degrees read details given under the heading "Graduate Studies" sub-heading "Special Professional Degrees." Two-week periods of Campus and field work alternate.

MUSIC

Professors Rogers (Dean of the College), Rebell (Head of the Department of Piano), Altman, Pease (Head of the Department of Voice). Associate Professors Schultz (Head of the Department of School Music), DeLuca, Williams, ———. Assistant Professors Clampitt, Cook, Winn.

The major for the B.A. degree: 24 units above 1a-1b, including 3a-3b, 7a-7b, 101a-101b, 106, 107, 108a-108b, Psychology 127.

The supporting minor shall consist of 20 units advised from the following departments: English, languages, philosophy, psychology, history.

The minor in the colleges of Letters, Arts, and Sciences, and Education: applied music (one subject) 4 hours, Music 3a, Music 5a-5b, 6a-6b, Music 1a-1b, School Music 4 hours, music electives 1 hour.

1a-1b. Survey of Musical Literature. (2-2) I or II. Clampitt

The worth while and lasting in music. By means of carefully selected illustrations of the world's greatest music, a sincere appreciation of the musical masterpieces and their composers is cultivated. Not open to music majors.

2. Fundamentals of Music. (2) II. Staff

The rudiments of music for the major student in physical education. Rhythm, accent, and phrasing as used in the teaching of gymnastics, singing games, rhythms, and folk dancing. Required as prerequisite to P. E. 80a and 80b. Offered second semesters of alternate years.

3a-3b, Harmony I. (3-3) Yr. Williams, ———

For students who have had no previous training in the theory and writing of music. Rhythm, scale building, melody writing, and triad building carried into harmonizing given melodies and basses, original work, dominant sevenths in all forms and secondary sevenths. The development of originality and writing for voices is stressed. One class meeting each week devoted to ear training and keyboard harmony. Text *Modern Harmony*, Foote and Spalding.

4a-4b. Harmony II. (2-2) Yr. Williams, ———

Original writing will utilize the chords of the ninth, and its derivatives, the diminished sevenths, altered chords, modifications and suspensions. Modulation; various styles of compositions: practical writing for instrumental combinations. Text, *Modern Harmony*, Foote and Spalding.

5a-5b. Ear-Training and Sight-Singing I. (1-1) Yr. Clampitt

Oral and written dictation, aural recognition and sight-reading of meter, rhythm, major and minor modes, intervals, chords, melodies and two-part music. This class meets twice a week.

6a-6b. Ear-Training and Sight-Singing II. (1-1) Yr. Clampitt

The intricate rhythmic and melodic patterns in dictation and sight-singing. More advanced recognition of chords and cadential progressions with recognition of melodic period form. Prerequisite, 5. This class meets twice a week.

7a-7b. History of Music. (2-2) Yr. Clampitt

Primitive music, music of ancient civilization, church and choral music. The evolution of opera. The lives of the masters and their relationship to their times. Illustrations throughout. Extensive collateral readings required. No prerequisite. Lecture course.

25. Recital Attendance. (1) I or II. Williams

This course is a cultural one. All students are required to attend all public artist, faculty, opera, oratorio concerts, and the previews of these concerts. A ticket is given each student at the beginning of each semester

which must be presented at the concerts. Notebooks with programs and criticisms are examined at the end of each semester. Not open for credit to music majors.

101a-101b. Advanced Appreciation. (2-2) Yr. Williams

An intensive study of musical literature. The first semester: polyphonic and classic composers. The second semester: the romantic and early modern composers, including Debussy, Ravel, and others. Prerequisite, 1a-1b.

106a-106b. A Survey of Contemporary Music. (2-2) Yr. Cook

The study and analysis of the historical development and general principles underlying the development of contemporary music.

108a-108b. Form and Analysis. (2-2) Yr. Williams

The structure of music. Analysis of Mendelssohn's "Songs Without Words," all the Beethoven Sonatas, representative romantic and modern sonatas, quartets and symphonies from actual scores. Prerequisite, 3a-3b.

110a-110b. Composition I. (2-2) Yr. Cook

First semester: the principles of counterpoint as practiced in strict historical writing and in the freer contrapuntal methods of today. Second semester: free composition under given assignments, embracing the writing for solo voices and instruments, choral works and chamber music ensembles. Prerequisites, 4b and registration or credit in 108.

111a-111b. Composition II. (2-2) Yr.

Instrumental writing in combination with vocal writing. Sonatas, concertos, and small orchestral ensembles. Freedom of style granted and development of originality and personality encouraged. Given in 1922-33 and alternate years. Prerequisite, 110b.

112. Canon and Fugue. (2) II. Cook

The writing of two- and three-voice fugues according to the strict tenets of this form. Analysis of Bach's Fugues will accompany the writing. Prerequisite, 110a.

114a-114b. Orchestration I. (2-2) Yr. Williams

Individual instruments of the orchestra with reference to mechanism, manner of tone production, range, tone color and possibilities of combination with other instruments. Study of terms used, assembling and transposition of scores. Writing for string, woodwind, and brass sections and for instruments in the percussion section. Scoring for the complete symphony orchestra. Prerequisite, 3b.

214a-214b. Orchestration II. (2-2) Yr. Williams

Advanced work in writing for orchestra including arranging from piano or organ score. Rearranging band score for orchestra; arranging original number for orchestra and writing orchestral accompaniments for solo voice and chorus. Band instruments foreign to the orchestra. Differences between arranging for orchestra and band. Arranging for band from piano or organ score. Transcribing orchestra score for band, arranging original composition for band and writing band accompaniment for voice and chorus. The best numbers will be given public audition. Prerequisites, 4b and 114b.

225. Thesis. (4) II. Rogers

Research in some phase of music history, aesthetics, or education, to be embodied in a written thesis of at least 3,500 words. This must be done in the major field.

BAND AND ORCHESTRAL INSTRUMENTS

17a-b-c-d. Individual Band or Orchestral Instruments. (1 or 2) I or II. DeLuca

This is individual lessons on the instruments of the band and orchestra.

18a-b-c-d-e-f-g-h. Individual Band or Orchestral Instruments. (1 or 2) I or II. DeLuca

This is a continuation of Course 17a-b-c-d.

19a-b-c-d. Individual Band or Orchestral

Instruments. (1 to 4) I or II.

DeLuca

This is individual lessons on the instruments of the band and orchestra.

20. Concert Band. (1) I or II.

DeLuca

May be taken for credit any semester the student is registered in the University. Admission is by examination. Meets 4 class hours per week.

21a-b-c-d. Wind Instrument Class. (1) I or II.

DeLuca

Free class instruction on the brass and woodwind instruments of the orchestra and band. Class meets two times per week. Students will furnish own instruments or may secure them from College of Music. For beginners only.

117. Orchestral and Band Conducting. (1) I.

DeLuca

Organization and method of directing school orchestras and bands. Study of the individual instruments and choirs of the band and orchestra. Writing a conductor's score from orchestral parts. The art of conducting. Not for post-graduate credit. Prerequisite, 114.

119a-b-c-d. Individual Band or Orchestral

Instruments. (1 to 4) I or II.

DeLuca

A continuation of course 19d. Not for post-graduate credit.

PIANO

26a-b-c-d. Piano. (1 and 2) I or II.

Altman, Cook, Clampitt

A preliminary course in which the student must be able to play major and minor scales in all forms, Heller Studies Op. 25 or Czerny Studies Op. 299; Bach's Short Preludes and Fugues; and the easier Sonatas of Mozart and Haydn.

27a-b-c-d-e-f-g-h. Piano. (1 or 2) I or II.

Altman, Cook, Clampitt

Four years (eight semesters) of college work. Material and treatment the same as the more intensive 28a-b-c-d, taking twice the length of time to earn the same credit.

28a-b-c-d. Piano. (1 to 4) I or II.

Rebeil, Altman, Cook, Clampitt

Scales four octaves in all forms; Pischna's *Progressive Studies*; Bach's *Two and Three Voice Inventions*; Bach's *English or French Suites*; Cramer's *Etudes*; Clementi's *Gradus Parnassum*; Sonatas by Mozart, Haydn. Classic and modern compositions.

126a-b-c-d-e-f-g-h. Piano Ensemble.

Rebeil, Cook

(1) I or II.

Altman, Clampitt

The most important symphonic transcriptions for piano (four and eight hands) studied, and original compositions arranged for two and three pianos. Open to intermediate and advanced students who are registered in the College of Music. Not for graduate credit.

127. Piano Normal. (1) I or II.

Rebeil

Lectures on technique. Methods of piano playing. Comparative interpretation of composition by well-known artists. Program building and teaching material.

128a-b-c-d. Piano. (1 to 4) I or II.

Rebeil, Cook, Altman, Clampitt

Bach's *Preludes and Fugues*; Clementi's *Gradus Parnassum*; Chopin *Etudes*; Schumann, Beethoven Sonatas; Concertos by Beethoven, Grieg, and Schumann. Classic and modern compositions. Not for post-graduate credit.

228a-228b. Piano. (3 to 6) I or II.

Rebeil, Altman

Larger works of Bach such as Toccata and Fugue, D minor by Bach-Tausig; Chaconne; Bach-Busoni; Preludes and Fugues, Bach-Liszt; Sonatas by Chopin. Beethoven; Etudes by Chopin, Dohnanyi and modern composers. Concertos: Liszt's E flat; Beethoven's *Emporer*; Rachmaninoff No. II.

SCHOOL MUSIC

176. Primary Grade Music. (2) I. Schultz
 Child psychology in relation to the teaching of primary music. The child voice. Rote, observation, and device songs. Teaching materials. Rhythmic sense development. Listening lessons. Prerequisites, Junior standing, 5b and 26d or equivalent. Not for post-graduate credit.
177. Intermediate Grade Music. (2) II. Schultz
 Psychology of the child in relation to the teaching of intermediate music. Tonal, rhythmic, and theoretical problems in grades four, five, and six. Voice classification, part singing. Appreciation of music. Tests and measurements. Prerequisite, 176. Not for post-graduate credit.
178. Secondary School Music. (2) I. Schultz
 Adolescent psychology in relation to the teaching of secondary school music. The professional, administrative, and business phases of the music teacher's and supervisor's work. Prerequisites, 26d, or equivalent and Education 106 or registration in Education 106.
179. Instrumental School Music. (2) II. Schultz
 Theory of instrumental organization. Procedure in private and class instruction in band and orchestral instruments. Orchestra and band materials of all grades of difficulty. Conduct of rehearsals, arranging music for young organizations. Prerequisite, 114a.
276. Advanced School Music Problems. (3) I. Schultz
 The analysis of music curricula; curriculum evaluation and construction; tests and measurements in school music; remedial measures; comparative methods and materials.
277. Modern Tendencies in Music Education. (3) II. Schultz
 Criticism; the trend in objectives; psychology of teaching; training for the talented child and the subnormal child; projects; creative music; experiments in music reading; Dalcroze eurhythmics; the radio and the sound picture in music education.
- Teaching of Music. (3) I. Schultz
 For description see Education 197m. Required of all students in College of Music majoring in School Music.

VIOLIN

- 14a-b-c-d. Violin. (1 or 2) I or II. Williams
 Use of the bow. Tone production. First five positions. Knowledge of all scales and arpeggios in two octaves. Studies and Etudes by Kayser. Book Three, Mazas, Volume II, Dancla. Selected pieces in the first five positions. Concertos by Accolay, Ortmann, Seitz.
- 15a-b-c-d-e-f-g-h. Violin. (1 or 2) I or II. Williams
 Four years (eight semesters) of college work. Material and treatment cover the same ground as the more intensive 16a-b-c-d, taking twice the length of time to earn the same amount of credit.
- 16a-b-c-d. Violin. (1 to 4) I or II. Williams
 All scales and arpeggios in three octaves with various bowings. Scales in thirds, sixths, and octaves. Studies by Schradieck, Sevcik, Gruenberg, Kreutzer, and Fiorillo. Selected sonatas by Schubert, Handel, Mozart, Tartini, and Beethoven. Concertos by Viotti and Mozart. Classic and modern compositions.
22. Orchestra. (1) I or II. Williams
 This course may be taken for credit any semester the student is registered in the University. Admission is by examination. Meets 3 class hours per week.

24a-b-c-d. String Instrument Class. (1) I or II. Schultz-Williams

Free class instruction on violin, viola, cello, and double bass. Class meets two times per week. Students will furnish own instruments or may secure them from College of Music. For beginners only.

116a-b-c-d. Violin. (1 to 4) I or II. Williams

All scales in thirds, sixths, octaves, and tenths. Selected etudes and caprices by Rode, Rovelli, Dont, and Gaviniès. Sonatas by Vivaldi, Greig, Gade, and Beethoven. Concertos by Weinawski, Mendelssohn, Bruch, Lalo, and Viëuxtemps. Not for post-graduate credit.

118a-b-c-d-e-f-g-h. Violin Ensemble. (1) I or II. Williams

An extensive course of string ensemble for piano and violin trios, quartets, and quintets is offered. Classics and modern compositions are studied, and public performances of the same are given. Open to intermediate and advanced students who are registered in the College of Music. Not for post-graduate credit.

216a-216b. Violin. (3 to 6) I or II. Williams

Scales and arpeggios in octaves and fingered octaves, Paganini and Wieniawski *Caprices*; Bach sonatas for violin alone; sonatas by Franck, Brahms, Strauss, and Carpenter; concertos by Saint-Saëns, Brahms, Dvorak, Beethoven, and Paganini.

VOICE

56a-56b. Voice. (1 or 2) I or II. Winn

For Freshmen who enter with satisfactory credentials in academic subjects, but without adequate vocal prerequisites for 57a or 58a. The instructor assigns technical work adjusted to the particular needs of the students. The systematic development of breathing, rhythm, resonance, intonation and diction are stressed, also the correction of obvious defects. Vocalises are selected from Vaccai *Practical Method* or Sieber *Eight-Measure Exercises*. Simple songs are used for diction. The student should be able to play simple accompaniments by the end of this course.

57a-b-c-d-e-f-g-h. Voice. (1 or 2) I or II. Pease, Winn

Four years (eight semesters) of college work. Material and treatment the same as the more intensive 58a-b-c-d, taking twice the length of time to earn the same credit. Ensemble and recital experience.

58a-b-c-d. Voice. (1 to 4) I or II. Rogers, Pease, Winn

Two years (four semesters) of college work. Continued attention to breathing, tone, enunciation, range, pitch, and rhythm. Vocalises equivalent to Marzocchi *The Art of Vocalization*, Books I and II; or Spicker, *Masterpieces of Vocalization*, Books I and II. American, English, Italian, French, and German songs selected for progressive teaching value. A working knowledge of the piano must be shown during this course. Public recital. Required of all voice majors.

59. Oratorio. (1) I or II. Rogers

The greater oratorios of Handel, Haydn, Mendelssohn, Hadley, Parker, Elgar, and others are studied and publicly performed with master soloists and orchestral accompaniment.

60. Opera. (1) II. Rogers, Pease

Coaching for operatic roles, ensemble singing; stage-craft; dramatic action. Make-up; opera presentation.

61. Men's Glee Club. (1) I or II. Pease

Entrance by competition. Meets 3 class hours per week for 1 unit of credit per semester. A classical program is prepared and memorized. A study of the masters of mediæval polyphony and of modern compositions. Voice culture in ensemble lessons. Members of the club are required to register in oratorio and must appear in public performance of the same.

62. Women's Glee Club. (1) I or II. Cook

Requirements and privileges are similar to those for the Men's Glee Club.

156. A Cappella Choir. (1) I or II. Pease
A study and public performance of madrigal, motets, masses and other complicated compositions for unaccompanied part singing. Works of Arcadelt, deLassus, Morley, Byrd, Dowland, and other representative writers of the Sixteenth and Seventeenth centuries.
- 158a-b-c-d. Voice. (1 to 4) I or II. Rogers, Pease, Winn
A continuation of 58a-58d with advanced repertoire in opera and oratorio. Public recital required. Not for post-graduate credit.
159. Choral Conducting. (1) II. Rogers
Tone production, entry-relation, etc. The fundamentals and technical problems of conducting. Each student in turn conducts the class, and some public performances are required. Classification of voice. Not for post-graduate credit.
- 258a-258b. Voice. (3 to 6) I or II. Rogers, Pease
Open only to Seniors and post-graduates who have completed all undergraduate work in voice.

PHILOSOPHY AND PSYCHOLOGY

Professor Riesen (Head of the Department).

Associate Professor Schneck.

Assistant Professors Simley, Caster.

PHILOSOPHY

The major: 24 units including Philosophy 12 and 101a-101b; 16 units must be upper-division work.

The supporting minor should be chosen from: history, literature, mathematics, psychology, social sciences, physical sciences.

11. Introduction to Philosophy. (3) II. Riesen
An interpretation of nature and human life. Philosophical essays by Wm. James, four or five Socratic dialogues by Plato, and an outline text dealing with the fundamental concepts of philosophy.
12. Logic. (3) I. Schneck
Thinking processes from the point of view of validity. Inference, the methods of science, importance of reflective thinking.
20. Elementary Ethics. (2) I. Simley
The growth of conscience, the evolution of morality, the basis of right and wrong, the control of human conduct, the relation of morality to custom and conventionality, etc. Not open to upper-division students.
- 101a-101b. History of Philosophy. (3-3) Yr. Schneck
First semester: The origin of philosophical thinking in Greece and its influence upon Rome and medieval Europe. Second semester: Old and new strands in philosophic and scientific thinking in Europe beginning with the Renaissance. Students may begin either semester.
120. Principles of Ethics. (2) II. Simley
Meaning of moral conduct, responsibility, and freedom. A criticism of historic philosophies of life. The construction of an order of human interests and values.
125. Religions. (2) I. Riesen
Primitive and historical religions, their social background, the lives and teachings of their leaders. Zoroaster, Confucius, Gautama Buddha, Moses, Jesus, Mohammed. Not given in 1932-33.
126. Philosophy of Religion. (2) I. Riesen
The nature of rites, ceremonies, and religious experience. The central concepts of religion, and its relation to the sciences and morality.
133. Plato and Aristotle. (2) I. Schneck
Selections from Plato and Aristotle with critical analysis. Prerequisite, 6 units in philosophy. Philosophy 101a must precede or accompany this course. Given in 1933-34 and alternate years.
- 230a-230b. Philosophical Literature. (2-2) Yr. Riesen
Masterpieces in world literature from the point of view of their philosophy. Complete works in translations. Dante, Lucretius, Goethe, Ibsen, Nietzsche, and others. Prerequisites, 6 units in upper-division philosophy or literature, also graduate or Senior standing.
- 250a-250b. Seminar. (2-2) Yr. Schneck
Prerequisites, Philosophy 101a-101b and 3 other units in philosophy or psychology, also graduate or Senior standing.

PSYCHOLOGY

The major: 24 units including Psychology 1a-1b, 105a-105b; Education 211a.

The supporting minor should be chosen from zoology, mathematics, philosophy, physics.

Psychology 1a (Elementary Psychology) is prerequisite to all other psychology courses.

1a-1b. Elementary Psychology. (3-3) Yr. Staff

The laws and principles underlying human behavior, mental activity, and the fundamental psychological processes. Prerequisite to all other courses in psychology. Not open to Freshmen. 1a either semester.

103. Physiological Psychology. (3) II. Caster

The bodily structures and functions, as related to psychological processes. Emphasis on the sense organs, the nervous system, and the muscular and glandular systems. Current theories of activity of the nervous system examined and evaluated. Prerequisite, Psychology 1a-1b.

105a-105b. Experimental Psychology. (3-3) Yr. Staff

Development of experimental work in psychology with an evaluation of present-day methods. Experimental studies under controlled conditions. Laboratory work on the receptors; motor responses; types of learning; language, personality, and emotional response. One lecture and two 3-hour laboratory periods. Prerequisite, 1b. Laboratory fee, \$3 each semester.

111. Comparative Psychology. (3) I. Caster

The development of behavior from its simpler or more elementary forms through the evolutionary series. Animals, from the single celled organisms up to human beings.

112. Development of Human Behavior. (3) II. Caster

The changes in human behavior from conception to death. Prerequisites, 1a, and either 1b, Education 14, or Zoology 4.

115. Social Psychology. (3) I. Simley

The foundations of social behavior; the development of personality; crowd contagion, suggestion, communication, fad and fashion, conflict and adjustment. Prerequisite, 1a; after 1932-33, 1b. Not for post-graduate credit.

118. Abnormal Psychology. (3) II. Simley

The various forms of mental abnormality and deficiency; the mechanisms of adjustment that lead to abnormal traits of personality; the nature of the various forms of nervous disorders and insanities. The special interests of the pre-medic and law students are considered. Prerequisite, 1a. Field trip fee, \$3.50. Given in 1932-33 and alternate years.

122. Applied Psychology. (3) II. Simley

The application of psychological principles and methods to the problems of human behavior. Efficiency in business and industry; problems in law, medicine, and other fields. Prerequisite, 1a.

130. Psychology of Learning. (3) I. Simley

The mechanisms involved in the modification of behavior and the acquisition of knowledge and efficiency. Evaluation of current theories and explanations of the learning process. Prerequisite, 1b. Given in 1933-34 and alternate years.

140. Psychology of Perception. (3) II. Schneck

Psychological factors involved in apprehending and interpreting our environment. Special attention to judgment and discrimination. Laboratory demonstrations. Prerequisites, 1b, and 103 or Zoology 57. Given in 1933-34 and alternate years.

209. Systems of Psychology. (3) I.**Schneck**

The history of psychology with an evaluation of the various schools including Behaviorism and the more recent Gestalt theory. Prerequisite, 105a-105b, or classification as Seniors majoring in philosophy. Given in 1933-34 and alternate years.

215. Mental Tests and Measurements. (3) I.**Simley**

The principles of mental measurement and of mental test standardization; practical work in the use of tests and scales. Special training in the technique of individual testing. Open to Seniors and graduate students. Two lecture periods and one laboratory period. Prerequisites, 1b and credit or registration in Education 211a. Given in 1932-33 and alternate years.

223a-223b. Research. (1 to 4, 1 to 4) Yr.**Staff**

Investigation of problems of psychology for which the student is prepared.

PHYSICAL EDUCATION FOR MEN

Professor McKale (Head of the Department).

Associate Professors L. W. Davis, Enke.

Assistant Professor Picard. A. W. Farwick, Head Coach of Football.

Graduate Manager Slonaker.

Instructor Gibbings.

Major: The major requires 24 units in courses above the Sophomore year. Courses must be selected from Physical Education 150, 152, 191a-191b, 192, 193a-193b, 194, 195, 196, 198, 199. Physical Education 150 and 152 are required.

The supporting minor shall consist of 20 units advised from: mathematics, chemistry, history, economics, biology, and manual arts.

The teaching minor shall consist of at least 15 units selected from the following courses in Physical Education: 150, 152, 191a-191b, 192, 193a-193b, 194, 195, 196, 198, 199. Physical Education 152 is required for the minor.

25. Freshman Physical Education. ($\frac{1}{2}$) I. Staff

A course designed to present the general field of physical education to the Freshman student so that he may know something of the following courses he might select. Calisthenic drills, conditioning gymnastics, stunts, ability tests, and the fundamentals of the more popular games. Two periods per week.

26a-26b. Beginning Swimming. ($\frac{1}{2}$) I or II. Gibbings

A course required of students who cannot swim 100 yards. Designed to teach confidence methods, swimming movements, proper breathing, and one or two of the most common strokes. Two periods per week.

27. Individual Athletics. ($\frac{1}{2}$) II. Davis, Enke

A good development course. Emphasis placed upon individual activities that give the student a training in the fundamental physical skills of running, throwing, jumping, climbing, etc. Useful in everyday work and play. Two periods per week.

28a-28b. Individual Gymnastics. ($1\frac{1}{2}$) I or II. Picard

A small percentage of the Freshman and Sophomore classes has some physical disability that prevents enrollment in military training. Such cases as weak hearts, kidney disorders, general debility, paralysis, etc., receive special physiotherapeutic measures such as diathermy, corrective and preventive exercises, etc., for further prevention or relief. The educational phase is especially emphasized. Five periods per week, since it is substituted for military training, both in practice and credit.

29. Games. ($\frac{1}{2}$) II. Davis, Enke

Volley-ball, playground ball, and related activities. All are popular adult games. Recommended highly to second-semester Freshmen in order that they have a sufficient knowledge and ability to engage pleasurably in a health-giving physical activity after they leave school. Two periods per week.

30a-30b. Wrestling. ($\frac{1}{2}$) I and II. Picard

The fundamental positions while on the mat or on the feet. Methods of taking an opponent to the mat from the feet; getting behind and on top of an opponent; breaking loose when at a disadvantage underneath; holds with the legs, pinning holds and numerous defensive tactics will be covered. Two periods a week. May be substituted for any Freshman physical education course except 26a-26b.

38a-38b. Individual Gymnastics. (1) I or II. Picard

Further prevention or correction of physical defects discovered in Freshmen, or beginning work for students who have developed, since their Freshman

year, any disease, defect, or disability that may be benefited through medical measures. Three periods per week.

150. Mass Gymnastics. (1) I or II. Picard

Semi-theoretical, elected by Juniors and Seniors who wish to develop and maintain their physical efficiency. Mass exercise drill, individual and group events, miscellaneous games, some stunts, and individual and group tests. Three hours per week. Required for major in physical education.

Note: Students majoring in physical education should elect this course either at the time they are taking Physical Education 191a-191b, or after this course.

152. Advanced Swimming and Life Saving. (1) II. Gibbings

Required of students majoring or minoring in physical education. Particular training and instruction will be given in the swimming strokes and water maneuvers essential for life saving. All students required to take the Red Cross Life Saving Tests, completion of which entitles the student to Red Cross Life Saving certificates. Three periods per week.

191a. Calisthenics. (3) I. Picard

History, systems, problems, aims and objectives, lesson formation, daily lesson plans, physical tests, pedagogy, and prescription of exercises for normal groups. Outside reading, term papers, and practical demonstrations are required. Open to Juniors and Seniors.

191b. Playgrounds and Recreation. (3) II. Davis

Theories of play, objectives, establishing a system, daily programs, design and equipment of play areas, play leadership, pedagogy of games, pyramids, organization and administration of systems, and a study of child growth and development. Regular assignments, including outside readings, reports, and practical demonstrations of ability to lead children in play. Prerequisite, Physical Education 191a.

192. Athletic Coaching, Training. (1) I or II. Staff

Treatment of all kinds of athletic injuries. Methods of rubbing and massage. Bandaging and first aid. Theory, practice, and assigned reading. Open to Juniors and Seniors.

193a. Health Education. (3) I. Picard

Objectives of school health program; integration of health service, health supervision and health instruction; health demonstrations; health examinations; rural school health; relation of school to outside health agencies; comparative study of health programs; control of contagious diseases and publicity. Tests, outside readings, reports, assigned problems. Zoology 4, 8, and 57 are desirable.

193b. Orthopaedics. (3) II. Picard

Preventive, corrective, and remedial gymnastics; theory; the field of physiotherapeutics; specific diseases, defects and disabilities and treatments; physiology and prescription of exercise for such cases; daily lesson plans; program; equipment; and organization and administration of a department. Outside readings, text assignments, problems, and term papers. Prerequisites, Zoology 4, 8, and 57. Botany 67 and Home Economics 2 are desired.

194. Athletic Coaching, Football. (3) I. McKale

Rules from viewpoints of coaches, players, and officials. Ethics of the game, value of mental attitude and sportsmanship; early practice and arrangement of material; offense and defense; generalship and strategy; kicking and passing; drills for linemen, ends, and backs; blocking and tackling; fundamental plays, trick plays, and signal systems. Theory practice, and assigned reading. Open to Juniors and Seniors.

195. Athletic Coaching, Basketball. (2) I. Enke

Rules from viewpoints of players, officials, and coaches. History of basketball. Proper equipment; technique and individual play; floor work; catching, shooting, and passing the ball; discussion of the different systems of offense and defense; conditioning; organization of practice periods. Proper methods of conducting basketball tournaments. Theory, practice, and assigned reading. Open to Juniors and Seniors.

196. Athletic Coaching, Baseball. (2) II. McKale

Rules and umpiring baseball games; batting and bunting; base running, stealing, and sliding; position play; offensive and defensive team play; battery generalship and strategy; coaching and signaling. Arrangement of practice. Points in coaching. Difference between college and professional baseball. Study of organized baseball. Theory, practice, and assigned reading. Open to Juniors and Seniors.

198. Athletic Coaching, Track and Field Athletics. (2) II. Davis

Cross-country running. Rules of competition and sportsmanship. Proper methods of conducting track and field meets. Starting, sprinting, and distance running. Hurdling, jumping, vaulting, and weight events. Organization and development of a team. Practice schedule and daily workout. Open to Juniors and Seniors.

199. Athletic Coaching, Advanced Football. (2) I. Enke

Two 2-hour field periods and one lecture period. Instruction in the specific duties of every player on the team. Students will then be required to practice and demonstrate their ability according to the previous instruction. Tackling, kicking, blocking, passing, team organization, selection of plays, signal systems, and game strategy are taken up in a practical manner. Prerequisite P. E. 194, or in conjunction with that course. Open only to Juniors and Seniors majoring or minoring in physical education.

- The Teaching of Physical Education for Men. (3) I or II. Picard

For description see Education 197p. Required of all students majoring in physical education for men.

PHYSICAL EDUCATION FOR WOMEN

Professor Gittings (Head of the Department).

Assistant Professor Chesney.

Instructors Keeth, Brown, Kling.

The major: 24 units total including 8 units physical education activity courses above 1a-1b, 2a-2b, 12 units physical education theory courses and 4 units methods and material courses.

The supporting minor shall consist of 20 units advised from the biology, home economics, or dramatics departments.

The teaching minor: 16 units including 8 units of physical education activity courses, 83, 75a-75b, and 152.

Physical education is required of all lower-division women students registered for 6 or more units of University work.

ACTIVITY COURSES

1a-1b. First Year Physical Education. (1-1) Yr. Staff

Each woman registered in physical education has a choice of a different sport each semester. Efficiency in one sport per semester is required of all Freshmen and Sophomores. Special work in corrective or modified gymnastics is prescribed for those below par physically. For those physically unable to participate in any activity, a class in health education is conducted. Posture examinations are given at the beginning and end of each semester. This is required in addition to the physical examination given by the medical department. Schedule of hours for each sport will be announced during registration week. One unit of credit will be given for 3 hours work per week in a sport coached by instructors in the Physical Education Department. Swimming, dancing, hockey, riding, tennis, baseball, basketball, track athletics, archery, horseshoes, and modified gymnastics and health education classes are taught. Required of all Freshman women. A fee of \$10 each semester is charged for the riding class.

2a-2b. Second Year Physical Education. (1-1) Yr. Staff

Continuation of 1a-1b. Prerequisite, 1a-1b. Required of all Sophomore women.

105a-105b. Advanced Physical Education. (1-1) Yr. Staff

Advanced athletics and sports including all of those taught in 1a, 1b, 2a, and 2b, and in addition a series of modern minor sports will be taught to a group of P. E. majors. This course is open to Juniors who have satisfactorily completed work in 1a-1b and 2a-2b, and shall not include repetition of work done in the lower-division courses.

106a-106b. Advanced Physical Education. (1-1) Yr. Staff

Continuation of course 105a and 105b. Prerequisites, 1a-1b, 2a-2b, 105a-105b.

107a-107b. Equitation. (1-1) Yr. Military Staff

Elementary and advanced equitation. Theory and practice of the horse. Study and practice of the aids in riding. Coaching in the different gaits, jumping, cross-country riding, and horse show features. Three hours practice per week. Open to all women. Fee, \$10 each semester.

108a-108b. Advanced Equitation. (1-1) Yr. Military Staff

Advanced equitation. Coaching in the fast gaits of the horse, hurdlings, cross-country riding, and polo practice. Instruction in anatomy, care, and feeding of the horse. Preparation for women who wish to take camp counselorships in riding. Three hours practice per week. Prerequisite, 107a-107b. Fee, \$10 each semester.

112a-112b. Folk Dancing. (1-1) Yr. Brown

Teaching of folk dances of various nations, clogging and tap dancing

Teaching of singing games and fundamental play rhythms suitable for younger children. Open to men and women.

113a-113b. Interpretative Dancing. (1-1) Yr. Brown

Teaching of fundamentals of motor control, poise and flexibility of the joint-muscular system to give ease of expression. Special emphasis on rhythms and appreciation of music through movement. Readings and reports on the dance and related art forms. Open to Juniors and Seniors.

115a-115b. Advanced Interpretative Dancing. (1-1) Yr. Brown

Continuation of 113a-113b. Through coordination of thought, feeling and action, the dance becomes a creative form of self-expression. Development of individually created dance rhythms and compositions. Principles of dance construction. Lectures, readings, and reports of the theory, technique, and teaching of the dance. Open to Seniors.

123a-123b. General Gymnastics. (1-1) Yr. Brown-Keeth

Teaching of floorwork, marching and apparatus work based on American, German, and Danish systems. Practice in school-room gymnastics, tumbling and apparatus work. Three hours work per week including notebook records. Open to Sophomore, Junior, and Senior physical education majors.

THEORY COURSES

76. History and Principles of Physical Education. (2) I. Gittings

This course deals with the bodily activities and play of former civilizations; a survey of physical education systems of the ancients, the people of the middle ages and present national developments; progress of physical education in the United States and European countries. Study of the objectives, standards, and methods of physical-educational systems.

82. Play and Playgrounds. (2) I. Chesney

Theories of play; methods of organization, administration, and management of playgrounds; discussion of equipment; study of methods of producing game or play leaders. Not given in 1932-33.

84. First Aid. (1) I or II. Kling

Instruction in quick and efficient treatment in cases of accident or emergencies. Life saving practice and Red Cross tests.

152. Health Examinations and Anthropometry. (2) I. Gittings

Study of the human body, its measurements, its aspects and mechanical structure in order to judge health, skill, ability, and organic condition with a view to arranging for those examined the proper physical activity or health program.

153. Health Direction. (2) I. Gittings

Study of source materials in the field of Health Education, Health Service, and Physical Education. Review of the educational and psychological contributions to the field of health. Outlining of programs for directing Health Instruction. Prerequisite, Bacteriology 67 and 137. Not given in 1932-33.

154. Therapeutic Gymnastics. (2) II. Gittings

Theory and practice of general and local massage. Study of fundamental principles in the selecting and adapting of corrective movements for abnormal physical conditions. Study of developmental activities for prevention of postural handicaps and for special physical defects. Prerequisite, Zoology 8.

156. Physical Education Administration. (2) II. Gittings

Information regarding the administration of a physical education plant and program. Articulation of the Physical Education Department with other departments and services of the school. Instruction in the use and care of equipment, pools, records, and tests. Discussion of credits, schedules, curriculum content, annual reports, etc. Open to physical education majors in Senior year. Not given in 1932-33.

METHODS AND MATERIAL COURSES**75a-75b. Methods and Material—Sports. (2-2) Yr. Chesney-Keeth**

Practice and theory of coaching swimming, hockey, basketball, soccer, baseball, speedball, hy-lo ball, and field ball. Discussion of game values, technique, equipment, rules, and duties of sports officials. Not given in 1933-34.

80a-80b. Methods and Material—Dancing. (2-2) Yr. Brown

Practice and theory of directing interpretative dancing, folk dancing, and clogging. Discussion of the rhythms, values, technique, costumes, and equipment for dancing classes. Planning of exhibitions, programs, and pageants. Prerequisites, 2 units of interpretative and 1 unit of folk dancing. Not given in 1932-33.

83. Games. (2) II. Keeth

This course includes practice and theory of games and play. School playground, and low organization games will be taught. Notebook record required. Open to Sophomore, Junior, and Senior physical education majors. Prerequisite, P. E. 82.

155a-155b. Methods and Material—Sports. (2-2) Yr. Kling-Chesney

Practice and theory of coaching tennis, swimming, track athletics, and minor sports. Discussion of game values, technique, equipment and rules. Theory and practice in duties of officials. Prerequisite, advanced swimming, and one semester of tennis. Not given in 1932-33.

SPECIAL RELATED COURSES**Music 2. Fundamentals of Music. (2) I. College of Music Staff**

The rudiments of music for the major student in physical education. Rhythm, accent, and phrasing as used in the teaching of gymnastics, singing games, rhythms, and folk dancing. Required as prerequisite to P. E. 80a and 80b, offered second semester of alternate years.

Social Fundamentals. (½-½) Yr. Dean of Women—Special Lecturers

Required of all Freshman women students. Factors in right living and social adjustment; personal hygiene; nutrition; costume; social usage; the choice of an occupation; personal and ethical problems. One hour a week.

PHYSICS

Professors Life (Head of the Department), Warner.
Associate Professor Soller.
Instructor Ormsby.

The major: 24 units exclusive of 1a-1b or 17a-17b, and including 18a-18b, 19a-19b, 104, 105a, 106b, 111a-111b.

The supporting minor should be chosen from: chemistry, mathematics, astronomy, philosophy, geology, biology, engineering.

1a-1b. Engineering Physics. (5-5) Yr. Warner-Ormsby

Three hours lecture and recitation and two 3-hour laboratory periods. Emphasis on analytical methods and solution of problems. Required of engineering students.

1a. Mechanics and Heat. Prerequisites, Elementary Physics, Mathematics 20 and 24 and enrollment in Mathematics 100a.

1b. Magnetism, Electricity, and Light. Prerequisites, 1a and enrollment in Mathematics 100b. Laboratory fee, \$4 each semester.

17a-17b. General Physics. (4-4) Yr. Life-Ormsby

Planned to emphasize the importance of this science in all walks of life. Mechanics, properties of matter, wave motion, sound, heat, magnetism, electricity, and light. Three 1-hour lecture and recitation periods and one 3-hour laboratory period. Laboratory fee, \$2 each semester. Separate laboratory sections for arts, home economics, and agriculture students.

18a-18b. Electron Physics. (2-2) Yr. Soller

Elementary modern physics; atomic and electrical theory; ionization currents; use of electrometer; vacuum technique; vacuum tubes; photo-electric cell; discharge tubes; X-ray tubes, photographs, equipment, intensity measurement; radio activity; positive rays; ionization potentials; atmospheric electricity. One lecture and one 3-hour laboratory period. Laboratory fee, \$3 per semester. Prerequisites, Physics 1b or 17b, registration in Mathematics 100a, and Chemistry 1a or 2a. Given in 1933-34 and alternate years.

19a-19b. Theoretical Mechanics—Vector Treatment; Introductory Course. (2-2) Yr. Warner

Prerequisites, Physics 1b or 17b and registration in Mathematics 100a. Two lecture and recitation periods.

104. Electrical Measurements. (2) I. Soller

Sensitive galvanometer is taken as a sample instrument and the dynamic conditions treated. Advantage of critical damping; current, voltage, coulomb and flux calibrations; magnetic properties of iron; potentiometer; measurement of all ranges of resistance, capacity, inductance and frequencies; thermoelectricity. One hour lecture and recitation and one 3-hour laboratory period. Prerequisites, Physics 1b or 17b and Mathematics 100b. Laboratory fee, \$2. Not for post-graduate credit.

105a-105b. Thermodynamics and Theory of Heat. (2-2) Yr. Warner

Statistical foundation of heat; the two principal laws of thermodynamics; cyclic processes; entropy; thermodynamic potential; thermodynamic equilibrium; laws of radiation; kinetic theory of gasses. Prerequisites, Physics 1b or 17b, Mathematics 100b, and registration in Chemistry 1a or 2a. Given in 1933-34 and alternate years.

106a-106b. Theory of Optics. (2-3) Yr. Warner

Prerequisites, Physics 1b or 17b and registration in Mathematics 100a.
106a. Geometrical Optics, Spectroscopy, and Photometry. Two hours lecture and recitation.

106b. Physical Optics. Interference, diffraction, polarization, and double refraction. Two hours lecture and recitation and one 3-hour laboratory period. Laboratory fee, \$5. Given in 1932-33 and alternate years.

108. **Electron Tubes. (2) II.** Soller
Static and dynamic characteristics of thermionic tubes; tubes as rectifiers, amplifiers, and oscillators; audio and radio frequency measurements. One lecture and one 3-hour laboratory period. Prerequisite, Physics 104. Laboratory fee, \$5. Not for post-graduate credit.
110. **Radio Communication. (2) I.** Soller
Oscillating circuit conditions; resonance; capacity and inductance coupling; antenna systems; spark and arc transmission; vacuum tube transmission; modulation; receiving circuits. Two hours lecture and recitation. Prerequisite, Physics 108.
- 111a-111b. **Electricity and Magnetism. (2-2) Yr.** Soller
Electrostatics; electric circuits; electromagnetism; magnetism; electro-magnetic fields; theoretical treatment by vector methods. Two lectures. Prerequisites, Physics 1b or 17b, 19b. Mathematics 100b. Given in 1932-33 and alternate years.
- 201a-201b. **X-Ray Studies and X-Ray Analysis of Crystalline Materials. (2-2) Yr.** Soller
Production, spectra, absorption, and scattering reflection intensities; crystal-line space lattices, methods of obtaining the interatomic structure of materials; practice with equipment. Two lectures first semester; one lecture and one 3-hour laboratory period second semester. Laboratory fee second semester, \$5. Prerequisites, Physics 18b, Chemistry 1b, Mathematics 100b. Given in 1933-34 and alternate years.
- 204a-204b. **Radiations and Matter. (2-2) Yr.** Soller
Bohr-Sommerfeld theory of atomic structure; infra-red, visible, ultra-violet, and X-ray spectra and their relation to atomic and molecular structure; the physical and chemical properties of elements and compounds and their relation to atomic energy levels and electron saturation; ionization; photo electricity. Two lectures. Prerequisites, Physics 18b, Chemistry 1b, Mathematics 100b. Given in 1932-33 and alternate years.
- 212a-212b. **Seminar. (1-1) Yr.** Soller
Current literature and selected topics. Reports by invited speakers, the staff, and students. Students may take this course more than once for credit.
- 224a-224b. **Special Study. (1 to 4) I or II.** Warner-Soller
Readings, conferences, and special individual investigations in the scope of physics, not covered by other courses regularly scheduled in the department. Primarily for those majoring or minoring in physics but open to other graduates and Seniors upon approval of the instructor in charge and the head of the department. May be pursued more than once for credit, with change of subject matter.
230. **Research. (1 to 4) I or II.** Staff
- The Teaching of Physics. (3) II.** Life
For description see Education 197j. Required of students in the College of Education majoring in physics.

