

Williams - Connor

BULLETIN

ARIZONA

STATE COLLEGE

Tempe

CATALOG ISSUE 1954-1955

NEW SERIES

MARCH, 1954

No. 9

ARIZONA STATE COLLEGE BULLETIN

NEW SERIES No. 9

MARCH, 1954

Grady Gammage, Ed.D., LL.D., President of the College

Harold D. Richardson, Ph.D., Academic Vice President

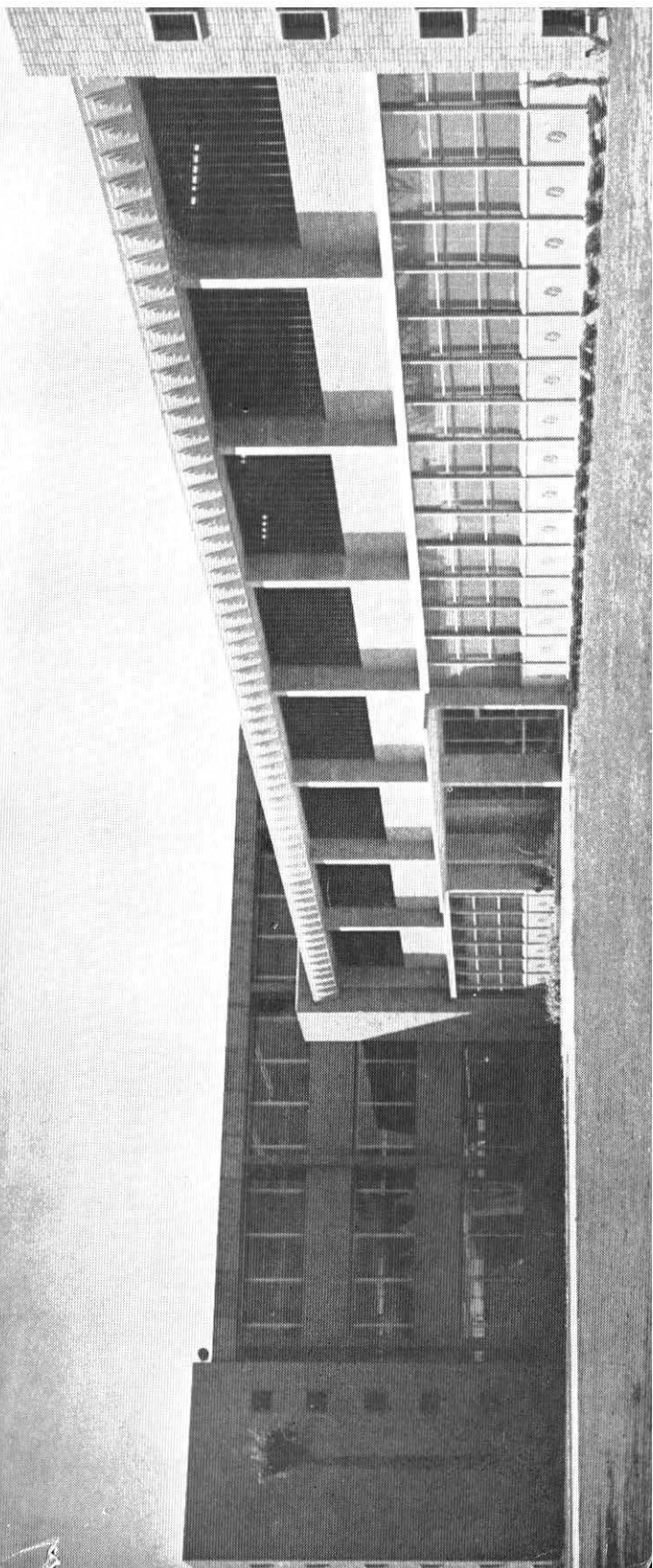