PLANT BREEDING

Professor Bryan (Head of the Department).
Associate Professor Pressley.

Note: The following courses related to Plant Breeding are offered through the Department of Botany. For descriptions see page 137.

Bot. 8. Genetics. (3) II.	Bryan-Pressley
Bot. 100. Botanical Discussions. (1) I or II.	Botany Staff
Bot. 128. Plant Breeding. (3) II.	Bryan-Pressley
Bot. 200. Research. (4-6) I or II.	Staff
Bot. 201. Special Discussions. (1) I or II.	Staff
Bot. 209. Advanced Studies. (2-4) I or II.	Staff

PLANT PATHOLOGY

Professor J. G. Brown (Head of the Department).
Associate Professor Streets.

Note: The following courses related to Plant Pathology are offered through the Department of Botany. For descriptions see page 137.

Bot. 100.	Botanical Discussions. (1) I or II.	Botany Staff
Bot. 105.	Pathology. (4) I.	Brown-Streets
Bot. 135.	Mycology. (4) II.	Brown
Bot. 145.	Diseases of Cereals, Fiber, and Forage Crops. (4) I.	Streets
Bot. 155.	Diseases of Fruit Trees, Nut Trees, and Truck Crops. (4) II.	Streets
Bot. 165.	Diseases of Forest Trees, Shade Trees, and Ornamentals. (4) II.	Streets
Bot. 200.	Research. (4-6) I or II.	Staff
Bot. 201.	Special Discussions. (1) I or II.	Staff
Bot. 209.	Advanced Studies. (2-4) I or II.	Staff
Bot. 225.	Pathological Histology and Cytology. (4) I.	Brown
Bot. 275.	Physiology of Parasitism. (4) II.	Brown

POULTRY HUSBANDRY

Professor Embleton (Head of the Department).
Assistant Professor Hinds.

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1. Animal Industry. (4) II. Hinds
The general aspects of poultry keeping. Three lectures and one laboratory period. One-quarter time Poultry Husbandry (See Animal Husbandry 1 and Dairy Husbandry 1).
11. Farm Poultry. (3) I. Hinds
The major phases of the poultry industry. Two lectures and one 3-hour laboratory period. Laboratory fee, \$2.
101. Poultry Anatomy and Diseases. (2) I. Hinds
The structure of the fowl, its diseases, including prevention and treatment, and the care of sick birds. Poultry survey and dissection. One lecture and one 3-hour laboratory period. Given in 1932-33 and alternate years. Laboratory fee, \$2. Prerequisites, Poultry 11, Zoology 4 and Bacteriology 7.
102. Poultry Breeding and Judging. (3) I. Embleton
The origin, history, and classification of breeds of poultry along with judging of breeding pens and mating. Given in 1933-34 and alternate years. One lecture and two 3-hour laboratory periods. Not for post-graduate credit. Prerequisite, Poultry 11.
103. Economics of Poultry Management. (2) II. Embleton
The business end of poultry husbandry. The work is handled through problems having an economic bearing on the poultry business. Given in 1932-33 and alternate years. Two lectures. Prerequisite, Poultry 11.
104. Poultry Nutrition. (3) I. Hinds
Feeds suitable for poultry; physiology of digestion; the principles of feeding for egg-production, growth, and fattening, and the compounding of rations. Given in 1933-34 and alternate years. Prerequisites, Poultry 11, Chemistry 50.
105. Principles of Poultry Marketing. (3) II. Hinds
The method of handling, packing, and grading eggs; killing, cooling, grading and packing poultry; storage of poultry and eggs; the study of various market centers. Given in 1933-34 and alternate years. Two lectures and one laboratory period. Laboratory fee, \$2. Prerequisites, Poultry 11, Economics 1a.
106. Incubation and Brooding. (3) II. Hinds
In addition to the lecture work, each student will care for at least one incubator during the course of an incubation period, and will be at the University Poultry Plant morning and night, including Sundays.
After the chicks are hatched, students care for them under the brooders for a period of 2 weeks. Given in 1932-33 and alternate years. One lecture and 6 hours of laboratory work to be arranged outside of regular schedule. Laboratory fee, \$2. Not for post-graduate credit. Prerequisites, Poultry 11, Physics 17b.
- 201a-201b. Methods in Research. (3-3) Yr. Embleton
Research methods studied by means of an original problem which will be carried through to completion including the outlining of the problem, the bibliography, formulating the original data, and writing up the final results. One semester only, given each year beginning with the second semester, 1932-33 and alternating semesters thereafter. Laboratory fee, \$2 each semester.
202. Research in Poultry Husbandry. (2 to 4) I or II. Embleton
Graduate students specializing in poultry husbandry may elect a thesis.

RANGE ECOLOGY

Associate Professor McGinnies (Head of the Department).
Assistant Professor Nichol.
Assistant Instructor Love.

Note: The following courses related to Range Ecology are offered through the Department of Botany. For descriptions see page 137.

Bot. 6. Ecology. (4) I.	McGinnies-Shantz
Bot. 16. Range and Forest Preservation and Utilization. (4) II.	McGinnies
Bot. 100. Botanical Discussions. (1) I or II.	Botany Staff
Bot. 126. Range Ecology. (4) I.	McGinnies
Bot. 200. Research. (4-6) I or II.	Staff
Bot. 201. Special Discussions. (1) I or II.	Staff
Bot. 209. Advanced Studies. (2-4) I or II.	McGinnies

SPANISH

Professor Fitz-Gerald (Head of the Department).

Associate Professors Brooks, Post, Nicholson.

Assistant Professor Nichols.

Instructors Eberling, Hudspeth.

The major: 24 units above 1b, including 110a-110b, 103a-103b, 194, including also such other course as the Head of the Department shall advise.

The supporting minor should be chosen from: classical literature, English, French, German, history, philosophy and art, provided that with art there be not less than 8 units of a second foreign language.

The teaching minor consists of 15 units above 1b, and must include 3a-3b, 13a-13b, and 14a-14b. Students offering 2 years of Spanish for entrance must include 110a-110b and 194.

SPANISH

1a-1b. Elementary Spanish. (4-4) Yr. Nicholson and Staff

A beginning course that includes grammar essentials and translation, emphasizing especially accurate pronunciation and oral work.

3a-3b. Intermediate Spanish. (4-4) Yr. Nichols and Staff

Introduction to systematic syntax accompanied by reading of modern books. Prerequisite, 1b or 2 years of high-school Spanish.

13a-13b. Elementary Conversation. (1-1) Yr. Post and Staff

A laboratory course three periods a week with no preparation. Sections limited to 20 students. Prerequisite, 3b or 4 years of high-school Spanish. Required for the Department's recommendation to teach.

14a-14b. Elementary Composition. (2-2) Yr. Eberling and Staff

Prerequisite, 3b or 4 years of high-school Spanish. Required for the Department's recommendation to teach.

103a-103b. Advanced Composition. (2-2) Yr. Post

A practical course in writing Spanish. Wilkins, *A Spanish Reference Grammar*; Spaulding, *Syntax of the Spanish Verb*, and translation of some English novel or classic into Spanish. Original themes. Prerequisites, 14b for 103a; 103a for 103b.

109a-109b. Literature of the Golden Age. (3-3) Yr. Brooks

The literary movements of the Golden Age of Spanish literature, 1550-1700, with reading of representative authors. Prerequisite, 110b. Not offered 1932-33.

110a-110b. Introduction to Spanish Literature. (3-3) Yr. Fitz-Gerald, Brooks

The literary movements of the last three centuries and the reading of representative texts from the most important authors of the period. Prerequisite, 3b or 4 years of high-school Spanish. This course is prerequisite to all further upper-division courses. Not for post-graduate credit.

111a-111b. Spanish Literature of the Nineteenth Century. (3-3) Yr. Post

The literary movements of the Nineteenth century; Moratín, Martínez de la Rosa, Rivas, Bretón de los Herreros, Hartzenbusch, Zorrilla, Tamayo y Baus, Echegaray, Núñez de Arce, Pereda, Valera, Pardo Bazán, Pérez Galdós, Alarcón, Palacio Valdés, Blasco Ibáñez, Trueba, lyric poets, and others. Prerequisite, 110b.

113a-113b. Spanish Literature of the Twentieth Century. (3-3) Yr. Nicholson

The present literary tendencies of Spain, with special reference to the national life and character. Representative writers since 1900, such as Galdós, Benavente, Linares Rivas, los Quintero, Blasco Ibáñez, Azorin, Baroja, Concha Espina. Prerequisite, 110b.

116a-116b. Spanish-American Literature. (3-3) Yr. Nichols

The principal movements and authors of Spanish America, Coester, *Literary History of Spanish America*, and assigned readings. Prerequisite, 110b.

123a-123b. Advanced Conversation. (1-1) Yr. Brooks

Open to students who have had 13b or its equivalent, but may be taken only in connection with other upper-division courses.

194. Phonetics and Grammar. (3) II. Nicholson

A practical study of phonetics and a review of grammar. Navarro Tomás, *Pronunciación Española*; Ramsey, *A Textbook of Modern Spanish*. Required for the Department's recommendation to teach.

The Teaching of Spanish. (3) I. Nicholson

For a description see Education 197k. Required of students in the College of Education majoring in Spanish.

224a-224b. The Novela of the Golden Age. (3-3) Yr. Fitz-Gerald

Lectures on the cultural history of the period and on the Novelistic Movement. Given in 1932-33 and alternate years.

225a-225b. The Comedia of the Golden Age. (3-3) Yr. Fitz-Gerald

Lectures on the cultural history of the period, and on the Dramatic Movement. Given in 1933-34 and alternate years.

ROMANCE PHILOLOGY

205a-205b. Introduction to Romance Philology: Phonology, and Morphology. (3-3) Yr. Fitz-Gerald

Not offered in 1932-33.

206a-206b. Oldest Monuments of the Spanish Language. (3-3) Yr. Fitz-Gerald

Phonology, Morphology, and Palaeography. The Poema del Cid and Gonzalo de Berceo's *Santo Domingo de Silos*. Given in 1933-34 and alternate years.

240a-240b. Mediaeval Spanish Literature. (3-3) Yr. Fitz-Gerald

Lectures on the various movements in Mediaeval Spanish Literature through the reign of Juan II. Given in 1932-33 and alternate years.

250a-250b. Research. (3-3) Yr. Staff

ITALIAN

1a-1b. Elementary Italian. (4-4) Yr. Brooks

Grandgent, *Italian Grammar*; pronunciation; oral drill; reading from representative selections, both prose and verse.

ZOOLOGY

Professors Gunthorp (Head of the Department), G. T. Caldwell.
Instructor Hannum.

The major: 24 units above a basic course of 8 units; this basic course may consist of (a) Zoology 4 and 8, or (b) Zoology 4 and 44. Sixteen hours of the major must be upper division.

The supporting minor should be chosen from botany, chemistry, geology, mathematics, physics, or psychology.

The teaching minor must include a basic course (see above), and enough additional units to total at least 15.

4. Elementary Zoology. (4) I or II. Gunthorp and Assistants

The structure, physiology, development and behavior of animals, from the biological viewpoint. Together with Zoology 8 or 44 it forms a year course. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$5.

8. Mammalian Anatomy. (4) II. Hannum

A study of anatomy in which the cat is used as the example. Required of all physical education majors. Prerequisite, Zoology 4. One lecture and three 3-hour laboratory periods. Laboratory fee, \$5.

22. Eugenics. (2) I. Gunthorp

The betterment of the human race through heredity. Prerequisite, Sophomore standing. Two lectures.

44. Invertebrate Zoology. (4) II. Gunthorp

The morphology, physiology, ecology, and taxonomy of the invertebrates. Prerequisite, Zoology 4. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$5.

45. Comparative Anatomy. (4) I. Hannum

A comparative study of chordate morphology. Recommended for pre-medical students. Prerequisite, Zoology 4. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$6.

57. Elementary Physiology. (4) I. G. T. Caldwell

The physiological processes of the human body. Primarily for students in physical education and the general under-graduate. Prerequisite, Zoology 8. Three lectures and one 3-hour laboratory period. Laboratory fee, \$5.

111. Evolution. (2) I. Gunthorp

Lectures, readings, and demonstrations dealing with the history, modern theories, factors, and mechanism of organic evolution and its influences on modern thought. Prerequisite, 8 units of botany or zoology. Two lectures. Given in 1933-34 and alternate years.

143. Mammalian Physiology. (4) I. G. T. Caldwell

Physiology of the supporting and motor tissues, the nervous system, and the special senses, with particular reference to the human body. Prerequisites, Chemistry 1b or 2b and Zoology 8 or 45. Three lectures and one 3-hour laboratory period. Laboratory fee, \$5.

144. Mammalian Physiology. (4) II. G. T. Caldwell

Physiology of circulation, respiration, digestion, absorption, and excretion, with special reference to the human body. Prerequisite, Chemistry 103a or 50. Three lectures and one 3-hour laboratory period. Laboratory fee, \$5.

146. Animal Histology. (4) II. Hannum

The microscopic anatomy of mammalian tissues, and the technique involved in their preparation. Prerequisite, Zoology 8 or 45. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$8.

147. Vertebrate Embryology. (4) II. G. T. Caldwell

The cell and cell division, germ cells and their formation, maturation and

cleavage of the egg, and the various stages in the later development of the vertebrate embryos, with particular emphasis on organogenesis. Prerequisite, Zoology 45. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$5.

149. Parasitology. (4) I. Hannum

The morphology, biological activity, and control of those animals involved in the causation and transmission of disease. Emphasis upon the parasites of man and the domestic animals. Prerequisite, 16 units of bacteriology or zoology. Two lectures and two 3-hour laboratory periods. Laboratory fee, \$5.

171. Geographical Distribution. (2) I. Gunthorp

The geographical distribution of animals. Prerequisites, 8 units of zoology. Two lectures. Given in 1932-33 and alternate years.

191a-191b. Elementary Zoological Problems. (2 to 4) I or II. Staff

Problems for properly qualified seniors after consultation with instructors. Credit will be adjusted in accordance with the work accomplished.

216a-216b. Zoological Research. (2 to 4) I or II. Staff

On consultation with instructors, problems along the following lines may be undertaken: physiology, vertebrate morphology and invertebrate morphology. Results must be presented as a thesis or in form of publication. Credit will be adjusted in accordance with the work accomplished.

Teaching of Zoology. (3) I. Gunthorp

For description see Education 197b. Required of all students in the College of Education majoring in zoology.

Courses in Other Departments:

Starred courses in Entomology and Economic Zoology may be counted toward a Zoology major. Also Botany 8 and 133.

THE SUMMER SESSION

The University annually conducts a Summer Session on the University Campus at Tucson. The Summer Session continues for 10 weeks, being made up of two terms of 5 weeks each. Classes meet 6 days a week, a 2-unit course requiring 6 class hours a week per term. The First Term of the 1933 Summer Session begins Monday, June 5, and ends Saturday, July 8. The second Term begins Monday, July 10, and ends Saturday, August 12. Registration is held on the first day of each Term. For registration after the first day a late registration fee of \$2 is charged. Registration for credit will not be permitted after Monday, June 12, for the First Term, or Saturday, July 15, for the Second Term.

ADMISSION TO THE SUMMER SESSION

The general rules and regulations of the University relating to admission to the University for credit apply to the Summer Session.

Regular Students of the University of Arizona in good standing are admitted as at any other time.

Prospective Freshmen should file a statement of high-school credits on Certificate of Recommendation Form R25, obtained from the Registrar.

Students coming from other universities and colleges must present to the Registrar evidence that they are in good standing. Those who propose to become candidates for a degree must file a complete transcript of record.

Graduate students seeking an advanced degree must file evidence of having graduated from an approved university or college.

Other students will be permitted to pursue such courses as they are qualified to carry.

ACADEMIC CREDIT

The Summer Session is an integral part of the regular University organization, with similar standards of academic accomplishment. The courses are of the same character as those offered during the regular academic year. Credit obtained is fully recognized toward the various degrees which the University confers.

All Summer Session work is counted as work in residence. The maximum credit for which students may register regularly is 12 semester hours for the 10-week Session or 6 semester hours for either 5-week Term.

PROJECTED REGISTRATION

Students who have regularly registered for 12 semester hours of credit and have demonstrated their ability to do independent work, may be permitted to register for a maximum of 3 semester hours of work to be done in **absentia**. Work thus undertaken must be in the nature of an individual problem and must be completed before the beginning of the next Summer Session. Work done under projected registration will be accepted for **residence credit**. Graduate credit will be granted under the regulations governing graduate credit in residence.

GRADUATE STUDY AND ADVANCED DEGREES

The University of Arizona Summer Session gives particular attention to graduate study. All courses numbered from 200 to 299 are definitely

organized as graduate courses and carry graduate credit. Courses numbered from 100 to 199 may be taken for graduate credit upon the recommendation of the instructor and the approval of the Graduate Study Committee.

Due to the increasing demand for advanced graduate work during the summer, several of the departments of the University have provided for individual research in their special fields. Such courses are listed under the respective departments. Students who wish to pursue any of these courses must obtain the consent of the respective instructors before registering for the courses.

In certain departments provision is made for teachers in service and others who are unable to attend the University during the regular year, to complete the requirements for the master's degree by attendance at summer sessions only.

SPECIAL FEATURES

Field Research—A special feature of the Summer Session is the opportunity offered graduate students to carry on field investigations in connection with research projects already under way in archaeology, plant and animal ecology, plant geography, range ecology, mammalogy, forestry, and plant physiology.

Due to the wide variation in topography and climate available within short distances under Arizona conditions, it will be possible to become familiar with conditions prevailing in all the main floral and faunal divisions from the sub-tropical desert to the Alpine.

Similarly, Arizona offers unsurpassed opportunity to study prehistoric life, extending in some cases probably as far back as Pleistocene times. The ruins of the "Cliff Dwellers" and the prehistoric Pueblos are scattered over the entire State. They present many interesting phases of human culture and introduce us to the beginnings of American industry.

Registration for any of the above work will be only by individual arrangement of properly qualified students with the leader of the line of research which it is desired to pursue. Detailed information concerning these research opportunities may be obtained by addressing the Dean of the Summer Session.

Field Geology—Arizona in general is exceptionally rich in geological phenomena of almost every type. In many of the mountain regions a great diversity of formations, structures, topography, ore deposits, and mines occur in relatively small areas ideally suitable and convenient for study in a summer course. The University, through the Arizona Bureau of Mines, offers such a summer course in field geology. To students of geology, inexperienced in field methods and procedure, this summer course affords an excellent opportunity to acquire the practical working knowledge necessary for the successful interpretation of the geology of any given area. Enrollment is open only to men and is limited to 12. For information concerning this course, address: The Director, Arizona Bureau of Mines, Tucson, Arizona.

Trade and Industrial Education—Under a cooperative arrangement with the State Department of Vocational Education, the University has inaugurated a program of training for teachers of Trades and Industries and of Mechanic Arts. It is open to experienced teachers in these fields and is organized to lead to the degree of Bachelor of Industrial Education. Provision is also made for those who already hold the bachelor's degree to secure advanced work in their field. Details concerning the requirements for the degree of Bachelor of Industrial Education will be

found on page 80. At present the opportunities in this field are confined to the Summer Session.

Another innovation introduced this year, one of particular interest to teachers and administrators in the Indian Service, is a course in Personnel Problems for Vocational Teachers in Indian Schools.

Instructors for all of these courses are carefully selected from the outstanding leaders in the respective fields. We are fortunate to be able to number among them national and state officers.

Inquiries should be addressed to the Dean of the Summer Session.

EXPENSES AND FEES

As the University is unable to extend credit, it is essential that all students have sufficient funds on entering to defray their immediate expenses.

Tuition—The tuition required of all students is \$25 for either 5-week Term or \$40 for the whole 10-week Session.

Laboratory and Material Fees—In certain laboratory and other courses fees are required to cover the cost of materials and of breakage. A statement of the amount of such fees is found in the description of courses.

Dormitories—Rooms in the dormitories may be obtained for \$7.50 per term per person, two in a room. A room deposit of \$5 is required of all residents of the dormitories.

Board—Board at the University Dining Hall may be secured at a cost of \$35 per term. Board is payable in advance on the first day of each Term. (As the University charges for board only a sufficient amount to cover its cost, it reserves the right to increase the rate to meet any increase in the price of foodstuffs and service.)

Trips—For recreational trips regularly arranged for students of the Summer Session and for trips required in connection with field courses, a fee based on mileage will be charged.

No fees except the room deposit are returnable.

For more detailed information concerning the Summer Session, inquiries should be addressed to the Dean of the Summer Session, University of Arizona, Tucson.

**DEPARTMENTS
OF
RESEARCH AND EXTENSION**

AGRICULTURAL EXPERIMENT STATION

ORGANIZATION AND WORK

The Agricultural Experiment Station is legally a division of the University of Arizona College of Agriculture. The purpose of the Agricultural Experiment Station is to aid "in acquiring and diffusing useful and practical information on subjects connected with agriculture, and to promote scientific investigation and experiments respecting the principles and application of agricultural science."

The activities of the Experiment Station include research and experimentation in agricultural chemistry and soils, agronomy, animal husbandry, botany, entomology, home economics, horticulture, irrigation, dairy, husbandry, and poultry husbandry.

Owing to wide variation in agricultural conditions in Arizona, it has been found of advantage to establish branches of the Experiment Station in various parts of the State, to do work where conditions are most satisfactory for its accomplishment.

The Agriculture Building, which was completed September, 1915, offers ample room for research, educational work, and extension in agriculture, and affords an attractive center for the agricultural activities of the State. The administrative offices and the laboratories for research work are located in this building at Tucson. From this base, the four great agricultural districts of the State—the Salt River Valley, the Lower Colorado Valley, the Casa Grande Valley, and the Upper Gila Valley—are conveniently accessible for field and observation work.

The main Experiment Station Farm is located near Mesa, in the Salt River Valley, which is intermediate in elevation and in mean yearly temperature with respect to the irrigated valleys of southern Arizona. The results obtained are capable therefore of general application to the southern part of the State.

The Tempe Date Orchard is situated in the alkaline district near Tempe, where successful experimentation with the date palm has been of great value in demonstrating a use for extensive areas of alkaline land in the Southwest.

The branch station near Yuma, including a tract of land in the Colorado River Valley proper and another on the Yuma Mesa, affords object lessons to the public and furnishes experimental data concerning fruits, vegetables, and farm crops of this part of the State.

The University Farms afford facilities for study and experimentation near Tucson. Laboratories, greenhouses, and gardens on the University grounds serve a similar purpose.

The results of experiment station work are published as bulletins, timely hints, and reports of the Station. The longer and more technical bulletins and annual reports give in detail the results of investigations as they mature.

The Agricultural Experiment Station is fairly well endowed. It receives regularly the funds appropriated by Congress under the Hatch, Adams, and Purnell acts. These funds are supplemented by appropriations made by the Legislature of Arizona.

AGRICULTURAL EXTENSION SERVICE

ORGANIZATION AND WORK

The Agricultural Extension Service is organized as a distinct administrative division of the University of Arizona College of Agriculture for the management and conduct of extension work in agriculture and home economics. This service also represents the United States Department of Agriculture and all extension work of the Department in Arizona is administered through the Extension Service.

The purpose of the Agricultural Extension Service is to "give instruction and practical demonstration in agriculture and home economics to persons not attending or resident in said college," including principally farmers and stockmen and their families, and new settlers throughout the State. Federal funds for carrying on the Agricultural Extension work are provided by the Smith-Lever, Capper-Ketcham, the so-called Additional Cooperative fund, and directly from the United States Department of Agriculture. To supplement these funds similar amounts from state and county sources are available. Of 14 counties in the State, 12 have for several years been making regular annual appropriations for extension work in cooperation with the Agricultural Extension Service. The State Legislature has for several years appropriated annually to the Extension Service the sum of \$15,000 to be used in the control of noxious rodents, in cooperation with the United States Biological Survey.

During the current year the Extension Service has employed 34 people in administrative and subject-matter activities. There are seven home demonstration agents, twelve county agents, five assistant county agents, seven subject-matter specialists, and three administrative officials. The home demonstration group has emphasized a program bearing on nutrition, clothing, and boys' and girls' club work, and has reached practically every rural community in the State. County agricultural agents have emphasized improved practices in livestock production, in dairying, in poultry, in field crops, irrigation practice, and in rodent control. Their work has been very ably supplemented by the work of the subject-matter specialists. An attempt is being made to serve every community in the State that desires such service.

During the past year in cooperation with the radio stations of the State, a radio program has been established, in which representatives of the College of Agriculture, present new and interesting information bearing on farm and home life. Thousands of farm homes are reached by this service weekly.

Other extension activities are: County Farm and Home Weeks; extension schools, consisting of 2- and 3-day courses of instruction for farmers and their families, held in different parts of the State; extension circulars issued for distribution in the State; exhibits and judges sent to fairs; and speakers provided for farmers' meetings. Outbreaks of disease among animals, of insect infestation, and of trouble with plant diseases are matters of immediate concern to the Extension Service and any community may secure assistance by reporting such conditions.

ARIZONA BUREAU OF MINES

ORGANIZATION AND ACTIVITIES

The Arizona Bureau of Mines was created by Act of the Legislature in 1915. Its objects are to make investigations and disseminate information which may lead to the development and expansion of the State's mineral industries. Among the many lines of activity in which the Bureau engages, the following have proved especially important and valuable:

1. The preparation and publication of bulletins containing authoritative information on a wide range of topics of interest to prospectors, miners, and others concerned with the development of Arizona's mineral resources and industries. The bulletins are distributed free of charge upon request, and 129 have already been issued.

2. The free classification of mineral and rock specimens. Besides naming rocks, and naming and giving the composition of minerals, the Bureau makes free qualitative tests for important elements, and answers inquiries concerning the probable market for and the economic value of ore similar to samples submitted. When assays, quantitative chemical analyses, microscopic or thin sections are desired, they are furnished at rates established by law, a schedule of which will be submitted on request.

3. The accumulation of geologic data, and the making of topographic and geologic maps and reports. In cooperation with the United States Geological Survey, a large scale base map (non-geological), a reconnaissance geologic map, and a topographic map (100-meter contours) of the entire State have been completed, and are ready for distribution. A voluminous, illustrated resumé of the geology of Arizona is also available. Reports on the geology and mineral resources of counties and districts are in preparation. Field investigations incident to these activities have yielded a great deal of new and valuable information concerning promising undeveloped occurrences of both metallic and non-metallic minerals (clay, gypsum, coal, etc.).

4. The technical education of miners and prospectors through lectures and miners' institutes held in mining camps. This work has proved very successful.

5. The fostering of research on Arizona mining and metallurgical problems. Although some of this work is done by experts employed by and under the supervision of the Bureau, the greater part is accomplished through a cooperative arrangement with the United States Bureau of Mines Experiment Station on the Campus of the University. Under this agreement the Arizona Bureau of Mines provides research workers who operate under the direction of the Supervising Mining Engineer and Metallurgist of the United States Bureau of Mines Experiment Station.

One line of research successfully undertaken several years ago resulted in the development of a practical electrical method for locating sulphide ore bodies.

6. The collection and dissemination of statistics relating to the mineral industries of the State.

7. The operation of a clipping bureau that collects and files all items relating to Arizona mines and minerals that appear in Arizona newspapers and in many technical periodicals.

8. The dissemination of publicity relating to Arizona's mineral industries.

9. The organization of a general information bureau that attempts to answer as completely as possible inquiries regarding mines and mining, metallurgy, geology, mineralogy, mining law, and other related subjects.

The one-word policy of the Bureau is "Service" to the State, and to those interested in the development of its mineral resources; and the assistance and advice of its staff are freely offered to all.

UNIVERSITY EXTENSION DIVISION

PURPOSE AND AIMS

The purpose of the University Extension Division is to make available, as largely as possible, to every community and every individual in the State the advantages of general equipment, educational training, and specialized information, represented on the University Campus. This phase of University work is the natural outgrowth of the realization that a university is the institution of the people of a state, and that it should serve the state in every way possible.

ORGANIZATION FOR SERVICE

Department of Correspondence Courses

The Department of Correspondence Courses offers a well-rounded curriculum at a nominal fee, carrying regular college credit, in selected subjects. Approximately one-half of the requirements for the bachelor's degree may be met through correspondence or extension class courses. Teacher re-certification requirements may also be met through such courses.

Department of General Extension

Bureau of Arizona High School Speech Activities—The Arizona High School Debating League has been organized to promote intelligent discussion of vital questions, and, together with intramural and inter-scholastic activities in extemporaneous speaking, oratory, and dramatic and humorous reading, to stimulate the practice of good public speaking among the young people in the high schools. This service is conducted in cooperation with the Department of English of the University.

Bureau of Extension Classes—Local extension classes are organized under the direction of the University Extension Division in some of the larger communities of the State. A request from 10 or more prospective students will usually be deemed sufficient for considering the organization of a class in a selected subject carrying regular college credit. A nominal registration fee is charge for all courses.

Bureau of General Information—The University Extension Division is willing and eager to respond, to the extent of its ability, to requests for general information, whether or not in direct connection with University work.

Bureau of Lecture Service—Lecturers can be secured for Commencements or other special occasions. Speakers can also be provided for educational lectures or lecture courses. This service is free, but the organization receiving this service is asked to meet the lecturers' expenses for traveling and subsistence.

Bureau of Loan Package Library Service—Library packages, made up of materials bearing upon vital current topics, are available for institutions, organizations, or individuals. These packages consist of books, pamphlets, and newspaper and magazine clippings; they are loaned for periods of two weeks. This service is conducted in cooperation with the University Library.

Bureau of Lyceum Activities—University talent as represented in lectures, readings, music, dramatics, and related arts will be introduced to interested communities of the State as often as opportunity permits.

Bureau of Reading Courses—Reading courses are offered in a number of subjects covering a wide range of the world's best literature, biography, and history, as well as a number of trades, industries, and sciences. These courses have been prepared by the United States Bureau of Education and the American Library Association. They are designed for the benefit of persons, who, without thought of college credit, desire to pursue reading along definite lines. A nominal fee will be charged for the reading course pamphlets.

Bureau of School and Community Dramatics—Advice and help is offered in organizing dramatic clubs, and in the solution of specific problems of any nature encountered in choosing and staging plays. A loan library of one-act and full-length plays is being built up as rapidly as possible for the use of the people of the State. All plays and books are loaned for a period of two weeks.

Bureau of University News—News items concerning the University community are released to the newspapers and interested periodicals of the State, through a regularly established news service.

Bureau of Visual Education—Moving pictures and stereopticon slides are available, upon payment of a nominal rental or service charge, to institutions, organizations, or individuals equipped with suitable projectors. Exhibitors pay the express or parcel post charges on all shipments of pictures.

GENERAL INFORMATION

Units of credit, earned through correspondence or extension classes, may be presented in partial or complete fulfillment of requirements for the granting or renewal of teaching certificates in Arizona. Credit in the course "National and State Constitutions," is accepted by the State Board of Education in fulfillment of the law requiring each teacher to pass an examination in this subject.

The courses of the Extension Division do not offer a short cut; they are organized to coincide as closely as possible with the corresponding courses offered in residence at the University, and are usually given by instructors having charge of similar residence courses.

The chief merit of correspondence courses and extension classes is that they offer the isolated student, the teacher, the housewife, and the business man, the opportunity and advantage of pursuing studies under University tutelage and for college credit, at home and in spare hours.

Address all inquiries to the Director, University Extension Division, University of Arizona, Tucson.

REGULATIONS GOVERNING CREDIT COURSES

Correspondence courses or extension classes may not be undertaken by a student while in regular attendance at an institution of learning without the knowledge and written consent of the authorities of such institution. Students registered for residence work at the University of Arizona may not enroll for correspondence courses or extension classes without the written permission of the Registrar. Such permission must accompany the application for correspondence or extension instruction before registration will be accepted.

A maximum of 60 units of credit (semester hours) earned through correspondence, extension classes, or both, may be applied toward a bachelor's degree; however, the Extension Division does not necessarily undertake to furnish that number of suitable units to each applicant.

No preliminary examinations or general prerequisites are required for registration in correspondence courses or extension classes, except in

certain advanced courses. Credit will not be granted in those courses requiring prerequisites unless satisfactory evidence is presented that such prerequisites have been fully met. If the correspondence or extension class student should later come to the University, he must, of course, comply with the requirements for admission to residence courses.

A final examination or its equivalent is required in each course before credit is awarded. Examinations in correspondence courses may be taken either at the University or in the student's home town under conditions approved by the University Extension Division.

The Extension Division reserves the right to reject any registration for correspondence courses or extension classes if it feels that the best interests of the student or the Extension Division will not be served through such registration.

CORRESPONDENCE COURSES

Correspondence courses may be begun at any time of the year and may be completed as rapidly as the character of the work will permit. Students are allowed a maximum of 12 months from date of registration in which to complete the work for which they have registered. If work is not completed within the allotted time, a time extension of 12 months may be secured through the payment of a nominal fee for each course. This time extension privilege may be exercised only within 12 months from date of expiration of the original registration.

Students may register for as many courses at a time as they feel they can pursue with profit; however, experience has proved that students profit more who register for not more than two or three courses at a time.

Each correspondence course is presented in a number of assignments, as a 2- or a 3-unit course, depending upon the nature and content of the subject. Approximately 6 hours of preparation are expected on each assignment, since an assignment represents approximately a week's work in residence. Students are expected to purchase their own texts and supplies.

Registration fees are arranged on the basis of the number of units in a given course, at the rate of \$5.00 per unit. Fees will ordinarily not be refunded because of a student's inability or unwillingness to pursue a course which he has begun. If no work has been done on the course and the student wishes to withdraw his registration, all fees will be refunded with the exception of a nominal sum to cover registration costs. A nominal charge will be made for transferring enrollments from one correspondence course to another; such enrollment transferral being allowed only if no work has been done by the student on the original course. Should a student request a second examination in a correspondence course a nominal fee will be charged for the accommodation.

EXTENSION CLASSES

Extension classes meet regularly with University instructors and comply with the University regulations as to course content, prerequisites, total number of class recitation hours, final examination, etc. The time and length of individual class recitations may be decided mutually between the instructor and the students at the first meeting of the class.

An extension class in a particular subject will be organized only if 10 or more paid registrations are secured. If the class is organized the instructor will notify the students, advising them of the place and time of the first meeting of the class. If the class is not organized, all fees will, of course, be returned.

Each extension class is offered as a 2- or a 3-unit course. In a 2-unit course a minimum of 27 recitation clock hours will be required, whereas 40 recitation clock hours will be required for a 3-unit course. Registration fees are arranged on the basis of the number of units in a given course at the rate of \$5.00 per unit. Auditors are required to pay the registration fee, but need not submit themselves to recitations or examinations. Auditors do not earn credit for courses audited. Fees will ordinarily not be refunded because of a student's inability or unwillingness to pursue a course which he has begun.

Residence credit will be allowed for all extension classes conducted in Tucson by University instructors under conditions similar to those governing regular residence classes, provided that the student desiring such residence credit has previously taken, is taking, or shall subsequently take, regular residence work at the University.

Graduate courses given as extension classes in Tucson by the University Extension Division will be allowed graduate credit when they meet all the requirements of those courses offered on the Campus, and are taught by instructors of the regular University staff, who in regular sessions teach upper-division work. Graduate credit will also be given for upper-division courses which meet the requirements just stated, if the student has registered for graduate credit with the consent of the instructor and the Graduate Study Committee, and provided the student receives a 1 or 2 in the course.

ARIZONA STATE MUSEUM

The Arizona State Museum, established by law as an integral part of the State University, is maintained as an educational factor in the institution and the State. Its chief aim is to present the life history of Arizona and the great Southwest. Its archaeological collections emphasize the conditions and the achievements of the ancient Cave, Cliff, and Pueblo peoples of the region; and its ethnological collections present the manufactured products of the various modern Indian tribes. Its natural history collections show the bird life of the State and present many other forms of animal existence. Through gifts, exchanges with other museums, and by purchase, the Museum has secured numerous specimens representing other lands and other ages of culture.

During the past year through the kindness of Dr. Charles Van Bergen, the Los Angeles-Van Bergen Expedition presented the Arizona State Museum a fine model of the ancient pueblo, uncovered by them near Casa Grande ruins, and an excellent collection of early red-on-buff pottery and stone implements from the Grewe site, also near Casa Grande ruins.

Mr. Harold S. Gladwin of the Gila Pueblo, presented the Museum with a good collection of pottery from eastern Arizona and typical sherds from many sites in the Southwest with full data accompanying them.

The National Museum at Washington has sent the Museum a small collection of pottery from the Elden Pueblo near Flagstaff, and some stone implements and sherds from other sites.

Many other smaller collections have been received from individuals and the University Expeditions have added very materially to the Museum collections.

Thus it is possible to gather in Arizona not only a rich collection representing the southwestern United States, but also sufficient from other regions to have a reasonable basis of comparison with other lands.

The Arizona State Museum now is on the first floor of the Stadium Building, just north of Sixth Street on Vine Street, and is easily reached by automobile. It is open to the public every week day during the college year from 9:00 a. m. to 5:00 p.m., and on Sunday from 2:00 to 4:00 p. m.

STEWARD OBSERVATORY

The principal instrument of the Steward Observatory is the reflecting telescope of 36 inches aperture, one of the largest instruments on any university campus. Its three focus arrangements, of 15, 45, and 110 feet, allow unusual flexibility of operation and use. The work of the instrument is almost exclusively photographic and has resulted in some 1,600 photographs of the moon, Mars, stars of variable brightness, and the extra-galactic nebulae ("Island Universes").

Observational equipment further includes, for patrol and photometric work, a 5-inch Cooke-type camera of 30 inches focus and an F:4.5 Tessar lens of 10 inches focus, and, for solar and instructional purposes, a 4-inch Brashear refractor, in a building of its own. For the measurement and reduction of photographs there are a Hartman microphotometer, a screw comparator, comparison microscopes, and a computing machine.

Besides numerous small pieces of apparatus, mainly for instruction and demonstration, are a fine Howard mean time clock mounted in a temperature control room in the pier of the reflector, and a long-range radio receiving set for time service. During the year 1926-27, the position of the Observatory was established with reference to United States Geological Survey data, as follows:

Latitude N $32^{\circ} 13' 59.4''$

Longitude W $110^{\circ} 56' 55.2''$

Altitude above mean sea level 757 meters.

In addition to observational work and instruction, an extensive investigation of past climatic conditions in the Southwest, as revealed by tree growth and as related to sun-spot variation, is in progress, by means of a special periodograph and other auxiliary equipment devised here.

Throughout the academic year the Observatory is regularly open to the public after eight o'clock on Tuesday evenings, in clear weather, for observation of the moon, planets, and other objects of interest, with the large telescope. The normal attendance is about 75, but it is sometimes as high as 300. Nearly 2,500 people are thus accommodated annually, many of them from schools in and near Tucson.

**INSTITUTIONS AFFILIATED
WITH THE
UNIVERSITY**

ARIZONA STATE LABORATORY

Jane H. Rider, C.E., Director.

Marion E. Stroud, Bacteriologist.

W. B. West, B.S., Asst. Bacteriologist.

The State Laboratory, located in the south wing of the Old Main Building, was established in 1912 by an act of the Legislature to enforce the provisions of the Pure Food Law and to perform any duties requested by the Board of Regents of the University of Arizona, acting in joint session with the Superintendent of Public Health. A branch laboratory was opened in the Arizona State Building, Phoenix, on July 1, 1931. This is in charge of Marion E. Stroud, State Bacteriologist.

The Superintendent of Public Health has requested the Laboratory to perform any work of a public health character which various county and municipal health officers may request. This includes sanitary surveys of public water supplies, the inspection of sewage and garbage disposal plants and tourist camps, and the laboratory examinations of foods, water, and material from suspected cases of infectious diseases.

Any health officer or the Superintendent of State Institutions may request insulated shipping containers with sterile bottles for the collection of water samples to be sent to the Laboratory for bacteriological examinations. These containers hold sufficient ice to keep the samples in good condition during transit.

The President of the University has arranged to have advanced students in biology use the facilities of the Laboratory in working on research problems, when such study is recommended by the head of the department.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF BIOLOGICAL SURVEY

Predatory Animal and Rodent Control

- D. A. Gilchrist, Associate Biologist, Regional Supervisor, Rodent and Predatory Animal Control.
B. E. Foster, Assistant Biologist, Leader, Rodent and Predatory Animal Control.
C. E. Gillham, Assistant Leader, Rodent and Predatory Animal Control.
-

Biological Investigations

Walter P. Taylor, Ph.D., Senior Biologist, in Charge, Tucson Field Office.

ORGANIZATION AND OBJECTIVES

The Bureau of Biological Survey is concerned with the wild life of the country. It conducts operations and disseminates information through six divisions, three of which are engaged chiefly with research, (Biological Investigations, Food Habits, Fur Resources), one with control measures, (Predatory Animal and Rodent Control), one with the administration of reservations and laws for the conservation of wild life, (Game and Bird Conservation), and one with the survey and acquisition of lands for migratory bird refuges. Studies include biological surveys of major areas, the life histories, geographic distribution, classification, abundance, and food habits and natural feeding grounds of native birds, mammals, and other wild vertebrates, and native plant relationships, as a basis for the educational, control, service, and regulatory work of the bureau and cooperating agencies. Expert leadership is furnished in cooperation with State and other organizations to limit the destructiveness of injurious species.

The scope and importance of the rodent and predatory animal control work by the Biological Survey in Arizona are well known. Rodent control activities (concerned especially with jack-rabbits, prairie dogs, pocket gophers, and ground squirrels) are conducted in close cooperation with the Agricultural Extension Service of the University of Arizona, while the Arizona Livestock Sanitary Board cooperates in the predatory animal control work (which is directed particularly toward reducing losses in livestock and wild game from mountain lions, coyotes, bobcats, and wolves).

Provision is made in Room 310, Agriculture Building, for the work of the field office of the Division of Biological Investigations. Active projects are under way on the biology of forest and grazing range, including life histories of certain rodents as the porcupine, tassel-eared tree squirrel, the jack-rabbits; amount and character of forage consumed by prairie dogs; studies of wild game with special reference to deer; rodents as related to the Roosevelt water-shed; and general influences of vertebrate life, especially birds and mammals, on forest and range.

A principal objective of this office is to furnish information useful in wild-life, forest, farm and range management in Arizona and the Southwest. Much of the work is cooperative with the University of Arizona Agricultural Experiment Station.