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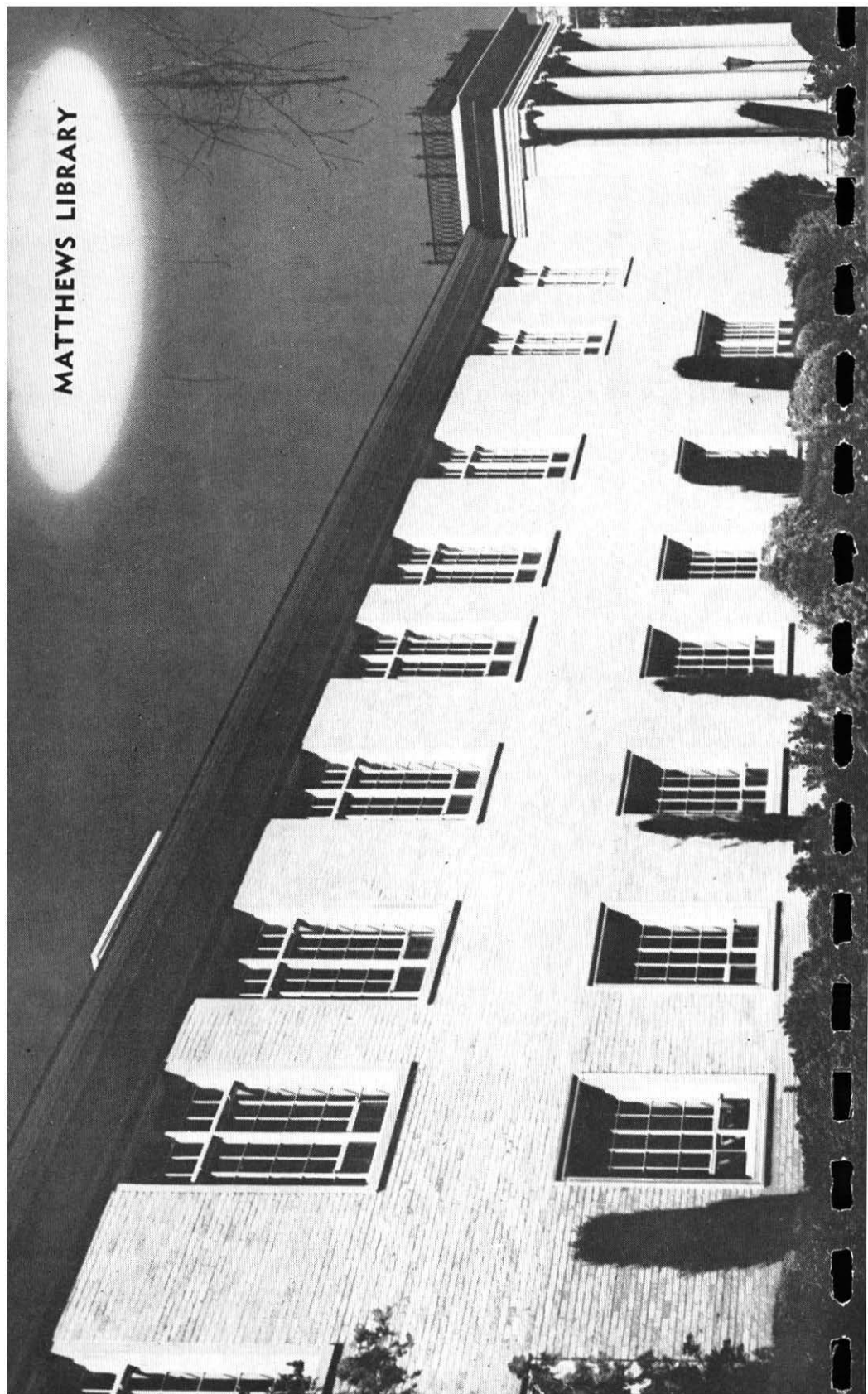
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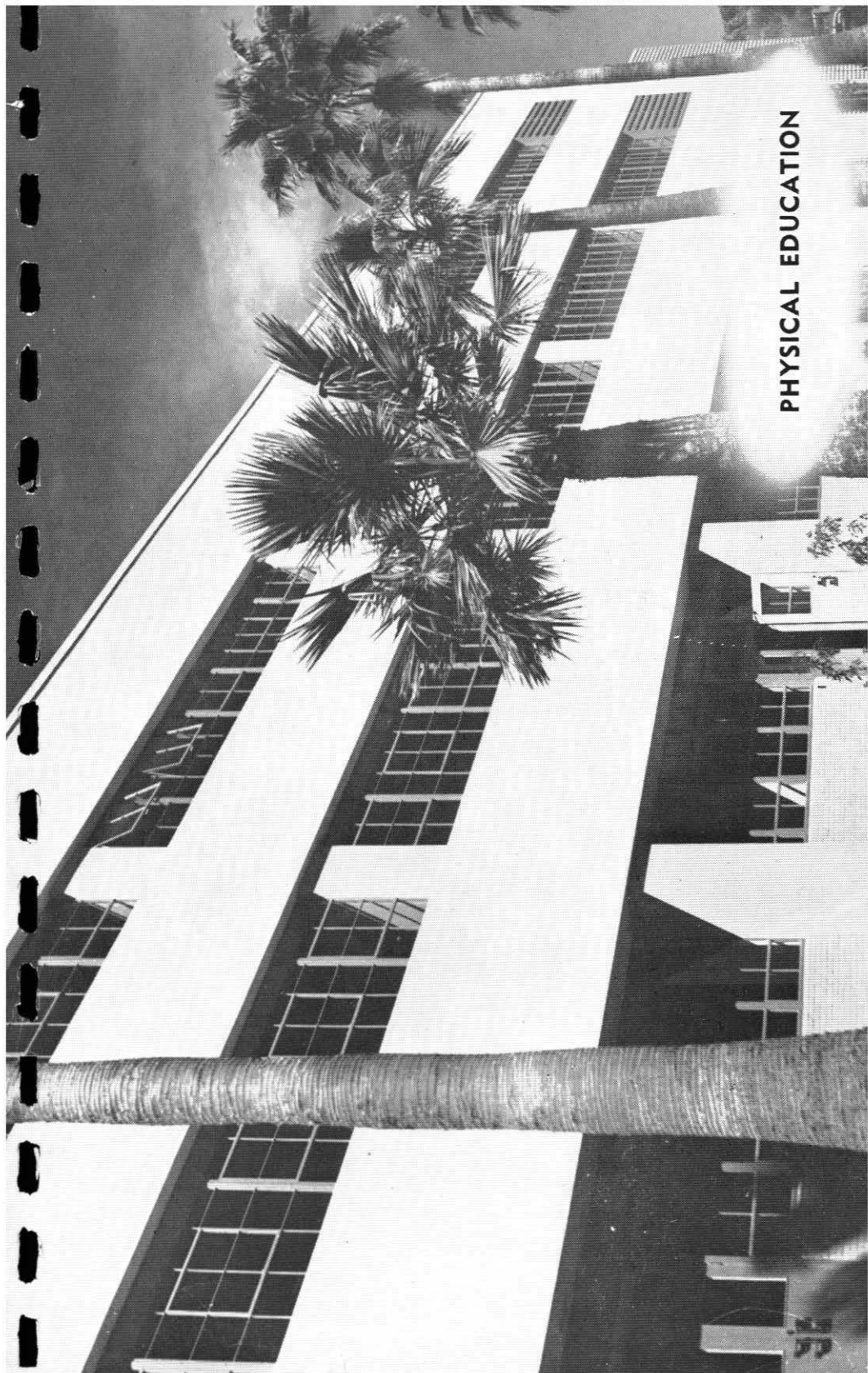
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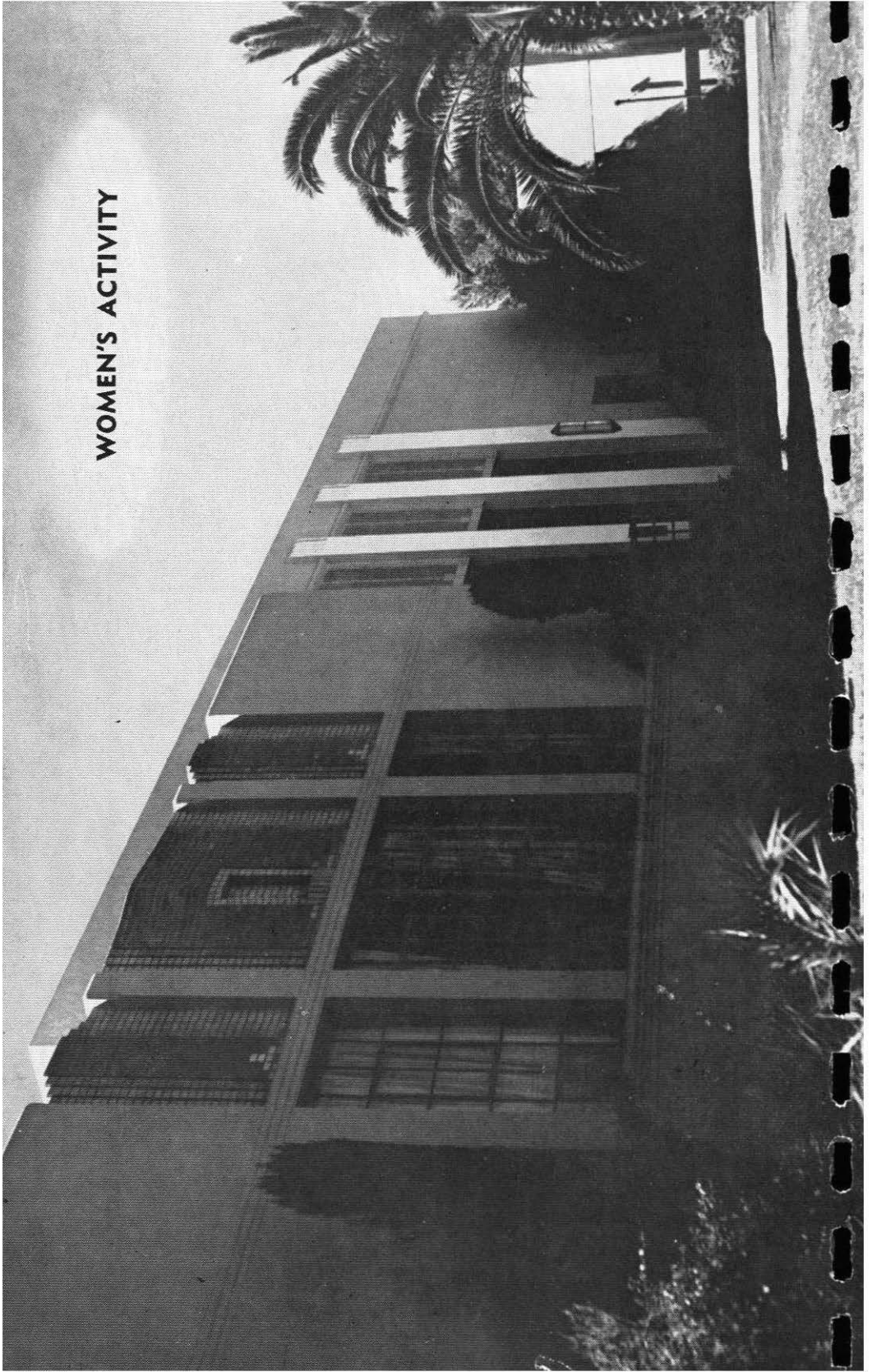
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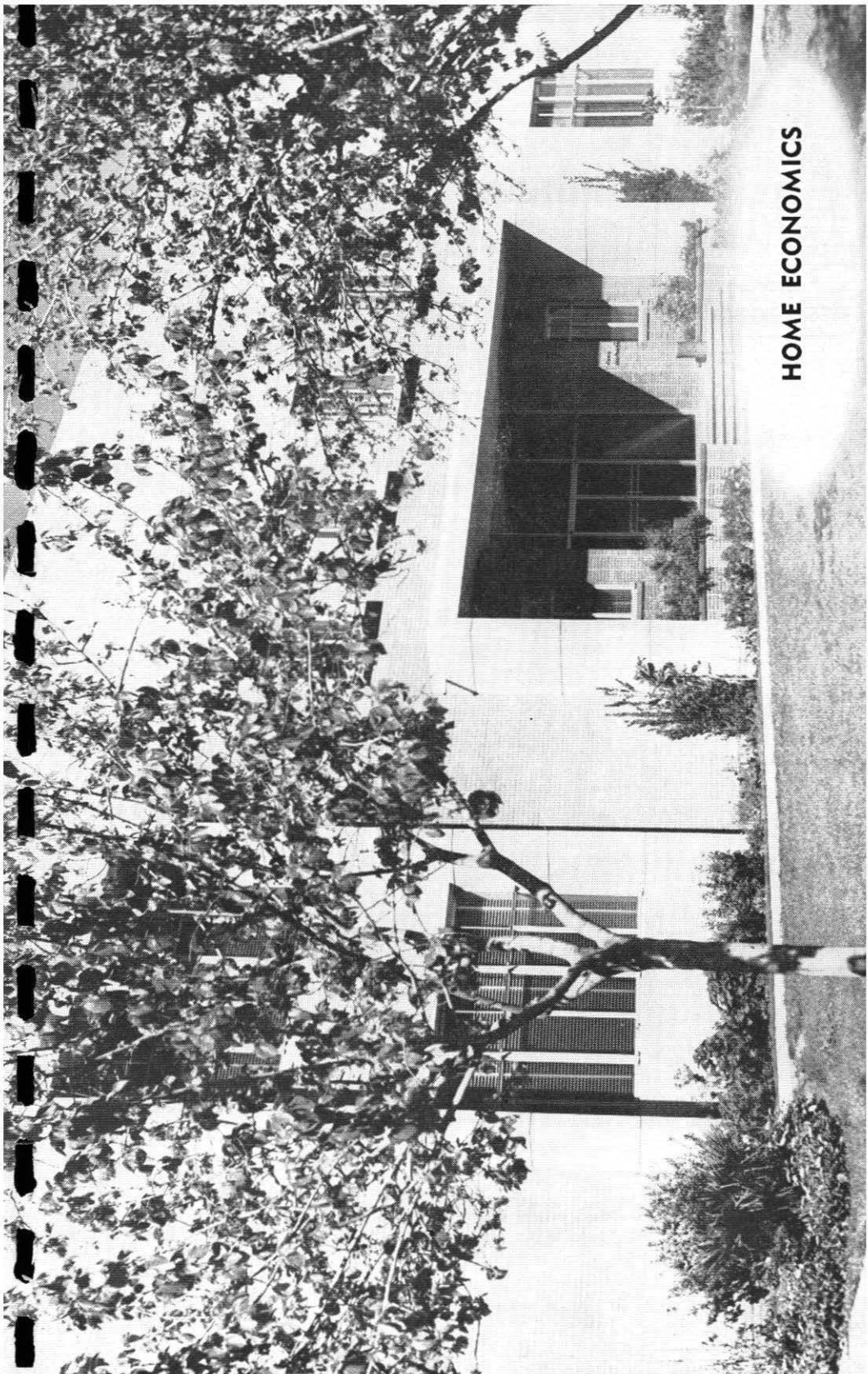




BUSINESS ADMINISTRATION
and **AGRICULTURE**

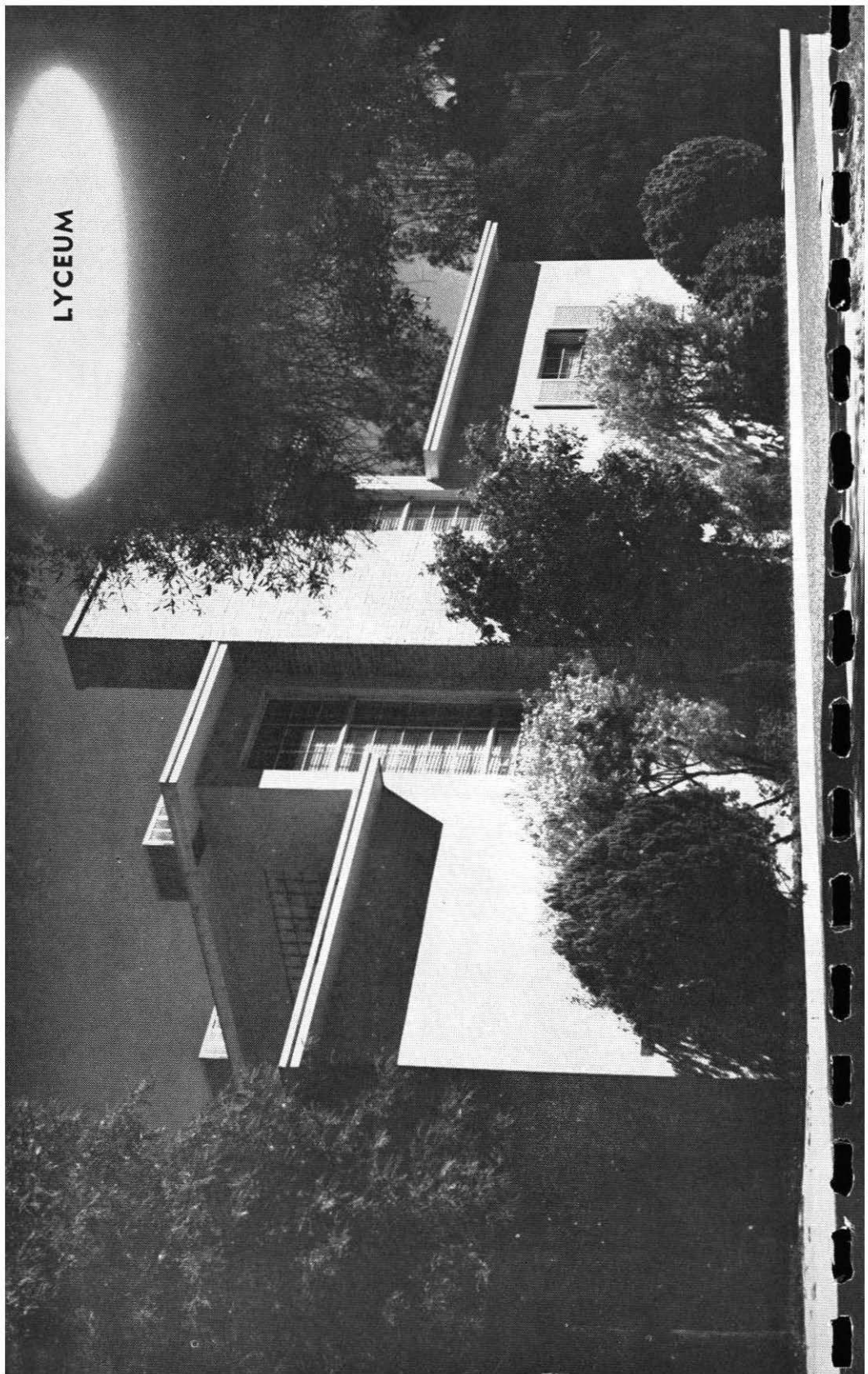
WOMEN'S ACTIVITY





HOME ECONOMICS

LYCEUM





BULLETIN

ARIZONA
STATE COLLEGE
Tempe

CATALOG ISSUE 1954-1955

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College Calendar, 1954-55

Fall Semester

Residence Halls and Dining Hall Open.....	Sept. 6, Monday
First Freshman Assembly.....	Sept. 7, Tues., 8:30 a.m.
Orientation and Guidance for Freshmen	Sept. 7, 8, 9, Tues., Wed., (All Freshmen are expected to be in Thurs. attendance on these days for the special orientation programs, aptitude tests, and physical examinations.)
Freshmen Students Will Complete Regis- tration and Pay Fees.....	Sept. 10, Fri., to Noon Sat., Sept. 11
Sophomores, Juniors, Seniors, and Gradu- ates Receive Registration Materials and Complete Registration	Sept. 9, 10 to Noon Sat., Sept. 11
Instruction Begins	Sept. 13, Mon.
Faculty Planning Conference.....	Sept. 18, Sat.
Last Day of Registration for Credit.....	Sept. 25, Sat. Noon
Deficient Scholarship Reports Due.....	Nov. 5, Fri., 4:00 p.m.
Armistice Day, No Classes.....	Nov. 11, Thurs.
Candidates for Bachelor's Degrees Must File Application for Graduation by.....	Nov. 15, Mon.
Thanksgiving Recess	Nov. 24, Wed., 10:00 p.m. to Nov. 29, Mon., 8:00 a.m.
Christmas Vacation	Dec. 18, Sat., 12:00 Noon to Jan. 3, Mon., 8:00 a.m.
Final Examinations	Jan. 14, 17, 18, 19, 20, Fri., Mon., Tues., Wed., Thurs.
First Semester Grade Reports Due.....	Jan. 21, Fri., 4:30 p.m.

Spring Semester

Residence Halls Open to New Students.....	Jan. 21, Fri. Noon
New Freshmen and Transfer Students Get Registration Materials, Take Apti- tude and Physical Examinations.....	Jan. 21, 22, Fri., Sat.
Registration Days	Jan. 25, 26, Tues., Wed. (All Students will complete registration and pay fees.)
Instruction Begins, Second Semester.....	Jan. 27, Thurs.
Last Day of Registration for Credit.....	Feb. 9, Wed.
Washington's Birthday, No Classes.....	Feb. 22, Tues.
Deficient Scholarship Reports Due.....	Mar. 18, Fri., 4:00 p.m.
Easter Vacation	Apr. 7, Thurs., 10:00 p.m. to Apr. 18, Mon.
Scholarship Reports Due for All Students Completing Requirements for Degrees.....	May 16, Mon. Noon
Commencement Rehearsal— Goodwin Stadium	May 20, Fri., 8:00 a.m.
Honors Assembly	May 20, Fri., 10:30 a.m.
R.O.T.C. Honors Ceremony and Parade.....	May 20, Fri., 8:00 p.m.
Baccalaureate Service	May 22, Sun., 8:00 p.m.
Commencement Exercises	May 24, Tues., 8:00 p.m.
Final Examinations	May 23, 24, 25, 26, 27, Mon., Tues., Wed., Thurs., Fri.
Residence Halls Closed	May 28, Sat., 12:00 Noon
Final Semester Grade Reports.....	May 30, Mon., Noon

Summer Session

First Summer Session Begins, Registration..	June 6, Mon.
First Summer Session Ends.....	July 9, Sat.
Second Summer Session Begins, Registra- tion	July 11, Mon.
Post Session Registration.....	July 16, Sat.
Second Summer Session Ends.....	Aug. 13, Sat.