UNITED STATES BUREAU OF MINES

SOUTHWEST EXPERIMENT STATION

E. D. Gardner, Supervising Engineer
George M. Babcock, Principal Clerk

METALLURGICAL SECTION

Victor H. Gottschalk, Senior Physicist
William A. Sloan, Assistant Chemist
_____, Associate Metallurgist
Frank S. Wartman, Assistant Metallurgist
Alfred P. Towne, Metallurgical Assistant

MINING SECTION

Chas. H. Johnson, Assistant Mining Engineer
Catherine E. Ray, Senior Typist

ORGANIZATION AND PURPOSE

The function of the United States Bureau of Mines of the Department of Commerce, as prescribed in its amended organic act, is to conduct scientific and technologic investigations in the field of mining and metallurgy, with a view to increasing safety and efficiency in the mineral industries. The Bureau is essentially a field organization, with administrative and technical headquarters in Washington, D. C. At present there are eleven experiment stations located at: Salt Lake City, Utah; Rolla, Mo.; New Brunswick, N. J.; Minneapolis, Minn.; Seattle, Wash.; Berkeley, Calif.; Bartlesville, Okla.; Pittsburgh, Pa.; Reno, Nev.; Birmingham-Tuscaloosa, Ala.; and Tucson, Ariz. Field offices are also maintained at various points.

In most cases the mining experiment stations are established at the state universities, and are doing direct cooperative work with the state institutions in the investigation of the metallurgical and mining problems that are most important to their respective districts. The special field of the metallurgical section of the station at Tucson is the metallurgy of copper; the staff of the division is actively engaged in the investigation of the principal problems confronting the copper industry of the Southwest, such as the treatment of oxidized and partly-oxidized disseminated copper ores.

The mining section is conducting an investigation of mining methods and practices in metal mines in which stress is given to the relation of the methods used to rock structure and the factors affecting costs and choice of methods.

Laboratories and offices have been provided for this station in the south wing of the Mines and Engineering Building. The equipment is adapted to the investigation of concentration, leaching, roasting, and smelter problems on a scale ranging from hand samples to several tons.

FOREST SERVICE

SOUTHWESTERN FOREST AND RANGE EXPERIMENT STATION

G. A. Pearson, M.S., Director.

Forest Research

G. A. Pearson, M.S., in Charge
Hermann Krauch, B.S. E. M. Hornibrook, B.S.

Range Research

C. K. Cooperrider, B.S., in Charge
B. A. Hendricks, B.S.; H. O. Cassidy, B.S.; E. S. Bliss, B.S.
Santa Rita Experimental Range—Matt J. Culley, in Charge
Paul B. Lister, M.S.
Jornada Experimental Range—R. S. Campbell, M.S., in Charge.
R. H. Canfield, M.F.

Forest and Range Influences

C. K. Cooperrider, B.S., in Charge

The Southwestern Forest and Range Experiment Station occupies a suite of rooms on the third floor of the Agriculture Building on the University Campus. This Station is responsible for the research work connected with the conservation and utilization of timber, forage, and water resources in the national forests of Arizona and New Mexico, embracing an area of some thirty million acres of forest and range land. The organization includes three departments: Forest Research, Range Research, and Forest and Range Influences.

FOREST RESEARCH

Problems concerning the management of forests are studied under field conditions. Among the investigations in progress are: natural regeneration, including the influence of both natural and artificial factors such as soil, climate, plant competition, lumbering, grazing, fire and biotic agencies; studies of limiting factors in different forest associations; rate of growth of different species of trees under different conditions; forest planting and nursery problems. A field station at Fort Valley near the foot of the San Francisco Mountains, altitude 12,700 feet, provides an excellent base for a study of life zones in different altitudes ranging from the lower to the upper climatic limits of tree growth. Physical factor stations in these zones or "forest types" have already established fairly definite relationships between climate and tree distribution. A large number of "permanent sample plots" on which records of several thousand trees have been maintained for twenty years or more are located in different forest associations in Arizona and New Mexico.

RANGE RESEARCH

Research is conducted on a number of sheep and cattle ranges within the national forests, and on two experimental cattle ranges originally withdrawn as range reserves, namely: the Jornada, located near Las Cruces, New Mexico, and the Santa Rita, at the foot of the Santa Rita Mountains south of Tucson, Arizona.

The research units are engaged in determining the many factors that influence the productivity of forest and range lands, as well as the economic production of livestock on the range, and of isolating those factors so that the relative influence of each may be more fully understood by those directly or indirectly dependent upon the range industry, or engaged in the administration of range lands.

On the special experimental ranges general problems of range management, as forage use, maintenance and production are studied as well as those pertaining to the particular types of semi-arid range lands represented.

Work on the national forests is primarily concerned with the solution of those particular problems that face the forest user and administrator. It must necessarily take into account, study, and correlate with range management other land uses and values. For example, present primary range projects include a study of natural regeneration of cut-over pine forest, and involve investigations to determine the relation of vegetation and its use to soil maintenance, soil erosion, and stream-flow.

FOREST AND RANGE INFLUENCES

Water and the natural products of the soil were a free bonanza to pioneer development of the Southwest. Today the perpetuation of existing and new developments, that are dependent upon the delivery of usable water, governs the future of existing and new populations, their standard of living and economic structure. Likewise, the economic maintenance of transportation and highway systems is dependent upon flood control, and the productivity of range and forest lands is dependent upon soil stability.

Investigations in progress are field studies conducted on the Salt River watershed. They are intended to determine whether vegetation may be employed as the primary means to safeguard waterflow and to control erosion; and, if so, whether in a natural state or one modified by cutting and grazing, and also, to determine the measures necessary to protect soil and moisture from the ravages of erosion so that they may be conserved for the growing of forest and forage crops, and to deliver the maximum amounts of usable water for irrigation, municipal use, power, etc.

UNIVERSITY RECORD
1931-1932

CANDIDATES FOR COMMISSIONS

SECOND LIEUTENANT COMMISSION IN THE UNITED STATES OFFICERS' RESERVE CORPS

The following graduates of the Reserve Officers' Training Corps, University of Arizona, received commissions as Second Lieutenants, Cavalry, Officers' Reserve Corps, U. S. Army:

*Thomas Scott Algert
John Gist Anderson (Honor Graduate)
Abbott Harrington Burns
Karl Douglas Butler
Harry Vincent Chambers
*Thomas Laurin Chambers, Jr.
*David Franklin Durand
Frank Howard Evans
Joe Fishback
James Edward Flynn
Thomas David Henderson
*James Culberson Herndon
Harry Inman Irvin
Dallas Franklin Kilcrease
Paul John Klingenberg
Thomas Lloyd Long
James Daniel McGuire
Herschel Harvey McMullen
Lewis Clark McVay
Guy Henderson Murphy
Harvey Alexander Mylander
Glenn Allan Poole
Lawrence William Roberson
Kenneth Fairfax Sagar
Douglas Alvin Sheffield
Moyers Sidney Shore (Honor Graduate)
Homer B. Smith, Jr.
*Justin Mack Smith
Adolph Ferrin Solomon
Frederick Miller Sperry
Henry Russell Spicer
Ralph Theodore Thompson
Lucian Sidney Wells
Ted G. Woods
Stanley Archer Young

*The graduates marked with an asterisk receive certificates of eligibility for commissions, not having attained the age of 21 years.

DEGREES CONFERRED JUNE, 1931

COLLEGE OF MINES AND ENGINEERING

BACHELOR OF SCIENCE IN CIVIL ENGINEERING

Earl Robert Bennett	Paul Frederick Glendening
Southard Burdsal	Clare Hepworth
MacKay Coleman	Robert Lochard Houston
Chester Melcenia Cowen	Hubert Shipley Hunter
William Elton Dail, with highest distinction.	Nicholas Gregory Korneeff
Jacob Erickson	Leo Lauri Laine
	Herschel Harvey McMullen
	Myron John Nelson

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING

Weldon Thomas Brinton	Otto Kempe Mangum
Anton Wenzel Fraps, with distinction.	Ricardo Manzo
Jesse Franklin Henderson, Jr.	Frank Julius Rietz, with distinction.
Carl Albrecht Ludy	Chesley J. Sabin
John Alton McBride	Barney Arthur Shehane
C. Stanley McKinley	Clarence Seth Wilcox
	William Thomas Wishart

BACHELOR OF SCIENCE IN MECHANICAL ENGINEERING

Lloyd Ross Burch, with distinction.	Harvey A. Mylander
John Wilson Cowin	Warren T. Smith
Lewis Allen Hurst	Stanley Llewellyn Stewart

BACHELOR OF SCIENCE IN MINING ENGINEERING

James Seldon Baker	William Horton Fowler
Jose Luis Campana	Frederick Elon Johnson
Mark Walsh Clardy	Karl Henry Koropp
James Bishop Fletcher	William Harold Stephens

PROFESSIONAL DEGREES

John Paul Harmon	Administrative Engineer of Mines
Richard Bennett	Civil Engineer
Glenton G. Sykes	Civil Engineer

COLLEGE OF LAW

BACHELOR OF LAWS

Theos Casimir Bernard	Clair Raymond DuVall
Virgil William Chandler	Lee Garrett
James Elmer Day	James McKinny Howsare
Joseph Leo Dunigan	John Mercer Johnson

Francis Edward Jenney, **with high distinction.**
 John Hubbard Joss
 Stanley Wise Kimble
 Abner Lipscomb
 Nolen Leonard McLean
 Harvey Karl Mangum, **with distinction.**
 Francis Joseph Ryley
 Robert Richard Stroud, **with distinction.**

JURIS DOCTOR

Leandro Enrique Anaya
 Albert Wesley Gurtler
 Richard Henry Hecker
 Henry Sabin Stevens

COLLEGE OF EDUCATION

BACHELOR OF ARTS IN EDUCATION

Major

Effie Edwards Autry	Education
Eunice Mary Babbitt	English
Shiela Virginia Baker, with distinction	Spanish
Helen E. Bloom, with high distinction	Spanish
Victor DeWitt Brannon, with high distinction	History
Margaret Louise Brownlee	English
Elsie L. Burson	English
Margaret Carnighan	Spanish
Margarita Amparo Castaneda	Spanish
Alfa C. Christianson, with distinction	Spanish
Winnie Belle Cochran	Spanish
Verna White Conger	Art
Carrie Capitola Cotner	Education
Ruth Isabelle Cowin	Education
Elizabeth Ahearn Cronin	English
Edith E. Culley	Education
Waldo M. Dicus	Economics
Henrietta Scott Elvey	History
Ruth Borger Fitzgerald	Education
Elizabeth Jane Fishback, with distinction	Spanish
Donn Marcos Freasier	Spanish
Marjorie Leah Freberg	English
Maria Luisa Gabaldon	Spanish
Genevieve Gardner	English
R. Eldine Gharst, with distinction	History
Marybelle Darrow Goodell	Spanish
Mary Gertrude Greiner, with distinction	English
Helen Hawkins	History
Grace N. Herrick	Education
Isabelle Dolores Howatt	Spanish
Ruth E. Hoyt	History
John Walter Hughes	English
Edna LaVerna Johnson	English
Nelle Miller Johnson	Education
Kiah Kathleen Kendrick, with distinction	Spanish
Nona M. Korfhage	History
Ana Mae McGrath	Art
Lorna B. McMonagle, with distinction	Spanish

Adele Frances Mearns, with distinction	English
Tillie Claire Mendelowitz	Spanish
Harriet Huntington Miller	English
Anah Belle Monroe, with high distinction	Education
Marion Lucille Moore	English
Aurora Beatrice Moralis	Education
Dorothy Virginia Morton	English
Beulah Viola Nelson	Education
Louise Mae Reed	History
Verna Iva Reed	English
Edith Mary Roberts	Education
Ellen M. Robertson	Education
Virginia Alice Rosenfeld	English
Allie Burchard Russell	Mathematics
Catherine Genevieve Cecilia Schilling	Spanish
Alice M. Smith	English
Blanche Steuer	Education
Jacob Sweeney	Spanish
Margaret Mary Sweeney	History
Ethel Irene Twitchell	Art
Katherine Margaret Van Buskirk, with distinction	Education
Agnes M. Wallace	History
Lyla Genella Wilson	English

BACHELOR OF SCIENCE IN EDUCATION

	<i>Major</i>
Lucy Elizabeth Akin	Physical Education
Fermin Deogracias Esquerria	Mathematics
Lois LaVaughn Fox	Mathematics
Margaret Patricia Hedderman	Physical Education
Fern Marjorie Johnson	Biology
Aileen Agnes Maiden, with distinction	Biology
Vance H. Marchbanks, Jr.	Biology
Mary Agnes Mathiesen	Physical Education
La Venda Mattice	Physical Education
Marjorie Kinney Miller	Physical Education
Harold A. Patten	Physical Education
Gertrude Lester Paxson	Home Economics
Doratheia Plath	Physical Education
Joanna Stretch Reeves	Education
Elizabeth Anne Struthers, with distinction	Chemistry
Donald Loomis Webb, with high distinction	Mathematics
Hazel Josephine Williams	Physical Education
Vera Walden	Physical Education

COLLEGE OF AGRICULTURE

BACHELOR OF SCIENCE IN AGRICULTURE

Parley Pratt Cardon	Fay Wesley Richardson
Jesse Victor Langdon	Edward Carmack Tatum
John Mark McLernon	Stephen Bryan Tatum
Edward S. McSweeny	Emory Alvon Telford

Charles P. Thompson

Thomas Daniel Watson

William Palmer Stockwell, **with high distinction.****BACHELOR OF SCIENCE IN HOME ECONOMICS**Marion Savoye Dudley, **with high distinction**

Christine Garcia

Geneva Hofmann

Nancy Drake Rhuart

Hannah Romney, **with high distinction.****COLLEGE OF MUSIC****BACHELOR OF MUSIC**

Dallas Franklin Kilcrease

Ellen Arleen Slette

COLLEGE OF LETTERS, ARTS, AND SCIENCES**BACHELOR OF ARTS***Major*

John Gist Anderson

Betty Burrell Atkinson

Myron Stern Bachenheimer

Howard Thomas Barkley

Thomas Henry Bate, Jr.

David Molloy Cameron

Archibald Hagar Cashion, **with high distinction**

Nancy Emily Chase

Stanley Wilford Cissna

Edythe Southard Cobbe

Ruth Anastasia Coles

Florence Bell Collier, **with distinction**

Lucille Collins

Virginia Lanier Culbertson, **with distinction**

Eleanor Hughes Cunningham

L. Clark Davies

Rodger Davis, **with high distinction**

Helen Elizabeth Dunbar

Rosario Salazar Espinosa

Katharine Marion Freeman

Mary Fehr Gries

Olga Marie Hamlin

Marion J. Hammill

John F. Hart, **with distinction**Charles Johnston Hitch, **with highest distinction**

Cecil Edward Hoffman

Matt. Henry Holtzen

Helen Elizabeth Johnson

Charles Vernon Kinter

Margaret Koons

History

English

Philosophy

Biology

Biology

Zoology

English

English

English

French

History

Biology

English

English

Biology

History

Economics

Archaeology

English

Archaeology

Psychology

History

History

Biology

Economics

History

History

English

English

English

Robert Frederick Krause	History
Marguerite Heckman Leshner, with highest distinction	French
Alfred Louis Levy	Economics
Lillie McAlister	History
Veronica Agnes McDonald	English
John Charles McGregor	Archaeology
Edwin D. Merwin	Romance Languages
Linda Michaelson	Spanish
Caroline Stockwell Montague, with distinction	Philosophy
Clinton James Mumby	English
Arthur R. Myattway	English
Fred Clayton Noon	Economics
Spencer Peet Nordyke	History
Adrance W. Perkins	English
Mary Emmeline Pope	History
Norma Katharine Richter	French
Eleanor Riddle	Economics
Milton O. Riepe	English
Dwight Leonard Ryerson, with distinction	Biology
Mary Hines Sattler	English
Virginia Curtis Savage	English
Benjamin Soper Shantz	Economics
Moyers Sidney Shore	Mathematics
Frederick Miller Sperry	Economics
William Sidney Stallings, Jr.	Archaeology
Barbara Carol Stradling	English
Nancy Tate	History
Frances Taylor	English
John Orr Theobald	Spanish
William McIlvain Thompson, Jr.	History
Helen Adelaide Tillson	Romance Languages
Chet W. Wadsworth	Economics
Howard Otis Welty, Jr.	English
Florence Williams Wenner, with high distinction	English
Clark Thomas White	History
Virginia Wright, with distinction	Spanish
Alexander Francis Ziede	History

BACHELOR OF SCIENCE

Irvin John Blondon	Chemistry
Mary Ellen Campbell	Mathematics
Joseph Emmett Carpenter, with high distinction	Chemistry
John Richard Dull	Mathematics
Elbert Osborn Foster	Chemistry
Heinz Haffner	Biology
Simon Kinsman, with distinction	Chemistry
Benjamin Paul Korod	Physics
Stuart Franklin Krentz	Chemistry
Dermont Wilson Melick	Biology
Robert Seay Sigler	Geology
Frederick Robert Stofft	Geology
August W. Zahner	Chemistry

BACHELOR OF SCIENCE IN BUSINESS ADMINISTRATION

George E. Antonick
 William Carlos Avery, **with high distinction**
 Josephine Barnes
 William W. Brostrom, Jr.
 Margaret Caldwell
 James Weston Crotty
 Pauline Mae Fariss
 Margaret Mary Finnerty
 Harold R. Forsnas
 Rolland Joseph Goodell
 Alice M. Jones, **with distinction**
 Robert Clair Kepple
 Jules Louis Krentz
 Theodore Kruger
 Grant Morgan McGregor

Oliver C. Pinson
 Percy Walter Pogson, Jr.
 Charley Domico Quarelli
 Louis Oscar Roberts
 Ronald Vernon Robinson
 Laurence Sidney Rundle
 Louis Sands, Jr.
 Ernest Clair Slosser
 Charles Theodore Taylor, **with distinction.**
 Raymond William Tewksbury
 Alfred P. Towne
 Stuart E. Treadwell
 Ted G. Woods
 Robert Ephraim Yount

Edward Theodore McCormick, **with high distinction.**

ADVANCED DEGREES**MASTER OF ARTS**

Genevieve Mary Ashby	<i>The Development of Guidance in Secondary Schools.</i>	Major Education
Mary G. Boyer	<i>The Growth of the Soil in the Literature of Arizona.</i>	English
Madge S. Burt	<i>A Critical Evaluation of the Status of Physical Education in the High Schools.</i>	Education
Mildred H. Felmley	<i>T. E. Brown as Revealed in His Letters and Poems.</i>	English
Norman E. Gabel	<i>Martin Hill Ruins, An Example of Prehistoric Culture of the Middle Gila.</i>	Archaeology
Frances Gillmor, with distinction	<i>A Biography of John and Louisa Wetherill.</i>	English
Charles G. Hampton	<i>The Interest of the People of Indiana in Public Education.</i>	Education
Murel W. Hanna	<i>An Archaeological Review of Middle Gila Culture.</i>	Archaeology
Louise T. Houghton	<i>An Analysis of the Characteristics of the Spanish Picaresque Novel.</i>	Spanish
Clarence Wm. Hunnicutt	<i>A Study of Past and Present Relationships Between the Federal Government and Public Education in the United States of America.</i>	Education
Mary Edith Keeth	<i>Two Forms of an Objective Standardized Tennis Test.</i>	Education
John L. Larkin	<i>A Study in Prediction in the First Year College English Classes of the University of Arizona in 1929-1930.</i>	Education
Mary Margaret Lockwood	<i>Pioneer Life as It Is Reflected in American Literature.</i>	English

Albert Jesse Lovelee	Spanish
<i>The Anti-clericalism of Juan Montalvo.</i>	
George Joseph Peak	Education
<i>Relative Achievement of English-speaking and Spanish-speaking Children.</i>	
Jean Provence	English
<i>The Historical and Romantic Elements in John Ford's "Perkin Warbeck."</i>	
Alice Senob	Spanish
<i>Pardo Bazan and Naturalism.</i>	
Charles Foster Todd	History
<i>The Initiative and Referendum in Arizona.</i>	
Margarette A. Walker	Education
<i>An Historical and Critical Evaluation of the Accomplishment Quotient.</i>	
Virginia Ruth Youel	French
<i>Henry Bataille as an Exponent of Contemporary French Drama.</i>	

MASTER OF SCIENCE

George T. Bazzetta	Major Chemistry
<i>The Methylation and Ethylation of Mesquite Gum.</i>	
Stephen Lincoln Brown	Metallurgy
<i>Dissolution of Some Common Copper Minerals.</i>	
Vinton A. Brown, with distinction	Physics
<i>A New Method of Measuring the Intensity of X-rays.</i>	
Hosny El Melehy	Poultry Husbandry
<i>The Correlation Between the Orthodox and Steup's Systems of Culling with Annual Egg Production.</i>	
Rudolph Carl Gebhardt, with distinction	Geology
<i>Geology and Mineral Resources of the Quijotoa Mountains.</i>	
David C. Minton, Jr.	Metallurgy
<i>A Study of Some Recent Advances in the Metallurgical Treatment of Gold Ores with Emphasis on the Effects of Primary Mine Slime.</i>	
Edward K. Pryor	Metallurgy
<i>Factors Governing the Oxidation of Iron Solutions Used as Solvents in Leaching Copper Ores.</i>	
Floyd Herbert Russell	Chemistry
<i>The Composition of Lemon Gum.</i>	
Alex Levine Solow	Metallurgy
<i>Rate of Entry of Solutions into Ores During Leaching as Affected by the Gases Entrained in the Voids Within the Ore Particles.</i>	
Homer E. Stavely	Chemistry
<i>The Chemical Structure of an Aldotetronic Acid Resulting from the Partial Hydrolysis of Cholla Gum.</i>	
Walter L. Thomas	Geology
<i>Geology and Ore Deposits of the Rosemont Area, Pima County, Arizona.</i>	

DOCTOR OF PHILOSOPHY

Carl Lausen	Economic Geology
<i>Gold Veins of the Oatman and Katherine Districts, Arizona.</i>	

HONORS AND PRIZES

COUNTY SCHOLARSHIP AWARDS 1931

The counties are given in the order of the grades made by the contestants, the highest first.

MARICOPA COUNTY

Herbert Rhodes, Holder of Scholarship, Phoenix.
_____, Alternate.

GREENLEE COUNTY

James T. O'Neil, Holder of Scholarship, Clifton.
Tindall Cashion, Alternate, Clifton.

GILA COUNTY

Ralph C. Clifford, Holder of Scholarship, Globe.
Jack P. Zapp, Alternate, Globe.

PIMA COUNTY

John F. Rauscher, Holder of Scholarship, Tucson.
Mary Alice Harper, Alternate, Tucson.

COCHISE COUNTY

Harry Lusk, Holder of Scholarship, Douglas.
_____, Alternate.

PINAL COUNTY

Consuelo Howatt, Holder of Scholarship, Ray.
Moses Brown, Jr., Alternate, Ray.

YUMA COUNTY

Mary Sue Wentworth, Holder of Scholarship, Yuma.
John Vomocil, Alternate, Gadsden.

YAVAPAI COUNTY

Lorene Beverly Putsch, Holder of Scholarship, Prescott.
William Emmett Hicks, Alternate, Prescott.

NAVAJO COUNTY

Albert Hetherington, Holder of Scholarship, Joseph City.
_____, Alternate.

MOHAVE COUNTY

William Pitt Turner Jr., Holder of Scholarship, Kingman.
_____, Alternate.

COCONINO COUNTY

Grant Anderson, Holder of Scholarship, Flagstaff.
_____, Alternate.

SANTA CRUZ COUNTY

Arlo Richardson, Holder of Scholarship Patagonia.
_____, Alternate.

THE PRESIDENT'S CUP AND SCHOLARSHIP

The cup was awarded as follows:

1919-1920—Tucson High School
 1920-1921—Tombstone High School
 1921-1922—Prescott High School
 1922-1923—Chandler High School
 1923-1924—Ajo High School
 1924-1925—Safford High School
 1925-1926—Nogales High School
 1926-1927—Casa Grande High School
 1927-1928—Yuma High School
 1928-1929—Tombstone High School

The cup and scholarship have been awarded as follows:

1929-1930:

Cup—Prescott High School
 Scholarship—Lorene Putsch

1930-1931:

Cup—Morenci High School
 Scholarship—Not yet awarded

THE UNIVERSITY CUP AND SCHOLARSHIP

The cup and scholarship have been awarded as follows:

1929-1930:

Cup—Tucson High School
 Samuel Adams
 Mary E. Rechif
 Paul Roca
 Scholarship—Hester McNeeley

1930-1931:

Cup—Tucson High School
 Ruth Marian Noble
 Margaret Ruthmary Taylor
 Eunice Otis Williams
 Scholarship—Not yet awarded

COLLEGIATE SCHOLARSHIPS AND PRIZES**For General Scholarship and Attainment**

The Philo Sherman Bennett Scholarship	Catherine Morgan
The Collegiate Club Scholarship	Sheila Baker
The Merrill P. Freeman Medals	Marion L. Moore, Earl R. Bennett
The Dwight B. Heard Scholarships	
George Antonik, Frank Bacon, Betty Bandell, Theos Bernard, Lucile Best, Helen Bloom, K. D. Butler, Louise Enochs, John Franks, Geneva Hoffman, Willa Irene Hussey, Elizabeth Keller, Mary Leonard, Annette Masten, Francis Nemeck, William F. Norton, Alice Nowell, Mary Brown Onstott, Marion S. Reid, Adrian Roberts, Eldred Roberts, Hannah Romney, Stanley Stewart.	
The Inter-Fraternity Scholarship Cup	
The Mortar Board Cups—	
Freshman	Shirley James
Sophomore	Margaret Gardner

The Phi Kappa Phi Freshman Awards—

Oran Corbett, Richard H. Forster, Bertha Grasham, Ellen L. Greig,
Lillian Kline, Ruth M. Noble, Alice H. Nowell, Elwood Ryder, Mar-
garet R. Taylor, James Yee.

The Hattie Ferrin Solomon Award—

First Semester

Kappa Kappa Gamma

Second Semester

Alpha Phi

The Ella A. Stearns Award

Helen Bloom

The Woman's Club Scholarship

Gertrude Greiner

For Department Achievement**Chemistry—**

The Phi Lambda Upsilon Cup

Claudio Alvarez Tostado

Commerce—

The Alpha Kappa Psi Cup

Robert Cromwell

Economics—

The Chi Omega Prize

Margaret Caldwell

Education—

The Phi Delta Kappa Awards

Senior

Victor Brannon

Junior

Alex Frazier

The Pi Lambda Theta Award

Margaret Gardner

Engineering—

The Tau Beta Pi Cup

Clarence Wright

English—

Dramatics

The Tucson Players' Award

Nancy Gillespie, Mucio Delgado

Oratory

The Arizona State Junior College Prizes

Extemporaneous Speaking

Don Graves

Interpretative Reading

Dorothy J. Klink

Oratory

Louis Evans

The Byron Cummings Gold Medals

Sam Adams, Nolen McLean, Enrique Anaya, Byron Mock,

Jack Bryan, Mary Rechif, Mucio Delgado, Paul Roca, Don

Graces, Donna Leah Smith, William M. Thompson, Jr.

The Delphian Award

Donna Leah Smith

The Pacific Orensic League Prizes

Oratory

*Sam Adams

Extemporaneous Speaking

Paul Roca

Poetry

The Phebe M. Bogan Memorial Poetry Prize

Florence Wenner

Prose

The Fred Newton Scott Prose Competition

Rosalio Espinosa

Home Economics—

Home Economics Club Cup

Marion Dudley

Home Economics Scholarship

Anita Davis

Law—

Phi Delta Phi Award

1930

Rex E. Lee

1931

Harvey Karl Mangum

Mathematics—

The Julia Atkinson Keyes Award

Clarence Wright

Military—

The Powell Saber

Cadet Colonel Guy Murphey

The Scabbard and Blade Medals

Sophomore

Cadet Master

Sergeant Robert M. DeVault

Freshman

Cadet Oran Corbett

Music—

The Juilliard Foundation Scholarship

Heloise McBride

The Charles F. Rogers Cup

Alice Nowell

MILITARY ORGANIZATION

1931-1932

Howard C. Tatum, Lieut. Colonel, Cavalry, U. S. Army, Professor of Military Science and Tactics.
 Mack Garr, Major, Cavalry, U. S. Army, Assistant Professor of Military Science and Tactics.
 William R. Irvin, Captain, Cavalry, U. S. Army, Assistant Professor of Military Science and Tactics.
 Gene R. Mauger, Captain, Cavalry, U. S. Army, Assistant Professor of Military Science and Tactics.
 Nelson I. Beck, Technical Sergeant, U. S. Army, Instructor in Military Science and Tactics.
 Albert C. Falconer, First Sergeant, U. S. Army, Instructor in Military Science and Tactics.
 Frank B. Murphy, Sergeant, U. S. Army, Instructor in Military Science and Tactics.
 Wilbert L. McDonald, Military Property Custodian.
 Miss Mary Ann Cross, Secretary, Department of Military Science and Tactics.
 And a detachment of eleven Regular Army soldiers.

CADET OFFICERS

Colonel

John Boyd

Lieutenant Colonel

Wilbur Webb

Majors

Peter Kiernan

William W. Davies

Francis L. Nemeck

Captains

W. M. Vreeland

E. H. Andres, Jr.

E. Philip Hunziker

Frank Losee

William Lewis

Roy Lassetter

A. Bruce Knapp

Jack Ford

Ralph Ford

First Lieutenants

A. Harry Wilson

Henry Voss

Leonard E. Smith

F. Granville Angeny

John T. Cassady

Henry W. Defty

William VanDeman

Harold L. Rupkey

H. G. DeWolf, Jr.

Mark Finley

Charles Fruin

James Fruin

George Preston

Robert Thierry

Rodney Wirtz

A. Anton Frederickson

Lowell U. Hargus

E. G. Hoffsten

Allan Hood

Eugene Manzo

Gus Hugh Montgomery

Theodore Knipe

Charles H. Simon

Phil. Greven

Edwin J. Montgomery

William Norton

Milton Gorodezky

Franklin Fish

Elgin Sanders

Waldo Huber

Simon Kinsman

John Kittredge

J. D. Daniel

Second Lieutenants

George D. Anderson

Maurice Anderson

Frank C. Armer

A. Harry Buehman

Robert Burgess

Drexel D. Clark

William D. Clark

Fred J. W. Contzen

E. L. Courtright

W. Brunt Dawson

Robert DeVault

Edward T. Ford

W. M. Fulkerson

Leigh O. Gardner

George Glendening

George W. Green
Richard Grondona
George Horton
Hollis A. Hunt
J. J. Irvin
E. M. Jacobson
Kenneth A. King

Robert P. Kirk
Ralph Knowles
John Means
Merle W. Moore
Arthur L. Reynolds
John Sands
Hans Schou
T. Gray Wright

Robert A. Shimmin
James C. Stewart
John Troja
Maurice Webb
Paul Westerlund
Alfred Westerman
James H. Williams

Master Sergeant

James Yee

First Sergeants

George A. Ponsford
Bruce Layton

Paul Wm. Krznarick
James Taylor
Warren Gill

George W. Paul
John Burton
William Carter

Technical Sergeant

Clark deBleyker

Staff Sergeants

C. L. Story
E. F. Ryder

W. G. Ethel
Andrew White
Frank Clinton

Newton Sherburne
Richard Forester
H. March

Sergeants

Stewart DePoy
George F. Johnson
Wray Sagaser
Gordon Dale Brown
Van P. Batterton
Eugene Filbrun
John A. McNary
Louis Clark
Pete Kusianovich

Vincent R. Byrne
Glasgow Callicotte
Theodore White
Tom Rogers
Ferrin Solomon
C. H. Tacquard
C. Bate
Hugh Anderson
William Anderson
D. Teis

W. C. Merrill
Keith Mets
J. J. Jackle
M. Gunter
C. M. Posner
L. Lynn
Waldo Butler
L. Helm
O. D. Dierking

Corporals

W. C. Jack
Edward J. Krawczuk
N. McKelvey
R. C. Sims
Vaugh Hierholzer
W. Crowfoot
Arthur Davis
C. D. Grabert

C. Tuthill
K. F. Goodson
M. Haymore
M. F. Lynch
P. W. Riggs
E. L. Young
R. B. Bradley
D. Holmes

M. Walker
Allyn Fisher
John E. Taylor
W. McKinney
Charles Farrell
C. Felder
C. A. McLean
D. D. Baker

COLLEGIATE HONORS, SCHOLARSHIPS, ETC.

**Collegiate Honors
1930-1931**

Class Honors

Senior Scholars

Betty B. Atkinson
William C. Avery
Howard T. Barkley
Helen E. Bloom
Weldon T. Brinton

Lloyd R. Burch
David M. Cameron
Archibald H. Cashion
Alfa Christianson
Mark W. Clardy

Carrie C. Cotner
 William E. Dail
 Roger Davis
 E. Jane Fishback
 Anton W. Fraps
 John F. Hart
 Charles J. Hitch
 Nelle Miller Johnson
 Alice M. Jones
 K. Kathleen Kendrick
 Edward T. McCormick
 Ana Mae McGrath
 Aileen A. Maiden

LaVenda Mattice
 Caroline S. Montague
 Clinton J. Mumby
 Frank J. Rietz
 Dwight L. Ryerson
 Chesley J. Sabin
 Mary H. Sattler
 Alice M. Smith
 William P. Stockwell
 Charles T. Taylor
 Charles P. Thompson
 Florence W. Wenner
 August W. Zahner

Junior Scholars

Farnk C. Armer
 William G. Bate
 Robert Baxter Brown
 Walter A. Brown
 Jack Yeaman Bryan
 John Tom Cassady
 Austin B. Chinn, Jr.
 Dorothy Anne Clark
 Eleanor Parker Clarke
 Alexander Frazier
 George Delos Gardner
 Irven Edwin Gee
 Paul Frederick Hawley
 Gloria Howatt
 Katherine Kimball Jimerson
 Charlton Johnson
 Genevieve Kanen
 Lucile J. Larmour
 Betty Light

James Lyon
 Robert G. McBride
 Ann McElhinney
 Isabella McQuesten
 Eugene Manzo
 Otis Morago
 Margaret W. Murry
 Mary Brown Onstott
 Frances K. Pennington
 Arthur C. Prescott
 Laird A. Racey
 Virginia Reed
 Millard O. Reese
 Betty Starr Risdon
 Sydney Rochlin
 Franklyn Royer
 William Slotnick
 Francis Marion Whiting

Sophomore Scholars

Betty Bandel
 Marjorie Bickerstaff
 Paul C. Brown
 Weyland C. Brubaker
 Gurdon Montague Butler, Jr.
 Mary Cloud
 Daniel Cummings
 Robert Edward Fifield
 Margaret Fish
 Margaret Gardner
 Mary Elizabeth Gholson
 Milton Gorodezky
 Robert William Harralson
 Alice Adella Hart
 Elizabeth Hastings
 Charles Hollinger
 Jack M. Jones
 Lee Lanan Keener

Louis Kelemen
 Dorothy O. Linn
 Catherine Morgan
 Frances Nash
 Rex Rodney Rambo
 Mary Rechif
 Samuel Rees
 William Richard Soule
 Frank H. Sparks
 James C. Stewart
 Laverne Sundin
 Eleanor Treat
 Bruce Watkins
 Regina Wender
 Gracia Marsh Williams
 Robert Edgar Wilson
 Mary J. Woolery

Freshman Honorable Mention

Gordon Cortes Baldwin
 Barbara Barnard

Henry Weber Beumler
 Gudrun Bistrup

Oran Corbett
 Maria Anita Davis
 May Nelda Don
 Richard Hurd Forster
 Bertha Grasham
 Ellen Greig
 Frances Huddleson
 John Joseph Jakle
 Lillian Kline
 Paul William Krznarich

David Kruger
 Mildred Matson
 Ruth Noble
 Alice Howe Nowell
 Elwood Frank Ryder
 Lavora Smith
 Margaret Ruthmary Taylor
 Marian Webb
 Eunice Otis Williams
 James Yee

College of Law

Third Year Honors

Francis Jenney

Second Year Honors

Palmer K. Larson
 John D. Lyons, Jr.