1954

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1956

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Board of Regents
of
The University and State Colleges
of Arizona

Ex-Officio

HOWARD PYLE, LL. D.....Governor of Arizona
M. L. BROOKS, M.A. in Ed.....State Superintendent of
Public Instruction

Appointed

	TERM EXPIRES
WALTER R. BIMSON.....	January, 1955
LYNN M. LANEY, B.S., J.D., Asst. Treasurer.....	January, 1955
JOHN G. BABBITT, B.S., President.....	January, 1957
MICHAEL B. HODGES, Treasurer.....	January, 1957
JOHN M. JACOBS.....	January, 1959
EVELYN J. KIRMSE, A.M., Asst. Secretary.....	January, 1959
ALEXANDER G. JACOME, B.S.....	January, 1961
WILLIAM R. MATHEWS, A.B., Secretary.....	January, 1961

The College Staff

1953-54

Administration

- GRADY GAMMAGE (1933)***.....President of the College
 B.A., M.A., LL.D., University of Arizona; Ed.D., New York University;
 Litt.D., Southwest Christian Seminary
- HAROLD D. RICHARDSON (1940)**.....Vice President of the College;
 Professor of Education
 Ph.B., Ph.M., University of Wisconsin; Ph.D., Northwestern University
- IRVING W. STOUT (1953)**.....Director of Graduate Study;
 Professor of Education
 B.Ed., Platteville State Teachers College;
 M.A., Ed.D., Northwestern University
- ARNOLD TILDEN (1937)**.....Dean, College of Arts and Sciences;
 Professor of History
 B.A., M.A., DePauw University; Ph. D., University of Southern
 California
- G. D. MCGRATH (1950)**.....Dean, School of Education;
 Professor of Education
 A.B., Findlay College; M.A., University of Michigan;
 Ph.D., University of Colorado
- ROY C. RICE (1946)**.....Director of Summer Session and Extension;
 Professor of Education
 B.S., New Mexico University; M.S., Massachusetts State College;
 Ph.D., Texas University
- J. O. GRIMES (1928)**.....Director, Correspondence;
 Professor of Psychology
 B.S. in Ed., Ohio University; M.A., Ph.D., University of Michigan
- GILBERT L. CADY (1934)**.....Comptroller;
 Chairman, Division of Business Management
 B.A. in Ed., Arizona State College at Tempe
- W. P. SHOFSTALL (1950)**.....Dean of Students;
 Chairman, Division of Student Affairs
 B.S. in Ed., Northeast Missouri State Teachers College;
 M.A., Ph.D., University of Missouri
- CATHERINE G. NICHOLS (1952)**.....Associate Dean of Students;
 Dean of Women
 A.B., M.A., University of Kentucky; Ed.D., Teachers College,
 Columbia University
- GEORGE C. YATES (1945)**.....Director of Special Services;
 Associate Professor of English
 B.S., M.A., University of Missouri
- HAROLD W. BATCHELOR (1943)**.....Head Librarian;
 Associate Professor of Library Science; Head of Department
 B.A., University of Oregon; B.S., M.S. in L.S., University of Illinois
- ALFRED THOMAS, JR. (1939)**.....Registrar and Director of Admissions
 B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- ROBERT F. MENKE (1947)**.....Director of Placement;
 Associate Professor of Education
 B.S., Oshkosh State Teachers College; M.A., Ph.D., Northwestern
 University
- JAMES W. CREASMAN (1947)**.....Alumni Secretary
 A.B. in Ed., Arizona State College at Tempe
- DONALD R. VAN PETTEN (1942)**.....Director of Intercollegiate Athletics;
 Professor of Political Science
 B.A. in Ed., Arizona State College at Tempe; M.S., University of
 Southern California; Ph.D., Stanford University

* Year of first appointment to the faculty.

Instruction

- GAMMAGE, GRADY (1933)** - - - - - President of the College
B.A., M.A., LL.D., University of Arizona; Ed.D., New York University;
Litt.D., Southwest Christian Seminary
- ABRAHAM, WILLARD (1953)** - - - - - Professor of Education
B.S., Illinois Institute of Technology (Lewis Institute); M.Ed., Chicago
Teachers College; Ph.D., Northwestern University
- ADAMSON, DONALD L., CAPTAIN (1951)** - - Assistant Professor of
Air Science and Tactics
B.S., University of Arizona
- ANDERSON, MARGERY M. (1949)** - - Assistant Professor of Education
B.A., Yankton College; M.A., University of Chicago
- AUSTIN, GLENN (1950)** - - - - Associate Professor of Education
B.A., M.A., University of Kansas; Ph.D., Ohio State University
- AUTENRIETH, BERTHA H. (1946)** - - Assistant Professor of Music
B.M., New England Conservatory; M.M., University of Michigan
- BALL, RACHEL STUTSMAN (1947)** - Associate Professor of Psychology
A.B., Cornell University; Ph.D. University of Chicago
- **BARGER, JAMES D. (1951)** - Special Lecturer in Medical Technology;
Pathologist — Good Samaritan Hospital
A.B., B.S., University of North Dakota; M.D., University of
Pennsylvania; M.S. (Pathology), University of Minnesota
- BARKLEY, BESS (1933)** - - - - - Associate Professor of Music
B.A., University of Arizona
- BARRETT, THOMAS W. (1950)** - - Associate Professor of Agronomy
B.S., Brigham Young University; M.S., Ph.D., Cornell University
- BATCHELOR, H. W. (1943)** - Associate Professor of Library Science;
Head of Department; Head Librarian
B.A., University of Oregon; B.S., M.S. in L.S., University of Illinois
- BATEMAN, GEORGE M. (1927)** - - - - Professor of Chemistry;
Head, Department of Physical Sciences
B.S., Utah State Agricultural College; M.S., Ph.D., Cornell University
- BEALS, ARTHUR R. (1951)** - - Assistant Professor of Accounting
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe;
C.P.A., Arizona
- BELL, RICHARD H. (1952)** - - - Assistant Professor of Education
B.A., Miami University; M.A., Teachers College, Columbia University
- BENDER, GORDON L. (1953)** - - - - Associate Professor of
Zoology Sciences
B.S., Iowa State College; M.S., University of Wisconsin;
Ph.D., University of Illinois
- BENEDICT, JOEL A. (1946)** - - - Associate Professor of Education;
Director, Bureau of Audio-Visual Aids
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- BERGERON, THEODORE S., M/SGT. (1952)** - - - Instructor in Military
Science and Tactics
- BOLLING, REXFORD (1950)** - - - Assistant Professor of Psychology
B.Ed., Fredonia State Teachers College; M.S., Syracuse University
- BOWERS, CHARLES O. (1948)** - - - Assistant Professor of Music;
Director of Orchestra
M.S., Southeast Missouri State College; M.M., Eastman School of Music
- BRATCHER, AUSTIN S. (1946)** - - - - Professor of Marketing
B.A., Trinity University; M.A., M.B.A., (Statistics), University of
Texas; M.B.A., (Marketing), University of Chicago
- BRIDENSTINE, DON C. (1953)** - Instructor in Business Administration
B.S., University of Oregon; A.M., University of Southern California
- BROWN, DUANE (1951)** - - - - Associate Professor of Chemistry
B.S., Brigham Young University; Ph.D., Cornell University
- BROWN, HOWARD (1952)** - - - - Instructor in Physical Education;
Assistant Coach
B.S. in P.Ed., M.S. in P.Ed., Indiana University