Lawrence V. Robertson
 Theodore Kinne Shoenhair

First Year Honors

William Spaid

Phi Kappa Phi Initiates

Graduate Students

Stephen L. Brown
 Rudolf C. Gebhardt

Frances Gillmor
 Alice Senob

Seniors

William C. Avery
 Sheila Baker
 Helen E. Bloom
 Victor D. Brannon
 Lloyd R. Burch
 Joseph E. Carpenter
 Archibald H. Cashion
 Florence Bell Collier
 Elton Dail
 Rodger Davis
 Marion Dudley

Anton Wenzel Fraps
 M. Gertrude Greiner
 Charles J. Hitch
 Frances E. Jenney
 Madge H. Leshner
 Edward T. McCormick
 Lorna McMonagle
 Frank Julius Rietz
 Katheirne M. VanBuskirk
 Donald Loomis Webb
 Florence Wenner

Sigma Xi Initiates to Associate Membership

George Bazzetta
 Vinton A. Brown
 Joseph L. McCarthy

Walter L. Ormsby
 Floyd H. Russell
 Homer E. Stavelly

REGISTER OF STUDENTS 1931-1932

REGULAR SESSION

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Aaron, James, Jr.	Hist.	B.A.	Phoenix
Abbott, Howard, So.	Phys. Ed.	B.S.	Tucson
Abercrombie, Harriet L., P. G.	Span.	M.A.	Tucson
Abrams, Mary Jane, So.	Econ.	B.S.A.	Warren
Ackley, Manfred H., So.	M. E.	B.S.M.E.	Jerome
Adams, Betty, Fr.	Music	B.M.	Tucson
Adams, John Bunyan, Fr.	Span.	B.A.	El Dorado, Kan.
Adams, Mary E., Sr.	Psych.	B.A.	Sioux Falls, S. D.
Adams, Sam, Jr.	Pol. Sci.	B.A.	Tucson
Adams, Zack T. Jr., Fr.			Phoenix
Adelmann, Henry Robert, Fr.	Bus. Adm.	B.S.B.A.	New York, N. Y.
Adeva, Borgingo Babasa, Fr.	Eng.	B.A.	P. I.
Adriano, Pedro, Sr.	Bus. Adm.	B.S.B.A.	Tucson
Agnew, Josephine C., Sr.	Hist.	B.A.	Fulton, Ill.
Aguirre, Alice G., Fr.	Span.	B.A.	Tucson
Akers, Devorah Genevieve, Jr.	H. Econ.	B.S.A.	Tucson
Alban, Frederick Warden, Jr.	Pol. Sci.	B.A.	Steubenville, Ohio
Aldrich, Richard Lewis.	Educ.	M.A.	Tucson
Aldridge, Mrs. Helen R., Sp.			Tucson
Alexander, G. Stanley, Sp.	E.E.	B.S.E.E.	Santa Ana, Calif.
Alexander, J. B., Sp.	M.E.	B.S.M.E.	Tucson
Algert, Edward, Sr.	Entom.	B.S.A.	La. Jolla, Calif.
Algert, Thomas Scott, Sr.	Chem.	B.S.	La Jolla, Calif.
Allen, Jesse E., P.G.	Bus. Adm.	M.S.	Mountain Grove, Mo.
Allen, Melva Janeta, P.G.	Bot.	M.S.	Tucson
Allen, Paul K., Fr.	Zool.	B.S.	Tucson
Allen, Robert R., Fr.	M.E.	B.S.M.E.	Inspiration
Allen, Ruth Weyer, Fr.	Math.	B.A.	Miami
Allin, Mrs. Josephine, Sp.			Tucson
Allison, Harry Dunlap, Sp.			San Bernardino, Calif.
Almada, Octavio Vicente, Fr.	Bus. Adm.	B.S.B.A.	Nogales
Almini, Judith, Jr.	Biol.	B.S.	Tucson
Alvarez-Tostado, Claudio, So.	Chem.	B.S.	Nogales
Aly, Alice B., P.G.			Tucson
Alwin, J. Walter			Tucson
Amado, Amalia, Fr.		A.B.E.	Tucson
Amado, Pablo R., Jr.	Econ.	B.A.	Tucson
Amerson, Wayne, P.G.	Educ.	M.A.	Vallejo, Calif.
Anderson, Curtis Howard, Jr.	Eng.	B.A.	Tucson
Anderson, Daniel Grant, Fr.	A.H.	B.S.A.	Flagstaff
Anderson, Florence E., P.G.	Educ.	M.A.	Wheatridge, Colo.
Anderson, Eugene James, Fr.		B.S.	Valentine
Anderson, George Darwin, Jr.	A.H.	B.S.A.	Cochise
Anderson, Hugh Lynn, So.	A.H.	B.S.A.	Flagstaff
Anderson, Jane, Fr.		B.A.	Tucson
Anderson, Jean, Sr.	Econ.	B.A.E.	Tucson
Anderson, John, Fr.	Pre-Med.	B.S.	Tucson
Anderson, John Gist, 1st Yr.	Law	LL.B.	Tucson
Anderson, Kenneth Dale, P.G.		M.S.	Tucson
Anderson, Malcolm Williams.	Educ.	M.A.	New Plymouth, Idaho
Anderson, Maurice Franklin, Jr.	Music	B.M.	Tucson
Anderson, Theodore W., 1st Yr.	Law	J.D.	Phoenix
Anderson, William Henry, Fr.	Math.	B.S.	Patagonia
Andres, Edward H., Jr.	German	B.A.	Tucson
Angeny, Ferdinand Granville, Jr.	E.E.	B.S.E.E.	Phoenix
Angle, Margaret, R.U.	Art		Tucson
Angle, Melvin, Fr.			Tucson
Anglin, Ray, Jr.	Phys. Ed.	B.S.	Kingman
Annen, Margaret H., Jr.	German	B.A.	Madison, Wis.
Ansorache, Emery, Sr.	Econ.	B.A.	Gillett, Wis.
Antonick, A. A. Jr.	Bus. Adm.	B.S.B.A.	Miami
Anodaca, Gilbert V., Fr.		B.A.	Tucson

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Archbold, Adrian, So.	Bus. Adm.	B.S.B.A.	New York, N. Y.
Armer, Frank C., Sr.	A.H.	B.S.A.	Globe
Armour, Lorene, Jr.	Span.	B.A.E.	Phoenix
Arntzen, Ruth Miller, Fr.		B.S.	Tucson
Arth, Albertine, Jr.	Bus. Adm.	B.S.B.A.	Tucson
Arthur, Eleanor Louise, Sr.	Eng.	B.A.	Douglas
Asbury, Wilbur Francis, Jr.	Bus. Adm.	B.S.B.A.	Phoenix
Ascher, Evelynne May, Jr.	Soc.	B.A.	Chicago, Ill.
Ashbaugh, Florence R., R.U.			Tucson
Ashjian, Iris, So.	Eng.	B.A.	Tucson
Aspell, Hope, So.	Eng.	B.A.	New York, N. Y.
Aston, Rollan Estil, Jr.	Educ.		Tucson
Atkinson, Dorah Jeanne, Sp.			Tucson
Attaway, Helen, Sr.	Educ.	B.A.E.	Tucson
Austin, Carryl Charles, Jr.	Eng.	B.A.	Globe
Ayers, Alvin D., Sr.	Chem.	B.S.	Tucson
Babson, Sanford L., Sr.	Bus. Adm.	B.S.B.A.	Claremont, Calif.
Bacon, Frederick E., P.G.	Met.	M.S.	Pelham Manor, N. Y.
Bacon, Robert Childs, Jr.	E.M.	B.S.E.M.	Pelham Manor, N. Y.
Badger, John Fields, Fr.		B.S.E.E.	Glen Ellyn, Ill.
Bailey, Doris Louise, Sp.	Eng.	B.A.	Phoenix
Bailey, Lowell C., R.U.			Tucson
Bailey, Ogle F., P.G.	Hist.	M.A.	Ottawa, Kan.
Baird, James, Fr.	Hist.	B.A.	Kansas City, Mo.
Baker, Adeline A., Jr.	Mus.	B.M.	Tucson
Baker, Bernard, Fr.	Bus. Adm.	B.S.B.A.	Payette, Idaho
Baker, Cecil Sherman, Jr.	French	B.A.	Long Beach, Calif.
Baker, Donald Daniel, So.	E.M.	B.S.E.M.	McPherson, Kan.
Baker, Fred J., P.G.	Biol.	M.A.	Clifton
Baker, Howard Robert, P.G.			Tucson
Baker, Leeds, Sp.		B.A.	New York, N. Y.
Baker, Marjorie, Jr.	Music	B.M.	Safford
Baker, Raymond Leonard, So.	M.E.	B.S.M.E.	Centerville, Iowa
Baldwin, Gordon Curtis, Jr.	Arch.	B.A.	Portland, Ore.
Ball, Laleah Read, Sr.	Math.	B.S.E.	Benson
Ballantyne, Annie M., R.U.			Tucson
Ballard, Gwendolyn, Jr.	Hist.	B.A.E.	Phoenix
Ballesteros, Rufino, Sp.		B.S.A.	P. I.
Ballou, Lucille G., Fr.		B.A.	Tucson
Balsiger, Leland, Sp.			Tucson
Bancroft, Robert Huntley, P.G.	Educ.	M.A.	Hot Springs, Ark.
Bandel, Betty, Jr.	Music	B.M.	Tucson
Banks, Leon Maxwell	Admin.	A.E.M.	Tucson
Barber, John Lawrence, 1st Yr.	Law	J.D.	Omaha, Neb.
Barber, Mrs. Lucille, Sr.	Eng.	B.A.	Tucson
Barber, Robert Olsen, So.			Tucson
Barboglio, Celestine E., Sr.	Econ.	B.A.E.	El Paso, Tex.
Bard, Gene A., Fr.	Zool.	R.S.	Tucson
Barkdoll, Ivan Harry, Sr.	Bus. Adm.	B.S.B.A.	Globe
Barkell, Spencer, So.	M.E.	B.S.M.E.	Lowell
Barker, Gwen, Jr.	Eng.	B.A.	Cottonwood
Barker, Fred Charles, Sp.			Phoenix
Barnes, Josephine, P.G.	Educ.		St. Paul, Minn.
Barnett, Alice Lathrop, Jr.	Eng.	B.A.	Tucson
Barnett, Mildred, Sp.			Tucson
Barondess, Mrs. Jeannette, P.G.	Eng.	M.A.	Brooklyn, N. Y.
Barrett, Charlotte, Sr.	Educ.	B.A.E.	Tucson
Barrett, Miss Howard, Sr.	Music	B.M.	Tucson
Barron, Barbara, So.	Eng.	B.A.E.	Tucson
Barron, Frances, Fr.	Art	B.A.E.	Tucson
Barrows, George W., Fr.	Bus. Adm.	B.S.B.A.	Phoenix
Bartel, Arthur T., P.G.	Botany	Ph.D.	Aberdeen, Idaho
Bartlett, Ernest, Jr.	Hist.	B.A.	Tucson
Batchelder, Philip, P.G.	Educ.	M.A.	Tucson
Bate, Claude, So.	M.E.	B.S.M.E.	Phoenix
Bate, William G., Sr.	Bus. Adm.	B.S.B.A.	Phoenix
Bates, Anne R., Fr.	H. Econ.	B.S.A.	Joliet, Ill.
Batterton, Van P., So.	Econ.	B.A.	Tucson
Baugh, Virginia E., Fr.	H. Econ.	B.S.A.	Bisbee
Bayless, Lynn M., R.U.			Phoenix

REGISTER OF STUDENTS

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<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Beamis, John Francis, So.	Chem.	B.S.	Tucson
Bealieu, Grace, Jr.	Phys. Ed.	B.S.E.	Tucson
Bebb, Glenn G. Jr.	Pol. Sci.	B.A.	Douglas
Beck, Arthur Walter, P.G.	Astron.	M.S.	Denver, Colo.
Beck, Betty-Ann, Jr.	Hist.	B.A.E.	Phoenix
Beckner, Elizabeth, Fr.	Hist.	B.A.	Tucson
Beddow, Alice, So.	Hist.	B.A.	El Paso, Tex.
Beeler, George Wessly, Fr.	Bus. Adm.	B.S.B.A.	Yuma
Beiser, Helen Ruth, Fr.	Phys. Ed.	B.S.E.	Chicago, Ill.
Bell, Elsie Caroline, So.	Econ.	B.A.	San Diego, Calif.
Bell, Merle, So.	Bus. Adm.	B.S.B.A.	LaCrosse, Wis.
Bellows, Louise, Sr.		B.A.	Long Beach, Calif.
Benham, Robert, Jr.	Hist.	B.A.	Cincinnati, Ohio
Benson, Lawrence, Jr.	Pre-Legal	B.S.	Claypool
Benson, Thomas Walter, Jr.	E.E.	B.S.E.E.	Flagstaff
Bentz, Jack O., So.	Bus. Adm.	B.S.B.A.	Tucson
Bentz, Joe Edward, Fr.	Bus. Adm.	B.S.B.A.	Tucson
Bergin, Leo Parnell, So.	A. H.	B.S.A.	Los Angeles, Calif.
Bergman, Joycie N., Fr.	Eng.	B.A.	Tucson
Bermingham, Charlotte, Fr.	Eng.	B.A.	River Forest, Ill.
Bernard, C. Theos, Jr.	Phil.	B.A.	Tombstone
Berry, Iona F., R.U.			Tucson
Berry, James H., So.	Bus. Adm.	B.S.B.A.	Santa Fe, N. M.
Berry, Stanley, 2nd Yr.	Law	LL.B.	Tucson
Best, Lucille, Sr.	Music	B.M.	Lowell
Betcher, Clarence George, R.U.	Chem.	B.S.	Tucson
Betts, Elliott R., So.	Bus. Adm.	B.S.B.A.	Webster Groves, Mo.
Beumler, Henry Weber, So.	Span.	LL.B.	Douglas
Bever, Allena M., Sr.	Eng.	B.A.	Bellingham, Wash.
Bever, Lawrence Hull, So.	Econ.	B.S.E.	Phoenix
Bickerstaff, Marjorie, Jr.	Eng.	B.A.E.	Douglas
Bigby, Peggy, Sr.	Zool.	B.S.	Tucson
Biggerstaff, Martha Jane, Jr.	Eng.	B.A.	Wabash, Ind.
Biggs, Davis Jr., So.	Math.	B.A.	Kirkwood, Mo.
Binford, Muriel, So.	Span.	B.A.	Beverly Hills, Calif.
Bingham, Charles, Fr.			Beloit, Wis.
Binzel, Alma Louise, P.G.	Soc.	M.A.	Bowling Green, Kv.
Bishop, Cyrus D., Fr.	Bus. Adm.	B.S.B.A.	Miami
Bishop, Ottey M., Jr.	Geol.	B.S.	Globe
Bissell, William, Sr.	M.E.	B.S.M.E.	Atascadero, Calif.
Bistrup, Gudrun, So.	Span.	B.A.E.	Tucson
Bivens, Harold, So.			Tucson
Black, James Walter	Pre-Law	LL.B.	Tucson
Black, Louese, Sp.	Music	B.M.	Mentone, Ind.
Blackman, Maxine, So.	Arch.	B.A.	Hayden
Blake, Isabel, So.	Hist.	B.A.	Tucson
Blake, Judson, R.U.			Twin Buttes, Mont.
Blakeslee, Herbert, Sp.			Tucson
Blanchard, Clyde Alvin, Sr.	Eng.	B.A.	Tucson
Block, Emil, R.U.			Tucson
Block, Herbert N., R.U.			Tucson
Block, Max, Fr.			Brooklyn, N. Y.
Block, Richard Meyer, So.	Pre-Med.	B.S.	Tucson
Blodgett, Joyce E., Jr.	Bus. Adm.	B.S.B.A.	Tucson
Bloom, Mildred, So.	Hist.	B.S.E.	Tucson
Blue, Stanley Linden, Fr.		B.A.	Denver, Colo.
Boal, Mona Williams, So.	Eng.	B.A.	Tucson
Bock, Mrs. Rosemary, R.U.			Tucson
Boddinghouse, Sally, Fr.			Chicago, Ill.
Boeckeler, Henry A., Jr.	Econ.	B.A.	Westport, Conn.
Boggs, Bob, Fr.			Tucson
Boles, Barbara, Fr.			Pasadena, Calif.
Boll, Victor M., So.	Bus. Adm.	B.S.B.A.	Bowie
Bolweg, Henry Jr., Jr.	E.M.	B.S.E.M.	Douglas
Bondy, Mrs. Ruth, R.U.			Tucson
Bone, Alma Bernice, Sr.	Music	B.M.	Hastings, Okla.
Boontempo, Adelaide M., Jr.	Music	B.M.	Miami
Booher, Lawrence J., Jr.	C.E.	B.S.C.E.	Tucson
Booker, Roberta Eleanor, Fr.	Eng.	B.A.	Tucson
Books, Otho S., Jr.	Psych.	B.A.	Kansas City, Mo.
Booth, Jonathan L., P.G.	Educ.	M.A.	Williams
Borgmann, Dick, Fr.	Arch. E.	B.S.C.E.	Sank Centre, Minn.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Borgquist, Arline, So.	Phys. Ed.	B.A.E.	Tucson
Bothwell, Hyman Dutton, Sr.	Econ.	B.A.	San Juan, P. R.
Bott, Margaret	Art	B.A.	Des Moines, Iowa
Bouse, Nellie Jean, Jr.	Bus. Adm.	B.S.B.A.	Jerorfe
Bowles, Anson P., Jr.	Eng.	B.A.	Tucson
Boyd, Edna Lewis, Sr.	H. Econ.	B.S.A.	Tucson
Boyd, John G., Jr.	Bus. Adm.	B.S.B.A.	Tucson
Boyers, Clements J., So.		B.S.B.A.	Mount Vernon, N. Y.
Boyle, James Patrick Jr., Fr.	Span.	B.A.	Tucson
Bradford, E. W., Jr.	Bus. Adm.	B.S.B.A.	Yuma
Bradford, William T., Fr.			Tucson
Bradley, Robin Bevans, R.U.	Econ.	B.A.	Spokane, Wash.
Brannon, Victor D., P.G.	Pol. Sci.	M.A.	Phoenix
Branson, Sylvia, Sr.	Music	B.M.	Bisbee
Branum, Raymond, Fr.		B.S.	Douglas
Brazelton, Helen, Sr.	French	B.A.E.	Tucson
Brazelton, Russell W., So.	Eng.	B.A.	Tucson
Breazeale, Edward Lee, Fr.	Chem.	B.S.	Tucson
Breazeale, Mary, Sr.	Math.	B.S.E.	Tucson
Brehm, Eunice, Fr.		B.A.E.	Bisbee
Brenner, Joel, So.	Math.	B.A.	Brooklyn, N. Y.
Bressler, Margaret P., Fr.	Eng.	B.A.	Bisbee
Brewer, Leslie O., P.G.	Span.	M.A.	Tucson
Bring, Howard, Fr.			Tucson
Brinson, S. A. Jr., Fr.	Bus. Adm.	B.S.B.A.	Longview, Tex.
Brittain, Madge Anne, P.G.		M.A.	Tucson
Broadwater, Ronald, So.			Wichita, Kan.
Brodek, Ralph Edwin, Fr.			Los Angeles, Calif.
Broderick, Arthur P., So.	E.M.	B.S.E.M.	St. Louis, Mo.
Brooke, Anne, Sr.	French	B.A.E.	Tucson
Brooke, Helen, Fr.		B.A.E.	Tucson
Brooks, Betty, So.	Phys. Ed.	B.A.E.	Phoenix
Brooks, Patrick Henry, Sp.	Law		Tucson
Brown, David Owen, 3rd Yr.	Law	LL.B.	Mesa
Brown, Elizabeth Patterson, Jr.	Zool.	B.S.E.	Tucson
Brown, F. Anson, So.	E.E.	B.S.E.E.	Decatur, Ill.
Brown, Floyd G., Sr.	Eng.	B.A.E.	Phoenix
Brown, Genevieve, P.G.	Educ.	M.A.	Lyons, Ill.
Brown, Gilbert Carson, Fr.	Hort.	B.S.A.	Ray
Brown, Gordon Dale, So.	Pre-Legal	B.A.	Lowell
Brown, Gratia M., Sr.	Biol.	B.S.E.	Tucson
Brown, Lewis, Jr.	Econ.	B.A.	Fort McPherson, Ga.
Brown, Margaret, Fr.	Math.	B.S.	Globe
Brown, Mary G., So.	Eng.	B.A.	Tucson
Borwn, Meredith, Sr.	Eng.	B.A.E.	Tucson
Brown, Moses Jr., Fr.	Eng.	B.A.	Ray
Brown, Myrlan Green, Fr.	Bus. Adm.	B.S.B.A.	St. Johns
Brown, Neilson, Fr.	Eng.	B.A.	Springfield, Mass.
Brown, Paul G., Jr.	Chem.	B.S.	Phoenix
Brown, Raymond D. Jr., Jr.		B.A.	Indianapolis, Ind.
Brown, Richard K., Fr.	Zool.	B.S.	Roslyn, Wash.
Brown, Robert Baxter, Sr.	Bus. Adm.	B.S.B.A.	Ray
Brown, Ruth Evelyn, So.	Econ.	B.A.	Balboa Beach, Calif.
Brown, Walter A., Sr.	C.E.	B.S.C.E.	Covina, Calif.
Brownless, Marian J., Jr.	Music	B.M.	Etiwanda, Calif.
Brubaker, Marguerite June, Fr.	Eng.	B.A.E.	Clifton
Brubaker, Weyland C., Jr.	Bus. Adm.	B.S.B.A.	Clifton
Brunswick, Nicholas T., Jr.	Math.	B.S.E.	East Chicago, Ind.
Bryan, Jack Yeaman, Sr.	Phil.	B.A.	Tucson
Bryan, Mary Elizabeth, So.	Hist.	B.A.E.	Tucson
Bryce, Jessie, P.G.	Bus. Adm.	M.A.	Pima
Buchanan, Peter, So.	Math.	B.S.E.E.	Manila, P. I.
Buchenberg, Margaret, Jr.	Eng.	B.A.	Patagonia
Bucholz, Herman C., So.	Biol.	B.S.	Tucson
Budlong, John, Fr.	Math.	B.A.	Newport, R. I.
Budlong, Margaret W., 1st Yr.	Law	LL.B.	Tucson
Buehman, Harry Albert, So.	E.E.	B.S.E.E.	Tucson
Buente, Hazel, P.G.	Music	M.M.	Tucson
Bull, Jane, Fr.			El Paso, Tex.
Burch, Raymond, So.			Tucson
Burger, James R., 1st Yr.	Law	LL.B.	Phoenix
Burgess, John Stephen, Fr.	Pre-Legal	B.A.	Racine, Wis.

REGISTER OF STUDENTS

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<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Burgess, Robert Roy, 1st Yr.	Law	LL.B.	Racine, Wis.
Burgess, Truitt, Fr.	Pre-Legal	B.A.	Oraibi
Burgess, Walter M., Sr.	Psych.	B.A.	Morenci
Burke, John F., Sr.	Bus. Adm.	B.S.B.A.	Morenci
Burns, Abbott H., Sr.	M.E.	B.S.M.E.	Tucson
Burns, Mrs. Sammie, P.G.	Educ.	M.A.	Cortaro
Burr, Herbert F., Jr.	P. H.	B.S.A.	Tucson
Burr, Waldon, Sp.	P. H.	B.A.	Tucson
Burrows, Herbert John, P.G.	Educ.	M.A.	Tucson
Burrows, Mrs. Mary C., R.U.		B.A.	Tucson
Burton, John, So.	Bus. Adm.	B.S.B.A.	Tucson
Burton, Virginia C., Jr.	Art	B.A.	Tucson
Bush, Louise Altha, P.G.	Geol.	Ph.D.	Ann Arbor, Mich.
Bustamante, Antonio M., So.	Chem.	B.S.	Tucson
Bustamante, Louis, Fr.	Span.	B.A.E.	Tucson
Butler, Edwin L., R.U.	Bus. Adm.		Cleveland, Ohio
Butler, Florence, Sp.			Tucson
Butler, Frances C. (Mrs.), Fr.		B.A.E.	Anderson, Ind.
Butler, Gurdon Montague Jr., Jr.	E.M.	B.S.E.M.	Tucson
Butler, Karl Douglas, P.G.		M.S.	Mesa
Butler, Leonard J., So.	C.E.	B.S.C.E.	Tuba City
Butler, Olga, Sr.	Phys. Ed.	B.S.E.	Mesa
Butler, Ralph G., Sp.	C.E.	B.S.C.E.	Tucson
Butler, Waldo D., So.	Eng.	B.A.	Tucson
Butts, Nadyne, Jr.	Span.	B.A.	Tucson
Buzan, Martin W., So.		B.A.	Tucson
Buzan, Rose L.			Tucson
Byrd, Clara Mary, Sr.	Span.	B.A.E.	El Paso, Tex.
Byrne, Alice M., Jr.	H. Econ.	B.S.A.	Yuma
Byrne, Frances E., Jr.	Span.	B.A.E.	Yuma
Byrne, Vincent R., So.	Phys. Ed.	B.A.E.	Douglas
Cable, Don, Fr.	Bus. Adm.	B.S.B.A.	Tucson
Cahn, Leonard, Fr.	Eng.	B.A.	Tucson
Caine, Bernard T., 3rd Yr.	Law	LL.B.	Tucson
Caldwell, Hugh M., 3rd Yr.	Law	LL.B.	Phoenix
Caldwell, Tom M., Jr.	Econ.	B.A.	Phoenix
Calhoun, Henry Clay, Jr.	Pol. Sci.	B.S.	Chicago, Ill.
Callicotte, Glasgow, So.			Clifton
Calnan, Catherine, So.	Soc.	B.A.	Clinton, Iowa
Cameron, Frances Isabelle, Fr.		B.A.	Indianapolis, Ind.
Cameron, Lois, So.	Bus. Adm.	B.S.B.A.	Miami
Campbell, Alexander Nye, Fr.	E.E.	B.S.E.E.	Los Angeles, Calif.
Campbell, Bill (W. E. Jr.), Fr.	Chem.	B.S.	Tucson
Campbell, David M.	Pre-Legal	B.A.	Yuma
Campbell, Katherine, Fr.		B.A.	Globe
Campbell, Marian E., So.	Biol.	B.S.	Benton Harbor, Mich.
Campster, Archibald H., P.G.	Educ.	M.A.	Phoenix
Capron, Rody G., Sp.	Eng.	B.A.	Waterville, Ohio
Caramella, Frank W., Sp.			Tucson
Carev, Thomas, Jr.	Hist.	B.A.	Nogales
Carlisle, Wilda, Fr.	Eng.	B.A.E.	Tucson
Carlson, Clarence, So.	Bus. Adm.	B.S.B.A.	Chandler
Carnev, Mary Abigail, Jr.	Soc.	B.A.	Deming, N. M.
Carr, Ruth Mary, Fr.		B.A.	Tucson
Carr, Stanton, Sr.	French	B.A.	Grand Canyon
Carsey, William Arnold, P.G.	Hist.	M.A.	Tulsa, Wyo.
Carson, Robert Hardy, Jr.	E.E.	B.S.E.E.	Tucson
Carter, Katharine D., Fr.		B.S.	Tucson
Carter, Russell B., Sr.	Econ.	B.A.	Los Angeles, Calif.
Carter, William Barton, So.	Econ.	B.A.	Douglas
Case, Veda L., Sr.	Music	B.M.	Glendale
Cashion, Tindall E., Fr.	Bus. Adm.	B.S.B.A.	Morenci
Cashion, Lucile Mary, Jr.	Eng.	B.A.E.	Long Beach, Calif.
Cassady, John Tom, Sr.	R. Ecol.	B.S.A.	Tucson
Cate, Howard, Fr.	Math.	B.A.	Tucson
Catlin, Mrs. Pearl, 1st Yr.	Law	LL.B.	Tucson
Caywood, Louis R., Sr.	Arch.	M.A.	Warren
Cederstrom, D. John, P.G.	Geol.	Ph.D.	Pt. Washington, N. Y.
Celaya, Ida, P.G.	Span.	M.A.	Tucson
Celaya, Olivia M., So.	Eng.	B.A.	Tempe

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Cerf, Paul D., Fr.	Bus. Adm.	B.S.B.A.	Los Angeles, Calif.
Chambers, Dorothy, So.	Chem.	B.S.E.	Tucson
Chambers, Harry, Jr.	Span.	B.A.	Tucson
Chambers, Thomas L., 1st Yr.	Law	LL.B.	Tucson
Champion, Alice M., Sr.	H. Econ.	B.S.A.	Algonar, Mich.
Chanin, Milton, So.	Chem.	B.S.	Tucson
Chapman, Gene Hewett, Fr.		B.A.	Ontario, Calif.
Chapman, Vera Mae, R.U.	Art	B.A.	Tucson
Childs, Ernestine, Jr.	Phys. Ed.	B.S.E.	Tucson
Chilton, Maxine, Jr.	Music	B.M.	Los Angeles, Calif.
Chilton, Thomas Gerald, Fr.	Bus. Adm.	B.S.B.A.	Miami
Chinn, Austin B. Jr., Sr.	Phys.	B.S.	Tucson
Christianson, Alfa C., P.G.	Span.	M.A.	Tucson
Christianson, Ingrid, Fr.		B.A.	Tucson
Christianson, Marvin I., Fr.	Span.	B.A.E.	Tucson
Christy, Marshall, C., Jr.	Bus. Adm.	B.S.B.A.	Phoenix
Clardy, Mark W., P.G.	Met.	M.S.	Sacaton
Clare, Hugh Jay, Jr.	Educ.	B.A.E.	Tucson
Clark, Bettina M., Sr.	Hist.	B.A.	Tucson
Clark, Donald F., So.		B.A.	Phoenix
Clark, Dorothy Anne, Sr.	Bus. Adm.	B.S.B.A.	Glendale
Clark, Drexel D., Jr.	Bus. Adm.	B.S.B.A.	Tucson
Clark, George D., So.	Law	LL.B.	Douglas
Clark, Henry D., Sr.	E.M.	B.S.E.M.	Covina, Calif.
Clark, Lorraine, So.	Art	B.A.	Tucson
Clark, Louis, So.	Bus. Adm.	B.S.B.A.	Tucson
Clark, William D. Jr., So.	Bus. Adm.	B.S.B.A.	Los Angeles, Calif.
Clarke, Eleanor Parker, Sr.	Arch.	B.A.	New York, N. Y.
Clason, Gilbert O., So.	E.E.	B.S.E.E.	Bisbee
Clifford, Ralph C., Fr.	M.E.	B.S.M.E.	Globe
Clift, Grace A., Fr.	Music	B.M.	Wilkes-Barre, Pa.
Clinton, Frank M., So.	C.E.	B.S.C.E.	Hereford
Cloud, Mary, Jr.	Hist.	B.A.E.	Los Angeles, Calif.
Cloud, William Kendrick, Jr.	M.E.	B.S.M.E.	Tucson
Clyde, Virginia G., Fr.		B.S.	Oakland, Calif.
Clyne, Thomas Edward, So.		B.A.	Tucson
Cochran, Charles M., Fr.	C.E.	B.S.C.E.	Tucson
Cochrane, Harold E., 1st Yr.	Law	J.D.	Tucson
Cochran, Orville Alvin, So.	Eng.	B.A.	Concho
Coffee, Maurine, P.G.	Educ.	M.A.	Cortaro
Cofor, Chester C., Fr.	E.E.	B.S.E.E.	Kingman
Coffer, L. Wallace, Jr.	Chem.	B.S.	Glendale
Cofiori, Alfred V., Sp.	Phys. Ed.	B.S.E.	Tucson
Coker, Elmer C., 1st Yr.	Law	LL.B.	Florence
Cole, Della Price, So.	Eng.	B.A.	Tucson
Cole, Meade A., So.			Tucson
Coleman, Helen, So.	Music	B.M.	Ray
Colford, Thomas, So.	Pol. Sci.	B.A.	Bisbee
Collier, Florence Bell, P.G.	Zool.	M.A.	Tucson
Collier, Horace, Sr.	D. H.	B.S.A.	Tempe
Collins, Charles E., Jr.	Bus. Adm.	B.S.B.A.	Indianapolis, Ind.
Collins, Robert J., So.		B.A.	Indianapolis, Ind.
Colombo, Frank A., Fr.	Bus. Adm.	B.S.B.A.	Morenci
Compton, Melville Claude, Fr.	Econ.	B.A.	Bisbee
Comstock, Margaret, Fr.	Eng.	B.A.E.	Tucson
Conant, Frances Clemens, Fr.			St. Louis, Mo.
Condron, Charles Morse, Fr.	M.E.	B.S.M.E.	Tucson
Confer, Katherine, P.G.	Educ.	M.A.	Tucson
Conger, Marianne Jane, Fr.	Eng.	B.A.	Phoenix
Conlon, Julia, R.U.			Hudson, Pa.
Connolly, Francis N., So.	Bus. Adm.	B.S.B.A.	Mesa
Connor, Gladys Grace, Fr.	Arch.	B.A.	Denver, Colo.
Conter, Marie Ange, Jr.	French	B.A.	Phoenix
Contreras, Julia Louise, Fr.	Span.	B.A.E.	Douglas
Contzen, Frederick J. W., Jr.	Geol.	B.S.	Tucson
Conway, Wentworth, Fr.	Math.	B.S.	Washington, D. C.
Cooley, John Edward, Sr.	Hist.	B.A.	Inglewood, Calif.
Coolidge, Earl R., So.	E.M.	B.S.E.M.	Lawrence, Mass.
Coone, Henrietta M., R.U.	Art	B.A.	Tucson
Cooper, Francis G., 1st Yr.	Law	LL.B.	Ireland
Cooperrider, Charles K., P.G.			Tucson
Copple, Donald Carl, Fr.			Logansport, Ind.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Copps, Jean, Sr.	Art	B.A.	Stevens Point, Wis.
Corbett, Johnston Knox, So.	Bus. Adm.	B.S.B.A.	Tucson
Corces, Pilar, Sr.	Span.	B.A.E.	Tampa, Fla.
Corkill, Beatrice Mary, Fr.	Music	B.M.	Bisbee
Cornell, Warren, So.	E.M.	B.S.E.M.	Tucson
Cornick, Evelyn, P.G.		M.A.	Prescott
Cosper, Harvel H., Jr.	Voc. Agr.	B.S.A.	Duncan
Costanti, D. James, So.			Tucson
Costen, Martha Reeves, So.		B.A.	Memphis, Tenn.
Coulson, Hansell U., Sr.	Psych.	B.A.	Williams
Coulson, Margaret, Jr.	French	B.A.	Malta, Ohio
Courtright, Edward Landon, So.	Pre-Legal	B.A.	Tucson
Coury, Tom E., Jr.	E.E.	B.S.E.E.	Sonora
Covington, Campbell, So.	Pre-Med.	B.A.	Tucson
Cowell, Mary Elizabeth, Jr.	Eng.	B.A.E.	Tucson
Cox, Hannah Julia, So.	Hist.	B.A.	Cullowee, N. C.
Cox, Roberta C., Jr.	Music	B.M.	Phoenix
Cox, Jack Simpson, Sr.	Hist.	B.A.	Phoenix
Crabtree, Henry E., Fr.	E.E.	B.S.E.E.	Jackson, Wyo.
Crago, Jean, Fr.		B.A.	Colorado Springs, Colo.
Craig, Ruth T., P.G.	Eng.	M.A.	Ann Arbor, Mich.
Cramer, Paul Irving, So.	E.M.	B.S.E.M.	Amherst, Wis.
Crandall, Clarence Leroy, So.	Zool.	B.S.	Safford
Crandall, Earle, So.	Pre-Med.	B.S.	Safford
Cranor, Catherine Lowry, Fr.	Eng.	B.A.	Prescott
Crawford, Albert, 1st Yr.	Law	LL.B.	Prescott
Crawford, Glenn Arthur, Jr.	C.E.	B.S.C.E.	Covina, Calif.
Cree, Allan, Jr.	Chem.	B.S.	Flagstaff
Cress, Kathryn E., Fr.			Flagstaff
Cress, Leighton, So.			Flagstaff
Crismon, Edgar T., Jr.	Hort.	B.S.A.	Mesa
Cromwell, Frederick N., Jr.	Eng.	B.A.	Tucson
Cromwell, Robert Oliver, Jr.	Bus. Adm.	B.S.B.A.	Tucson
Cronin, Mrs. Elizabeth A., P.G.	Eng.	M.A.	Tucson
Crow, Floyd Garver, P.G.	Eng.	M.A.	Tucson
Crow, Jim Petty, Jr.	Pre-Med.	B.S.	Hominy, Okla.
Crough, Marian, Fr.	Span.	B.A.	Tucson
Crowfoot, Maytsie, Fr.	Bus. Adm.	B.S.B.A.	Morenci
Crowfoot, William Arthur, So.	Arch.	B.S.	Morenci
Crozer, William M., So.	Eng.	B.S.M.E.	Winslow
Crum, Inice, Fr.		B.A.	Tucson
Cunningham, Mrs. Blanche B., R.U.			Tucson
Cunningham, Ethel Courtney, P.G.	Span.	M.A.	Omaha, Neb.
Curtis, Coyl, So.	E.E.	B.S.E.E.	San Carlos
Curtis, Loren S., Sr.	Econ.	B.A.E.	Tucson
Cushing, Elliott, Fr.	C.E.	B.S.C.E.	Tucson
Cutler, Henry, 1st Yr.	Law	LL.B.	Wilmette, Ill.
Daly, John William, Jr.	Hist.	B.A.	Tucson
Dahlberg, Henry, Jr.			Phoenix
Dahlgren, Edesse, Sr.	Phys. Ed.	B.S.E.	Phoenix
Damron, Dale, So.	A.H.	B.S.A.	Coolidge
Dana, Elizabeth Marjorie	Eng.	B.A.	Portland, Ore.
Dangeil, Manuel, Sp.	Agr. Eng.	B.S.A.	P. I.
Daniel, Elizabeth, Jr.	Hist.	B.A.	Longview, Tex.
Daniel, James Gibson, Jr.	Econ.	B.A.	Phoenix
Daniels, Bruce, Fr.	E.E.	B.S.E.E.	Kingman
Daniels, Hayzle B., Sp.	Span.	B.A.	Nogales
D'Arcy, Frances, So.	Phys. Ed.	B.S.E.	Jerome
Daugherty, Francis, Fr.	Bus. Adm.	B.S.B.A.	Wilcox
David, Beatrice, Fr.	H. Econ.	B.A.A.	Tucson
Davidson, John W., Fr.			Birmingham, Ala.
Davies, Modoc Wynn, Fr.	Eng.	B.A.	Bisbee
Davies, Olive, So.	Phys. Ed.	B.A.E.	Douglas
Davies, Richard S., Fr.	Chem.	B.S.	Globe
Davies, Tom, Jr.	Bus. Adm.	B.S.B.A.	Phoenix
Davies, William Walter, Jr.	Econ.	B.A.	Ajo
Davis, Arthur, So.	C.E.	B.S.C.E.	Webb
Davis, Barbara, Jr.	Bus. Adm.	B.S.B.A.	Tucson
Davis, Charles Homer, So.	Agron.	B.S.A.	Glendale
Davis, Daisy D., So.	Eng.	B.A.E.	Tucson

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Davis, Elma Mae, Fr.	H. Econ.	B.S.A.	El Paso, Tex.
Davis, Frances Meta, Fr.	Educ.	B.A.E.	Douglas
Davis, Franklin, Fr.	Bus. Adm.	B.S.B.A.	Phoenix
Davis, Harold Faurest, Fr.		B.A.	Louisville, Ky.
Davis, Leone, Fr.	Educ.	B.A.E.	Tucson
Davis, Louis S., Sp.			Wendell, N. C.
Davis, Margaret Ruth, So.	Hist.	B.A.	Douglas
Davis, Maria Anita, So.	H. Econ.	B.S.A.	Bisbee
Davis, Marilee, Jr.	Eng.	B.A.E.	Superior
Davis, Mark Charles, Fr.	Bus. Adm.	B.S.B.A.	New Castle, Ind.
Davis, Nelson William, P.G.	Educ.	M.A.	Tucson
Davis, Rodger D., P.G.	Econ.	M.A.	Tombstone
Davis, Ruth L., P.G.	Econ.	M.A.	Toledo, Ohio
Dawe, Marjorie, Fr.	Bus. Adm.	B.S.B.A.	Douglas
Dawson, William Brunt, Jr.	Bus. Adm.	B.S.B.A.	Tucson
Day, George W., Fr.		B.S.	Charleston, W. Va.
Dayton, William C., Fr.	Hist.	B.A.	Muskondol, Wis.
Deans, William, So.	Bus. Adm.	B.A.	Oakland, Calif.
Decker, Carl, Fr.	Math.	B.S.E.	Douglas
Decker, Floyd A., P.G.	E.E.	M.S.E.E.	Omaha, Neb.
DeConcini, Evo, 3rd Yr.	Law	LL.B.	Tucson
Defty, Henry Watson, Sr.	Bus. Adm.	B.S.B.A.	Phoenix
De Gomez, Marceline, Fr.	Hist.	B.A.E.	Morenci
De Gomez, Pilar, Fr.	Span.	B.A.E.	Morenci
DeHart, Mrs. Minnie, Sp.			Tucson
De Jesus, Antonio Velasco, 3rd Yr.	Law	J.D.	Manila, P. I.
Delgado, Alfonso Jr., Jr.	E.E.	B.S.E.E.	Nogales
Delgado, Mucio, Jr.	Span.	B.A.E.	Winkelman
Den Bleyker, Clark, So.	Music	B.A.	Tucson
Denison, Henry Inez, Sp.			Tucson
Denison, Charles Lewis, Fr.	Bus. Adm.	B.S.B.A.	Ajo
Dentzer, Alma, Jr.	Span.	B.A.E.	Superior
Derzer, Joseph Andrew, P.G.	E.E.	M.S.E.E.	Tucson
DePass, George S., R.U.			Spartanburg, S. C.
DePoy, Stewart M., So.	Met.	B.S.	Jerome
Deshler, George A. F., So.	Bus. Adm.	B.S.B.A.	Tucson
De Sota, Rosalio, Jr.	Biol.	B.S.	Morenci
Deter, R. L., So.	Biol.	B.S.	Tucson
DeVault, Robert Martin, Jr.	Bus. Adm.	B.S.B.A.	Kansas City, Mo.
Devitt, John Brantson, So.		B.A.	Oskaloosa, Iowa
De Vos, Jimmie, Fr.	Econ.	B.S.B.A.	Miami
Dewey, Mrs. G., Jr.	Math.	B.S.	Tucson
DeWolf, Hubert G., Jr.	Pre-Med.	B.S.	Tucson
Dickinson, Samuel Dorris, Jr.	Arch.	B.A.	Prescott
Dierking, O. D., So.		B.A.	Safford
Diggs, Mrs. Della Adams, P.G.	Eng.	M.A.	Tucson
Dille, Robert	Bus. Adm.	B.S.B.A.	Phoenix
Dinwiddie, Edgar, Fr.	Agr.	B.S.A.	Hereford
Disenhaus, Bennie Leon, So.			Chicago, Ill.
Dixon, Betsy, So.	Eng.	B.A.	El Paso, Tex.
Dixon, Helen Gertrude, Fr.	Art	B.A.	Tucson
Dixon, Lois Lillian, So.	Phys. Ed.	B.A.E.	Tucson
Doan, Donald Jay, P.G.	Met.	B.S.	Tucson
Doan, Jean Cargill, So.		B.S.	Yuma
Dodge, Abbott E., Sr.	Phys. Ed.	B.S.E.	Tucson
Dodge, Anne K., Jr.		B.A.	Tucson
Dodge, Julia, R.U.			Madison, Wis.
Don, Maude Martha, So.	Bus. Adm.	B.S.B.A.	Tucson
Don, May Nelda, So.	Phys. Ed.	B.S.E.	Tucson
Donahue, Elizabeth, Jr.	Psych.	B.A.E.	Phoenix
Donnelly, Jean Merl, P.G.	Eng.	M.A.	Tucson
Donovan, Patrick J., Fr.	Bus. Adm.	B.S.B.A.	Yuma
Dorsey, Edward Jr., Jr.	Arch.	B.A.	Phoenix
Douglas, Volney, Sr.	Ecol.	B.S.A.	Sonita
Douglass, Edwin Keith, Sr.	Hort.	B.S.A.	Tucson
Douglass, John W., So.	Bus. Adm.	B.S.B.A.	St. Louis, Mo.
Dow, Homer, Fr.	C.E.	B.S.C.E.	Tucson
Downey, Margaret, Fr.			Sacramento, Calif.
Drachman, Albert Harry, Fr.	Pre-Med.	B.S.	Tucson
Drachman, Lawrence Oscar, So.	M.E.	B.S.M.E.	Tucson
Drain, James G., Jr.	Bus. Adm.	B.S.B.A.	Washington, D. C.
Drane, Ruth Eileen, So.	Hist.	B.A.E.	Tucson

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Draper, Dorothy Mary, Sr.	H. Econ.	B.S.A.	Glendale
Draper, Mrs. Fred, Jr.	H. Econ.	B.S.A.	Tucson
Drechsler, Bernard, 2nd Yr.	Law	J.D.	Brooklyn, N. Y.
Drechsler, Mrs. Madeleine, Sr.	Eng.	B.A.	Tucson
Dreesen, Helen, R.U.	Hist.		Whiting, Ind.
Driscoll, Burchell, Jr.	Psych.	B.A.	Wilmington, Calif.
Dritt, William M., Sr.	Econ.	B.A.	Mexico, D. F.
Driver, Mary-Sue, P.G.	Educ.	M.A.	Kansas City, Tex.
Dubach, Isabel, Fr.	Eng.	B.A.	Phoenix
Duck, Thomas Spann, Fr.	E.E.	B.S.E.E.	Indianapolis, Ind.
Duffy, James Peter, R.U.	E.E.	B.S.E.E.	Elmhurst, L. I., N. Y.
DuMont, Harry, So.	Econ.	B.A.	Chicago, Ill.
Dunbar, Helen, P.G.	Arch.	M.A.	Yuma
Duncan, Ponton L., Jr.	Bus. Adm.	B.S.B.A.	Tucson
Dunipace, Helen Winifred, Fr.		B.A.	Tucson
Dunipace, William Smith, Fr.		B.A.	Bowling Green, Ohio
Duniven, C. L., So.	Math.	B.A.	Tucson
Dunn, William Crawford, Fr.	Pre-Legal	B.A.	Tucson
Dunseath, James Elliott, Sr.	Pre-Legal	B.A.	Tucson
Dunseath, Mary E., Fr.			Tucson
Durand, David Franklin, So.	Bus. Adm.	B.S.B.A.	Chicago, Ill.
Duval, Howard Louis, Fr.	Econ.	B.A.	Prescott
Duwe, Herman A., Fr.	Phys. Ed.	B.S.E.	Yuma
Eads, Mary Jean, Jr.	Eng.	B.A.E.	Prescott
Eager, Hattie Louise, Fr.		B.A.E.	Tucson
Eberling, Frances, P.G.	Span.	M.A.	Los Angeles, Calif.
Ebsen, Monroe G., Fr.	Bus. Adm.	B.S.B.A.	San Simon
Edelen, Alexander W. Jr., Jr.	E.M.	B.S.E.M.	Mexico City, Mex.
Edelen, Sallie B., Fr.	Art	B.A.	Mexico City, Mex.
Edwards, W. Thomas, Fr.		B.S.	Tucson
Ellis, Ronald J., 1st Yr.	Law	J.D.	Florence
Elsing, Mary Celestine, Sr.	Hist.	B.A.	Tucson
Elsing, William T., 2nd Yr.	Law	LL.B.	Tucson
Embleton, Harry, P.G.	Chem.	M.S.	Tucson
Emery, Merrill, Fr.	H. Econ.	B.S.A.	Tucson
Emmons, Virginia, So.	Bus. Adm.	B.S.B.A.	Benson
Engleman, Mary Frances, So.	French	B.A.	Kansas City, Mo.
Enlows, Harold E., Jr.	Geol.	B.S.	Tulsa, Okla.
Enochs, Mary Louise, Jr.	Music	B.M.	Bisbee
Eoff, Mary, Sr.	Phys. Ed.	B.S.E.	Tucson
Erickson, Irene I., Jr.	Educ.	B.A.E.	Grafton, N. D.
Ernsberger, Edward Lester, P.G.	Zool.	B.S.	Rathdrum, Idaho
Ethel, Willis G., So.	Hist.	B.S.	Bisbee
Evans, Charles Edward, P.G.	Met.	M.S.	Sombrerete, Mex.
Evans, Frank H., Sr.	M.E.	B.S.M.E.	Tucson
Evans, Joan Louise, Fr.	French	B.A.	Tucson
Evans, Louis, Jr.	Hist.	B.A.	Phoenix
Evans, Marshall, Fr.	B.A.	B.S.B.A.	Tucson
Ewart, Margaret E., Sr.	Eng.	B.A.E.	Long Beach, Calif.
Ewing, James William, Fr.	D. H.	B.S.A.	Tucson
Ewing, Mary Idella, Fr.			Tucson
Ewing, Robert M., So.	A. H.	B.S.A.	Tucson
Ezell, Robert B., So.		B.A.	Hayden
Fahlen, Frederick T., Jr.	Hist.	B.A.	Phoenix
Failor, Gillmor, 3rd Yr.	Law	LL.B.	Tucson
Fairbanks, David Hanna, Sp.	Chem.		Baltimore, Md.
Faires, Marguerite, Fr.	Span.	B.A.E.	Globe
Farley, Gordon, 1st Yr.	Law	LL.B.	Patagonia
Farley, Wilda, Sr.	H. Econ.	B.S.A.	Safford
Farmer, Leone Alta, Jr.	Educ.	B.S.E.	Salem, Ohio
Farnsworth, Richard W., Sr.	A. H.	B.S.A.	Coolidge
Farrar, Paul Waldo, P.G.	Zool.	M.S.	Pacific Beach, Calif.
Farrell, Charles H., Jr.	Music	B.M.	Tucson
Farry, M. Isabella, P.G.	Hist.	M.A.	Rochester, Ind.
Febiger, Lea, R.U.			Tucson
Feddersen, Robert, Sr.	Phys. Ed.	B.S.	Ray
Fegley, Frederic C., So.	M.E.	B.S.M.E.	Tucson
Feinn, Marcia, Fr.	French	B.A.	Waterbury, Conn.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Felder, Charles K., Fr.	Bus. Adm.	B.S.B.A.	Globe
Felix, Alma Sue, Jr.	Hist.	B.A.E.	Carlsbad, N. M.
Felix, Edmundo P., Fr.	Chem.	B.S.	Tucson
Feore, Martin Doyle, Fr.		B.S.A.	Tucson
Ferguson, Dorris E., Sr.	Eng.	B.A.E.	Holbrook
Fernandez, Joseph M., So.	Span.	B.A.E.	Miami
Ferrell, Lee Frank, Jr.	Pre-Med.	B.S.	Ft. Bayard, N. M.
Fielder, Fred Alan, Fr.	C.E.	B.S.C.E.	Tucson
Felder, Hametia Marcelite, So.	Eng.	B.A.E.	Tucson
Filbrun, David Eugene, So.			New Carlisle, Ohio
Finkel, Charles Milton, So.	Pol. Sci.	B.A.	Detroit, Mich.
Finley, Mark, Sr.	Eng.	B.A.	Tucson
Finley, Maxine (Mrs.)	Eng.	B.A.	Tucson
Fireman, Milton, Sr.	Chem.	B.S.	Glendale
Fish, Franklin Wakefield Jr., Sr.	C.E.	B.S.C.E.	Tucson
Fish, Margaret, Jr.		B.A.E.	Snowflake
Fishback, Joe, Sr.	Chem.	B.S.	Tucson
Fishback, Niel, Fr.	M.E.	B.S.M.E.	Tucson
Fisher, Allyn LeRoy, So.	Geol.	B.S.	El Paso, Tex.
Fisher, Delmar William, Jr.	M.E.	B.S.M.E.	Phoenix
Fisher, Edward M., Fr.	Bus. Adm.	B.S.B.A.	Tucson
Fisher, Ethel May, Jr.	Phys. Ed.	B.S.E.	Phoenix
Fisher, Howard R., Fr.	Pre-Dental	B.S.	Warren
Fiske, Willard C., Fr.	Chem.	B.S.	Phoenix
Fitzgerald, Geraldine, Sr.	Eng.	B.A.	Kansas City, Mo.
Fitzgerald, Lynn Warren, So.	Educ.	B.A.E.	Tucson
Flanagan, Bill Thomas, R.U.		B.A.	Tucson
Flanagan, Charles E., Jr.	Bus. Adm.	B.S.B.A.	Tucson
Flanagan, Ruby B., Jr.	Educ.	B.A.E.	Tucson
Flannery, John William, Jr.	Econ.	B.A.	Los Angeles, Calif.
Flannery, Ruth Frances, Jr.	Psych.	B.A.	Long Beach, Calif.
Flannigan, Oscar Craig, Fr.	Phys.	B.S.	Globe
Fletcher, John Dexter, Fr.	Bus. Adm.	B.S.B.A.	Wickenburg
Fletcher, Tom G., R.U.			Alpena, Mich.
Flint, Eleanor May, 1st Yr.	Law	LL.B.	Phoenix
Flint, John, Jr.	C.E.	B.S.C.E.	Phoenix
Floyd, Catherine, Jr.	Phys. Ed.	B.S.E.	Gallup, N. M.
Flynn, James Edward, P.G.	Hist.	M.A.	Cottonwood
Fontenot, L. Austin, 2nd Yr.	Law	LL.B.	Tucson
Forbes, James McLaren, Sr.	E.M.	B.S.E.M.	Covina, Calif.
Ford, Edward Thomas, Fr.	Econ.	B.A.	San Francisco, Calif.
Ford, Eleanor, Fr.	Pol. Sci.	B.A.	Tucson
Ford, Jack A., So.	Geol.	B.S.	Los Angeles, Calif.
Ford, John H., So.	Bus. Adm.	B.S.B.A.	Tucson
Ford, John Cornelius, So.		B.S.	Tucson
Ford, Ralph J., Sr.	Arch.	B.A.	Los Angeles, Calif.
Forsnas, Raymond C., Jr.	M.E.	B.S.M.E.	Superior
Forster, Richard H., So.	Eng.	B.A.	Cleveland, Ohio
Foster, Elbert Osborn, P.G.	Agr. Chem.	M.S.	Tucson
Foster, Florence Cecilia, So.	Eng.	B.A.E.	Tucson
Foster, Helen Rodgers, So.	Eng.	B.A.E.	Tucson
Foster, Junia Estelle, Fr.	Arch.	B.A.	Tucson
Foster, Wayne C., So.	M.E.	B.S.M.E.	Prescott
Foust, Cleon Henry Jr., 2nd Yr.	Law	J.D.	Tucson
Fouts, Harold S., Jr.	Chem.	B.S.	Omaha, Neb.
Fowler, Charles V., Fr.	Pre-Legal	B.A.	Tucson
Fowler, Virginia, So.	H. Econ.	P.S.A.	Tucson
Francis, Wellington, So.	Bus. Adm.	B.S.B.A.	Flagstaff
Franco, Velma Dolores, Jr.	Art	B.A.E.	Tucson
Franklin, Selim Jr., P.G.	Law	J.D.	Tucson
Franks, John Richard, 1st Yr.	Law	LL.B.	Prescott
Fraps, Edward P., Jr.	C.E.	B.S.C.E.	Tucson
Fraser, George, Fr.	Zool.	B.S.	Morenci
Frazier, Alexander, P.G.	Eng.	B.A.	Phoenix
Frederick, Clarence Alfred, Fr.		B.S.	Amherst, Ohio
Frederickson, A. Anton, Sr.	M.E.	B.S.M.E.	Phoenix
Frederickson, Phyllis, So.	H. Econ.	B.S.A.	Phoenix
Free, Guadalupe, Jr.	Span.	B.A.E.	Tucson
Free, Josephine, So.	Phys. Ed.	B.A.E.	Tucson
Freeman, Francis Marion, Jr.	Chem.	B.S.	El Paso, Tex.
Freis, Edward, So.	Eng.	B.A.	Chicago, Ill.
French, Ursula Cecile, Fr.	Eng.	B.A.	Oakland, Calif.

REGISTER OF STUDENTS

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<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Friedlander, Judith, Fr.	Art	B.A.	Tucson
Fritz, Albert W. Sr.	Bus. Adm.	B.S.B.A.	Tucson
Fritz, John Edward, So.	Chem.	B.S.	Douglas
Fritz, Charles E., Sp.	Biol.	B.S.	Globe
Frost, Hughlene, Sp.			Standard
Fruin, James, Sr.	Chem.	B.S.	Globe
Fruitman, Bertha D.	Art	B.A.E.	Bisbee
Fruitman, Cecilia, R.U.			Bisbee
Fruitman, Frank W., R.U.			Bisbee
Fry, Noah Elkenyon, 2nd Yr.	Law	LL.B.	Valdosta, Ga.
Fryer, Carina, Fr.	Eng.	B.A.	Leavenworth, Kan.
Fryer, John Fr.	Pre-Legal	B.A.	Leavenworth, Kan.
Fulbright, Brit, 2nd Yr.	Law	LL.B.	Stoutland, Mo.
Fulkerson, William Measey, So.		B.S.	Tucson
Fulton, Betty Duncan, So.	Eng.	B.A.	Tucson
Fulton, Richard E., Fr.	Bus. Adm.	B.S.B.A.	Florence
Fulton, William Hayden, Jr.	Math.	B.S.	Waterbury, Conn.
Gabaldon, Rodolfo, Fr.		B.A.	Safford
Gabbard, Fred William, Jr.	E.E.	B.S.E.E.	Scottsdale
Gabel, Norman, P.G.	Arch.	Ph.D.	Tucson
Galbreath, Clyde O., Sr.	Econ.	B.A.E.	Upland, Calif.
Gale, Lillian Kathryn, So.	Soc.	B.A.	Tucson
Gallagher, Alice, Sr.	Bus. Adm.	B.S.B.A.	Tucson
Gallagher, Hugh M. Jr., Fr.	M.E.	B.S.M.E.	Beverly Hills, Calif.
Galt, Tom, Fr.		B.A.	Santa Fe, N. M.
Gambrell, Thornton Reed, So.			Tucson
Garcia, Aida Levin, Sr.	Span.	B.A.E.	Tucson
Gardner, Dorothy Lorana, Sr.	Art	B.A.	Tucson
Gardner, George Delos, Sr.	E.M.	B.S.E.M.	Tucson
Gardner, Leigh O., Jr.	C.E.	B.S.C.E.	Inspiration
Gardner, Margaret, Jr.	Eng.	B.A.E.	Jerome
Garrett, Katharine Louise, Jr.	Educ.	B.A.E.	Douglas
Gary, Wilbur Yocum, P.G.	Chem.	M.S.	Ocala, Fla.
Gates, Frederick, Jr.	Bus. Adm.	B.S.B.A.	Tucson
Gates, Lois Ollie, So.	Psych.	B.S.	Kingman
Gatlin, Dorothy Lee, Jr.	Span.	B.A.E.	Tucson
Gatlin, Ruth L., Sr.	Bot.	B.S.E.	Patagonia
Gav, Dorothy Frances, Sr.	Arch.	B.A.	Berkeley, Calif.
Gebhardt, Rudolph C., P.G.	Geol.	M.S.	Boyceville, Wis.
Gee, Irvin, Sr.	Poultry	B.S.A.	Tucson
Gehr, Louise, Fr.	Econ.	B.A.	Highland Park, Ill.
Gemmel, Adelaide, Jr.	Arch.	B.A.	Ontario, Calif.
Gerhardt, Alvin Whitmore, Sr.	E.M.	B.S.E.M.	Tucson
Gesin, Ernest M., Sr.	Hist.	B.A.	Tucson
Getty, Eva M., Jr.	Biol.	B.S.E.	Montpelier, N. D.
Getty, Harry Thomas, P.G.	Arch.	M.A.	Tucson
Geyer, Mrs. Eva N., P.G.	Eng.	M.A.	Tucson
Gholson, Marv Elizabeth, Jr.	Music	B.M.	Mesa
Gibbings, P. N. Jr., P.G.	C.E.	M.S.C.E.	Norfolk, Va.
Gibbings, Tom, P.G.	Educ.	M.A.	Norfolk, Va.
Gibbons, Ellen H., Jr.		B.A.	Tucson
Gibson, Albert W., Jr.			Phoenix
Gibson, Dodd Graham, P.G.	Mine Adm.	A.E.M.	Webster Grove, Mo.
Gibson, Harold Randolph, Fr.	Pre-Med.	B.S.	McMinnville, Ore.
Gilbert, Dan W., Fr.		B.S.A.	Oakdale, Calif.
Gilbert, Thomas, Fr.	Bus. Adm.	B.S.B.A.	Globe
Gill, Warren C., So.	Bus. Adm.	B.S.B.A.	Tucson
Gilleland, Frank W., P.G.	Educ.	M.A.	Seatersville, W. Va.
Gillespie, Don, 1st Yr.	Law	LL.B.	San Bernardino, Calif.
Gillett, Lorris, So.	Eng.	B.A.E.	Hiram, Ohio
Gillum, Robert H., Fr.	Pre-Legal	B.A.	Tucson
Gilmore, James E., So.	Econ.	B.A.	Racine, Wis.
Gingery, Anna Laura, Jr.	H. Econ.	B.S.A.	Glendale
Girton, Allene Drake, P.G.	Music		Tucson
Glendening, George E., Jr.	R. Ecol.	B.S.A.	Glendale
Godwin, James Alvin, Fr.		B.A.	Phoenix
Goergens, Albert George, Jr.	M.E.	B.S.M.E.	Washington, D. C.
Golding, Robert, Fr.	Bus. Adm.	B.S.B.A.	Miami
Goldstein, Mac L., Jr.	Psych.	B.S.	Chicago, Ill.
Gonzalez, Florencio, Fr.	Pre-Dental	B.S.	Nogales

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Gonzalez, Saturnino, Sr.	Biol.	B.S.	Clifton
Goodman, Walter G., Jr.	Bus. Adm.	B.S.B.A.	Durango, Colo.
Goodson, Kenneth F., Fr.		B.A.	Phoenix
Gordon, Jerome, Jr.	E.M.	B.S.E.M.	Santa Monica, Calif.
Gordon, Mrs. Marcella, R.U.		B.A.E.	Tucson
Gorodezky, Eli, 2nd Yr.	Law	LL.B.	Kansas City, Mo.
Gorodezky, Milton, Jr.	Bus. Adm.	B.S.B.A.	Kansas City, Mo.
Gorsuch, David Major, P.G.	Zool.	Ph.D.	Thrift, Tex.
Gose, Elsie Lee, So.	Phys. Ed.	B.S.E.	Hurley, N. M.
Gottschalk, Barbara Ottilie, P.G.	Eng.	M.A.	Tucson
Grabert, Claude D. Jr., So.	Bus. Adm.	B.S.B.A.	Deming, N. M.
Graesser, Lois M., Sr.	Math.	B.A.	Tucson
Graham, James A., Jr. R.U.	Econ.	B.A.	Hollywood, Calif.
Graham, Robert A., Sr.	Arch.	B.S.	Tucson
Grant, James Robert, So.	Span.	B.A.	Tucson
Grasham, Bertha, So.	Span.	B.A.	Warren
Graves, Don Elvin, So.	Pre-Legal	B.A.	Los Angeles, Calif.
Gray, Harry J., Sp.	Econ.	B.A.	Phoenix
Gray, John William, Fr.	Bus. Adm.	B.S.B.A.	Spring Green, Wis.
Green, George Washington, Sp.			Tucson
Green, Polly A., Jr.	Eng.	B.A.E.	Coleman, Tex.
Greenbaum, Leonard G., Fr.	Zool.	B.S.	Mt. Vernon, N. Y.
Greene, Richard Charles, So.	Bus. Adm.	B.S.B.A.	Kalamazoo, Mich.
Greene, Robert A., P.G.	Agr. Chem.	Ph.D.	Pea Ridge, Ark.
Greenwood, Kenneth R., Sr.	M.E.	B.S.M.E.	Niagara Falls, N. Y.
Greer, Jason Wilbur, So.	Phys. Ed.	B.S.E.	Tucson
Gregg, Samuel Walter Jr., So.			Bradford, Pa.
Greig, Ellen L., So.	Chem.	B.S.	Ravinia, Ill.
Greiner, Dorothy, Jr.	Span.	B.A.E.	Tucson
Greven, Philip John, So.	M.E.	B.S.M.E.	Tucson
Gricus, Charles A., Fr.	Soc.	B.A.	Chicago, Ill.
Griffith, Catherine Isabelle, Fr.	H. Econ.	B.S.A.	Globe
Griffith, Ernest M., Jr.	E.E.	B.S.E.E.	Globe
Griffith, Helen, Sr.	Span.	B.A.E.	Santa Barbara, Mex.
Griffith, Manning, So.	Pre-Legal	B.A.	Tucson
Grondona, Richard, So.	Pre-Legal	B.A.	San Francisco, Calif.
Guerrero, Edward Victor, Fr.	E.E.	B.S.E.E.	Nogales
Guillotte, George B., Jr.	E.M.	B.S.E.M.	Salt Lake City, Utah
Gunst, Marie Louise, P.G.	Arch.	Ph.D.	Tucson
Gunter, Manning, So.	Biol.	B.S.	Globe
Gunter, Randolph, Fr.	Eng.	B.A.E.	Globe
Gunthorp, Charles Lawrence, 2nd Yr.	Law	LL.B.	Tucson
Gurley, William D., So.			Benson
Gutzman, Edwin, Fr.	Hist.	B.A.	Tucson
Guynup, Catherine S., Jr.	Hist.	B.A.E.	Miami
Guynup, Leona E., So.	Phys. Ed.	B.S.E.	Miami
Haddaway, Rochester H., Jr.	Eng.	B.A.	Fort Worth, Tex.
Hagerty, Cordelia, Sp.			Tucson
Haines, Margaret A., Jr.	Eng.	B.A.	Rockford, Ill.
Halbach, Robert W. Jr., R.U.		B.A.	Quincy, Ill.
Hale, Thomas Jr., P.G.	Zool.	B.S.	Tucson
Hall, Charles W., So.	Pre-Med.	B.S.	Mt. Vernon, Ill.
Hall, Chester A., P.G.	Educ.	M.A.	Tucson
Hall, George, Sr.	Eng.	B.S.	Newcastle, Ind.
Hall, Herbert, So.	C.E.	B.S.C.E.	Tacoma, Wash.
Hall, John, Sr.	E.E.	B.S.E.E.	Litchfield Park
Hall, Katherine, Fr.	H. Econ.	B.S.A.	Newcastle, Ind.
Hall, Lula, Jr.	Music	B.M.	Eagar
Halliday, Henry Fred, Sr.	Bus. Adm.	B.S.B.A.	Superior
Hamilton, Earl, Sr.	M.E.	B.S.M.E.	Esmond
Hamilton, Frances L., P.G.	Bot.		Phoenix
Hamilton, Louis F., Sr.	Hort.	B.S.A.	Yuma
Hamilton, Martha Louise, Jr.			Patagonia
Hampshire, Claude C., P.G.	C.E.	M.S.	Tucson
Hampshire, Myra Mason, Jr.			Tucson
Hampston, Jeannette, So.		B.A.E.	Warren
Hand, David M. G., P.G.			Willcox
Handley, Margaret Laura, So.	Eng.	B.A.E.	Nogales
Handley, Mattie Lee, Jr.	Span.	B.A.E.	Nogales
Hankins, Lola Emma, Jr.	Eng.	B.A.E.	Phoenix

REGISTER OF STUDENTS

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<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Hannah, Elizabeth, Fr.	Eng.	B.A.E.	Florence
Hanna, Murel W., P.G.		M.A.	Berkeley, Calif.
Hansen, Ailene, Sr.	H. Econ.	B.S.A.	Joseph City
Hansen, George K., Jr.	Bus. Adm.	B.S.B.A.	Joseph City
Hansen, Oscar B., Sr.	Bus. Adm.	B.S.B.A.	Santa Ana, Calif.
Hanson, Alice, Jr.	Eng.	B.A.E.	Phoenix
Harbella, Amelia, Fr.	Bus. Adm.	B.S.B.A.	Springerville
Hardin, Mildred Cleo. Sr.	Hist.	B.A.E.	Marana
Hardin, Mrs. Mildred D., Jr.		B.A.E.	Tucson
Harding, Robert C., Sr.	C.E.	B.S.C.E.	Tucson
Hardwick, William R., Fr.	M.E.	B.S.M.E.	Tucson
Hardy, Ralph Charles, Jr.	Econ.	B.A.	Pendleton, Ind.
Hardy, Ruth Lee, Jr.	Eng.	B.A.	Tucson
Hargus, Lee, So.	Eng.	B.A.	Tucson
Hargus, Lowell, Jr.	Bus. Adm.	B.S.B.A.	Tucson
Harkey, Mrs. Alice Perkins, P.G.	Eng.	M.A.	Tucson
Harless, Richard Fielding, 2nd Yr.	Law	J.D.	Mesa
Harper, Helen Elizabeth, Sr.	Math.	B.S.E.	Tucson
Harper, Mary Alice, Fr.		B.A.E.	Tucson
Harrell, Sheldon, Fr.			Tucson
Harris, Charles V., Sr.	E.M.	B.S.E.M.	Bisbee
Harris, Leland B., Fr.	Eng.	R.A.	Webster Groves, Mo.
Harris, Samuel H. Jr., Sr.	Art	B.A.	Chicago, Ill.
Harrison, Buford Paul, Fr.	A. H.	B.S.A.	San Francisco, Calif.
Harrison, Kenneth C., P.G.	Zool.	M.S.	Jerome
Harritt, James Douglas, So.	Arch.	B.A.	La Mesa, Calif.
Harshberger, George, Fr.	Econ.	B.A.E.	Phoenix
Hart, Alice A., Jr.	Zool.	B.S.E.	Inspiration
Hart, John Lanston, Jr.	Bus. Adm.	B.S.B.A.	New York, N. Y.
Hart, Martha, Sr.	Phys. Ed.	B.S.E.	Tucson
Hartin, Jack Thomas, Fr.	E.E.	B.S.E.E.	Holbrook
Hartley, Elizabeth, P.G.	Zool.	M.S.	Tucson
Harvey, Doris L., So.	Arch.	B.A.	Pasadena, Calif.
Hastings, James, Sp.		B.S.	Tucson
Hastings, Russell, Jr.	Arch.	B.A.	Grand Canyon
Hatcher, Burrell Richard, Fr.	E.E.	B.S.E.E.	Tucson
Hathaway, Gavnor William, Fr.	M.E.	B.S.M.E.	Nogales
Hathaway, Gregory O., Fr.	Pre-Legal	B.A.	Nogales
Hottis, Morley, Fr.	Hort.	B.S.A.	Tucson
Haugen, Mary Edna, P.G.	Eng.	M.A.	Woodworth, N. D.
Hanbhart, Edward William, P.G.	Educ.	M.A.	
Hauter, J. Allan, Sr.	Chem.	B.S.	La Grange, Ill.
Hawes, Bonnie Irene, Fr.	H. Econ.	B.S.A.	Willcox
Hawkins, John Q., Jr.	Agron.	B.S.A.	Tucson
Hawkins, Mrs. Ruth A., Fr.	H. Econ.	B.S.A.	Tucson
Hawley, Paul Frederick, Sr.	E.E.	B.S.E.E.	Miami
Hayden, Mary Jane, So.		B.A.	Kansas City, Mo.
Haves, Evelyn, Fr.	French	B.A.E.	Globe
Haymore, Millard Jr., So.	Bus. Adm.	B.S.B.A.	Los Angeles, Calif.
Haynie, Ret E., Fr.	Eng.	B.A.	Tucson
Hazelett, Joie-Belle, Jr.	Music	B.M.	Phoenix
Haylewood, H. C., Jr.	C.E.	B.S.C.E.	Bisbee
Heard, Marvin E., P.G.	Educ.	M.A.	Casa Grande
Heath, Albert, Sr.	C.E.	B.S.C.E.	Higley
Heath, Wilbur Eliotte, Fr.	Bus. Adm.	B.S.B.A.	Higley
Heidenreich, Philip, Sr.			La Grande, Ore.
Heileman, Burl, Sr.	M.E.	B.S.M.E.	Phoenix
Heisman, Sadie Klein (Mrs.), Fr.			Tucson
Helbron, Ralph F., Fr.		B.S.	San Bernardino, Calif.
Helm, Lloyd C., So.	Econ.	B.A.	Douglas
Helmicks, Eileen Juliet, Fr.		B.A.	Deerfield, Wis.
Henderson, Arthur, Sr.	Eng.	B.A.	Brooklyn, N. Y.
Henderson, Jarvis Richard, Fr.	Eng.	B.A.	Tucson
Henderson, Robert G., Fr.	Zool.	B.S.	Tucson
Henderson, Ronald C., Fr.			Phoenix
Henderson, Thomas D., Sr.	E.M.	B.S.E.M.	Manilla, P. I.
Henderson, Thomas S., Sr.	E.E.	B.S.E.E.	Tucson
Hendricks, Archie, Fr.			Sells
Hendricks, Barnard Andrew, P.G.	Bot.	M.S.	Lincoln, N. M.
Hendrix, Vera E., Sr.	Math.	B.A.E.	Mesa
Hennessey, Evelyn Mae, Fr.	Bus. Ad	B.S.B.A.	Holbrook
Henry, Elizabeth M., P.G.	Span.	M.A.	Columbus, N. M.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Henry, Franklin M., Sp.	Phys.		San Francisco, Calif.
Henry, John William, Fr.	Hist.	B.A.	Clifton
Hereford, Mrs. Mary, R.U.			Tucson
Hermes, Charlotte Marie, Jr.	Span.	B.A.	Tucson
Herndon, Betty B., P.G.	Span.	M.A.	Tucson
Herndon, Thomas Ralph, P.G.			Tuba City
Hernon, Robert Mann, P.G.	Geol.	M.S.	Forest City, Iowa
Herrick, Emily Elaine, Fr.	Bus. Adm.	B.S.B.A.	San Diego, Calif.
Herrick, Gertrude, P.G.			River Forest, Ill.
Herrick, Leonora Louise, Fr.	Eng.	B.A.	San Diego, Calif.
Herring, Dorothy C., So.	H. Econ.	B.S.A.	Mansfield, Ohio
Hess, Dorothy Helen, Fr.	Bus. Adm.	B.S.B.A.	Tucson
Hesselberg, Albert, 1st Yr.	Law	J.D.	Tucson
Hetherington, Albert W., Fr.	Zool.	B.S.	Joseph City
Hewitt, Delphine M., Jr.	Arch.	B.A.	Niles, Ohio
Hewitt, Ruth Ida, R.U.			Niles, Ohio
Hicks, Charles Newton, Fr.	Math.	B.A.	Kingman
Hicks, French Jack, P.G.	Math.	M.A.	Columbus, Ark.
Hicks, Mrs. Gertrude, Jr.	Eng.	B.A.	Tucson
Hicks, William Emmett, Fr.	Pre-Legal	B.A.	Prescott
Hierholzer, Vaughn F., So.	E.E.	B.S.E.E.	Toledo, Ohio
Higdon, Charles E., P.G.	Geol.	M.S.	Leitchfield, Ky.
Higley, Muri., Jr.			Yuma
Hill, James, Fr.		B.S.	Olberg
Hill, J. M., Fr.			Berkeley, Calif.
Hill, John Fleming, Fr.	Arch.	B.A.E.	Berkeley, Calif.
Hill, Joseph Wolfrey, 1st Yr.	Law	J.D.	Dayton, Ohio
Hill, Robert Murray, Fr.	Pre-Med.	B.S.	Morenci
Hiller, James Carroll, Fr.	M.E.	B.S.M.E.	Tucson
Hinckly, Arthur L., R.U.			Tucson
Hind, Shirley, So.	Music	B.M.	Globe
Hindle, Norman James, Fr.	Bus. Adm.	B.S.B.A.	Yuma
Hines, Marjorie Rita, Jr.	Eng.	B.A.	Great Neck, N. Y.
Hinrichs, Paul George, Sr.	Math.	B.A.E.	Tucson
Hooctor, Earle Lewis, Jr.	Bus. Adm.	B.S.B.A.	Glendale
Hodnette, Marie, Sr.	Eng.	B.A.E.	Denver, Colo.
Hoffman, Cecil Edward, P.G.	Hist.	B.A.	Escuela (Pima)
Hoffman, Luther T., Jr.	Psych.	B.A.	Pasadena, Calif.
Hoffsten, Ernest Godfrey, Sr.	Eng.	B.A.	Webster Groves, Mo.
Holesapple, Abbie Yell, Jr.	Pre-Med.	B.S.	Tucson
Holladay, Lawrence E., Sr.	Law	LL.B.	Tucson
Holland, Alice Solomon, Fr.			Tucson
Holland, Linton Walters, R.U.	Eng.	B.A.	Tucson
Hollinger, Charles S., Jr.	Latin	B.A.E.	Tucson
Holloway, Merritt R., So.		B.A.	Iowa City, Iowa
Holm, Marjorie, Jr.	Hist.	B.A.	New York, N. Y.
Holmes, Donald T., So.	Chem.	B.S.	Ajo
Holmes, William W., Fr.	Educ.	B.A.E.	Chicago, Ill.
Holzworth, Martha Camp, Jr.	Hist.	B.A.E.	Phoenix
Hood, Allan T., Sr.	Econ.	B.S.	Douglas
Hoover, Lillian C., So.	H. Econ.	B.S.A.	Chickasha, Okla.
Hopkins, Alice Dougherty, Fr.	Music	B.M.	Clarkdale
Hore, Roy, Fr.	Math.	B.A.	Jerome
Hornberger, Florence, Fr.	Econ.	B.A.	Phoenix
Hornberger, Rex W., Jr.	Bus. Adm.	B.S.B.A.	Phoenix
Horner, Reuben L., So.	Educ.	B.A.E.	Nogales
Horton, George Allan, Jr.	E.M.	B.S.E.M.	Jackson, Ohio
Houghton, Louise, P.G.	Span.	M.A.	Tucson
Houle, Elaine, Jr.		B.S.	Douglas
Houston, George E., Jr.	C.E.	B.S.C.E.	Tucson
Houston, Robert L., P.G.	C.E.	M.S.C.E.	Tucson
Howard, Helen, Fr.	Eng.	B.A.	Denver, Colo.
Howard, Robert D., P.G.	Educ.	M.A.	Tucson
Howard, Robert J., Sr.	Chem.	B.S.	Phoenix
Howatt, Consuelo, Fr.	Eng.	B.A.	Tucson
Howatt, Gloria, P.G.	Span.	M.A.	Tucson
Howe, Edwin Rogers, Fr.			Bisbee
Hoyt, David Donald, Fr.	French	B.A.	Tucson
Hoyt, Walter S., Fr.		B.A.	Kansas City, Mo.
Hubbard, L. W., Jr.	M.E.	B.S.M.E.	Empalme, Son., Mex.
Hubbell, Jacqueline, So.		B.A.E.	Tucson
Huber, Elmer E., So.	Bus. Adm.	B.S.B.A.	Miami

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Huber, Waldo O., Sr.	M.E.	B.S.M.E.	Mesa
Huddleson, Frances H., So.	Music	B.A.	Ft. Huachuca
Hudson, Bernice, R.U.	Eng.	B.A.	Tucson
Hudson, Don, So.	Chem.	B.S.	Tucson
Hudson, Dwight G., So.	Hort.	B.S.A.	Tempe
Hudson, Hugh F., Sr.	A. H.	B.S.A.	Tempe
Hudson, Lawrence, Jr.	Bus. Adm.	B.S.B.A.	Tolleson
Hudson, Phil Graydon, P.G.	Bus. Adm.	M.A.	Tolleson
Hudspeth, Aiyce E., Jr.	H. Econ.	B.S.A.	Tucson
Hudspeth, Tom C., P.G.	Span.	B.S.A.	Tucson
Huff, Lillian M., Fr.	H. Econ.	B.S.A.	Tucson
Huff, Mary Louise, Sr.	Hist.	B.A.E.	Tucson
Huffman, Dorothy, Sr.	H. Econ.	B.S.A.	Tucson
Huffman, Kearns Florence, Sr.	French	B.A.	Tucson
Hughes, Daniel, Sr.	Bus. Adm.	B.S.B.A.	Tucson
Hughes, John Beaver, Fr.	Bus. Adm.	B.S.B.A.	Clarkdale
Hughes, Marjorie Neva, Sr.	Eng.	B.A.	Tucson
Hughes, Marguerite B., R.U.	H. Econ.	B.S.	Tucson
Hughes, Reuben Paul, So.	Bus. Adm.	B.S.B.A.	Tucson
Hughey, Vedder, P.G.	Math.	M.S.	Buffalo, N. Y.
Hull, Thomas, Robert, P.G.			Newton Centre, Mass.
Hulsey, Harold A., So.	Bus. Adm.	B.S.B.A.	San Simon
Hummel, Gail, So.	Pre-Legal	B.A.	Tucson
Hundhausen, Mary, Jr.	Geol.	B.S.	Gray Summit, Mo.
Huning, Mary Julianita, Sr.	Art	B.A.E.	Ventura, Calif.
Hunsaker, Mary, So.	Bus. Adm.	B.S.B.A.	Everett, Wash.
Hunt, Hollis A., So.	C.E.	B.S.C.E.	Miami
Huntzicker, Blanche, So.	Hist.	B.A.	Milwaukee, Wis.
Huntzicker, Victoria, Jr.	Eng.	B.A.	Milwaukee, Wis.
Hunziker, Eugene Philip, Jr.	C.E.	B.S.C.E.	Los Angeles, Calif.
Hussey, Frances Lynch, Jr.	Eng.	B.A.E.	Springerville
Hussey, Willan Irene, Jr.	Eng.	B.A.	Tucson
Hutcheson, Esther, Fr.	Hist.	B.A.	Tucson
Hyke, Arthur W., 2nd Yr.	Law	LL.B.	Tucson
Hyslop, James R., Jr.	Zool.	B.S.	Parral, Mex.
Ihrig, Mary L., P.G.	Eng.	M.A.	Mansfield, Ohio
Iliff, Christobel, Fr.	Art	B.A.	Stewart, Nev.
Inch, Helen Marjorie, Jr.	Art	B.A.E.	Medford, Ore.
Inderlied, Herman Frederick, Fr.	Zool.	B.S.	Phoenix
Irvin, Elizabeth Faye, P.G.	Eng.	M.A.	Longmont, Colo.
Irvin, Harry, Sr.	Agron.	B.S.A.	Tucson
Irvin, Jefferson J., Fr.	Hist.	B.A.	Tucson
Irvin, Walker, Sr.	Econ.	B.A.	Tucson
Irving, Richard, Jr.	Hist.	B.A.	Ft. Davis, Tex.
Isley, Shirley Irene, Jr.	H. Econ.	B.S.A.	Mesa
Israel, Hyman, So.	Econ.	B.A.	Chicago, Ill.
Jack, William C., So.	Bus. Adm.	B.S.B.A.	Douglas
Jackson, Doyle D., P.G.	Educ.	Ph.D.	Tucson
Jackson, Earl, Sr.	Eng.	B.A.	Camp Verde
Jackson, Fay Mary, Jr.	Span.	B.A.E.	Phoenix
Jackson, George William, Fr.	Bus. Adm.	B.S.B.A.	Winslow
Jackson, Ruth E., Sr.	Hist.	B.A.E.	Long Beach, Calif.
Jacobs, Alan H., 1st Yr.	Law	LL.B.	Santa Barbara, Calif.
Jacobs, Isola C., So.	Biol.	B.S.	Tucson
Jacobson, Eino Matti, Jr.	C.E.	B.S.C.E.	Miami
Jacobson, Josephine, So.	Phys. Ed.	B.S.E.	Miami
Jacobson, Mrs. N. S., R.U.	Music	B.M.	Owatonna, Minn.
Jakle, John Joseph, So.	Bus. Adm.	B.S.B.A.	Flagstaff
James, Ruth, Sr.	Hist.	B.A.E.	Bisbee
James, Shirley Elaine, So.	Hist.	B.A.	Bisbee
Jameson, Donald, Fr.			Tucson
Jamda, Louis Richard, So.		B.A.	Pasadena, Calif.
Jarman, Muriel Freda, Fr.	Econ.	B.A.	Juneau, Alaska
Jeffrey, Alice Catherine, So.	Eng.	B.A.E.	Lowell
Jenckes, Joseph, 2nd Yr.	Law	J.D.	Phoenix
Jenkins, Ralph H., So.			Tucson
Jenks, Randolph, Fr.	Zool.	B.S.	Morristown, N. J.
Jenney, Mrs. Evelyn Buzan, R.U.			Tucson
Jensen, Agnes, P.G.	Educ.	M.A.	Tucson

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Jewett, Mrs. Cora K., Sr.	Educ.	B.A.E.	Tucson
Jimerson, Mrs. Katherine, Sr.	French	B.A.	Tucson
Jobe, Harley B., Fr.	Zool.	B.S.	Phoenix
Johnson, Charlton Fred, Sr.	Bus. Adm.	B.S.B.A.	Phoenix
Johnson, Charles H., P.G.			Tucson
Johnson, Geo. A., Fr.	Bus. Adm.	B.S.B.A.	Wayzata, Minn.
Johnson, George F., So.	Biol.	B.S.A.	Gregory, S. D.
Johnson, Harry Franklin, So.		B.A.	Topeka, Kan.
Johnson, Henry Pickens, Jr.	Music	B.M.	Bisbee
Johnson, Lloyd Bates, 2nd Yr.	Law	LL.B.	Rabon, N. M.
Johnson, Robert W., Fr.		B.S.A.	Riverside, Calif.
Johnson, Sam B., So.	Econ.	B.A.	Clayton, N. M.
Johnston, Walter, Sp.	Bus. Adm.	B.S.B.A.	Safford
Jones, Alice Mary, 1st Yr.	Law	LL.B.	Brawley, Calif.
Jones, Elizabeth Wells, Jr.	French	B.A.	Ft. Atkinson, Wis.
Jones, Evaline Rowena, Fr.	French	B.A.	Phoenix
Jones, James Arthur, Jr.	Hist.	B.A.	Phoenix
Jones, Jack M., Jr.	E.E.	B.S.E.E.	Phoenix
Jones, Shirley Marie, Fr.		B.A.E.	Mobile, Ala.
Jordan, Lester, Jr.	Bus. Adm.	B.S.B.A.	Topeka, Kan.
Joyner, Joan Bernice, Fr.	Eng.	B.A.	Phoenix
Judson, Jeannette, So.	Eng.	B.A.	Phoenix
Julien, Meredith Louise, Jr.	Eng.	B.A.	Indianapolis, Ind.
Jung, Hom Moon, Fr.	E.M.	B.S.E.M.	Prescott
Kalil, Margaret, Jr.	Hist.	B.A.E.	Ajo
Kanen, Genevieve, Sr.	Music	B.M.	El Paso, Tex.
Karger, Robert S., R.U.	Psych.	B.A.	Chicago, Ill.
Karjala, Pentti, P.G.	Econ.	M.A.	Waukegan, Ill.
Kartchner, Merle, Jr.	Music	B.M.	Snowflake
Kasson, Mary Russell, Jr.	Latin	B.A.E.	Roswell, N. M.
Kautz, Olive Iona, P.G.	Educ.	M.A.	Tucson
Kearns, Mary Frances, Fr.	Hist.	B.A.	Tucson
Kearns, William O'Brien, P.G.	Pol. Sci.	M.A.	Tucson
Keeler, C. Wilson, Jr.	Psych.	B.A.	Prescott
Keener, Lee Lanam, Sr.	Econ.	B.A.	Tucson
Keho, Mrs. Clifford H., P.G.			Coin, Iowa
Keirnan, Marguarit Ellen, R.U.	Eng.	B.A.	San Diego, Calif.
Keleman, Louis, So.	E.E.	B.S.E.E.	Tucson
Keller, Ann, Jr.	Eng.	B.A.	Ft. Leavenworth, Kan.
Keller, Elizabeth, Sr.	Eng.	B.A.E.	Long Beach, Calif.
Keller, Frank Jr., So.	C.E.	B.S.C.E.	Ft. Leavenworth, Kan.
Keller, Lloyd, Jr.	M.E.	B.S.M.E.	Phoenix
Kelley, Harold E., 1st Yr.	Law	LL.B.	Haddfield, N. J.
Kelley, Mose E., Jr.	E.M.	B.S.E.M.	Tucson
Kelly, John Franklin, So.		B.A.	Phoenix
Kelly, Larry D., Jr.	M.E.	B.S.M.E.	Glendale
Kelly, Mary Knox, R.U.	Educ.	B.A.E.	Tucson
Kelly, Raymond Coole, Jr.	M.E.	B.S.M.E.	Hinsdale, Ill.
Kelly, David Roderick, Fr.			Phoenix
Kendrick, Ora Wanda, Fr.	Span.	B.A.E.	Tucson
Keneaster, Claude H., Jr.		B.S.A.	Tucson
Kennedy, Lenore M., P.G.			Tucson
Kennedy, Margaret Ruth, So.	French	B.A.	Globe
Kent, Homer Asa, Fr.	Chem.	B.S.	Clarkdale
Kepner, Martha A., So.	Span.	B.A.	Tucson
Kercher, Margaret S., So.	Span.	B.A.	Topeka, Kan.
Kerr, Louise Marguerite, Fr.	Bus. Adm.	B.S.B.A.	Clifton
Kerr, Roscoe R., 2nd Yr.	Law	J.D.	Long Beach, Calif.
Kersey, Thelma, P.G.	Hist.	M.A.	Alamogorda, N. M.
Kessler, Harry, So.	Hort.	B.S.A.	Long Beach, Calif.
Kessler, Rollo V., P.G.	Educ.	M.A.	Troy, Ohio
Keyes, Donald J., So.			Tucson
Kiernan, Peter R., Sr.	C.E.	B.S.C.E.	San Diego, Calif.
Knight, Ruth Ella, R.U.			Tucson
Kilborn, Elizabeth, So.	Bus. Adm.	B.S.B.A.	Akron, Ohio
Kilborn, Esther, So.		B.A.	Tucson
Kilian, Charles Harry, Jr.	Chem.	B.S.	Pacific Grove, Calif.
Killip, William, Sp.	E.M.	B.S.E.M.	Morenci
Kimball, Olive, Sr.	Art	B.A.E.	Tucson
Kimball, William F., Sr.	Eng.	B.A.	Tucson