** Part Time

- BRYANT, FRED O. (1950) - Assistant Professor of Physical Education
B.S., Springfield College; M.S., University of Illinois
- BULLOCK, ARNOLD (1938) - - - - Associate Professor of Music
B.M., Yale School of Music; M.A. in Ed., Arizona State College at Tempe
- BURGESS, GWEN (1950) - - - - Assistant Professor of Art
B.S., James Millikin University; M.A., Columbia University
- BURGOYNE, EDWARD E. (1951) - - Assistant Professor of Chemistry
B.S., Utah State Agricultural College; M.S., Ph.D., University of Wisconsin
- BURK, KARL W. (1949) - - Assistant Professor of Industrial Arts
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- BURKE, DONA BOYLE (1946) - - - Assistant Professor of English
B.A., M.A., University of Michigan
- **BURKHARD, SAMUEL (1921) - Professor of Education and Sociology
B.A., Goshen College; M.A., Columbia University;
Ph.D., New York University
- BURTON, A. R. (1941) - - - - Professor of Accounting
B.S., M.S., Kansas State Teachers College; Ph.D., University of Nebraska; C.P.A., Arizona
- BYERS, FRANK R. (1947) - - - - Professor of English;
Director, Drama Workshop
B.A., M.A., University of Cincinnati
- BYERS, NELLIE B. (1934) - - - Associate Professor of Education
B.A., University of Cincinnati; M.A., Ohio State University
- CASTILLO, SENON A. (1948) - - Instructor in Physical Education;
Track Coach
B.A. in Ed., Arizona State College at Tempe
- CAVALLIERE, WILLIAM A. (1945) - - - - Assistant Professor of
Industrial Arts
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- †CHAVEZ, DANIEL J. (1951) - - - - Assistant Professor of
Farm Management
B.S., M.Agr.Ed., University of Arizona
- CONLIN, DAVID A. (1948) - - - - Associate Professor of English
A.B., Syracuse University; Ph.D., Yale University
- CRAWFORD, FRED (1948) - - - Professor of Educational Psychology
A.B., Santa Barbara State College; M.S. in Ed., Ed.D., University of Southern California
- CRAWFORD, MARILYN (1952) - - - - Instructor in Health and
Physical Education
B.S. in P.E., Women's College, University of North Carolina;
M.A., University of North Carolina
- DALE, MANLEY H., JR., MAJOR (1950) - - - Assistant Professor of
Air Science and Tactics
B.S., Arizona State College at Tempe
- DAVIES, MADOC W. (1940) - - - - Assistant Professor of English
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- DAVIS, SANDFORD S. (1953) - - - Assistant Professor of Education
B.A., B.S., Central Missouri State College; M.A., University of Missouri;
Ed.D., University of Colorado
- DICKINSON, ARTHUR L. (1952) - Instructor in Physical Education;
Trainer, Intercollegiate Athletics
B.A., Iowa State Teachers College; M.S., Indiana University
- DOUTHIT, J. C. (1950) - - - Assistant Professor of Industrial Arts
B.E.E., University of Arkansas; M.A. in Ed., Arizona State College at Tempe (Registered Electrical Engineer in Arizona)
- DRESSKELL, MILES A. (1945) - - - - Professor of Music
A.B., San Jose State College; B.M., Northwestern University;
M.A., Teachers College, Columbia University

† On Leave

** Part Time

- DRESSKELL, NADINE (1945) - - - - Assistant Professor of Music
B.S., Bowling Green State College; M.A., Teachers College, Columbia University
- ELLSWORTH, LOLA (1938) - Associate Professor of Home Economics
B.S., Brigham Young University; M.A., Teachers College, Columbia University
- ELMORE, JAMES W. (1949) - Assistant Professor of Industrial Arts
A.B., University of Nebraska; M.S. in Architecture, Columbia University
(Registered Architect in Arizona)
- ENSIGN, MEL C. (1948) - - Assistant Professor of Industrial Arts
B.Arch., University of Southern California; M.Arch., Harvard University
(Registered Architect in Arizona)
- ESCUDERO, MARY JULIETTE (1948) - - - Assistant Professor of Foreign Languages
Diplomé, University of Paris-Institut de Phonetique; A.E., San Diego State College; M.A., Claremont Graduate School; Ph.D., Cornell University
- ESSIG, MARY (1947) - - Assistant Professor of Home Economics; Hostess at the Home Management House
B.S. in Ed., University of Missouri; M.E., Colorado State College of Agriculture and Mechanic Arts
- FETTER, EUGENE FRANK (1953) - Instructor in Physical Education; End Coach
B.S. in Ed., Ohio Northern University; M.S. in P.E., Indiana University
- FINLEY, LUTHER (1950) - - Assistant Professor of Industrial Arts
B.S., M.A. in Ed., Arizona State College at Tempe
(Licensed Land Surveyor in Arizona)
- FOUCH, ROBERT S. (1950) - - - Assistant Professor of Mathematics
S.B., S.M., University of Chicago
- FRENCH, HELEN AIKEN (1949) - - Assistant Professor of Education
B.S. in Ed., Geneva College; M.A., University of Pittsburgh
- FUCHS, JACOB (1952) - - - - Assistant Professor of Chemistry
B.A., New York University; M.S., Ph.D., University of Illinois
- GILLANDERS, DOROTHY F. (1937) - - - - Associate Professor of Physical Education
B.S., Oregon State College; M.A., Teachers College, Columbia University; Registered Physical Therapist, Walter Reed Hospital
- GIRDLER, JOHN (1946) - - - - Assistant Professor of English
B.A., LL.B., University of Colorado; M.A., University of Southern California
- †GIRDLER, LEW (1949) - - - - Associate Professor of English
B.A., Illinois College; M.A., University of California; Ph.D., University of California at Los Angeles
- GOODWIN, JOHN B. (1948) - Assistant Professor of Industrial Arts
B.A. in Ed., Arizona State College at Tempe; M.S., Oregon State College
- GRIFFITHS, BYRON R., M/SGT. (1953) - - - - Instructor in Military Science and Tactics
- GRIMES, JOHN O. (1928) - - - - Professor of Psychology; Director, Correspondence
B.S. in Ed., Ohio University; M.A., Ph.D., University of Michigan
- GURNEE, HERBERT (1943) - - - - Professor of Psychology
B.A., M.A., Wesleyan University; Ph.D., Harvard University
- GUTENBERG, ARTHUR W. (1951) - Assistant Professor of Economics; Director, Bureau of Business Services
B.A.S., B.S., M.B.A., University of California
- HANSON, HUGH (1948) - - - - Assistant Professor of Zoology
B.S. in Ed., Kansas State Teachers College; M.S., Ph.D., University of Illinois
- HARELSON, HARRY B. (1935) - - - - Professor of Music; Head of Department
B. Pub. Sch. Mus., M.M., Columbia School of Music

† On Leave

- HARTER, TOM J. (1937) - - - - - Professor of Art
B.A. in Ed., Arizona State College at Tempe; M.F.A., University of Oregon
- HEADINGTON, ROBERT C. (1953) - - Associate Professor of Economics
A.B., Kenyon College; M.S., Ph.D., Ohio State University
- HEIMANN, ROBERT A. (1952) - - Assistant Professor of Education;
Counselor Trainer
B.S., Wisconsin State College; M.S., Ph.D., University of Wisconsin
- HENSHAW, MARJORIE B. (1953) - - - - - Instructor in English
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- HERM, ABRAHAM L., CAPTAIN (1951) - - - Assistant Professor of
Military Science and Tactics
B.S., University of Illinois
- HILKERT, E. J. (1933) - - - - - Professor of Accounting;
Head of Department
B.S. in Bus. Ad., M.A., University of Southern California; LL.B.,
University of Notre Dame; C.P.A., Arizona and California
- HINES, HAROLD C. (1952) - - - - Associate Professor of Music;
Director of Band
B.S., M.S., University of Illinois
- HITCHCOCK, JAMES M., CAPTAIN (1953) - - Assistant Professor of
Military Science and Tactics
B.S., University of Washington
- **HODGE, ALBERT L. (1952) - - - Associate Professor of Music
Mus. Doc., University of Melbourne
- HOPKINS, ERNEST J. (1949) - - - - - Professor of Journalism
B.A., University of Southern California
- HUBBARD, PAUL G. (1950) - - - - Assistant Professor of History
B.A., Wabash College; M.A., Ph.D., University of Illinois
- JELINEK, JAMES J. (1953), Associate Professor of Secondary Education
B.S. in Ed., University of Illinois; M.A. in Ed., Northwestern
University; Ed.D., Indiana University
- JONES, JAMES J. (1952) - - - - Assistant Professor of Education
B.S. in Ed., M.Ed., University of Georgia; Ed.D., Indiana University
- JONES, ROBERT C. (1951) - - - - - Instructor in Library Science;
Assistant Librarian
B.A., M.A., University of Denver
- JUDD, B. IRA (1937) - - - - - Professor of Agronomy
B.S., M.S., Utah State Agricultural College; Ph.D., University of
Nebraska
- KAGY, VIRGINIA L. (1947) - Associate Professor of Home Economics
B.A., Drake University; M.S., Iowa State College; Ph.D., Johns Hopkins
University
- KAJIKAWA, WILLIAM (1937) - - - Assistant Professor of Physical
Education; Basketball Coach
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- KAUFMAN, LUCILE B. (1950) - Assistant Professor of Industrial Arts
B.S.(M.E.), M.S., University of Colorado
(Registered Mechanical Engineer in Arizona and Illinois)
- KEATING, PATRICIA B. (1948) - - - Assistant Professor of Music
B.M., University of Illinois; M.M., Northwestern University
- KEITH, MARLOW (1946) - - Assistant Professor of Industrial Arts
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- KELSO, LOIS E. (1949) - - - - - Instructor in Secretarial Science
B.S. in Ed., Central Missouri State Teachers College;
M.B.A., University of Denver
- KLANN, MARGARET L. (1945) - - - - - Associate Professor of
Physical Education
B.S. in Ed., University of Illinois; M.A., Colorado State College of
Education
- KLOPPMANN, ALFRED E., M/SGT. (1952) - - - - - Instructor in
Military Science and Tactics