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
King, Kenneth A., So.		B.S.	Tucson
Kingsley, Marjorie H., Jr.	Eng.	B.A.	Phoenix
Kinley, Thomas R., Jr.	Bus. Adm.	B.S.B.A.	Boston, Mass.
Kinnear, Mrs. Regina, Sp.	Eng.	B.A.	Columbus, Ohio
Kinney, Kathryn M., So.	Music	B.M.	Tucson
Kinsman, Simon, P.G.	Chem.	M.S.	Globe
Kirby, Lorena, Sr.	French	B.A.	Dallas, Tex.
Kirby, Robert, Fr.	E.E.	B.S.E.E.	Tucson
Kirk, Robert P., Jr.	C.E.	B.S.C.E.	Phoenix
Kirkland, Ira Bird, Fr.	Econ.	B.A.	Evanston, Ill.
Kittredge, John M., Jr.	M.E.	B.S.M.E.	Ottumwa, Iowa
Klein, Everett E., Jr.	Educ.	B.A.E.	Tucson
Klein, Norman, Fr.	Zool.	B.S.	Yonkers, N. Y.
Klima, John J., Sr.	Econ.	B.A.E.	Cleveland, Ohio
Kline, Lillian, So.	Bus. Adm.	B.S.B.A.	Douglas
Klingenberg, Paul, Sr.	Entom.	B.S.A.	Clarkdale
Knapp, A. Bruce, Jr.		B.S.	Tucson
Knight, Winifred, Sp.	Music	B.M.	Tucson
Knipe, Dorothy, R.U.			Tucson
Knipe, Theodore, Jr.	Botany	B.S.	Tucson
Knoles, Rex, Sr.	Bus. Adm.	B.S.B.A.	Tombstone
Knowles, Ralph, So.	C.E.	B.S.C.E.	Ajo
Knudsen, Hans, Sr.	Chem.	B.S.	Benson
Kossousky, Sylvia, Fr.	Psych.	B.A.	New York, N. Y.
Kramer, Lee, Sr.	Educ.	B.A.E.	Modoc, Ind.
Krauter, Douglas John, Fr.	Econ.	B.A.	Steins, N. M.
Krause, Gregory, R.U.			Tucson
Krawczuk, John Edward, Fr.	Hist.	B.A.	Whipple
Krebs, Ruth Nadine, Fr.	H. Econ.	B.S.A.	Tombstone
Krivel, Martha Elizabeth, Fr.	H. Econ.	B.S.A.	Tucson
Kroeger, Grace Christine, So.	Bus. Adm.	B.S.B.A.	Tucson
Krouskup, T. B., P.G.	Educ.	M.A.	Casa Grande
Kruger, David, So.	Bus. Adm.	B.S.B.A.	Bisbee
Kruger, Max, 1st Yr.	Law	J.D.	Bisbee
Krutttschnitt, Ted H., Fr.	Arch.	B.A.	Tucson
Krznarich, Paul, So.	Chem.	B.S.	Mesa
Kuffer, Adrien D., Sr.	Agron.	B.S.A.	Needles, Calif.
Kunze, Ruby E., Fr.	Eng.	B.A.	Phoenix
Kusianovich, Pete, So.	Arch.	B.A.	Tucson
Labensart, Irving, Fr.	Bus. Adm.	B.S.B.A.	Miami
Lamb, Frank D., Jr.	E.M.	B.S.E.M.	Phoenix
Lamb, John C., So.	M.E.	B.S.M.E.	Tucson
Laing, John Thomas, 1st Yr.	Law	LL.B.	Tucson
LaMotte, Blanche Elizabeth, So.	Eng.	B.A.E.	Los Angeles, Calif.
Landon, Marion Louise, So.	Pol. Sci.	B.A.	Flint, Mich.
Lane, Harland R., Jr.	M.E.	B.S.M.E.	Durango, Colo.
Lang, Jack W., Sr.	Econ.	B.A.	Rochester, N. Y.
Lang, Richard, Sr.	Econ.	B.A.	Rochester, N. Y.
Lange, Harry Burton, Fr.	Math.	B.S.E.	Douglas
Lange, Herman Henry, Jr.	Physics	B.S.E.	Douglas
Lange, Jack, So.	Biol.	B.S.	Racine, Wis.
Langers, Mary C., So.			Tucson
Lapham, Nancy, Fr.			LaGrange, Ill.
LaPrade, Jimmie, Fr.	Hist.	B.A.	Winslow
Larkin, Edward A., So.		B.A.	Chicago, Ill.
Larkin, John Lawrence, P.G.	Educ.	Ph.D.	Tucson
Larmour, Lucile J., Sr.	Eng.	B.A.E.	Tucson
Larson, Orville Delbart, So.	Bus. Adm.	B.S.B.A.	Miami
Larsen, Mrs. Fannie, R.U.			Houston, Tex.
Larson, Rosa K., P.G.			Tucson
Lassetter, Roy Jr., So.	Arch.	B.A.	El Paso, Tex.
Laube, William T. Jr., So.	Pre-Legal	B.A.	Seattle, Wash.
Lay, Ruth W., Sr.	Zool.	B.S.	Sacaton
Layton, Bruce, Jr.	Bus. Adm.	B.S.B.A.	Safford
Layton, Henry Marden, So.	M.E.	B.S.M.E.	Thatcher
Leach, Burton Crosby, Fr.		B.A.	Chala Vista, Calif.
Leary, Paul Edward, Sp.	Phys. Ed.	B.S.E.	Long Beach, Calif.
Le Beau, Fred E., Fr.	E.E.	B.S.E.E.	Kingman
Lee, Roy Augustus, P.G.	Educ.	M.A.	Tucson
Legler, Iona Eva, Jr.	Econ.	B.A.E.	Tucson

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Legler, Randall P., R.U.	Bus. Adm.	B.S.B.A.	Tucson
Lehman, Howard William, R.U.	Law	LL.B.	Springfield, Ill.
Leiber, Bill F., Fr.	E.E.	B.S.E.E.	Phoenix
Leiber, Henry, Sr.		B.A.	Phoenix
Leichman, Nathan S., Sr.	German	B.A.	Tucson
Leland, George R., Jr.	Chem.	B.S.	Tucson
Leland, Helen Elizabeth, Fr.	Span.	B.A.E.	Clifton
Lemen, Matthew H. Jr., Fr.	E.E.	B.S.E.E.	Tucson
Lentz, John A., Jr.	E.M.	B.S.E.M.	Phoenix
Leonard, Celima Roi, So.	Span.	B.A.	Casa Grande
Leonard, Ralph Jackson, Fr.	M.E.	B.S.M.E.	Tucson
Leos, Juanita M., Fr.	Span.	B.A.	Florence
Leshner, Mrs. Marguerite H., P.G.	French	M.A.	Tucson
Lesley, Carmen T., So.	Phys. Ed.	B.S.E.	Tucson
Letchworth, Edward H. Jr., 1st Yr.	Law	J.D.	Buffalo, N. Y.
Leverton, Edith, Fr.	Music	B.M.	Tucson
Leverton, Ruth, P.G.	H. Econ.	M.S.	Lincoln, Neb.
Levine, Sophie, So.	Bact.	B.S.	Tucson
Levy, Alfred L., 2nd Yr.	Law	J.D.	Douglas
Levy, Esther Farber, Jr.	Econ.	B.A.	Tucson
Levy, Leon Fred, Fr.	Bus. Adm.	B.S.B.A.	Douglas
Levy, Sam, Fr.	Educ.	B.A.E.	Douglas
Lewis, Ernest, Sp.			Tucson
Lewis, Richard, So.	E.M.	B.S.E.M.	Peoria, Ill.
Lewis, William Hoyt, Sr.	Econ.	B.A.	Birmingham, Ala.
Lewis, William Morton, Sr.	Span.	B.A.	Tucson
Libbey, Alfred Rainey, Fr.	M.E.	B.S.M.E.	Tucson
Liebbe, Norbert Henry, Sr.	Bus. Adm.	B.S.B.A.	Tucson
Light, Betty S., Sr.	Music	B.M.	Tucson
Lindblad, Walter Edward, Jr.	Eng.	B.A.	Wilmette, Ill.
Lindenfeld, Hortense A., Jr.	Art	B.A.E.	Tucson
Lingard, Elsbeth, Sr.	H. Econ.	B.S.A.	Casa Grande
Linn, Dorothy O., Jr.	Eng.	B.A.	Tucson
Liscum, Fred, R.U.	E.E.	B.S.E.E.	Tucson
Littlewood, Frank, So.	E.E.	B.S.E.E.	Tucson
Livaudais, Eulalie, Sp.			New Orleans, La.
Livengood, Marjorie Mildred, Sr.	Span.	B.A.E.	Dragon
Lloyd, Elizabeth, Sr.	Eng.	B.A.	Leavenworth, Kan.
Locke, Benita, Fr.	Arch.	B.A.	Oklahoma City, Okla.
Lockett, Claiborne H., Sr.	Econ.	B.A.E.	Phoenix
Lockett, Florence Dunn, Sr.	Eng.	B.A.	Phoenix
Lockett, Hattie M., Sr.	Educ.	B.A.E.	Phoenix
Lockett, Robert W., R.U.			Tucson
Lockhart, Geneva Juanita, Jr.			Phoenix
Lockwood, A. Charlotte, Sr.	Eng.	B.A.	Phoenix
Logan, Charles Sumpter, R.U.	Eng.	B.A.	Oxford, Miss.
Logie, Catherine Munger, Sr.	Eng.	B.A.E.	Phoenix
Lombard, Ruth Virginia, Fr.	Art	B.A.	Redlands, Calif.
Long, Frank C., Fr.			Pittsfield
Long, Thomas Lloyd, Sr.	M.E.	B.S.M.E.	Wichita, Kan.
Losee, Frank Burr, Sr.	M.E.	B.S.M.E.	Globe
Lott, Frankie Wylma, Fr.	Bus. Adm.	B.S.B.A.	Tucson
Lott, Gladys R., Jr.	H. Econ.	B.S.A.	Tucson
Lounsbury, Virginia, Jr.	Hist.	B.A.E.	Superior, Wis.
Love, Mrs. Dorothy S., So.	Eng.	B.A.	Tucson
Love, Lawrence Dudley, P.G.	Bot.	Ph.D.	Tucson
Love, Walter Bruce, Jr.	Pre-Legal	B.A.	San Pedro, Calif.
Lovett, Marion H., R.U.	Educ.	Ph.D.	Tucson
Lowell, Charlene Elizabeth, Fr.	Span.	B.A.	Santa Ana, Calif.
Lowenstein, Edwin F., 3rd Yr.	Law	LL.B.	Whitehall, Ill.
Lowres, Bert Joseph, Sp.	M.E.	B.S.M.E.	Newark, N. J.
Lubetkin, Mrs. Milton, P.G.	Eng.	B.A.	Tucson
Lucas, Felix Miguel, So.	Educ.	B.A.E.	Los Angeles, Calif.
Ludy, Carl A., P.G.	E.E.	M.S.E.E.	Tucson
Lundberg, John Arvid, Fr.		B.S.A.	Douglas
Lusk, Harry Arnold, Fr.	Pre-Med.	B.S.	Douglas
Lutz, Cedric E., Sr.	Bus. Adm.	B.S.B.A.	Morenci
Luz, Charlotte, P.G.	Eng.	M.A.	Tucson
Lynch, Henry, P.G.	Geol.	M.S.	San Diego, Calif.
Lynch, Mark Forkner, So.	Pre-Legal	B.A.	New Castle, Ind.
Lynn, Lawrence G., So.	Pre-Legal	B.A.	Tucson
Lyon, James, Sr.	Bus. Adm.	B.S.B.A.	Tucson

REGISTER OF STUDENTS

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<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Lyons, Charles W., Fr.	Phys. Ed.	B.S.E.	Chloride
Lyons, James Gillespie, Sp.			Tucson
Lyons, John Daniel, 3rd Yr.	Law	J.D.	Monticella. N. Y.
Lytle, Clinton Robert, So.	Eng.	B.A.	McPherson, Kan.
McBride, Heloise Marion, P. G.	Voice	M.M.	Tucson
McBride, Jack W., Fr.	Pre-Legal	B.A.	Douglas
McBride, L.W., Sr.	Bus. Adm.	B.S.B.A.	Globe
McBride, Rex L., Sr.	M.E.	B.S.M.E.	Globe
McBride, Robert G., Sr.	Music	B.M.	Tucson
McCammond, Mabel Ruste, R.U.			Tucson
McCann, Agnes, Fr.	Art	B.A.E.	San Antonio, Tex.
McCarty, Esther M. (Mrs.), P.G.	Span.		Tucson
McCarty, Truman Paul, P.G.	German	M.A.	Tucson
McCauley, Willard J., P.G.	Educ.	M.A.	Tucson
McConnell, Dorothy M., Sr.	Eng.	B.A.E.	Pittsburgh, Pa.
McCord, Vivienne, Jr.	H. Econ.	B.S.A.	Long Beach, Calif.
McCorkindale, Laurence, Sr.	Entom.	B.S.A.	Whittier, Calif.
McCorkle, Donald H., Jr.	M.E.	B.S.M.E.	Berkeley, Calif.
McCormick, Ada P., Sr.	Eng.	B.A.	Tucson
McCormick, Fred Culver, P.G.	Eng.	M.A.	Tucson
McCormick, Isabelle Rose, Fr.	Math.	B.A.E.	Tucson
McCortney, Mary A., R.U.			Tucson
McCulloch, May Morrow, So.			Tucson
McCullough, J. Ray, P.G.	Phil.	Ph.D.	Tucson
McCullough, Robert, Fr.	E.E.	B.S.E.E.	Wapella, Iowa
McDaniel, Charles Eugene, 2nd Yr.	Law	LL.B.	Superior
McDevitt, George B., Jr.	Hist.	B.A.	Kingman
McDevitt, Norene, Fr.	Eng.	B.A.	Kingman
McDonald, Josephine M., Jr.	Eng.	B.A.E.	Inspiration
McDonald, William Joseph, Fr.	E.E.	B.S.E.E.	Tucson
McElhinney, Ann, Sr.	Eng.	B.A.E.	Waterloo, Iowa
McEvilly, Thomas Jos., So.		B.A.	Norwood, Ohio
McFadden, Lonnie, Fr.	Econ.	B.A.	Phoenix
McFadzean, Flora, Jr.	Span.	B.A.E.	Tucson
McFarland, Charles Lee, P.G.	Educ.	M.A.	West Chicago, Ill.
McGovern, Henry Peter, Sr.	E.E.	B.S.E.E.	West Union, W. Va.
McGrath, Mrs. Anna Mae, P.G.	Arch.	M.S.	Tucson
McGrath, Helen Elizabeth, Fr.	Econ.	B.A.	Tucson
McKay, Eugene B., Fr.	Physics	B.S.	Tucson
McKay, Roy Lee, Jr.	Pre-Med.	B.S.	Tucson
McKelvey, Nathaniel, Fr.	Eng.	B.A.	Tucson
McKenzie, Donald A., P.G.	French	M.A.	Cincinnati, Ohio
McKinley, Kathryn Lois, 3rd Yr.	Law	LL.B.	Alamogordo, N. M.
McKinney, Walter R., So.	A. H.	B.S.A.	Courtland
McLaughlin, Alice, Sr.	Biol.	B.S.E.	Chicago, Ill.
McLaughlin, Dora J., Jr.	Art	B.A.E.	Tucson
McLaughlin, Wm. Donald, P.G.	Eng.	M.A.	Webster, Iowa
McLean, Eleanor T., Sr.	Eng.	B.A.	Hayden
McLean, Gordon A., So.	Geol.	B.S.	Morenci
McLean, Louise, Fr.		B.A.E.	Tucson
McMahon, Gene Kennedy, Fr.	M.E.	B.S.M.E.	Oakland, Calif.
McMichael, Minnie Agnes, Fr.	Chem.	B.S.	Globe
McNary, John A., So.	M.E.	B.S.M.E.	McNary
McNeely, Dorothy Hester, Fr.	Eng.	B.A.E.	Tucson
McPheters, Leamon E., Sp.	Ag. Chem.	B.S.A.	Tucson
McQuesten, Isabella, Sr.	H. Econ.	B.S.A.	Phoenix
McVay, Lewis Clark, Sr.	Biol.	B.S.	Phoenix
McWhirt, Martha Jean, Jr.	Arch.	B.A.	Whipple
MacGregor, Paul C., So.	E.M.	B.S.E.M.	Nogales
Mackay, Elizabeth, Fr.			Tucson
Mackey, William L., Fr.	Bus. Adm.	B.S.B.A.	Tucson
MacLane, Glenwood L., Jr.	Physics	B.S.	Phoenix
MacLean, Douglas, Fr.	Bus. Adm.	B.S.B.A.	Indianapolis, Ind.
Macon, Robert A., Sr.	Eng.	B.A.	Phoenix
MacRae, Thomas, 3rd Yr.	Law	LL.B.	Coolidge
Maddox, Cyrus William, So.	Bus. Adm.	B.S.B.A.	Tucson
Madigan, Katherine Elizabeth, Fr.		B.A.	Dunkirk, N. Y.
Maechtlen, Alice Pearl, Jr.	Arch.	B.A.	LaVerne, Calif.
Maechtlen, Dorothy B., Sr.	H. Econ.	B.S.A.	LaVerne, Calif.
Maeyes, Anna Genevieve, Sp.	Zool.		Tucson

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Magee, Leon, Sr.	C.E.	B.S.C.E.	Tucson
Mahoney, Eleanor P., Jr.	Math.	B.S.E.	Superior
Mahoney, Esther N., Jr.	H. Econ.	B.S.A.	Tucson
Maitland, George F., Fr.			Kansas City, Mo.
Malott, Eleanor E., Jr.	H. Econ.	B.S.A.	Globe
Mangan, Howard K., So.	Geol.	B.S.	Placentia, Calif.
Mangun, Otto K., P.G.	Physics	M.S.	Thatcher
Manley, R. Maxwell, Sr.	Zool.	B.S.	Canton, Pa.
Manley, William G., Jr.	Bus. Adm.	B.S.B.A.	Akron, Ohio
Manlove, Robert Fletcher, Sr.	Hist.	B.A.	Clayton, Mo.
Mann, John W., Fr.	Hist.	B.A.	Tolleson
Mannen, Alexander R., Jr.	Phys. Ed.	B.S.E.	San Diego, Calif.
Manning, W. R., Sr.	Phys. Ed.	B.S.E.	Tucson
Mansfield, Eddie, So.	Bus. Adm.	B.S.B.A.	Phoenix
Manuel, Hermogeas S., Jr.	E.M.	B.S.E.M.	P. I.
Manzo, Eugene Teran, Sr.	Span.	B.A.	Tucson
Manzo, Ricardo, P.G.	E.E.		Tucson
Mapalo, Fabian D., Jr.	Educ.	B.A.E.	P. I.
Mapes, Jack, Fr.	Bus. Adm.	B.S.B.A.	Sunfield, Mich.
March, Howard Davis, So.	Bus. Adm.	B.S.B.A.	Douglas
Marchbanks, Vance H., P.G.		M.A.	Little Rock, Ark.
Mariscal, Ernest H., Sr.	Bus. Adm.	B.S.B.A.	Tucson
Markley, Audrey C., Sr.	Music	B.M.	Tucson
Marks, Robert Craig, Fr.	Bus. Adm.	B.S.B.A.	Florence
Marlatte, Charles R., P.G.	Geol.	Ph.D.	Eugene, Ore.
Marquis, Robert Irwin, Sr.	M.E.	B.S.M.E.	Tucson
Marrufo, Robert L., Fr.	M.E.	B.S.M.E.	Tucson
Marshall, George N., So.	Pre-Legal	B.A.	Phoenix
Martin, Bill, Fr.	Pre-Legal	B.A.	Tucson
Martin, Joseph Andres, Fr.	Phys. Ed.	B.S.E.	Flagstaff
Martin, Harriette R., P.G.	Eng.	M.A.	Yorba Linda, Calif.
Martin, John E., Fr.		B.A.	Forest Hills, N. Y.
Martin, Maurice Harry, So.		B.S.A.	Casa Grande
Martinez, Maria Eva, Sr.	Span.	B.A.E.	Tucson
Mason, Jack Mets, Fr.		B.A.	Hayden
Massey, Mrs. Mary L., Jr.	Span.	B.A.	Tucson
Mathews, William A., Fr.	Phys. Ed.	B.S.E.	Tucson
Matson, Edward J., P.G.	Geol.	M.S.	Hancock, Mich.
Matson, Margaret, Jr.	Bus. Adm.	B.S.B.A.	Flagstaff
Matson, Mildred, So.	Phys. Ed.	B.A.E.	Flagstaff
Matthews, Lilah, Jr.	Educ.	B.A.E.	Camas, Wash.
Maye, Ruth, Fr.		B.A.	Tucson
Meaders, Robert Clayborn, P.G.	Met.	M.S.	Dahlonaga, Ga.
Means, John Z. Jr., Jr.	Math.	B.A.	Tucson
Medcraft, Evangeline, So.	Eng.	B.A.E.	Tucson
Medford, Carl J., Fr.		B.S.A.	Phoenix
Malton, Mary S., So.		B.A.	Chickasha, Okla.
Menard, Archille John, R.U.			Tucson
Mendelson, Charles R., Fr.	Bus. Adm.	B.S.B.A.	Des Moines, Iowa
Mendivil, Ignacio, Jr.		B.S.	Nogales
Mendivil, Lupe, Sr.	Bus. Adm.	B.S.B.A.	Nogales
Merrill, Verona Jane, Fr.		B.A.	Irbee
Merrill, Wesley C., So.	Chem.	B.S.	Warren
Merritt, Catherine, R.U.	Music	B.M.	Tucson
Mets, Keith, So.	Zool.	B.S.	Mesa
Mewborn, A. Boyd, P.G.	Math.	M.A.	Tucson
Michael, Jonathan H., P.G.	Educ.	M.A.	Tucson
Michaelson, James P., Fr.	E.M.	B.S.E.M.	Globe
Mickle, Charles W., Jr.	Bus. Adm.	B.S.B.A.	Phoenix
Middleton, James Arthur, So.	M.E.	B.S.M.E.	Prescott
Midgard, Mayre Arnette, Jr.	Psych.	B.A.E.	Tucson
Miguel, Primo, Fr.	Eng.	B.A.E.	Angadanan, P. I.
Miles, Lillian, Jr.	Eng.	B.A.	Los Angeles, Calif.
Millard, Maude Lovell, 2nd Yr.	Law	J.D.	Phoenix
Miller, Ben F. C., Jr.	Bus. Adm.	B.S.B.A.	Flint, Mich.
Miller, Bradford W., Sr.	Phys. Ed.	B.S.E.	Phoenix
Miller, Carl F., P.G.		Ph.D.	Tucson
Miller, Halbert B., Jr.	M.E.	B.S.M.E.	Phoenix
Miller, Horace L., Sr.	Hist.	B.A.	Los Angeles, Calif.
Miller, Marjorie Helen, Jr.	Eng.	B.A.E.	Phoenix
Miller, Mary Elizabeth, Sr.	Hist.	B.A.	Highland Park, Mich.
Miller, Pierson Wilmer, Fr.	Educ.	B.A.E.	New Castle, Ind.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Miller, Warfield Z., Fr.	Econ.	B.A.	Richmond, Ky.
Mills, Ruth D., So.	French	B.A.	Tucson
Minchenberg, Alfred, P.G.		M.A.	New York, N. Y.
Minor, George Ridgeway, Fr.	Pre-Med.	B.S.	Tucson
Mock, Henry Byron, Jr.	Pol. Sci.	B.S.	Tucson
Montgomery, Edwin J., Jr.	Zool.	B.S.	Tucson
Montgomery, Gus Hugh, Sr.	Bus. Adm.	B.S.B.A.	Brawley, Calif.
Mooney, Helen Ida, Fr.	Art	B.A.	Clarkdale
Moore, Bellamy C., Jr.	Eng.	B.A.	Huntington Park, Calif.
Moore, Elinor M., Jr.	Math.	B.S.E.	Duluth, Minn.
Moore, E. Louise, Sr.	Eng.	B.A.E.	El Paso, Tex.
Moore, Marguerite Elaine, Sr.	Soc.	B.A.	Phoenix
Moore, Margaret L., P.G.	Eng.		Seattle, Wash.
Moore, Merle W., Jr.	Bus. Adm.	B.S.B.A.	Tucson
Moore, Robert L., Sr.	Biol.	B.S.	Phoenix
Moore, Royda Clara, Fr.	Eng.	B.A.	Hollywood, Calif.
Moore, Sheila, So.	Eng.	B.A.	Tucson
Morago, Otis E., Sr.	Bus. Adm.	B.S.B.A.	Sacaton
Morairty, Marguerite E., Jr.	Eng.	B.A.E.	Phoenix
Moran, Lawrence B., So.	Bus. Adm.	B.S.B.A.	Yuma
Morcomb, Richard Henry, So.	M.E.	B.S.M.E.	Morenci
Morgan, Berneice, Fr.	Span.	B.A.E.	Tucson
Morgan, Betty-Lou, Fr.	French	B.A.	Phoenix
Morgan, Catherine M., Jr.	Psych.	B.A.	Prescott
Morgan, Elizabeth, Jr.	Eng.		Tucson
Morgan, Harriet Lou Vella, Fr.	Zool.	B.S.	Tucson
Morgan, Meryl F., P.G.			Tucson
Moriarty, James Rickard, 1st Yr.	Law	LL.B.	Tucson
Morris, Hubert, So.	E.M.	B.S.E.M.	Milan, Mo.
Morris, James F., So.	Bus. Adm.	B.S.B.A.	Hayden
Morris, Levi Henry, 3rd Yr.	Law	J.D.	Douglas
Morrison, Donald, R.U.			Tucson
Morrison, Mike A., R.U.			Tucson
Morrison, Nancy Ellen, Jr.	H. Econ.	B.S.E.	Nogales
Morrow, Richard M., So.	Econ.	B.A.	Topeka, Kan.
Moseley, Harry Gladding, P.G.	Zool.	M.S.	Phoenix
Moser, Annie Marie, So.	Art	B.A.	Oatman
Moser, George LeBeau, So.	M.E.	B.S.M.E.	Oatman
Moser, Ruth Ophelia, Fr.	Bus. Adm.	B.S.B.A.	Tucson
Moss, Myron, Fr.	Math.	B.A.	Brooklyn, N. Y.
Moss, James Hamilton, Fr.	E.M.	B.S.E.M.	Oatman
Moyer, Claude Henry, R.U.			Tucson
Moyer, Gerald S., Fr.		B.A.	Lonoke, Ark.
Mueller, Herbert J., 2nd Yr.	Law	LL.B.	Wauwatosa, Wis.
Mulcahy, Wilbur H., R.U.	Eng.	B.A.	Tucson
Munger, Elizabeth, Sr.	Arch.	B.A.	Phoenix
Munn, William, Fr.	Bus. Adm.	B.S.B.A.	Cleveland, Ohio
Murch, Maynard H., R.U.			Cleveland, Ohio
Murdock, David Nathaniel, Jr.	Music	B.M.	Tempe
Murfee, Marjorie Adelle, Jr.	Eng.	B.A.	Pasadena, Calif.
Murphey, Helen Andrews, R.U.	Educ.	B.A.E.	Tucson
Murphy, Guy H., P.G.	Hort.	M.S.	Casa Grande
Murphy, John A., Jr.	Econ.	B.A.	Phoenix
Murphy, Lawrence Joseph, Sr.	Chem.	B.S.E.	Benson
Murphy, Ross B., Fr.	Agron.	B.S.A.	Casa Grande
Murry, Margaret, Sr.	Art	B.A.E.	Tucson
Myers, Jack Duane, Jr.	Pre-Med.	B.S.	Glendale
Myers, James Irvin, Fr.	Bus. Adm.	B.S.B.A.	Superior
Mylander, Harvey, P.G.	M.E.	M.S.	Tucson
Myrland, Imogene, P.G.		M.A.	Tucson
Nally, Leonard A., Fr.	Chem.	B.S.	Greaterville
Nally, Margaret Ann, Fr.	Phys. Ed.	B.S.E.	Greaterville
Nash, Frances R., Jr.	Eng.	B.A.E.	Globe
Nelson, Doris Anne, Fr.		B.A.	Omaha, Neb.
Nelson, Frank J., P.G.	Econ.	M.A.	Avoca, Minn.
Nelson, Helga E., Jr.	H. Econ.	B.S.A.	Tucson
Nelson, Jack H., 2nd Yr.	Law	LL.B.	Tucson
Nelson, Stanley Clifford, R.U.			Tucson

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Nemeck, Francis L., Sr.	Econ.	B.A.	Douglas
Netz, Charles Gibson, Fr.	E.M.	B.S.E.M.	New Castle, Ind.
Newman, Jack W., Sr.	E.E.	B.S.E.E.	Prescott
Newmaster, Mildred, So.			Elberfeld, Ind.
Newton, Patty, Sr.	Eng.	B.A.	El Paso, Tex.
Nichol, Lenore Reese, P.G.	Math.	Ph.D.	Phoenix
Niedringhaus, Fred William, P.G.	Phil.	M.S.	Tucson
Nielsen, Margaret, So.	Eng.	B.A.E.	Tucson
Noble, Mary George, Jr.	Hist.	B.A.E.	Tucson
Noble, Ruth M., So.	Span.	B.A.E.	Wichita, Kan.
Nobles, Emma E., Jr.	H. Econ.	B.S.A.	Tucson
Noon, Milford Lee, Fr.	C.E.	M.S.C.E.	Nogales
Noon, Walter, Jr.	Econ.	B.A.	Nogales
Norris, A. Norman, Fr.			Phoenix
Norton, William F., Sr.	C.E.	M.S.C.E.	Miami
Novell, Edward William, Sr.	E.M.	B.S.E.M.	Tucson
Nowell, Alice Howe, So.	Music	B.M.	Tucson
Nunez, Jose, Fr.			Tucson
Nuzzola, Charles A., Jr.	Zool.	B.S.E.	Tucson
Oakley, Lora E., P.G.	Nutr.	M.S.	Tucson
O'Brien, Helen E., So.	Span.	B.A.E.	Tucson
O'Brien, Jos. Pat., So.	Pol. Sci.	B.A.	Tucson
Odom, Alice Frances, So.	Hist.	B.A.E.	Tucson
O'Donnell, Kathleen G., Sr.	Eng.	B.A.	Tucson
O'Dowd, Jack B., 1st Yr.	Law	LL.B.	Tucson
Olbert, George B., Fr.	Bus. Adm.	B.S.B.A.	Warren
Olivar, Juan G., Jr.	E.E.	B.S.E.E.	Balaoan, P. I.
Olivar, Laureano, So.	Agron.	B.S.A.	Balaoan, P. I.
Oliver, Jay, Jr.	Hist.	B.A.	San Francisco, Calif.
Oliver, Lew Dwight, Jr.	Pol. Sci.	B.A.	Tempe
Oliver, Virginia, Sr.	Music	B.M.	Tucson
O'Mara, Edward, Fr.		B.S.	Globe
O'Neil, James Thomas, Fr.	M.E.	B.S.M.E.	Clifton
Onstott, Mary Brown, Sr.	Eng.	B.A.	Tucson
Ormsby, Walter B., P.G.	Physics	M.S.	Tucson
Openshaw, Aura, Jr.		B.A.E.	Los Angeles, Calif.
Ordones, Florentino E., Jr.	Hist.	B.A.E.	P. I.
Orr, Clement William, P.G.	Met.	M.S.	Welsville, Ohio
Osterud, Elden Laurits, R.U.			Richmond, Va.
Oswald, Edward H., Jr.	Chem.	B.S.	Winslow
Oswald, William Eugene, Jr.	Biol.	B.S.	Williams
Othick, Albert A., Fr.	Bus. Adm.	B.S.B.A.	Tirapata, Peru
Othick, Joseph Richard, Jr.	E.M.	B.S.E.M.	Tirapata, Peru
Ott, Mary G., Fr.	Span.	B.A.E.	Tucson
Otterman, Charles Henry, So.	C.E.	B.S.C.E.	Cincinnati, Ohio
Outlaw, Evelyn, Sp.		B.A.	El Paso, Tex.
Overbey, George, P.G.	Educ.	M.A.	Sherman, Tex.
Overpeck, Helen L., Sp.			Tucson
Pace, Elma D., So.	Music	B.M.	Bisbee
Pace, Pearl, Sr.	H. Econ.	B.S.A.	Thatcher
Pacheco, Refugio, 3rd Yr.	Law	LL.B.	Tucson
Paddock, Jessie P., Jr.	Span.	B.A.E.	Tucson
Paige, Elizabeth, Sr.	Psych.	B.A.	Anaheim, Calif.
Palese, Daniel J., Jr.	Zool.	B.S.	Tucson
Park, Marjorie, R.U.			Tucson
Parker, Coila Kinder, Jr.	Educ.	B.A.E.	Tucson
Parker, Alex McKay, Fr.	Chem.	B.S.	Tucson
Parker, Edith V., Jr.	French	B.A.	Tucson
Parris, Esther C. (Mrs.), Sp.	Phys. Ed.	B.S.E.	Tucson
Parsons, Arthur Roy, Sr.	Bus. Adm.	B.S.B.A.	Litchfield Park
Parsons, Edward U., So.	Bus. Adm.	B.S.B.A.	Litchfield Park
Parsons, Floyd C., So.	E.E.	B.S.E.E.	Miami
Pascoe, Dorothy Mae, Fr.			Morenci
Pascual, Agaton S., Jr.	Bus. Adm.	B.S.B.A.	Laoag, P. I.
Patten, Mary Ann, So.	Hist.	B.A.	Alhambra, Calif.
Patten, Morrirt W., Fr.	Zool.	B.S.	Seattle, Wash.
Patterson, Mrs. Erdean T., P.G.	Span.	M.A.	Tucson
Patton, Mary Fern, Sr.	Eng.	B.A.	Phoenix

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residency</i>
Paul, George W., So.		B.S.	Prescott
Pauli, Emilie, Jr.	Music	B.M.	Tucson
Pearson, Arthur Adolph, Fr.	M.E.	B.S.M.E.	Tucson
Pearson, Emil S., Sp.	C.E.	B.S.C.E.	Tucson
Pearson, Jane M., Jr.	Eng.	B.A.E.	Glendale
Pearson, John S., Fr.		B.A.	Indianapolis, Ind.
Pease, Margaret Ellen, Jr.	Eng.	B.A.	Tucson
Peck, Arthur Jr., Sp.			Strafford, Pa.
Peck, Llewellyn Owen, Jr.	R. Ecol.	B.S.A.	Glendale
Peet, Ben Culberg, Sr.	E.M.	B.S.E.M.	Los Angeles, Calif.
Peet, Roger, Sr.	E.M.	B.S.E.M.	Los Angeles, Calif.
Pemberton, Tempe, Jr.	Span.	B.A.E.	Tucson
Pennington, Frances K., Sr.	Eng.	B.A.	Tucson
Pennington, Nealy Aubrey, Sr.	Physics	B.S.	Tucson
Peralta, Mary, Jr.	Span.	B.A.E.	Tucson
Perez, Gines, Sr.	E.M.	B.S.E.M.	Miami
Perkins, Jane S., So.	Phys. Ed.	B.A.E.	Tucson
Perkins, William F., Sr.	Biol.	B.S.	Tucson
Perrin, Eleanor Dean, Fr.	Pre-Legal	B.A.	Tucson
Perry, Dorothy Vivien, Sr.	Hist.	B.A.E.	San Diego, Calif.
Perry, Truman O., Fr.			Phoenix
Peryam, William G., So.	Met.	B.S.M.E.	Douglas
Petersen, Beatrice, Jr.	H. Econ.	B.S.A.	Tucson
Peterson, Clarence Woodrow, Fr.		B.A.	Tucson
Peterson, Gilbert, Fr.		B.S.A.	Tucson
Peterson, Alfred, Sp.	Arch.		Hubbard, Minn.
Peterson, Nils Paul, P.G.	E.M.	M.S.E.M.	Owatonna, Minn.
Pettid, Elizabeth Ellen, So.	Hist.	B.A.E.	Phoenix
Phelps, John S., P.G.	M.E.	M.S.	Tucson
Phelps, Mary Louise, Jr.	Psych.	B.A.	Tucson
Phelps, Mildred N., R.U.			Tucson
Phillips, Clayton B., Sr.	Bus. Adm.	B.S.B.A.	Glendale, Calif.
Picard, Harry L., So.		B.A.	Tucson
Picard, Robert G., Fr.	Bus. Adm.	B.S.B.A.	Tucson
Pierce, Oscar B., Jr.	Bus. Adm.	B.S.B.A.	Kingwood, W. Va.
Pierce, Sarah Louise, Sr.	Arch.	B.A.	Patagonia
Pietrykowski, Leo P., Sr.	Eng.	B.A.	Tucson
Pilcher, Bayley, Sr.	Arch.	B.A.	Tucson
Pingry, Earl M., Sr.	C.E.	B.S.C.E.	Phoenix
Pinkley, Nancy Margaret, Sr.	Arch.	B.A.	Coolidge
Pinner, Burna R., P.G.	Arch.		Tucson
Piper, Mary Elizabeth, Sr.	Art	B.A.E.	Douglas
Place, Lew, So.	Art	B.A.	Tucson
Platt, Errol Benson, 1st Yr.	Law	J.D.	Phoenix
Platt, Harvey J., Sr.	Eng.	B.A.	St. Johns
Podesta, Francis E., Jr.	Pre-Legal	B.A.	San Francisco, Calif.
Polk, Orval H., P.G.	E.E.	M.S.E.E.	Canon City, Colo.
Pollock, Walter H., Sr.	E.M.	B.S.E.M.	Tucson
Ponsford, George A., So.	C.E.	B.S.C.E.	El Paso, Tex.
Poole, Glenn Allan, Jr.	Pre-Legal	B.A.	Los Angeles, Calif.
Poole, Jack Corrin Jr., Sp.			Tucson
Poor, Esther K., R.U.			Tucson
Pope, Ernst Russet, P.G.	Econ.	M.A.	Ithaca, N. Y.
Posner, Bennie, Fr.	Bus. Adm.	B.S.B.A.	Tucson
Posner, Charles M., So.	C.E.	B.S.C.E.	Chicago, Ill.
Post, Mildred A., Jr.	Eng.	B.A.E.	Tucson
Postlewaite, Emily, Jr.	Eng.	B.A.	Columbus, Ohio
Potter, George M., Fr.	E.M.	B.S.E.M.	Ajo
Potter, Kenneth R., Jr.	C.E.	B.S.C.E.	Tucson
Potter, Nan, Sp.			Tucson
Potthoff, Ada W., Jr.			Tucson
Potthoff, Herbert B., Sr.	Zool.	B.S.	St. Paul, Minn.
Powell, Carl William, Fr.	C.E.	B.S.C.E.	Richmond, Ind.
Powell, Collins M., So.		B.S.	Richmond, Ind.
Powelson, Marie H., P.G.		M.A.	Tucson
Power, Bereneice, Fr.	Art	B.A.E.	Tucson
Powers, Theodore F., Sr.	Econ.	B.A.	Phoenix
Praeger, Howard, P.G.	Eng.	M.A.	Oshkosh, Wis.
Praeger, Marjory Copeland, Jr.	Psych.	B.A.	Los Angeles, Calif.
Prasse, Roland E., So.	Bus. Adm.	B.S.B.A.	Lakewood, Ohio
Premsky, Adolph, Fr.	Bus. Adm.	B.S.B.A.	Tucson
Prescott, Arthur Chester, Sr.	Span.	B.A.	Douglas