** Part Time

- KLOSTER, PAULA R. (1927)** - Professor of Art; Head of Department
B.S., University of North Dakota; M.A., Stanford University
- KRENKEL, JOHN H. (1947)** - - - - - Professor of History
B.S. in Ed., University of Illinois; M.A., Claremont Graduate School;
Ph.D., University of Illinois
- LAVIK, RUDOLF H. (1933)** - - - Professor of Physical Education;
Head of Department
B.A., Concordia College; B.P.E., Springfield College; M.A., University
of Southern California
- LINDSTROM, FREDERICK B. (1953)** - Assistant Professor of Sociology
A.B., A.M., Ph.D., University of Chicago
- LYON, ROBERT B. (1938)** - - - Associate Professor of Mathematics
B.S., B.M., University of Illinois; M.S., University of Idaho
- MANNING, DUANE (1951)** - - - Associate Professor of Education
B.S., M.A., Ball State Teachers College; Ed.D., Indiana University
- MAUGHAN, GEORGE H. (1947)** - - - Associate Professor of Zoology
B.S., University of Idaho; A.M., University of Utah; Ph.D., Cornell
University
- MCCLEARY, JAMES A. (1947)** - - - Associate Professor of Botany
B.A., Asbury College; M.S., Ohio University; Ph.D., University of
Michigan
- MCGRATH, G. D. (1950)** - - - - - Professor of Education;
Dean, School of Education
A.B., Findlay College; M.A., University of Michigan; Ph.D., University
of Colorado
- MCKINNON, ANNA MARY (1946)** - Associate Professor of Accounting
B.S., University of Illinois; M.B.A., Northwestern University;
C.P.A., Arizona
- MCSLOY, DEAN F. (1947)** - - - - - Associate Professor of Speech
B.A., Yankton College; M.S., Northwestern University
- MENKE, ROBERT F. (1947)** - - - Associate Professor of Education;
Director of Placement
B.S., Oshkosh State Teachers College; M.A., Ph.D., Northwestern
University
- MERRITT, CHARLES (1946)** - - Associate Professor of Industrial Arts
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- MILLER, PAUL THEODORE (1947)** - Professor of Geography and Geology
A.B., Simpson College; M.S., Ph.D., University of Iowa
- MOFFIT, INEZ W. (1953)** - - - - - Instructor in Library Science;
Reference Librarian
B.A., Iowa State Teachers College; B.S. in L.S., University of
Minnesota; B.A., University of Denver
- MOODY, E. GRANT (1951)** - Assistant Professor of Dairy Husbandry
B.S., University of Arizona; M.S., Kansas State College;
Ph.D., Purdue University
- MOORE, MARION L. (1952)** - - - - - Instructor in Sociology
B.A., University of Arizona; M.A., University of Chicago
- MORRIS, MARY VIRGINIA (1948)** - - - Assistant Professor of Speech
B.A., University of Oregon; M.A., University of Washington
- MORTENSEN, MARTIN (1932)** - Associate Professor of General Science
B.A., Brigham Young University; M.A., University of Arizona
- MOUNT, DICK (1948)** - - Associate Professor of Business Education
B.A., Simpson College; M.S., Drake University
- MULLIGAN, WILLIAM T., COLONEL (1952)** - Professor of Air Science
and Tactics; Head of Department
B.A., University of California at Los Angeles
- MURPHY, NINA L. (1924)** - - - Professor of Physical Education;
Director of Women
B.S. in Ed., University of Arizona; M.A., University of Southern
California
- MYERS, LOUIS M. (1937)** - - - - - Professor of English;
Head of Department
B.A., St. Stephens College; M.A., Columbia University; Ph.D.,
University of California

- NEEB, LEWIS S. (1931) - - - - - Professor of Industrial Arts;
Head of Department
B.A. in Ed., M.A., University of Arizona
(Registered Mechanical Engineer in Arizona)
- NELSON, DAVID V. (1951) - - - - - Instructor in Office Training
and Management
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- NEWLAND, MARTIN K., LT. COL. (1950) - - Assistant Professor of
Air Science and Tactics
- NORTON, NAOMA (1948) - - Assistant Professor of Home Economics
B.A., Highlands University; M.A., Colorado State College of
Agriculture and Mechanic Arts
- ONOFRIO, ALBERT J. (1947) - - - - - Assistant Professor of
Physical Education
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- OSENBURG, FREDERIC C. (1946) - - - Associate Professor of English
B.A., M.A., University of Michigan; Ph.D., University of Illinois
- PARKER, ERNEST L. (1950) - Associate Professor of Animal Husbandry
Ph.D., University of Leipzig, Germany
- PAVLICH, MARY (1951) - - - - - Instructor in Physical Education
B.S. in Ed., University of Arizona; M.S. in P.E., Smith College
- PAYNE, IRA DAWSON (1911) - - - - - Professor Emeritus
B.A., M.A., Stanford University; LL.D., Arizona State College at Tempe
- PEABODY, STANLEY (1952) - Instructor in Electricity and Electronics
B.S., Arizona State College at Tempe
- PHILLIPS, GENE DAVID (1952) - - Assistant Professor of Education
B.A., M.S., Butler University; Ed.D., Indiana University
- PIERCE, WILBUR R., COLONEL (1951) - - - - - Professor of Military
Science and Tactics; Head of Department
B.S., U.S. Military Academy, West Point
- PITTMAN, ANNE M. (1952) - - - - - Assistant Professor of
Physical Education
B.S. in P.E., University of Texas; M.A. in Ed. Admin., New York
University
- **PLUMMER, ROBERT N. (1940) - - - - - Professor of Speech
B.S., Oklahoma Agricultural and Mechanical College; M.A., George
Peabody College; Ph.D., Louisiana State University
- PODLICH, WILLIAM F., JR. (1949) - Associate Professor of Education;
Director of Teacher Training
B.S., Maryland State Teachers College; M.A., Teachers College,
Columbia University; Ph.D., State University of Iowa
- POOLE, EDGAR T., SR., LT. COL. (1954) - - - Assistant Professor of
Air Science and Tactics
B.S., U. S. Military Academy, West Point
- POOLE, ROBERT H. (1951) - - - - - Assistant Professor of French
and Spanish
Ph.B., University of Chicago; M.A., University of Nebraska;
Ph.D., Stanford University; Certificate d'etudes, University of Paris
- PORTNOFF, COLLICE H. (1945) - - - - - Professor of English
B.A., M.A., University of California; Ph.D., Stanford University;
F.A.A.R., M.A., American Academy in Rome
- QUAID, HAZEL HARVEY (1931) - - - Associate Professor of Music
B.A. in Ed., Arizona State College at Tempe; M.A., Northwestern
University
- RANNELLS, JESSIE M. (1939) - - - Professor of Home Economics;
Head of Department
B.S., Iowa State College; M.S., Cornell University; Ph.D., University of
Wisconsin
- RASMUSSEN, ROBERT D. (1949) - - - - - Assistant Professor of
Animal Husbandry
B.S., Iowa State College; M.S., Washington State College
- RAWLS, WILLIAM S. (1949) - - - Assistant Professor of Physics
B.S., Murray State College; M.S., Tulane University

** Part Time

- RENNER, GEORGE T., III (1951) - - - - - Instructor in Geography
B.A., Stanford University; M.A., Columbia University
- RICE, ROSS R. (1950) - - - Assistant Professor of Political Science
M.A., University of Chicago
- RICE, ROY C. (1946) - - - - - Professor of Education;
Director of Summer Session and Extension
B.S., New Mexico University; M.S., Massachusetts State College;
Ph.D., Texas University
- RICHARDSON, GRANT L. (1953) - - Associate Professor of Agronomy
B.S. in Agric., M.S., University of Arizona; Ph.D., Oregon State College
- RICHARDSON, HAROLD D. (1940) - - - Professor of Education;
Vice President of the College
Ph.B., Ph.M., University of Wisconsin; Ph.D., Northwestern University
- RICKEL, HARRY (1948) - - - - - Assistant Professor of Music
B.M., M.M., University of Arizona
- RIDER, WENDELL J. (1953) - Associate Professor of Music Education
B.S., Iowa State Teachers College; M.M., Eastman School of Music;
Ph.D., University of Iowa
- RIGGINS, L. F. (1946) - - - - - Agricultural Mechanics
- ROBINSON, DANIEL O. (1948) - - Associate Professor of Agronomy;
Head of Department
A.B., Brigham Young University; M.A., University of Arizona;
Ph.D., Ohio State University
- **ROSENTHAL, MAURICE (1951) - - - Special Lecturer in Medical
Technology; Pathologist--Memorial Hospital
M.D., Medical College of Virginia
- ROVER, R. CRAIG (1952) - - - Assistant Professor of Education
B.A., Upsala College; M.A., St. Lawrence University;
Ph.D., Cornell University
- **SANDERSON, R. PHILLIPS (1947) - - - Assistant Professor of Art
School of the Art Institute of Chicago; Kansas City Art Institute
- SCHAUMBURG, DONALD R. (1953) - - - - - Instructor in Art
B.A. Ed., California College of Arts and Crafts; M.F.A., Claremont
Graduate School
- SCHILLING, DOROTHY C. (1932) - - - - - Professor of English
B.A., M.A., Ph.D., Stanford University
- SCOULAR, DAVID B. (1952) - - - - - Associate Professor of Music
B.M., Lawrence College; A.B., Texas Christian University;
M.A., Columbia University
- SCRAFFORD, ELMER J. (1950) - - - Assistant Professor of Music;
Assistant Band Conductor
B.S., Ohio State University; M.A., New York University
- SIMMONS, JAMES A. (1953) - - - - - Instructor in Music
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- SKINNER, H. CLAY (1938) - - - - - Professor of Psychology;
Head of Department
B.S. in Ed., Ohio University; M.A., Ohio State University;
Ph.D., New York University
- SMITH, CLYDE B. (1952) - Associate Professor of Physical Education;
Head Football Coach
A.B., Geneva College; M.S. in Ed., Indiana University
- SMITH, MARION W. (1952) - - - - - Instructor in Voice
B.S. Mus. Ed., Capital University; M.M., American Conservatory of
Music
- SMITH, SYDNEY RUSSELL (1947) - Associate Professor of Psychology
B.A., M.A., Ph.D., University of California
- SOMERS, MADELINE (1952) - - - Instructor in Physical Education
B.A., Chestnut Hill College; M.S., Smith College
- SOUTHERN, CLARENCE EDWARD (1936) - Associate Professor of English
B.A., Evansville College; M.A., Stanford University