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Presson, Page, Jr.	Eng.	B.A.E.	Tucson
Prestley, Harrison, Fr.	Span.	B.A.	Mexico City, Mex.
Preston, George Harvey, 1st Yr.	Law	LL.B.	Tucson
Price, George J., Fr.	Bus. Adm.	B.S.B.A.	Montclair, N. J.
Price, Mrs. Alma P., Sp.			Tucson
Price, George W., Fr.		B.A.	Passaic, N. J.
Priest, Bellamy A., So.	Phys. Ed.	B.S.E.	Yuma
Prince, Francis C., Jr.	Zool.	B.S.	Yuma
Procknow, Robert, Sp.			Flagstaff
Proctor, Robert Emmet, Sr.	C.E.	B.S.C.E.	Elkhart, Ind.
Proctor, Tom, Fr.	Eng.	B.A.	Elkhart, Ind.
Proffitt, Goldie, P.G.	Educ.	M.A.	Alden, Kan.
Proffitt, Selma Bernice, Fr.	Eng.	B.A.E.	Benson
Proffitt, Verna, Fr.	Bus. Adm.	B.S.B.A.	Benson
Prothero, Harold B., Jr.	Bus. Adm.	B.S.B.A.	Bloomington, Ill.
Provence, Charles, 2nd Yr.	Law	LL.D.	Tempe
Provence, Jean, P.G.	Econ.	Ph.D.	Inspiration
Pruet, Jack Zapp, Fr.	Econ.	B.A.	Globe
Puchi, Alfredo, Fr.	Bus. Adm.	B.S.B.A.	Nogales
Puckett, Mrs. G. L., Jr.	Educ.	B.A.E.	Tucson
Pugh, John Shiras, Fr.	Bus. Adm.	B.S.B.A.	Glendale, Calif.
Pullen, Roy Curtis, So.	Bus. Adm.	B.A.	Prescott
Purchase, Albert R., So.	Entom.	B.S.A.	Flushing, N. Y.
Putsch, Lorene Beverly, Fr.	Eng.	B.S.B.A.	Tucson
Putsch, Muriel Louise, Fr.	Pre-Med.	B.S.	Prescott
Quaintance, Charles W., Jr.	Biol.	B.S.E.	Philadelphia, Pa.
Quesnel, William H., So.			Tucson
Quevedo, Desiderio, So.	Hist.	B.A.	Los Angeles, Calif.
Quilty, Joan M., Jr.	Eng.	B.A.	Tucson
Racey, Laird A., Sr.	Bus. Adm.	B.S.B.A.	Phoenix
Raentsch, Karl R., So.	M.E.	B.S.M.E.	San Francisco, Calif.
Raentsch, Mary D., R.U.			San Francisco, Calif.
Raffety, Don L., Sr.	Bus. Adm.	B.S.B.A.	Blackwell, Okla.
Raffety, Jack, Jr.	Bus. Adm.	B.S.B.A.	Blackwell, Okla.
Rahm, Ella Martha, Jr.	Eng.	B.A.E.	Iron Mountain, Mich.
Rahm, Seth A., Sr.	Bus. Adm.	B.S.B.A.	Iron Mountain, Mich.
Rainey, Elizabeth Robbins, Fr.	Eng.	B.A.	Tucson
Rainey, Lindon, Fr.	Physics	B.S.	Buckeye
Rals, Jeannette, Fr.	Hist.	B.A.	Miami
Rait, Donald Myron Jr., Fr.	C.E.	B.S.C.E.	Warren
Ralph, Bernice May, So.	Eng.	B.A.E.	Tucson
Ralph, Calire D., Fr.	E.E.	B.S.E.E.	Tucson
Rambo, Rex Rodney, Sr.	Zool.	B.S.E.	LaPorte, Ind.
Rampton, Ralph W., Sr.	Geol.	B.S.	Pomona, Calif.
Randall, Hart Geo., So.	Chem.	B.S.	Meriden, Conn.
Randall, Leila Colvin, R.U.	Educ.	B.A.E.	Tucson
Rassweiler, John Edmund, Fr.	Pre-Med.	B.S.	Downers Grove, Ill.
Rauscher, John Francis, Fr.	C.E.	B.S.C.E.	Tucson
Rayburn, Frances E., Sr.	Econ.	B.A.	Alpena, Mich.
Raymond, John Charles, Jr.	Eng.	B.A.E.	Phoenix
Raymond, J. Walker, Jr.	Span.	B.A.E.	Tempe
Reader, Hazel Mae, So.	Eng.	B.A.E.	Tucson
Reardan, Betty Jane, Fr.		B.A.	Sacramento, Calif.
Reed, Elizabeth, P.G.	Span.	B.A.	Tucson
Reed, Virginia A., Sr.	Biol.	B.S.E.	Douglas
Rees, Samuel C., Jr.	Math.	B.S.E.	Jerome
Reese, Ione, So.	French	B.A.E.	Tucson
Reese, Melvin, So.	Bus. Adm.	B.S.B.A.	Phoenix
Reese, Millard Owen, Sr.	Hist.	B.A.	Tucson
Regan, Margaret J., Sp.	Eng.	B.A.	Tucson
Reid, Barney M., Fr.	Zool.	B.S.	Somerton
Reid, Gene C., Fr.			Tucson
Reid, Marion S., Sr.	Phys. Ed.	B.S.E.	Phoenix
Reinke, Arthur G., P.G.			Vienna, Austria
Reene, Leamon Albert, 1st Yr.	Law	LL.B.	Thatcher
Renner, Welmon O., So.	Pays. Ed.	B.S.E.	Prescott
Renshaw, Henrietta, Jr.	Span.	B.A.E.	Nogales
Rentfrow, Clara Mable, Jr.	Phys. Ed.	B.A.E.	Tucson

REGISTER OF STUDENTS

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Name and Classification	Major	Degree Sought	Home Residence
Resser, Josephine Ann, Fr.	Eng.	B.A.E.	Tucson
Reynolds, Arthur Larren, So.	Eng.	B.A.	Apache
Rhodes, Herbert D., Fr.	Chem.	B.S.	Phoenix
Rhodes, Juanita, Jr.	Art	B.A.	Tucson
Rice, Inez Frances, Fr.	Music	B.M.	Globe
Rich, Ray A., Fr.			Des Moines, Iowa
Richards, Albert, So.	Eng.	B.A.	Phoenix
Richards, Mrs. Cornelia C., Jr.	Phil.		Tucson
Richards, Dorothy Llewellyn, Jr.	Geol.	B.S.	Florence
Richards, Neldon L., Jr.	M.E.	B.S.M.E.	Mesa
Richardson, Arlo, Fr.		B.A.E.	Tucson
Richardson, Mrs. Jones Daisy, Sr.	H. Econ.	B.S.A.	Tucson
Richey, Elizabeth Ann, So.	Eng.	B.A.E.	Tucson
Richey, Marie G., Fr.	Art	B.A.	Tucson
Richard, Milnor Albert, Fr.	Eng.	B.A.	Safford
Rickel, Tom, Fr.		B.A.E.	Tucson
Riepe, Milton Oscar, 1st Yr.	Law	LL.D.	Burlington, Iowa
Riesen, Austin Herbert, Fr.	Math.	B.S.	Tucson
Rietz, Frank J., P.G.	Physics	M.S.	Morenci
Riggins, J. Alfred, Jr.	Econ.	B.A.	Phoenix
Rigggs, Paul W., So.	A.H.	B.S.A.	Dos Cabezas
Riley, Joseph Homer, 1st Yr.	Law	J.D.	Tucson
Risdon, Betty S., Sr.	Eng.	B.A.E.	Hollywood, Calif.
Roberson, Lawrence W., Sr.	Hort.	B.S.A.	Tucson
Roberson, Virginia Genevieve, R.U.		B.A.E.	Tucson
Roberts, Adrian Orlin, Jr.	Eng.	B.A.	Clarkdale
Roberts, Eldred, Sr.	A.H.	B.S.A.	Glendale
Roberts, Eugene C., Sr.	M.E.	B.S.M.E.	Long Beach, Calif.
Roberts, Isabel Niece, Jr.	Chem.		Easton, Pa.
Roberts, Malcolm Lindsey, Fr.	M.E.	B.S.M.E.	Houston, Tex.
Roberts, Roswell Reid, Fr.	Pre-Dental	B.S.	Tucson
Roberts, Virginia L., Jr.	Span.	B.A.E.	Tucson
Robertson, Charles Edwin, Jr.		B.S.B.A.	Sioux Falls, S. D.
Robertson, Ethel Keefe, Sr.	Eng.	B.A.E.	Los Angeles, Calif.
Robertson, L. V., 3rd Yr.	Law	LL.B.	Tucson
Robertson, Louise, Fr.	French	B.A.	Tucson
Robertson, Mrs. Mary P., Jr.	Phys. Ed.	B.S.E.	Tucson
Robetz, Wilhelm, Sr.	Bus. Adm.	B.S.B.A.	Cologne, Germany
Robinette, Roy B., Fr.	Bus. Adm.	B.S.B.A.	Cleveland, Ohio
Robinson, Brehman, So.	Chem.	B.S.	Glendale, Calif.
Robinson, Virginia A., So.	Art	B.A.E.	Tucson
Robison, Merna B., Jr.	Educ.	B.A.E.	Morenci
Robison, Roy H., P.G.	Educ.	M.A.	Tucson
Robson, Marv Jane, So.	Eng.	B.A.E.	Tucson
Rora, Paul McLennan, Jr.	Eng.	B.A.	Tucson
Rorhlin, Sidney, Sr.	C.E.	B.S.C.E.	Nogales
Rodee, Monica K., Jr.	Span.	B.A.E.	Tucson
Rodee, Ruth Elizabeth, Jr.	Eng.	B.A.E.	Tucson
Rodriguez, George N., 3rd Yr.	Law	LL.B.	El Paso, Tex.
Rogers, Annie, So.	H. Econ.	B.S.A.	Snowflake
Rogers, Iona, Fr.	Phys. Ed.	B.S.E.	Tucson
Rogers, James P., So.			Oregon, Ill.
Rogers, John Arthur, Jr.	Bus. Adm.	B.S.B.A.	Omaha, Neb.
Rogers, John Palmer, Fr.	Bus. Adm.	B.S.B.A.	Tucson
Rogers, Tom E., Fr.	Bus. Adm.	B.S.B.A.	Frankfort, Ky.
Rolle, James B., 3rd Yr.	Law	LL.B.	Morenci
Roland, Charles W., Sr.	Educ.	B.A.E.	Tucson
Romley, Elias M., 2nd Yr.	Law	J.D.	Phoenix
Romney, Eugene Jr., Jr.	Bus. Adm.	B.S.B.A.	Duncan
Romo, Genevieve C., Jr.	Music	B.M.	Ray
Ronstadt, Gilbert, Jr.	Econ.	B.A.	Tucson
Root, Jess, Sr.	Chem.	B.S.	Safford
Rork, Charles Francis, Sr.	M.E.	B.S.M.E.	Clifton
Rose, George Patrick, So.	Bus. Adm.	B.S.B.A.	Globe
Rose, Cloyd M., So.	Eng.	B.A.	Tucson
Rosen, James Arthur, Fr.	Phys. Ed.	B.S.	Phoenix
Rosen, Robert Phillip, Fr.	Phys. Ed.	B.S.	Phoenix
Rosenfeld, Harriett M., Fr.		B.A.E.	Tucson
Ross, Helen Winifred, Sr.	French	B.A.E.	Grand Junction, Colo.
Ross, Ralph Gilbert, Jr.	Phil.	B.A.	New York, N. Y.
Rountree, Albert L., R.U.	Econ.	B.A.	Phoenix
Rountree, Eugenie, Jr.		B.A.	Phoenix

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Rourke, Marjorie Lou, Fr.	Art	B.A.	Kansas City, Mo.
Royaltey, Lotus Meyer (Mrs.), Jr.	Eng.	B.A.E.	Tucson
Royer, Franklyn, Sr.	Psych.	B.A.	Los Angeles, Calif.
Ruble, Raymond Ralph, R.U.	Bus. Adm.	B.S.B.A.	Pasadena, Calif.
Ruffner, Mary Lou, Fr.			Prescott
Rulison, John Gustavus Jr., Sr.	Geol.	B.S.	Lansing, Mich.
Runke, Glenn R., Sr.	E.M.	B.S.E.M.	Iowa City, Iowa
Runke, Robert C., So.	Econ.	B.A.	Iowa City, Iowa
Rupkey, Harold Lee, Jr.	Econ.	B.A.	Coolidge Dam
Rupkey, Winona H., Jr.	Hist.	B.A.E.	Coolidge Dam
Rush, Eleanor, Jr.	Art	B.A.	Enid, Okla.
Russell, Mrs. Alice, Sr.	Econ.	B.A.	Tucson
Russell, Floyd H., P.G.	Chem.	M.S.	Tucson
Russell, Frank James, Fr.	Eng.	B.A.	Tucson
Russell, Kirby Frank, R.U.			Lansing, Mich.
Russell, Ruth Eleanor, Fr.	H. Econ.	B.S.A.	Capitola, Calif.
Rust, Harry Landa, Jr.	Hist.	B.A.	Kansas City, Mo.
Ruthrauff, Virginia, Jr.	Eng.	B.A.	Tucson
Ryder, Elwood Frank, So.	E.E.	B.S.E.E.	Globe
Sabin, Chloe D., Fr.	Eng.	B.A.E.	Bisbee
Sachs, Alyse Frances, Fr.	Psych.	B.A.	Omaha, Neb.
Sadler, Edward, Fr.		B.S.	Tucson
Sagaser, Wray F., So.	E.E.	B.S.E.E.	Tucson
Sainsbury, Roberts, So.	H. Econ.	B.S.A.	St. Johns
Sample, Clarence M., Jr.	Econ.	B.A.	Los Angeles, Calif.
Sample, Richard, Fr.		B.A.	Lafayette, Ind.
Samuels, Esther, Jr.	Bus. Adm.	B.S.B.A.	Phoenix
Samuelson, Adele, Sp.			Tucson
Sancet, Frank, Sr.	Phys. Ed.	B.S.E.	Glendale
Sanchez, G. Guillermo, Sr.	M.E.	B.S.M.E.	Morenci
Sanchez, Leon Edmundo, Jr.	E.M.	B.S.E.M.	Morenci
Sanders, David Brown, So.	Span.	B.A.	Paducah, Ky.
Sanders, Dorothy Olive, Jr.	Math.	B.S.E.	Nogales
Sanders, Elgin Elmer, Jr.	E.E.	B.S.E.E.	Douglas
Sanders, Eula Elizabeth, Sr.	Hist.	B.A.E.	Douglas
Sanders, James B., Sp.			Tucson
Sanders, Martin Franklin, 2nd Yr.	Law	LL.B.	Douglas
Sands, John, So.	Bus. Adm.	B.S.B.A.	Glendale
Sarrels, Dorothy L., Jr.	Bus. Adm.	B.S.B.A.	Tucson
Sarrels, Marian Maude, So.	Chem.	B.S.	Tucson
Sasuly, Richard, Fr.		B.A.	Washington, D. C.
Sattler, Mary Hines, P.G.	Eng.	M.A.	Tucson
Saunders, Lucille, Sr.	Arch.	B.A.	Roswell, N. M.
Savage, Loretta, 1st Yr.	Law	LL.B.	Phoenix
Sawyer, Earl, P.G.	Econ.	M.A.	Detroit, Mich.
Sawyer, W. C., P.G.	Educ.		Willcox
Schlotzhauer, Elbert O., Sr.	Econ.	B.A.	Douglas
Schlotzhauer, Walter S. Jr., Fr.		B.S.A.	Douglas
Schmidt, Katie Susan, R.U.	Art		Arlington, Kan.
Schmitt, Roland, So.	Bus. Adm.	B.S.B.A.	Tucson
Schnabel, M. Jane, Jr.	Music	B.M.	Phoenix
Schnabel, Margaret Mary, Jr.	Eng.	B.A.	Phoenix
Schou, Elise, R.U.	Eng.	B.A.	Beloit, Wis.
Schou, Hans Helge, So.	M.E.	B.S.M.E.	Beloit, Wis.
Schulman, Edmund, So.	Astron.	B.S.	Brooklyn, N. Y.
Schumacher, William, Sp.	Art		Tucson
Schwab, Margaret L., So.	Eng.	B.A.	Benson
Schwalen, Harold C., P.G.		M.S.	Tucson
Schwarzwaelder, Earl, So.	Biol.	B.S.	Tucson
Schwarzwaelder, Mildred, P.G.			Tucson
Scoville, Harold Ralph, So.	Pre-Legal	B.A.	Mesa
Scoville, Kenneth S., Fr.	Phys. Ed.	B.A.	Mesa
Scully, John Chase Jr., 1st Yr.	Law	LL.B.	Peoria, Ill.
Seaman, Arthur R., P.G.			Phoenix
Seamands, Albert Letcher, So.	Eng.	B.A.	Tucson
Seargeant, William Alexander, Fr.	Physics	B.S.	Cashlon
Season, Edwin Herbert, Fr.	Pre-Med	B.S.	Cleveland, Ohio
Seeley, Mildred, Jr.	Eng.	B.A.E.	Tucson
Seigelbaum, Willard Sander, Jr.	Zool.	B.S.	Kansas City, Mo.
Seidel, Gustave Antone, Sr.	Math.	B.S.	Glendale, Calif.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Sellers, George S., Sr.	M.E.	B.S.M.E.	San Jose, Calif.
Sellers, Richard Taylor, Fr.	Bus. Adm.	B.S.B.A.	Denver, Colo.
Seltzer, Seymar Jacob, Fr.		B.A.	New York, N. Y.
Serat, William S., 2nd Yr.	Law	LL.B.	Tucson
Shantz, Benjamin S., 2nd Yr.	Law	J.D.	Tucson
Shantz, Homer L. Jr., 1st Yr.	Law	J.D.	Tucson
Sharpe, Harvey K., Fr.			Morenci
Sheffer, Leroy Clarence, Jr.	Phys. Ed.	B.S.E.	Redondo Beach, Calif.
Sherburne, Charles Winfield, Fr.	Math.	B.S.	Ft. Clark, Tex.
Sherburne, H. Newton, So.	Math.	B.S.	Ft. Clark, Tex.
Shimmin, Robert, So.	M.E.	B.S.M.E.	Phoenix
Shire, Richard L., Fr.	E.E.	B.S.E.E.	Tucson
Short, Maxwell, R.U.			Cavalier, N. D.
Shreeves, Virginia, Sr.	Eng.	B.A.E.	Vinton, Iowa
Shurtleff, Dewey, P.G.	Physics	M.S.	Globe
Shutters, Elizabeth Margaret, R.U.	P. Ed.	B.S.E.	Mt. Jackson, Va.
Stebenthal, Helen Wade, Jr.	Eng.	B.A.E.	Morenci
Stebenthal, Wilda Ann, Fr.		B.A.	Morenci
Sigler, Virginia Anlee, Sr.	Pol. Sci.	B.A.E.	Tucson
Simon, Charles Henry, Jr.	Bus. Adm.	B.S.B.A.	Tucson
Simon, Flora, R.U.			Tucson
Simon, Leonard Seymour, Fr.	Jour.	B.A.	Tucson
Simons, Willis M., So.	Eng.	B.A.E.	Yuma
Sims, Richard Carvel, So.	Hort.	B.S.A.	Safford
Singer, Samuel Wililam, Sr.	Hist.	B.A.	Tucson
Sister Marguerite Ellard, Sr.	Hist.	B.A.	Tucson
Sister Mary Joachim, Sp.			Tucson
Skattaboe, Mrs. Mary, Jr.	Educ.	B.A.E.	Tucson
Skora, George, Fr.	Chem.	B.S.	Tucson
Skousen, Ida, Jr.	Eng.	B.A.E.	Thatcher
Slack, Ben L., So.	Eng.	B.A.	Tucson
Slater, Allan, Sp.	Phys. Ed.		Bellflower, Calif.
Slawson, Mila Allen, Jr.		B.S.	Tucson
Sleeth, Mrs. E. C., R.U.	Music	B.M.	Tucson
Sloan, William F., Fr.	E.M.	B.S.E.M.	Tucson
Smelker, Mary W., R.U.			Tucson
Smith, Adona E., Jr.	Eng.	B.A.E.	Tucson
Smith, Albert William, Jr.	Eng.	B.A.	Phoenix
Smith, Annie Laurie, So.	Math.	B.A.E.	Yuma
Smith, Collis Parker, Fr.			Tucson
Smith, Constance F., P.G.	Math.	Ph.D.	Tucson
Smith, David J., Sp.	Law		Centralia, Ill.
Smith, Donna Leah, Jr.	Econ.	B.A.	Clifton
Smith, Donald Endamon, Sp.	Hist.		Tucson
Smith, Doris Evelyn, Fr.	H. Econ.	B.S.A.	Chicago, Ill.
Smith, Douglas, So.	Biol.	B.S.	Tucson
Smith, Eleanor B., So.	Span.	B.A.	San Diego, Calif.
Smith, Elizabeth Lee, R.U.			Salem, N. J.
Smith, Ethel E., So.			San Antonio, Tex.
Smith, Florence Irene, Jr.	Educ.	B.A.E.	Fresno, Calif.
Smith, George Sanford, Fr.		B.S.	Tucson
Smith, Homer Bushman, Jr.	A.H.	B.S.A.	Salt Lake City, Utah
Smith, Howard V., P.G.	Agr. Chem.	Ph.D.	Tucson
Smith, James B. Jr., So.	Pre-Legal	B.A.	Tucson
Smith, Justin Gardner, Fr.	Hort.	B.S.A.	Mesa
Smith, Justin Mack, Sr.	Agron.	B.S.A.	Salt Lake City, Utah
Smith, Lavora, So.	Nutr.	B.S.A.	Snowflake
Smith, Leonard Emmett, Sp.			Omaha, Neb.
Smith, Lois S., Jr.	Eng.	B.A.	Amarillo, Tex.
Smith, Paul E., Sr.	Physics	B.S.	Tucson
Smith, Richard S., Fr.	Span.	B.A.	Glendale
Smith, Ruth Frances, P.G.	Span.	M.A.	Indianapolis, Ind.
Smith, Stewart Crowe, Fr.	Bus. Adm.	B.S.B.A.	Winthrop, Mass.
Smith, Sydney B., Fr.	Bus. Adm.	B.S.B.A.	Denver, Colo.
Smith, Waldo E., So.	Zool.	B.S.	Tucson
Smith, William H., Fr.	Eng.	B.A.	Tucson
Sobiloff, Hymen Jordan, Jr.		B.A.	Fall River, Mass.
Sohn, George, So.	Geol.	B.S.	Tucson
Soller, Mary, P.G.	Eng.	M.A.	Tucson
Solomon, David M., So.			Sheridan, Wyo.
Solomon, Ferrin, So.	Arch.	B.A.	Tucson
Soloway, Rose, Jr.	Econ.	B.A.	Brooklyn, N. Y.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Songer, Gertrude W., Fr.		B.A.	Tucson
Songer, Mabel Wiger, P.G.	Educ.	M.A.	Tucson
Soule, John Henderson, Sr.	Geol.	B.S.E.M.	Superior
Soule, Nancy Pamela, Sr.	Eng.	B.A.E.	Superior
Soule, William R., Jr.	Bus. Adm.	B.S.B.A.	Morenci
Sowder, Harold, Fr.	A. H.	B.S.A.	Cheyenne, Wyo.
Sowder, Richard Dunham, So.		B.A.	Madison, Kan.
Spaid, William, 1st Yr.	Law	J.D.	Washington, D. C.
Sparks, Duane Frank, Jr.	Econ.	B.A.	Tucson
Sparks, Frank H., Jr.	Econ.	B.A.	Indianapolis, Ind.
Sparks, John Milton, Fr.	Bus. Adm.	B.S.B.A.	Phoenix
Spaulding, Kenneth G., So.	Econ.	B.A.	Janesville, Wis.
Speer, J. W., Fr.	Pre-Legal	B.A.	Tucson
Spencer, Frances Cecile, So.	Math.	B.S.	Grand Canyon
Sperry, Fred M., Jr.	Econ.	B.A.	Los Angeles, Calif.
Spezia, Emmie, Fr.	Music	B.M.	Clifton
Spicer, Edward Holland, Sr.	Econ.	B.A.	Wilmington, Del.
Spicer, Russell, Sr.		B.S.	Los Angeles, Calif.
Spingarn, Stephen J., 2nd Yr.	Law	J.D.	Amenia, N. Y.
Spooner, Jack, Jr.	Pub. Con.	B.A.	Phoenix
Springfield, Robert M., Jr.	A. H.	B.S.A.	Phoenix
Sproule, Barton M., P.G.	Mining Adm.		Seattle, Wash.
Squire, Frank H., Fr.		B.S.A.	Tucson
Stallings, William Sidney, P.G.	Arch.	M.A.	El Paso, Tex.
Stambaugh, Roland E., So.	Econ.	B.A.	Thomas, Okla.
Stamps, Ray, R.U.	Violin		Ft. Worth, Tex.
Stanley, Caroline Hart, Jr.	Psych.	B.A.	Washington, D. C.
Starbuck, Fred, Sr.	Econ.	B.A.E.	Oak Park, Ill.
Starck, Elsa H., So.	H. Econ.	B.S.A.	Scottsdale
Starck, Halvar G., Jr.	Math.	B.S.	Scottsdale
Stark, John Wayne, P.G.	Bus. Adm.	M.S.	Nebo, Ill.
Stauffer, Dorothy, Sr.	Psych.	B.A.	Phoenix
Steele, Helen Deborah, So.	Hist.	B.A.	Evanston, Ill.
Steele, Ruth Naomi, Sr.	Phys. Ed.	B.S.E.	Tempe
Steenbergen, William A., P.G.	C.E.	M.S.C.E.	Tucson
Stephens, John M., So.		B.S.A.	Philadelphia, Pa.
Stephens, William B., Fr.		B.S.	Kingman
Stephenson, Clay Wheeler, Fr.			Kansas City, Mo.
Stephenson, Martha Elizabeth, Sr.	Hist.	B.A.	Tucson
Steuer, Hazel Dorothy, Jr.		B.A.	Cleveland, Ohio
Stevens, Margaret, Jr.	Hist.	B.A.E.	Tucson
Stevenson, Robert, P.G.	Educ.	M.A.	Williams
Stevenson, Stuart, Fr.	E.E.	B.S.E.E.	Bisbee
Stewart, Catharine, Fr.	Span.	B.A.E.	Globe
Stewart, C. Ruth, Fr.		B.A.	Tucson
Stewart, George Thomas, P.G.	Educ.	M.A.	Casa Grande
Stewart, Harrie B., So.	E.M.	B.S.E.M.	Prescott
Stewart, Harry Edwin, Jr.	E.E.	B.S.E.E.	Globe
Stewart, James C., Jr.	M.E.	B.S.M.E.	Bisbee
Stewart, Jane Flornell, Sr.	Music	B.M.	Mesa
Stewart, Joe H., Fr.	Chem.	B.S.	Prescott
Stewart, John T., Jr.	Hist.	B.A.E.	Casa Grande
Stewart, Lincoln A., P.G.	Geol.	M.S.	Tucson
Stickler, Warren, So.	E.E.	B.S.E.E.	Tucson
Stier, Calvert R., R.U.	Bus. Adm.	B.S.B.A.	Tucson
Stiles, Imogene, So.	French	B.A.	Tucson
Still, Betty Carter, Sr.	Pol. Sci.	B.S.E.	Tucson
Stillman, Alice Clark, Jr.	Hist.	B.A.E.	Tucson
Stockdale, Joseph Thomas, Fr.	E.M.	B.S.E.M.	Castle Hot Springs
Stockly, Walter D. Jr., Jr.	French	B.A.	Tucson
Stockwell, Wm. Palmer, P.G.	Bot.	M.S.	Tucson
Stoddard, Zoraida, So.	Art	B.A.	Glendale
Stokes, Charles Walter, 1st Yr.	Law	LL.B.	Tucson
Stone, Arthur Wm., Sr.	French	B.A.	Andover, Mass.
Stone, Helen Lois, Fr.	Art	B.A.	San Diego, Calif.
Stone, Paulus, Jr.	Bus. Adm.	B.S.B.A.	Miami
Stone, Warren B., Sp.			Phoenix
Story, Chester Lee, So.	E.E.	B.S.E.E.	Globe
Stover, Gaynor, So.	Hist.	B.A.	Tucson
Stover, Maynard M., Jr.	E.M.	B.S.E.M.	Phoenix
Stover, Randall, Jr.	M.E.	B.S.M.E.	Tucson
Stratton, Robert R., Jr.	Zool.	B.S.	Safford

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<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Stratton, William Grant, So.	Hist.	B.A.	Ingleside, Ill.
Straver, Edith H., Fr.	Music	B.M.	Tucson
Streeter, John Williams, P.G.	Eng.	M.A.	Stonington, Conn.
Stroud, Robert R., Sr.	Law	LL.B.	Tempe
Struthers, Eleanor, So.	Hist.	B.A.E.	Tucson
Sullinger, Marjorie W., So.	Educ.	B.A.E.	Tucson
Summers, James Livingstone, R.U.	Eng.		Tucson
Sumter, Jesse B., Sp.	Law	LL.B.	Tucson
Sunderland, Richard E., Jr.	Econ.	B.A.	Phoenix
Sunderland, Verne Euford, Fr.		B.S.	Omaha, Neb.
Sundin, La Verne, Jr.	Hist.	B.A.E.	Tucson
Sutherland, David H., Fr.	M.E.	B.S.M.E.	Tucson
Sutherland, Muriel Dorothy, Fr.	Span.	B.A.E.	Tucson
Suydam, Lee, Sp.			Long Beach, Calif.
Swain, John Franklin, So.	Pre-Legal	B.A.	Tucson
Swan, Edward Hamilton, Sp.	Eng.	B.A.	Flushing, N. Y.
Swearingen, Ben E. Jr., Fr.		B.A.	Marshall, Tex.
Sweek, Ardella, Sr.	Biol.	B.S.	Phoenix
Sweeney, Jane Dale, Fr.			Tucson
Sweet, Margaret V., Jr.	Econ.	B.A.	Lead, S. D.
Sweet, Marjorie L., So.	Bus. Adm.	B.S.B.A.	El Paso, Tex.
Symons, Bernice Montana, P.G.	Eng.	B.A.E.	Tucson
Tacquard, Carol August, So.	Bus. Adm.	B.S.B.A.	Tucson
Tatom, Frank York, Fr.	E.E.	B.S.E.E.	Tucson
Tatum, Edward C., P.G.	Hort.	M.S.A.	Higley
Tatum, Irene, Jr.	H. Econ.	B.S.A.	Higley
Tatum, Peggy, So.	Eng.	B.A.	Tucson
Taylor, Charles Wendell, Fr.	Eng.	B.A.	Elkhart, Ind.
Taylor, Bessie Pauline, Jr.	Hist.	B.A.	Superior, Okla.
Taylor, George Leslie, Fr.	Pol. Sci.	B.S.	Bisbee
Taylor, James Cornelius, Fr.	C.E.	B.S.C.E.	Tucson
Taylor, John Edgar, So.	Eng.	B.A.	Phoenix
Taylor, John L., So.	Hist.	B.A.	Pittsburgh, Pa.
Taylor, Margaret R., So.	Eng.	B.S.	Tucson
Taylor, Robert Johnson, Jr.	Bus. Adm.	B.S.B.A.	Tucson
Taylor, Theodore Walter, Fr.	Zool.	B.S.	Tucson
Teague, Kay, So.	Arch.	B.A.	San Dimas, Calif.
Teague, Lauretta, Fr.	Eng.	B.A.	Glendale
Teeter, Carl Edwin, P.G.			Tucson
Tels, Donald R., So.	C.E.	B.S.C.E.	Tucson
Tenney, James B., P.G.			Tucson
Tenney, Katherine, Jr.	Phil.	B.A.	Tucson
Terry, Dorothy B., Fr.		B.S.	Oracle
Terry, Ellen Ruth, Sr.	Music	B.M.	Clarkdale
Terry, Fred Ward, Jr.	Bus. Adm.	B.S.B.A.	Clarkdale
Tevis, Grant O., Fr.			Tucson
Thayer, Gilbert, Fr.	Bus. Adm.	B.S.B.A.	White Plains, N. Y.
Then, Agnes, Sp.			Tucson
Theobald, John Orr, P.G.	Span.	M.A.	Tucson
Theiry, Robert Henry, Jr.	Pre-Legal	B.A.	Keego Harbor, Mich.
Thomas, Billie Louise, Jr.	Hist.	B.A.E.	Jerome
Thomas, Dorothy, Fr.	H. Econ.	B.S.A.	Amarillo, Tex.
Thomas, Dorothy Orme, Sr.	Eng.	B.A.E.	Phoenix
Thomas, Geraldine Joan, Fr.	Phys. Ed.	B.A.E.	Jerome
Thomas, William Stewart, Fr.		B.A.	New York, N. Y.
Thomas, Winifred, Fr.	H. Econ.	B.S.A.	Amarillo, Tex.
Thomason, Austin, Jr.	Pre-Legal	B.A.	Phoenix
Thompson, Alvin Jerome, P.G.			Prescott
Thompson, Arthur Calvin, So.		B.S.	Jerome
Thompson, Frank J., Jr.	Bus. Adm.	B.S.B.A.	El Paso, Tex.
Thompson, Harriet, So.	H. Econ.	B.S.A.	Tucson
Thompson, Mansel, P.G.	Educ.	M.A.	Phoenix
Thompson, Ralph T., Sr.	Econ.	B.A.	Montclair, N. J.
Thompson, Shirley E., Sr.	Eng.	B.A.	Tucson
Thompson, Willie Mae, Sr.	Span.	B.A.E.	Tucson
Thornber, Harriett, P.G.	Educ.	M.A.	Tucson
Thornber, John S., P.G.	Educ.		Tucson
Thornton, Charles A., Fr.	Phys. Ed.	B.S.	Tucson
Thornton, Wm. Powell, So.	Bus. Adm.	B.S.B.A.	Tucson
Thrope, William Good, Sr.	Econ.	B.A.	Oregon, Ill.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Thuma, Helen Louise, Fr.	Bus. Adm.	B.S.B.A.	Miami
Thuma, Richard, Jr.	E.E.	B.S.E.E.	Miami
Thurston, Francis Lloyd, Jr.	Bus. Adm.	B.S.B.A.	Beloit, Wis.
Tinsley, Harry Charles, Sr.	Hist.	B.A.E.	Hillside
Tisor, Carl D., Jr.	Biol.	B.S.	Tucson
Tittle, LaDeane, Sr.	Psych.	B.A.	Tucson
Tonkin, Gertrude, So.	Eng.	B.A.	Morenci
Tonkin, James Henry, So.	Bus. Adm.	B.S.B.A.	Morenci
Torrey, Christiane Marion, So.	Biol.	B.S.E.	Tucson
Tovera, Simon M., So.	Eng.	B.A.	Luna, P. I.
Tovote, Eberhard, Fr.			Hayden
Towle, Lewis W., P.G.	Chem.	M.S.	Tucson
Towle, Mildred M., R.U.			Tucson
Townsend, Edwin Laurens, Jr.	Bus. Adm.	B.S.B.A.	El Paso, Tex.
Treash, Harriet E., R.U.	Eng.	B.A.	Tucson
Treash, Robert Phillip, Jr.	Eng.	B.A.	Tucson
Treat, Eva Marie, Fr.	H. Econ.	B.S.A.	Tucson
Tribby, Maurice B., Jr.	Bus. Adm.	B.S.B.A.	Prescott
Tribolet, Charles, Jr.	Bus. Adm.	B.S.B.A.	Phoenix
Trick, Roy M., Sp.	Bus. Adm.		Tucson
Troja, John F., Jr.	Econ.	B.A.	Ft. Madison, Iowa
Trott, Byron Harry, Fr.	Eng.	B.A.E.	Sacramento, Calif.
Truman, John C., Sr.	Zool.	B.S.	Florence
Turnage, William Vincent, So.	Eng.	B.A.	Tucson
Turner, Annie Lou, Jr.	Span.	B.A.E.	Tucson
Turner, Frances Josephine, Jr.	Hist.	B.A.	El Paso, Tex.
Turner, Gaston S., Fr.		B.A.	Tyrone, N. M.
Turner, Gorman Evans, Jr.	Econ.	B.A.	Tucson
Turner, Hester Ella, So.	Hist.	B.A.E.	Tucson
Turner, Lucy S., Sp.			Dayton, Ohio
Turner, William Pitt, Fr.	C.E.	B.S.C.E.	Kingman
Turney, Margaret Josephine, Jr.	Span.	B.A.E.	Greybell, Wyo.
Tuthill, Charles Carr, Fr.	Arch.	B.S.	Tucson
Tuthill, Elizabeth Newcombe, Fr.	French	B.A.	Tucson
Tuttle, Arthur Wm., Fr.	Pre-Legal	B.A.	Somerton
Tuttle, Coralinn E., Fr.	Bot.	B.S.E.	San Diego, Calif.
Tway, Irwin D., Jr.	Bus. Adm.	B.S.B.A.	Mesa
Tweedy, John S., So.	Econ.	B.A.	Ohio
Ungerer, Leslie D., P.G.	Span.		Fernandina, Fla.
Urban, Harter, Jr.	Bus. Adm.	B.S.B.A.	Tucson
Urquides, Marie Legarra, Jr.		B.A.	Tucson
Utterback, Madge Winifred, Sp.	Music		Caney, Kan.
VanAtta, Thomas A., Sp.	Econ.		Grove City, Pa.
Van Bibber, Florence, P.G.	Educ.	M.A.	Huntington, W. Va.
Van Deman, William H., So.	Bus. Adm.	B.S.B.A.	Tucson
Van Horn, James, Fr.			Tucson
Van Sant, Ralph, Sr.	D. H.	B.S.A.	Glendale
Van Vorst, Robert Braberg, Fr.	Biol.	B.S.	Tucson
Vaughn, Edna, So.	Psych.	B.A.	Phoenix
Velasco, Jose Rubin, Sr.	E.M.	B.S.E.M.	Nogales
Vezzetti, Lillian M., So.	Span.	B.A.	Tucson
Vialo, Mitchell S., P.G.	Educ.	M.A.	Miami
Viner, Walter Norman, Fr.	Econ.	B.A.	Tulsa, Okla.
Vogt, Julian W., So.	Math.	B.A.	San Diego, Calif.
Voigts, Busch, So.		B.S.A.	Kansas City, Mo.
Vonk, David F., Sr.	E.E.	B.S.E.E.	Bisbee
VonNoe, Valerie, Sr.	Eng.	B.A.	Tucson
Voss, Henry L., Jr.	Bus. Adm.	B.S.B.A.	Phoenix
Vosskuhler, Max P., P.G.			Tucson
Vreeland, W. Monroe, Sr.	Bus. Adm.	B.S.B.A.	Rocky Hills, N. J.
Vyne, Bill Edwin, Fr.	E.E.	B.S.E.E.	Prescott
Wadin, Anita, Sr.	Span.	B.A.E.	Phoenix
Waidler, Walter C., Sr.	E.M.	B.S.E.M.	Tucson
Waits, John Milton, Fr.	Eng.	B.A.	Tucson
Waits, Paula Gerraldean, So.	Music	B.M.	Ada, Okla.
Walker, Alice Louise, Sr.	Span.	B.A.E.	South Fork, Colo.
Walker, Jack M., Sr.	Bus. Adm.	B.S.B.A.	Ontario, Calif.
Walker, John Charles, P.G.	Hist.	M.A.	Tucson
Walker, John H., Fr.	Phys. Ed.	B.S.E.	Chandler
Walker, Mitchell S., So.	Bus. Adm.	B.S.B.A.	Chandler