** Part Time

- STAHNKE, HERBERT L. (1941) - - - - - Professor of Zoology;
Director, Poisonous Animals Research Laboratory;
Head, Department of Biological Sciences
S.B., University of Chicago; M.A., University of Arizona; Ph.D., Iowa
State College
- **STAPLEY, LOREL AARON (1951) - - - Special Lecturer in Medical
Technology; Assistant Pathologist—St. Joseph's Hospital
B.S., B.M., M.D., Northwestern University
- STEVENS, MILDRED L. (1952) - - - - - Associate Professor of
Physical Education
B.S., Stephen F. Austin State Teachers College; M.A., Texas State
College for Women; P.E.D., Indiana University
- STEVERSON, NORRIS J. (1932) - - - - - Associate Professor of
Physical Education
B.A. in Ed., Arizona State College at Tempe; M.S., University of
Southern California
- STEWART, KENNETH M. (1947) - - Associate Professor of Sociology
A.B., M.A., Ph.D., University of California
- STOUT, IRVING W. (1953) - - - - - Professor of Education;
Director of Graduate Study
B.Ed., Platteville State Teachers College; M.A., Ed.D., Northwestern
University
- SWANGER, JOE N., MAJOR (1951) - - - - - Assistant Professor of
Air Science and Tactics
- TAYLOR, LOUIS (1949) - - - - - Assistant Professor of English
B.S. in Ed., M.A., Ohio State University
- TAYSON, ELVIN D. (1953) - Assistant Professor of Animal Husbandry
B.S., University of Idaho; M.S., Utah State Agricultural College
- THOMSEN, WILLIAM G., CAPTAIN (1953) - - Assistant Professor of
Military Science and Tactics
A.B., University of California
- †THOMSON, RONALD G. (1947) - - - - - Associate Professor of
Physical Education
B.S., Springfield College; M.A. in Ed., Arizona State College at Tempe
- TILDEN, ARNOLD (1937) - - - - - Professor of History;
Dean, College of Arts and Sciences
B.A., M.A., DePauw University; Ph.D., University of Southern
California
- TIMMONS, F. ALAN (1953) - - - - - Assistant Professor of
Audio-Visual Education
A.B., San Francisco State College; M.A., University of Southern
California
- TULECKE, WALTER R. (1953) - - - Assistant Professor of Botany
A.B., M.S., Ph.D., University of Michigan
- **TURNER, F. BERNADETTE (1946) - Associate Professor of Sociology
B.S. in Ed., University of Minnesota; M.A., Northwestern University;
Ph.D., Washington University
- TURNER, KATHERINE C. (1946) - - Associate Professor of English
B.Ed., Illinois State Normal University; M.A., Ph.D., University of
Michigan
- VAN PETTEN, DONALD R. (1942) - - Professor of Political Science;
Director of Intercollegiate Athletics
B.A. in Ed., Arizona State College at Tempe; M.S., University of
Southern California; Ph.D., Stanford University
- VON DER HEYDT, ALFRED (1950) - - - - Assistant Professor of
Foreign Languages
Diploma, University of Frankfurt-on-the-Main; M.A., Yale University;
Ph.D., Cornell University
- WAGER, ALAN T. (1949) - - - - - Professor of Physics
B.S., Hobart College; M.A., Cornell University; Ph.D., University of
Chicago

† On Leave

** Part Time

- WEBB, DAVID R., SFC (1951) - - - Instructor in Military Science
and Tactics
- WELSH, RICHARD K. (1949) - - - Assistant Professor of English
A.B., DePauw University
- WESTBROOKE, JACK G., MAJOR (1952) - - - Assistant Professor of
Military Science and Tactics
B.S., University of Oklahoma
- WEXLER, CHARLES (1930) - - - - Professor of Mathematics;
Head of Department
B.S., Harvard College, M.S., Ph.D., Harvard University
- WHITE, ROBERT J. (1952) - - - Instructor in Physical Education;
Assistant Coach
B.S. in Ed., Indiana University
- **WILLIAMS, O. O. (1939) - Special Lecturer in Medical Technology
at St. Joseph's Hospital
B.S., M.D., Vanderbilt University
- WILLSON, LORETTA (1947) - - - - Assistant Professor of Speech
B.A., University of South Dakota; M.A., Northwestern University
- WILSON, IRMA (1922) - - - - Professor of Foreign Languages;
Head of Department
B.A., Montana State University; M.A., Ph.D., Teachers College,
Columbia University
- WOCHNER, RAYMOND E. (1952) - - - - Professor of Education
B.S., York College; M.S., University of Nebraska; Ph.D., University of
Wyoming
- WYLLYS, RUFUS KAY (1929) - - - - Professor of History;
Head of Department
B.A., Hillsdale College; M.A., University of Michigan; Ph.D.,
University of California; Litt.D., Hillsdale College
- YALE, FRANCIS G. (1952) - Assistant Professor of Physical Science
A.B., M.A., Colorado State College of Education; Ed.D., Teachers Col-
lege, Columbia University.
- YATES, GEORGE C. (1945) - - - Associate Professor of English;
Director of Special Services
B.S., M.A., University of Missouri
- YOUNG, GEORGE P. (1947) - - - Associate Professor of Psychology
B.A., Colorado State College; M.A., University of Colorado;
Ph.D., Yale University
- ZACHER, ROBERT V. (1946) - - - Associate Professor of Marketing
B.S., M.S., University of Alabama
- ZIDNAK, PETE (1951) - - - - Assistant Professor of Economics
B.S., Loyola University at Los Angeles; M.A., University of Southern
California
- ZIMMERMAN, J. E. (1946) - - - Associate Professor of English
B.A., M.A., Baylor University

Training School

- COOL, DWIGHT W. (1943) - - - - - Principal
B.A., University of Colorado; M.A., Colorado State College of Education
- ASHBY, NANCIE I. (1948) - - - - - Lunchroom Supervisor
- BOLLING, BETTY HUGHES (1950) - - - - - Seventh Grade
B.S. in Ed., Buffalo State Teachers College; M.A. Syracuse University
- BOWYER, IRENE (1949) - - - - - Fifth Grade
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- CASSITY, FRANCES PERRY (1942) - - - - - Kindergarten
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- COPPINGER, BILLIE A. (1953) - - - - - First Grade
B.A. in Ed., Arizona State College at Tempe
- CROUCH, BEULAH H. (1953) - - - - - Fourth Grade
B.A. in Ed., Arizona State College at Tempe

** Part Time

- HOOD, HARRY E. (1953) - - - - - Eighth Grade
B.A., University of Arizona; M.S. in Ed., Westminster College
- †KANE, AILEEN (1950) - - - - - Third Grade
B.A., Trinity College; M.A., Harvard Graduate School of Education
- MILARDOVICH, JOSEPH J. (1950) - - - - - Sixth Grade
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe
- MORRIS, MARY SCOTT (1947) - - - - - Art
A.B., Western Kentucky State College; M.A., Northwestern University
- PATERSON, M. JANE (1953) - - - - - Second Grade
B.Ed., State Teachers College, Plattsburgh, New York
- ROBINSON, DOROTHY F. (1927) - - - - - Librarian
B.A., M.A., University of Southern California
- THOMAS, CATHERINE R. (1937) - - - - - Music
B.A. in Ed., M.A. in Ed., Arizona State College at Tempe