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Walker, Osborne, Sr.	Phys. Ed.	B.S.E.	Tucson
Walker, Perry Douglas, Fr.		B.S.	Tucson
Wallace, Louise L., Fr.	Pre-Legal	B.A.	Kingman
Wallace, Myron T., P.G.	Pol. Sci.	M.A.	Paducah, Ky.
Wallace, Roy Oliver, Sp.			Tucson
Walling, Rex Jr., Jr.	Bus. Adm.	B.S.B.A.	Amarillo, Tex.
Walter, John Frederick, Fr.	M.E.	B.S.M.E.	Wabash, Ind.
Walter, Ruth Richmond, So.	Eng.	B.A.	Laguna Beach, Calif.
Walters, Howard Milton, Fr.	Pre-Legal	B.A.	Flagstaff
Ward, George Morton, Jr.	Span.	B.A.	San Francisco, Calif.
Wardlaw, Floyd W., Jr.			Tempe
Ware, John H., Fr.	Soc.	B.A.	Chloride
Warnock, Harold C., Jr.	Econ.	B.A.	Bisbee
Warren, Fred, Fr.	Chem.	B.S.	Phoenix
Warren, Fred, Jr.	Econ.	B.A.	Phoenix
Watkins, Bruce O., Jr.	E.E.	B.S.E.E.	Tucson
Watkins, James G., Fr.	Chem.	B.S.	Brooklyn, N. Y.
Watson, Phoebe, So.	Eng.	B.A.E.	Phoenix
Watson, Welland A., Jr.	R. Ecol.	B.S.A.	Montezuma, Iowa
Watson, William Arthur, Jr.	Phys. Ed.	B.S.E.	Long Beach, Calif.
Watterson, Robert Irving, Sp.	Bus. Adm.	B.S.B.A.	La Grange, Ill.
Weaver, Fawn, Fr.			Tucson
Weaver, Margaret Anita, P.G.	Eng.	M.A.	Tucson
Webb, Donald L., P.G.	Physics	M.S.	Tucson
Webb, Marian, Jr.	H. Econ.	B.S.A.	Globe
Webb, Maurice E., So.	M.E.	B.S.M.E.	Tucson
Webb, Wilbur C., Sr.	M.E.	B.S.M.E.	Globe
Weber, Billie, Jr.	Phys. Ed.	B.S.E.	Chicago, Ill.
Webster, Harriet, Sr.	Hist.	B.A.E.	Tucson
Webster, Margaret Mae, Sr.	Music	B.M.	Meetutse, Wyo.
Webster, Ora L., P.G.			Thatcher
Weisenberg, Robert, Fr.		B.A.	Los Angeles, Calif.
Weismann, Victor Paul, So.	M.E.	B.S.M.E.	Alhambra, Calif.
Welch, Elizabeth Price, P.G.	Eng.	M.A.	Chicago, Ill.
Welch, Lucy Bates, Fr.	Eng.	B.A.	Tucson
Weller, Ralph, Fr.	Math.	B.S.E.	Tucson
Wells, Frank Everts, Fr.	E.E.	B.S.E.E.	Williams
Wells, L. S., P.G.			Deming, N. M.
Welscher, Wilma Theresa, So.	Eng.	B.A.	Gallup, N. M.
Welter, Mark K., Jr.	Econ.	B.A.	Yuma
Weltmer, J. Noyes, Fr.	Bus. Adm.	B.S.B.A.	Superior
Welton, Francis G., Jr.	M.E.	B.S.M.E.	Alhambra, Calif.
Wenger, Rhea, Jr.	Educ.	B.A.E.	Tucson
Wenner, Mrs. Florence W., P.G.	Eng.	M.A.	Omaha, Neb.
Wentworth, Mary Sue, Fr.	Math.	B.S.	Yuma
Wesler, George Boyd, P.G.	E.M.	M.S.	Manitowoc, Wis.
West, Ray H., Jr.	Music	B.M.	Phoenix
Westbrook, Jennie Madeline, P.G.	Educ.	M.A.	San Angelo, Tex.
Westerdahl, Laura Annette, Sr.	Art	B.A.E.	Phoenix
Westerlund, Paul W., So.	Pre-Legal	B.A.	Phoenix
Westerman, Alfred Allen, Jr.	M.E.	B.S.M.E.	Florence
Westgard, Carl C., R.U.	Agr.	B.S.A.	Brawley, Calif.
Wetzel, Robert Albert, Fr.	Math.	B.S.	Detroit, Mich.
Wheeler, Russell M., Fr.		B.S.	Monticello, Ill.
Whiddon, Harriette Ettienne, Fr.		B.A.	Cedar Key, Fla.
White, Alice M., So.	Span.	B.A.E.	Bisbee
White, Andrew B., So.	Music	B.M.	Tucson
White, Charles Glenn, So.	Hist.	B.A.	Yuma
White, Doris Emily, Fr.	Zool.	B.S.	Tucson
White, Mrs. Geraldine, Sr.	Hist.	B.A.E.	Phoenix
White, John D., So.	Music	B.M.	Tucson
White, Marion Millender, P.G.	Eng.	M.A.	Mebane, N. C.
White, Paloma, P.G.	Latin		Tucson
White, Theodore D., So.	E.E.	B.S.E.E.	Scottsdale
Whiting, Charles Bryant, Sp.	Law		St. Johns
Whiting, Clayton E., Fr.		B.A.	Chicago, Ill.
Whiting, Francis Marion, Sr.	Biol.	B.S.	St. Johns
Whitney, Jack B., Fr.	C.E.	B.S.C.E.	Fort Huachuca
Whitney, Judson H., P.G.	Astro-Physics	M.A.	Phoenix
Whitson, Lish, 3rd Yr.	Law	J.D.	Urbana, Ill.
Wickware, Margaret, So.	H. Econ.	B.S.A.	Mesa
Wiegman, Edna Joan, R.U.		B.A.	Detroit, Mich.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Wiest, Albert Wilbur, Fr.	Art	B.A.	McNary
Wilbanks, Jewel Charlotte, Fr.	Eng.	B.A.E.	Tucson
Wilcox, Jack B., So.	Bus. Adm.	B.S.B.A.	Enid, Okla.
Wilder, Jane, Sr.	Hist.	B.A.	Los Angeles, Calif.
Wilder, Robbye, Fr.	Bus. Adm.	B.S.B.A.	McNary
Wilkinson, Phillip A., Jr.	C.E.	B.S.C.E.	San Diego, Calif.
Willey, Gordon R., So.	Arch.	B.A.	Phoenix
Williams, Eunice, Soo.	Biol.	B.S.	Tucson
Williams, J. Clifton, P.G.	Math.		Clifton
Williams, Frank R., Fr.	Zool.	B.S.	Phoenix
Williams, Gracia Marsh, Jr.	Eng.	B.A.	Oskaloosa, Iowa
Williams, Hanen H., So.	M.E.	B.S.M.E.	Phoenix
Williams, James Henry, Jr.		B.A.	Douglas
Williams, John A., So.	Chem.	B.S.	Hayden
Williams, June, Jr.	Psych.	B.A.	Tucson
Williams, Margaret Evelyn, Jr.	French	B.A.	Amarillo, Tex.
Williams, Mrs. Mary Leonard, Jr.	Biol.	B.S.E.	Tucson
Williamson, Barbara, So.	Bus. Adm.	B.S.B.A.	Clifton
Willis, Anne Harrison, Fr.	H. Econ.	B.S.A.	Phoenix
Willis, Barbara Lee, Sr.	Eng.	B.A.	Phoenix
Willis, DeWitt, So.	Pre-Legal	B.A.	Tucson
Willis, Mary Lillian, So.	Art	B.A.	Castle Hot Springs
Wilson, Arthur Harry, So.		B.A.	San Francisco, Calif.
Wilson, Barbara, P.G.	Zool.	M.S.	Tucson
Wilson, Bryce Hewitt, Sr.	Econ.	B.A.	Brilliant, Ala.
Wilson, Dedrick Francis, Fr.	E.E.	B.S.E.E.	Tucson
Wilson, George F., Fr.	Bus. Adm.	B.S.B.A.	Detroit, Mich.
Wilson, Harold D., Sp.	Pre-Legal	B.A.	Tucson
Wilson, Lucia, Fr.		B.A.	Burlington, Iowa
Wilson, Lynnford Samuel, So.	E.E.	B.S.E.E.	Genoa City, Wis.
Wilson, Robert E., Jr.	Span.	B.A.	Burlington, Iowa
Wilson, Virginia Florence, So.	Eng.	B.A.E.	Tucson
Wilson, Walter S., Fr.	Bus. Adm.	B.S.B.A.	Tucson
Wimmler, Norman Lucius, P.G.	M.E.	A.E.M.	Tucson
Wimmler, Mrs. Ray Gwin, Sp.			Tucson
Winkler, Fred, So.	E.M.	B.S.E.M.	Clarkdale
Winn, Ezra Thomas, Fr.	Econ.	B.A.	Mesa
Winter, William John, P.G.			Tucson
Wirtz, Rodney S., Sr.	Bus. Adm.	B.S.B.A.	Bisbee
Wisdom, Dorothy B., Sr.	Phys. Ed.	B.A.E.	
Wisely, John Benjamin, 1st Yr.	Law	J.D.	Terre Haute, Ind.
Wivel, Mrs. Aubrey A., R.U.			Tempe
Wivel, Claude Burns, P.G.	Educ.	Ph.D.	Tempe
Wofford, Katherine Ann, Fr.	Biol.	B.S.	Tucson
Wolf, Elliott Walter, P.G.	Educ.	M.A.	Easton, Pa.
Wolfson, David, Sr.	Econ.	B.A.	Phoenix
Wollaeger, Esther, Sr.	Hist.	B.A.	Tucson
Wollard, Clarence, Sr.	Econ.	B.A.	Tucson
Wood, John Arnault, Jr.	Geol.	B.S.	Glendora, Calif.
Wood, M. Mozelle, Fr.	Bus. Adm.	B.S.B.A.	Tucson
Woods, Wm. Leonard, Fr.	Eng.	B.A.E.	Tucson
Woods, Roy Clark, So.	Bus. Adm.	B.S.B.A.	Holbrook
Woodside, Helen Florence, Sr.	Educ.	B.A.E.	Wickenburg
Woodward, Morrill Roland, So.	M.E.	B.S.M.E.	Peoria, Ill.
Wolledge, H. Harrison, Jr.	Bus. Adm.	B.S.B.A.	Fargo, N. D.
Woolery, Mary J., Jr.	French	B.A.E.	Bisbee
Woolf, Lillian V., Sr.	Span.	B.A.E.	Tucson
Woolfolk, John Holt, P.G.	Educ.	M.A.	Richmond, Va.
woorth, Grace B., Jr.	Math.	B.S.E.	Tucson
Worthington, Glenn Fulton, Jr.	Chem.	B.S.	Long Beach, Calif.
Woundy, Martha, P.G.	Eng.	M.A.	Newburyport, Mass.
Wright, Clarence C., So.	E.E.	B.S.E.E.	Ray
Wright, Donald Graham, P.G.	Econ.	M.A.	Ashland, Ore.
Wright, Douglas, Sr.	Bus. Adm.	B.S.B.A.	Douglas
Wright, Travis Gray, So.		B.S.	Nogales
Wright, Virginia, P.G.	Span.	M.A.	Tucson
Wuellner, Albert L., Fr.	Bus. Adm.	B.S.B.A.	Alton, Ill.
Wyant, Robert Louis, Sp.	Agr.	B.S.A.	Phoenix
Wyatt, Jack T., So.	Bus. Adm.	B.S.B.A.	Sterling, Ill.
Wykoff, Norman R., Fr.	Bus. Adm.	B.S.B.A.	Prescott
Wylie, William Parkhill, Fr.	C.E.	B.S.C.E.	Tucson
Wynne, Burl W., Sr.	Hist.	B.A.	Globe

REGISTER OF STUDENTS

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<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Yaeger, Horton, Jr.	Econ.	B.A.	Phoenix
Yancy, James Walter, P.G.	Econ.	M.A.	Forrest City, Ark.
Yarbrough, Ida Lee, Sr.	Educ.	B.A.E.	Tucson
Yeary, Marie G., Jr.	Educ.	B.A.E.	Tucson
Yeates, Nan Josephine, R.U.			St. Louis, Mo.
Yee, James, So.	Biol.	B.S.	Tucson
Young, Edward Lee, Fr.	C.E.	B.S.C.E.	Douglas
Young, Evelyn A., So.			Tucson
Young, George Alexander, Jr.	Pre-Med.	B.S.	Omaha, Neb.
Young, G. Theodore, P.G.	Educ.	M.A.	Holbrook
Young, Stanley A., Jr.	E.M.	B.S.E.M.	Douglas
Young, Virginia E., Fr.	Span.	B.A.	Tucson
Youngs, Dorothea, Jr.	Eng.	B.A.E.	Howell, Mich.
Yount, Martua, So.	Phys. Ed.	B.S.E.	Prescott
Zahner, August W., P.G.	Chem.	M.S.	Lenexa, Kan.
Zimmerman, Adrienne, Jr.	Span.	B.A.	Kansas City, Mo.
Zimmerman, Lillian F., Fr.	Eng.	B.A.E.	Jerome
Zimmerman, Ralph, P.G.	Educ.	M.A.	Patagonia
Zuckerman, Stanley Barondess, Fr.	Eng.	B.A.	New York, N. Y.

SUMMER SESSION 1931

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Adams, Sam, 1, Jr.	Hist.	B.A.	Tucson
Akers, Lelah F., 2, Sp.			Fenville, Mich.
Akers, William W., 2, Sp.			Tucson
Alexander, F.C., 2, Sr.	Educ.	B.A.	Tempe
Allen, Boyd, 1, Sr.	Econ.	B.S.B.A.	Tucson
Allsworth, Brainard H., 1, 2, P.G.	Educ.	M.A.	Mesa
Anderson, Florence, 1, 2, P.G.	Educ.	M.A.	Wheatridge, Colo.
Anderson, Maurice, 1, 2, So.	Music	B.M.	Tucson
Anderson, Minnie, 1, Sp.			Warren
Anglin, Ray, 1, So.	Phys. Ed.	B.S.	Kingman
Arnfeld, Ruth, 1, So.		B.A.	Pittsburgh, Pa.
Attaway, Helen, 1, 2, Jr.	Educ.	B.A.	Coolidge
Austin, Louise, 1, Sr.	Eng.	P.A.	Chandler
Ayers, Amy Jean, 1, R.U.			Durango, Colo.
Ayers, Deering, 1, 2, Sr.	Chem.	B.S.	Tucson
Backstrom, Lewis, 1, 2, Sr.	Hist. and P.S.	B.A.	Marathon, Iowa
Baer, Beulah E., 1, 2, P.G.	Eng.	M.A.	Galesburg, Ill.
Baker, Cecil S., 1, 2, R.U.		B.A.	Washington, D. C.
Baker, Leeds, 1, 2, Sp.			New York, N. Y.
Baker, Raymond L., 1, So.	M.E.	B.S.M.E.	Centerville, Iowa
Barker, Gwen, 1, Jr.	Eng.	B.A.	Cottonwood
Barker, Ruth, 1, 2, P.G.	Educ.	M.A.	Tucson
Barnett, Ada, 1, Fr.			Mesa
Barrett, Charlotte, 1, 2, Jr.			Tucson
Barrett, Miss Howard, 2, P.G.			Tucson
Bartlett, Paul A., 1, So.	Eng. Lit.	B.A.	Tucson
Batchelder, Philip, 1, 2, P.G.	Educ.	M.A.	Tucson
Bate, William, 1, Jr.	Gen. Bus.	B.S.B.A.	Phoenix
Baughman, Pearl, 1, P.G.			Yuma, Colo.
Beamis, John F., 1, 2, Fr.			Tucson
Beaty, A. J., 1, 2, P.G.	Educ.	M.A.	Dallas, Tex.
Bell, Mary Alice, 1, 2, P.G.			Mesa
Beller, Laurence, 1, Sr.	Educ.	B.A.	Vinton, Iowa
Berry, Iona, 1, 2, R.U.			Tucson
Bertino, Margaret, 1, P.G.	Biol.	M.A.	Phoenix
Best, Alice M., 1, Sr.	Eng.	B.A.	Tucson
Best, M. Viola, 1, R.U.			Beaver Falls, Pa.
Bigby, Peggy M., 1, 2, Jr.	Biol.	B.S.	Tucson
Bivens, Harold E., 1, 2, Fr.		LL.B.	Tucson
Bodine, Charles L., 1, 2, P.G.	Educ.	M.A.	Mescalero, N. M.
Booher, Margaret, 1, P.G.	Educ.	M.A.	Tucson
Boyers, Clements J., 1, So.	Bus. Adm.	B.S.B.A.	Mt. Vernon, N. Y.
Boyle, James P., Jr. 1, 2, Fr.			Tucson
Bradford, William, 1, 2, Sp.			Tucson
Breazeale, Lucretia, 1, Sr.	Bot.	B.S.	Tucson
Brenner, Joel, 1, 2, So.	Math.	B.A.	Brooklyn, N. Y.
Brewer, Leslie O., 1, 2, P.G.	Span.	M.A.	Tucson
Briggs, Ian A., 1, P.G.			Victor, Mont.
Brooks, M. L., 1, P.G.	Admin.	M.S.	Phoenix
Brown, Elizabeth P., 1, Sp.	Pre-Med.		Tucson
Brown, Floyd, 1, 2, Sr.	Eng.	B.A.	Tucson
Brown, Gratia M., 1, 2, Jr.	Zool.	B.S.E.	Tucson
Brown, Meredith, 1, Sr.	Eng.	B.A.	Tucson
Browne, Thomas H., 1, P.G.			Vanderbilt, Pa.
Browning, I. N., 1, Sr.	Hist.	B.A.	Chandler, Tex.
Buchanan, Peter, 1, 2, Fr.	Math.	B.S.E.E.	Manila, P. I.
Buchman, A. H., 1, Fr.	E.E.	B.A.E.E.	Tucson
Burgess, Glen Dean, 1, 2, Jr.	Eng.	B.A.	Orabi
Burgham, Kathleen M., 1, 2, Jr.	Educ.	B.A.	Globe
Burns, Abbott, 1, 2, Sr.			Tucson
Burns, Mrs. Sammie, 1, P.G.	Eng.	M.A.	Tucson
Butler, Florence, 1, 2, P.G.		M.A.	Tuba City
Buzan, Anita Irene, 1, Sr.	Educ.	B.S.	Mesa

REGISTER OF STUDENTS

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<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Butler, Olga, 1, 2, Jr.	Phys. Ed.	B.A.	Tucson
Byrd, Clara Mary, 1, Jr.	Span.	B.A.E.	Clint, Tex.
Byrne, Margaret I., 1, Sr.	Rom. Lan.	B.A.	Yuma
Cable, Don, 1, 2, Fr.			Tucson
Calloway, Esther A., 1, P.G.	Educ.	M.A.	Phoenix
Cameron, Avilia, 1, Jr.	Educ.		Mesa
Carter, Ida, 1, 2, Sr.	Educ.		Tucson
Cavett, Lillian, 1, P.G.			Tucson
Chambers, Tom, 1, 2, Sr.	Econ.	B.A.	Tucson
Christensen, Elise, 1, Sr.	Educ.	B.A.	Chicago, Ill.
Clardy, Sara H., 1, 2, P.G.	Eng.	M.A.	Neosho, Mo.
Clare, Vesta, 1, 2, Jr.	Educ.	B.A.	Tucson
Clark, Alva B., 1, 2, P.G.	Educ.	M.A.	Tucson
Clark, Kenneth S., 1, 2, P.G.	Educ.	M.A.	Wickenburg
Clark, Marvin C., 1, P.G.	Educ.	M.A.	Long Beach, Calif.
Clark, Myrtle, 1, 2, Sp.			Ray
Clarke, Charlotte I., 1, So.			Onarga, Ill.
Cleaton, Mary Davis, 1, 2, Jr.	Eng.	B.A.	Richmond, Va.
Cleaton, Roberta, 1, Sr.	Educ.	B.A.	Richmond, Va.
Coats, Robert R., 1, P.G.		M.S.	Seattle, Wash.
Cole, Mrs. Ivy H., 1, 2, Jr.			Tucson
Cole, Mrs. Lena, 1, So.			Tucson
Conner, Eva, 1, Jr.	Educ.	B.A.	Tucson
Cooley, John Edward, 2, Sr.	Hist.	B.A.	Inglewood, Calif.
Cooley, Elizabeth, 2, Jr.	Eng.		Phoenix
Cotten, Mrs. Agnes, 1, R.U.			Tucson
Currow, Leonard, 1, Jr.	Man. Arts		Morenci
Curtis, Loren, 1, 2, Sr.	Econ.	B.A.	Tucson
Dallis, Rebecca, 1, P.G.			Phoenix
Daniel, Lula Belle, 1, P.G.	Hist.	M.A.	Tempe, Tex.
Davies, Hetty, 1, P.G.	Educ.	M.S.	San Antonio, Tex.
Davis, Barto C., 1, P.G.	Educ.	M.A.	Phoenix
Davis, Evelyn M., 1, Jr.	Educ.	B.A.	Tucson
Davis, Helen Roma, 1, P.G.	Eng.	M.A.	Phoenix
Davis, Nelson Wm., 2, P.G.	Educ.	M.A.	Brazil, I. S.
Denzer, Joseph Andrew, 1, 2, Sr.	E.E.	B.S.E.E.	Tucson
DeVault, Robert M., 1, Jr.		B.S.B.A.	Kansas City, Mo.
Dicus, Waldo M., 1, P.G.	Econ.		Jerome
Don, Maude, 1, 2, So.		B.S.B.A.	Tucson
Dovey, Marie, 1, 2, Jr.	Educ.	B.A.	Tucson
Doyle, Lena S., 1, 2, Sr.	Educ.	B.A.	Tucson
Duffy, Ida M., 1, 2, Sr.	Educ.	B.A.	Tucson
Duncan, Katherine, 1, Sr.	Eng.	B.A.	Alamogordo, N. M.
Dungan, Mary Evelyn, 1, Jr.	Educ.	B.A.	Tucson
Dunseath, Mary Elizabeth, 1, Fr.			Tucson
Eisenhart, J. F., 1, Jr.	Hist.	B.A.	Coolidge
Elledge, Dixie, 1, Sr.	Educ.		Benton, La.
Elledge, Dollie, 1, Sr.	Educ.		Benton, La.
England, Kathryn M., 2, Jr.		B.A.	Tucson
Eoff, Mary, 1, 2, Jr.	Phys. Ed.	B.S.	Tucson
Erdahl, Margarethe, 1, Sr.	Eng.	B.A.	Tucson
Escalante, Maria, 1, 2, Jr.	Span.	B.A.	Tempe
Etz, Ada May, 1, 2, Sr.	Educ.	B.A.	Benson
Ewing, Bertha E., 1, P.G.	Educ.	M.A.	Lake Arthur, N. M.
Ewing, Robert Max, 1, 2, Fr.	A.H.	B.S.A.	Lena, Ind.
Faras, Concepcion, 1, Fr.	Biol.	B.S.	Douglas
Faras, Rose, 1, Jr.	Span.	B.A.	Douglas
Farley, Wilda, 1, Sr.	H. Econ.	B.S.H.E.	Safford
Farrell, Katharine, 1, Jr.	Pol. Sci.	B.A.	Copper Hill
Feeney, F. H., 2, P.G.	Educ.	M.A.	San Simon
Feghtly, Margaret A., 2, Sp.	Music		Tucson
Fishback, Jane, 1, 2, P.G.	Span.	M.A.	Tucson
Floyd, Catherine, 1, Jr.	Phys. Ed.	B.S.	Gallup, N. M.
Foxwell, Alice, 1, 2, P.G.	Eng.	M.A.	Tucson
Foy, Vivian, 1, P.G.			Tucson

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Frazier, Alex, 1, 2, Sr.	Eng.	B. A.	Phoenix
French, Marjorie E., 1, 2, Sr.	Eng.	B. A.	Phoenix
Fulghum, Ruby E., 2, Jr.		B. A.	Willcox
Fuller, John S., 1, 2, P.G.			Phoenix
Gallagher, Alice, 1, Sr.	Fin.	B. A.	Gamboa, P. I.
Gallatin, Robert E., 1, P.G.			Tucson
Garcia, Christine, 2, P.G.	H. Econ.	M. A.	Tucson Indian School
Garretson, Ralph B., 1, P.G.	Hist.	M. A.	Tucson
Garrett, Katharine, 1, 2, Jr.			Douglas
Gee, Irvn Edwin, 2, Sr.	P.H.	B.S.A.	Tucson
Gesin, Ernest M., 1, 2, Sr.	Hist.	B. A.	Tucson
Getty, Harry Thomas, 1, P.G.	Arch.	M. A.	Kansas City, Mo.
Gomez, Mary, 1, 2, P.G.	Span.	M. A.	Tempe
Gonzalez, Satur, 1, 2, Sr.	Biol.	B.S.	Clifton
Greer, William, 1, 2, Sr.	C.E.	B.S.C.E.	Phoenix
Griffin, Hazel, 1, 2, Jr.			McIntire, Iowa
Guillotte, George, 1, Jr.	M.E.	B. A.	Patagonia
Gunter, Manning, 1, Soph.	Biol.	B.S.	Globe
Hall, Chester A., 1, 2, P.G.	Educ.	M. A.	Tucson
Hall, Hope Sisson, 1, 2, Jr.	Educ.		Tucson
Halliday, Carolyn, 2, Jr.			Tucson
Hardin, Mildred Oleo, 1, Sr.	Hist.	B. A.	Marana
Harkey, Mrs. Alice P., 2, P.G.	Eng.	M. A.	Tucson
Harkey, Ruby M., 1, 2, Jr.	Educ.	B. A.	Florence
Hayes, Ida T., 1, Jr.	Educ.	B. A.	Tombstone
Hays, James C., 1, 2, P.G.			Phoenix
Heath, Gertrude, 1, 2, Sr.	Educ.	B. A.	Huntington, Mass.
Henderson, Lucile, 1, P.G.	Educ.		Tucson
Henry, Elizabeth M., 1, P.G.	Span.	M. A.	Tucson
Hess, Harriet, 1, Sr.		B. A.	Yuma
Hinrichs, Paul, 1, 2, Jr.	Math.	B. A.	Tucson
Holcomb, Harold, 2, P.G.	Educ.	M. A.	Mesa
Howard, Dora Mae H., 1, 2, Sr.	Educ.		Hayden
Howell, Leona, 1, Jr.	Educ.	B. A.	Tucson
Hudson, William H., 1, 2, Sr.		B. A.	Phoenix
Huffman, Dorothy, 1, Sr.	H. Econ.	B.S.	Tucson
Hussey, Willa Irene, 2, Jr.	Eng.	B. A.	Tucson
Hyde, Jay, 2, P.G.	Educ.	M. A.	Phoenix
Irish, Clarence, 1, 2, P.G.	Educ.	M. A.	San Francisco, Calif.
Jackson, David D., 1, P.G.	Educ.	Ph.D.	Tucson
Jenson, Nell R., 2, Jr.			Tucson
Johnson, Edward D., 1, 2, Jr.	Phys. Ed.	B.S.	Woodbine, Iowa
Johnson, Mary Louise, 1, Sr.	Merch.	B. A.	Tucson
Johnston, Dorothy Jean, 1, P.G.	Educ.	M. A.	Augusta, Kan.
Johnston, Mrs. Jeanne, 1, Sr.	Educ.	B.S.	Augusta, Kan.
Johnston, Lillian S., 1, P.G.	Educ.	M. A.	San Luis
Jones, Louise C., 1, P.G.	Educ.	M. A.	Richmond, Mo.
Jones, Oliver P., 1, P.G.			Richmond, Mo.
Judd, B. Ira, 1, 2, P.G.	Ecol.	Ph.D.	St. David
Karns, Bertie Haynes, 1, P.G.			Phoenix
Kautz, Olive, 1, 2, P.G.			Tucson
Kearns, William O., 1, P.G.		B. A.	Brooklyn, N. Y.
Keddie, Mrs. Allie, 2, R.U.			Tucson
Keeler, C. Wilson, 1, Jr.	Law	LL.B.	Delta, Utah
Keho, Clifford, 1, 2, P.G.	Educ.	Ph.D.	Coin, Iowa
Kelley, Mose E., 2, Jr.	M.E.	B.S.M.E.	
Kessler, Rolla V., 1, P.G.	Educ.	M. A.	Tucson
Kilmer, Lawrence B., 1, 2, P.G.	Math.		Tucson
Kimball, Olive, 1, Jr.	Art	B. A.	Tucson
Kincaid, Anna H., 1, S.S.Sp.	Educ.	B.S.	Tolleson
Kinsey, Lura, 1, 2, Sr.	Educ.	B. A.	Flagstaff
Kinter, Charles V., 2, P.G.			Tucson
Kirk, Robert, 1, Jr.			Phoenix

REGISTER OF STUDENTS

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Name and Classification	Major	Degree Sought	Home Residence
Kitt, Ethel T., 2, P.G.	Educ.	M.A.	Tucson
Klima, John J., 1, 2, Jr.	Econ.	B.A.	Tucson
Klingenberg, Paul, 2	Entom.	B.S.A.	Clarkdale
Knight, Winifred, 1, Sp.	Music		Middleton, N. Y.
Koepf, William, 1, 2, P.G.	Educ.	M.A.	Tucson
Krentz, Bertha, 1, Sr.	Hist.	B.A.	Douglas
Lang, Jack, 1, Jr.	Econ.	B.A.	Rochester, N. Y.
Lang, Richard, 1, Jr.	Econ.	B.A.	Rochester, N. Y.
Larkin, John L., 1, P.G.	Educ.		Tucson
Laubscher, Anna, 2, Jr.	Educ.	B.S.	Bowie
Lawrence, Lena Lou, 1, P.G.	Educ.	M.A.	Fulton, Mo.
Leary, Paul, 1, 2, Sp.	Phys. Ed.	B.S.	Long Beach, Calif.
Lee, Roy A., 1, 2, P.G.	Educ.	M.A.	Tucson
Legg, Hester, 1, P.G.		M.A.	Moss, Miss.
Leichman, Nathan L., 1, Sr.	German	B.A.	Tucson
Lemen, Matthew H., 1, Fr.	Band-Orch.	B.M.	Tucson
Linn, Dorothy, 2, Jr.	Eng.	B.A.	Tucson
Lockhart, Geneva, 1, R.U.		B.A.	Phoenix
Longan, Walter L., 1, 2, P.G.	Educ.	M.A.	Tempe
Lorona, Leonor, 1, 2, R.U.			Hayden
Lott, Gladys R., 2, So.	Eng.	B.A.	Tucson
Love, Alice Emily, 1, 2, P.G.	Hist.	M.A.	Tucson
Love, L. Dudley, 2, P.G.	Ecol.	Ph.D.	Tucson
Lovett, Katherine, 2, Jr.			Tucson
Lucas, Felix, 1, 2, So.			Laoag Ilocos Norte, P. I.
Lynott, Mabel L., 1, P.G.		Ph.D.	Tucson
McBride, Wendell, 1, P.G.		M.A.	Western, Neb.
McClain, Elizabeth, 1, 2, Sr.	Eng.	B.A.	Tempe
McCoy, Freddie V., 1, Sr.	H. Econ.	B.S.	Caruthersville, Mo.
McGinnis, Blanche, 2, Sp.			Tucson
McGrath, Ana Mae, 1, P.G.	Arch.	M.A.	Tucson
McKinney, Ruth M., 1, So.	Educ.		Douglas
McLaughlin, Alice, 1, 2, Sr.	Biol.	B.A.	Chicago, Ill.
MacLennan, H. Kenneth, 1, 2, P.G.	Educ.	M.A.	Tempe
McLeskey, R.A., 1, P.G.	Educ.	M.A.	Alamogordo, N. M.
Macon, Robert A., 2, Sr.	Eng.	B.A.	Phoenix
Mahoney, Esther N., 1, So.	Nutr.	B.S.H.E.	Tucson
Malott, Eleanor, 1, Jr.	H. Econ.	B.S.H.E.	Globe
Mangun, Clinton M., 1, P.G.	Educ.	M.A.	Tucson
Mangun, Mrs. Mary H., 1, P.G.	Educ.		Tucson
Manning, W. R., 1, Sr.	Phys. Ed.	B.S.	Tucson
Mapalo, Fabian, 1, 2, Jr.	Educ.	B.A.	Manaoag Pangasinan, P. I.
Markham, Okla, 1, P.G.	Educ.	M.A.	El Paso, Tex.
Marshall, Mrs. Mary, 1, P.G.	Hist.	M.A.	Denton, Tex.
Marshall, Sara, 1, Jr.	Educ.	B.A.	Tucson
Matteson, Elsie L., 1, R.U.			St. David
Mattison, L. E., 1, So.			St. David
Mendoza, Elena, 1, Sr.	Span.	B.A.	Mesa
Merrill, Mrs. Margaret, 1, P.G.	Eng.	M.A.	Mesa
Merrill, Velma, 1, 2, P.G.	Hist.	M.A.	Mesa
Meyer, Mattie Y., 1, 2, P.G.	Educ.	M.A.	Tempe
Meyer, Myrtle, 1, Jr.	Educ.	B.A.	Tucson
Meyer, Ophelia, 1, P.G.			Tucson
Miguel, Primo, 1, Fr.			P. I.
Miller, Dorothy I., 1, R.U.			Tucson
Miller, Mrs. Ida V., 1, Jr.			Apache
Mills, Florence, 1, Jr.	Educ.	B.A.	Nogales
Mock, Byron, 1, 2, Jr.	Hist.	B.A.	Tucson
Montgomery, Edwin, 1, So.	Biol.		Tucson
Moody, Thelma, 1, R.U.			Emery Park
Moore, Bellamy C., 1, Jr.	Eng.	B.A.	Tucson
Moore, Nellie, 2, Jr.			Gilbert
Moore, Robert, 2, Sr.			Tucson
Moran, Lawrence B., 1, So.	Span.		Yuma
Moran, Marguerite, 1, Sr.	Educ.	B.A.	Deming, N. M.
Morgan, Meryl, 2, P.G.			Tucson
Morgan, Omer L., 1, Sr.			Gideon. Okla.
Morse, Milton B., 2, P.G.	Educ.	M.A.	Phoenix

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Morton, Mary Lee, 1, 2, Jr.	Educ.	B.S.	Tucson
Motchan, Jane, 1, Aud.			Cairo, Ill.
Mott, Dorothy C., 1, 2, Jr.	Arch.	B.A.	Phoenix
Murdock, David N., 1, 2, Jr.			Tempe
Murphey, Georgia L., 1, Aud.			Mayfield, Ky.
Murphy, Alice D., 1, 2, Sr.	Educ.	B.A.	Tucson
Naylor, Mary G., 1, 2, Sr.	Educ.	B.A.	Tucson
Neely, Leota, 1, P.G.	Span.		Gilbert
Nelson, Helga E., 1, So.	H. Econ.	B.S.	Tucson
Ochoa, Dolores Thelma, 1, P.G.	Span.		Tucson
O'Conner, Carlos E., 1, Jr.	Eng.	B.A.	Bowie
Oldfather, Orville, 1, 2, P.G.	Educ.	M.A.	St. David
Olivar, Laureano, 2, Fr.	Agron.	B.S.A.	P. I.
Onstott, Mary Brown, 2, Sr.	Eng.	B.A.	Tucson
O'Reilly, Edward T., 1, P.G.	Educ.	M.A.	Palo Verde
Otis, Eunice, 2, So.	Biol.	B.S.	Tucson
Pace, Pearl, 1, Sr.	H. Econ.	B.S.	Thatcher
Parker, Anna M., 1, Jr.	Educ.	B.A.	Escuela
Parker, Julian H., 2, P.G.			Lowell
Pauli, Emilio, 1, 2, So.	Piano	B.M.	Tucson
Paxton, Ann, 1, 2, Sr.	Hist.	B.A.	Miami
Paxton, Joseph F., 1, P.G.	Biol.	M.S.	Tucson
Pendleton, Gente, 2, P.G.			Tucson
Perkins, William F., 1, 2, Sr.	Biol.	B.S.	Tucson
Perry, Elwood E., 1, 2, P.G.	Educ.	M.A.	Tucson
Perry, Kathleen, 1, Jr.	Educ.	B.A.	Tucson
Peterson, Mrs. G. A., 1, P.G.	Educ.		Tucson
Pilcher, Bayly R., 1, 2, Sr.	Arch.	B.A.	Tucson
Pilcher, McNally Margaret, 1, R.U.			Tucson
Pistor, Arthur L., 2, Sp.			Tucson
Poindexter, Virginia, 1, 2, P.G.	Eng.	M.A.	Tucson
Praeger, Howard A., 1, 2, Sr.	Hist.	B.A.	Tucson
Prensky, Helen, 1, 2, Sr.	Bus. Adm.	B.S.B.A.	Tucson
Pridgen, Aima, 1, 2, Sr.			Tucson
Providence, Jean, 1, 2, P.G.	Eng.		Inspiration
Quilty, Joan, 2, Jr.	Eng.	B.A.	Tucson
Rais, Julia Mae, 1, Jr.			Globe
Ramage, R.A., 2, P.G.	Educ.	M.A.	Prescott
Rambo, Rex R., 1, 2, Jr.	Zool.	B.A.	Tucson
Reed, Virginia, 1, 2, Sr.	Biol.	B.S.	Douglas
Regan, Margaret, 1, 2, Sp.	Eng.	B.A.	Tucson
Reinke, Arthur G., 1, P.G.	Eng.	M.A.	Berlin, Germany
Richards, Thelma, 1, 2, Sr.	Hist.	B.A.	Jerome
Richey, Thamar, 1, Jr.			Tucson
Richey, Tim, 1, Fr.	Biol.		Tucson
Ridgway, George R., 1, Sr.	Phys. Ed.	B.A.	Safford
Riesen, Austin, 1, Fr.		B.A.	Tucson
Riggins, Dale C., 2, Jr.	Educ.	B.A.	Mesa
Rinearson, Olive W., 1, Jr.		B.A.	Tucson
Roberts, Eldred, 1, Sr.	D.H.	B.S.A.	Glendale
Robinson, Ola Carson, 2, P.G.			Christmas
Rodee, Ruth, 1, Jr.	Eng.	B.A.	Tucson
Rogers, Anne E., 1, Aud.			Tucson
Rogers, Harold B., 1, Sr.			Rhineland, Wis.
Rollo, Clint, 1, Sr.	Admin. Ed.	B.A.	Thatcher
Romo, Genevieve C., 1, Jr.	Piano	B.M.	Ray
Root, Jesse, 1, 2, Sr.	Chem.	B.S.	Safford
Rowland, John F., 1, R.U.			Hot Springs, Ark.
Russel, John Scott, 1, P.G.	Educ.	M.A.	Jacksonville, Ill.
Ryan, Alice, 1, Sr.	Educ.	B.A.	Globe
Ryan, Elsie J., 1, P.G.	Eng.	M.A.	Rillito

REGISTER OF STUDENTS

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<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Sanders, David, 1, 2, Fr.		B.A.	Tucson
Sarrels, Marian M., 1, 2, So.	Chem.	B.S.	Tucson
Schwarzwaelder, Earl, 1, 2, Fr.	Biol.		Tucson
Schwarzwaelder, Mildred, 1, 2, P.G.			Tucson
Scott, Elsie, 2, Jr.			Tucson
Scruggs, Mary, 2, So.	Eng.	B.A.	Tucson
Sister Gertrude Angela, 1, 2, Sp.		B.A.	Tucson
Sister M. Dolores Murphy, 2, Sr.	Educ.	B.A.	Tucson
Skattaboe, Mrs. Mary, 2, Jr.			Tucson
Slack, Ben, 2, Fr.	Eng.	B.A.	Tucson
Sleeth, Mrs. E. C., 1, 2, R.U.	Sch. Music	B.M.	Tucson
Slette, Arleen, 2, P.G.			Tucson
Sloan, William F., 1, Fr.			Tucson
Slotnick, William M., 1, 2, Sr.	Bus. Adm.	B.S.B.A.	Brooklyn, N. Y.
Small, Frances, 1, 2, Sr.	Educ.	B.A.	Tucson
Smith, Douglas, 1, 2, So.			Tucson
Smith, Elizabeth L., 2, Fr.	Psych.	B.A.	Salem, N. J.
Smith, Ethel, 2, Aud.			Tucson
Smith, Guy Edward, 1, 2, Sr.	Span.	B.A.	Glendale
Smith, Lulu Forrest, 1, 2, P.G.	Educ.	M.A.	Phoenix
Smith, Mrs. Sidney, 1, Sp.			Tucson
Solomon, Hattie F., 1, 2, P.G.			Tucson
Somerville, Guinevere, 1, P.G.	Eng.		Tularosa, N. M.
Spilsbury, P.D., 1, Sr.	Agron.	B.S.A.	Tucson
Stanley, Ernest B., 1, R.U.			Tucson
Staples, Arden, 1, 2, Sr.	Educ.	B.A.	Mesa
Stephens, John M., 1, Fr.		B.S.A.	Philadelphia, Pa.
Stevens, Margaret, 1, 2, Jr.	Hist.	B.A.	Ft. Huachuca
Stiles, Harold L., 1, 2, Sr.	Educ.	B.S.	Nogales
Still, Nellie, 1, 2, P.G.	Educ.	M.A.	Tempe
Stillman, Alice, 1, 2, Jr.	Hist.	B.A.	Tucson
Stirratt, Charlotte, 1, Sr.	Econ.	B.A.	Bisbee
Stockwell, Palmer, 1, P.G.	Bot.	M.S.	Tucson
Strayer, Edith H., 1, Fr.	Piano	B.M.	Tucson
Sturges, Ella W., 1, P.G.	Hist.		Phoenix
Swanson, Mrs. Nancy, 2, Sp.	Acct.		Tucson
Swartz, Arlene, 1, P.G.			Mt. Ayr, Iowa
Sweeney, Jane, 1, Fr.			Tucson
Tacquard, Anna, 1, Sr.	Educ.	B.A.	Tucson
Teeter, Carl E., 1, Sr.	Agri.	B.S.A.	Tucson
Teeter, Hazel E., 1, 2, P.G.			Tucson
Templeton, Fern, 1, Sr.	Eng.	B.A.	Tucson
Tenney, Myrtle E., 1, Fr.			Alameda, Calif.
Thew, Flora M., 1, Jr.			Tempe
Thomas, J. Angie, 1, 2, Jr.	Educ.	B.A.	Tucson
Thompson, Amelia, 1, 2, Sr.	Educ.	B.A.	Tucson
Thompson, Mansel, 1, 2, P.G.		M.A.	Phoenix
Thompson, Ralph, 2, Sr.	Econ.	B.S.	Tucson
Tittle, La Dean, 1, Sr.	Psych.	B.A.	Tucson
Truman, John C., 1, 2, Sr.	Biol.	B.S.	Florence
Utterbach, Wilma V., 1, 2, Sr.	Eng.	B.A.	Santa Cruz, Calif.
Valentine, Richard K., 1, Sr.			Patagonia
Van Bibber, Florence, 1, 2, P.G.	Educ.	M.A.	Huntington, W. Va.
Van Doren, Edwin, 2, P.G.			Tucson
Van Doren, Gladys, 2, Sr.	H. Econ.	B.A.	Tucson
Vasey, Ethel Vall, 1, 2, P.G.			Tucson
Vaughn, Mrs. A. B., 1, P.G.			Buckeye
Vaughn, William C., 1, P.G.	Educ.	M.A.	Buckeye
Vogel, William A., 1, P.G.			Tucson
Voss, Mrs. Harriette, 2, P.G.	Educ.	Ph.D.	Glendale
Walker, Alice, 1, Sr.	Span.	B.A.	South Fork, Colo.
Wallace, Margaret C., 2, So.	Art	B.A.	Tucson
Wallace, Myron T., 1, Sr.	Hist.	B.A.	Tucson
Waters, Creighton, 1, 2, Sp.			Denver, Colo.

<i>Name and Classification</i>	<i>Major</i>	<i>Degree Sought</i>	<i>Home Residence</i>
Watkins, Guadalupe, 1, 2, Jr.	Educ.	B.A.	El Paso, Tex.
Watson, Thomas D., 1, P.G.			Phoenix
Watterson, Robert, 1, 2, Sp.			Tucson
Weaver, Evelyn, 1, 2, R.U.	Hist.		Phoenix
Weaver, Ione, 1, 2, R.U.	Phys. Ed.		Phoenix
Webb, Ferris E., 2, P.G.	Educ.	M.A.	Globe
Webster, Lydia Y., 2, Jr.	Educ.	B.A.	Yuma
Wenner, Florence, 1, 2, P.G.	Eng.	M.A.	Tucson
West, Clara B., 1, Jr.			Tucson
Wheeler, Martha, 1, 2, P.G.	Eng.	M.A.	Corington, Tenn.
White, Garland M., 2, P.G.	Educ.	M.A.	Tempe
Wible, Charles L., 1, 2, P.G.	Psych.	M.S.	Lincoln, Neb.
Williams, Aleda, 1, Jr.	H. Econ.		Mesa
Williams, James H., 1, 2, So.	Econ.	B.A.	Douglas
Williams, June, 1, 2, So.	Psych.	B.A.	Tucson
Williams, Marion V., 1, 2, P.G.	Educ.	M.A.	L. L. Miami, Tex.
Wilson, Elizabeth, 1, S.S.Sp.			Tucson
Winstead, Lorena H., 1, Sr.	Educ.	B.S.	Tucson
Wisdom, Maybelle, 1, Sr.	Phys. Ed.	B.S.	Tucson
Wright, Margaret A., 1, Jr.	H. Econ.	B.S.	Douglas
Wynne, Burl W., 1, 2, Jr.	Hist.	B.A.	Globe
Yeary, Mrs. Marie, 1, 2, Jr.	Educ.		Tucson
Young, G. Theodore, 1, 2, P.G.	Educ.	M.A.	Holbrook

SUMMARY OF REGISTRATION 1931-1932

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Graduates	153	90	243
Seniors	206	145	351
Juniors	256	209	465
Sophomores	281	147	428
Freshmen	346	183	529
Regular Unclassified.....	36	48	84
Law Students.....	82	7	89
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Total Regular.....	1360	829	2189
Special Students.....	54	29	83
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Total Regular Session Students*.....	1414	858	2272
Summer Session.....	170	237	407
University Extension:			
Extension Class Students.....	45	137	182
Correspondence Students.....	194	405	599
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GRAND TOTAL.....	1823	1637	3460

* Not including 24 auditors.

SUMMARY OF STUDENTS

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Degrees	Graduates			Seniors			Juniors			Sophomores			Freshmen			Reg. Unc.			Specials			Totals			
	M.	W.	T.	M.	W.	T.	M.	W.	T.	M.	W.	T.	M.	W.	T.	M.	W.	T.	M.	W.	T.	M.	W.	T.	
COLLEGE OF MUSIC																									
Masters	2	2																							
B.M.				1	13	14																			
Unselected	2	2																							
Total	4	4		1	13	14																			
COLLEGE OF LAW																									
J.D.				5	5		3	1	4	16	5	21													
LL.B.				10	10		15	1	16	29	29														
Unselected													4	4											
Total																						82	7	89	
Grand Total	153	90	243	206	145	351	256	209	465	281	147	424	346	183	529	36	48	84	54	29	83	1414	858	2272	
Summer Session																						170	237	407	
University Extension:																									
Extension Class Students																							45	137	182
Correspondence Students (July 1, 1931 to April 1, 1932)																							194	405	599
GRAND TOTAL																							1323	1637	3460

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