Matthews Library

- BACHELOR, HAROLD W. (1943) - - - - - Head Librarian;
Associate Professor of Library Science; Head of Department
B.A., University of Oregon; B.S., M.S. in L.S., University of Illinois
- ARNHOLD, KATHRYN (1947) - - - - - Loan Service Manager
B.A. in Ed., Arizona State College at Tempe
- BLAYLOCK, EDNA THOMAS (1950) - - - - - Library Clerk
- CORY, LUELLE (1948) - - - - - Catalog Librarian
A.B., University of Kansas; B.L.S., University of Illinois Library School
- DIXON, HELEN Y. (1953) - - - - - Library Clerk
B.S., University of Nebraska
- FANNING, WYNEMA (1952) - - - - - Library Clerk
- HOOVER, GRACE V. (1951) - - - - - Reference Librarian
A.B., University of Nebraska; B.S. in L.S., University of Denver
- HOWE, CHARLES EDWARD (1951) - - - - - Assistant in Cataloging
B.D., Bexley Hall, Kenyon College
- JONES, ROBERT C. (1951) - - - - - Instructor in Library Science;
Assistant Librarian
A.B., M.A. in L.S., University of Denver
- LEIGH, OLIVE PATRICIA (1950) - - - - - Library Clerk
B.A., Colorado College
- MAXWELL, RUTH (1952) - - - - - Assistant in Cataloging
B.A. in Ed., Arizona State College at Tempe
- MOFFIT, INEZ W. (1953) - - - - - Instructor in Library Science;
Reference Librarian
B.A., Iowa State Teachers College; B.S. in L.S., University of
Minnesota; M.A., University of Denver
- MORGAN, FLORENCE B. (1950) - - - - - Catalog Librarian
B.A., University of Colorado; B.S. in L.S., University of Illinois;
M.S., Columbia University
- MYERS, JOHN M. (1953) - - - - - Assistant in Acquisitions
- PHILLIPS, RUTH F. (1948) - - - - - Catalog Librarian
B.S., Cornell College; Library Science Certificate, University of
Wisconsin
- RUSSELL, ISABEL (1953) - - - - - Assistant in Acquisitions
A.B., Butler University
- SIEDENTOPF, MARIE (1953) - - - - - Acquisitions Librarian
A.B., University of Montana; Library Certificate, Riverside Library
School.
- STEVENSON, PATSY Jo (1953) - - - - - Library Clerk
- **SWEENEY, RUTH (1952) - - - - - Library Clerk
- TERRILL, CHARLOTTE P. (1949) - - - - - Library Clerk
- WHETTEN, WILLMIRTH S. (1950) - - - - - Library Clerk

† On Leave

** Part Time

Assistants in Administration

ASHLEY, ALETHA - - Assistant to the Vice President of the College
 **AXEL, BEN JOHN, M.D. - - - - - College Physician
 BAAS, BARBARA - - - - - Secretary to the Comptroller
 BELTZ, V. V. - - Section Head, Veterans Accounts, Business Office
 BENEDICT, FRANCES, A.B. in Ed. - Librarian, Curriculum Laboratory
 BUNTE, MARY L., M.A. in Ed. - - - - Secretary to the President
 BUSTAMANTE, TONY, B.A. - - - - Assistant Manager, Bookstore
 CADWELL, RITA V. - - - - - Head Resident, Irish Hall
 CADWELL, ROBERT C., B.S. - - - Assistant to the Dean of Students
 CASSITY, GALEN H., M.A. in Ed. - - - - Assistant Registrar
 CONNOLLY, GRACE - - - - - Secretary, School of Education
 COOK, RUTH L., B.A. - - - - - Head Resident, East Hall
 CORNO, VERLA H. - - - - Secretary, Division of Special Services
 COSSELL, HAZEL M., M.S. - - - - Head Resident, Gammage Hall
 CRANCE, T. T., B.A., C.P.A. - - - Internal Auditor, Business Office
 DALBY, JACK E. - - - - - Assistant, Special Services
 DES JARDIN, MARGARET - Accompanist, Women's Physical Education
 **DOBBS, LAURA - - - - - Cashier, Victory Village
 DONOVAN, CARMEN, A.A. - Secretary, Summer Session and Extension
 DUBLIN, ARLENE F. - - - - - Supervisor, Mimeograph Office
 EARLE, LOIS PORTER, B.A. - - Section Head, Payroll, Business Office
 EVANTS, FLORENCE J., M.A. in Ed. - - Head Resident, Hayden Hall
 FALLON, WILLIAM J., B.A. - - - - Assistant Director, Placement
 FANNING, PEARL - - - - - Kitchen Supervisor
 FIX, RACHEL E. - - - - - Film Librarian, Audio-Visual Aids
 GARNATZ, NORMAN L. - - Financial Manager, Associated Students
 GEIGER, JACKIE A. - - - - - Secretary, Agriculture
 GREEN, MAVIS A., B.A. in Ed. - - Section Head, Accounts Payable,
 Business Office
 GREGORY, BEATRICE E. - - - - - Head Resident, Matthews Hall
 HAIRE, L. RAY, B.A. in Ed. - - - - - Manager, Bookstore
 HANNA, THOMAS C. - - - - - Multilith Operator
 HANNEY, IRENE M. - - - - - Head Resident, La Ramada Hall
 JOHNSON, JEAN - - - - - Secretary, Bookstore
 KOCH, NADINE M., B.S., R.N. - - - - Nurse, Health Service
 KOUNTZ, EDWARD C. - - - - - Manager, Devil's Den
 KRENKEL, MARGARET A. - - - - - Secretary, Registrar's Office
 LORD, RALPH C. - - - - - Military Property Custodian
 MACDONALD, ESTHER, R.N. - - - - - Nurse, Health Service
 MARX, EUGENE H. - - - - - Cashier, Business Office
 MATTHEWS, JAMES, B.F.A. - - - - - Photographer
 MAY, SIBYL S. - - - - - Purchasing Clerk, Business Office
 MCCAFFREY, EDWARD J., M/SGT. - - - - Training Aids, Air Force
 MCFARLAND, ELAINE, M.N., R.N. - - - - Director, Health Service
 MCSLOY, ELAINE, R.N. - - - - Assistant Director, Health Service
 MORRELL, GEORGE W., B.A. in Ed. - - - - Purchasing Agent

** Part Time

MUNRO, CLARE W. - - - - - Business Office Manager
 MYERS, HAZEL C. - - - - - Secretary, Alumni Office
 NELSON, ERWIN K., M/SGT. - - - - - Student Records, Air Force
 NELSON, MATTIE COOPER, B.A. - - - - - Head Resident, South Hall
 NORTMAN, RICHARD, M.A. in Ed. - - - - - Filming Director
 PARKER, CLARA N. - - - - - Head Resident, North Hall
 PEPPE, JEANNE, B.S., B.Lit. - - - - - Secretary; Laboratory Technician,
 Health Service
 POOR, ROBERT E. - - - - - Head Resident, Stadium Hall
 RENNER, JANE HUSSEY, B.A. - - - - - Secretary, Registrar's Office
 RHOTON, DREW - - - - - Section Head, Housing, Business Office
 RISPOLI, FRANK V., B.A. - - - - - Assistant to the Director of Athletics
 SHLYK, DOROTHY I. - - - - - Secretary, Student Affairs
 SIMMONS, DOROTHY L., D.O. - - - - - Head Resident, Alpha Hall
 SIMS, JOSEPH J. - - - - - Manager, General Stores
 SOUTHERN, JUANITA R. - - - - - Secretary, Graduate Division
 STAFF, GENEVIEVE E., B.S. - - - - - Director, Dining Hall
 STEWART, FRANCES O. - - - - - Secretary, Director of Intercollegiate Athletics
 THOMPSON, MARGIE DALE - - - - - Secretary, Industrial Arts
 TIPTON, FRANCES M. - - - - - Section Head, Records Section,
 Registrar's Office
 VIDAL, RAMONA - - - - - Secretary, Business Office and Purchasing
 WALSH, IRENE R., R.N. - - - - - Nurse, Health Service
 WALSH, MARGARET M., B.M. - - - - - Head Resident, West Hall
 WEST, RUTH K. - - - - - P.B.X. Operator
 **WESTERVELT, MARCUS W., M.D. - - - - - College Physician
 WILLIAMS, CAROLYN - - - - - Clerk-Typist, Air Force ROTC
 WILLIAMS, GENE LEE - - - - - Secretary, Army ROTC
 WOODS, HUBERT K., M/SGT. - - - - - Special Activities, Air Force
 YOUNGER, BETTY F. - - - - - Secretary, Dean of the College of Arts
 and Sciences

Assistants in Maintenance

HARRIS, FENN Superintendent, Buildings and Grounds	MILLS, ANDREW R. Head Mechanic
BLALOCK, WALTER S. Maintenance, Apartments and Dormitories	PLANK, WILBUR L. Plant Engineer
CRUMBAKER, JAMES W., B.S. Superintendent of Farm	RANNOU, WILLIAM F. Head Electrician
DUPREE, WILLIAM D. Carpenter Foreman	SCHWEIKERT, PETER J. Paint Shop Foreman
HENRIE, WILLIAM E. Head Custodian	SMITH, VICTOR F. Head Engineer
MCGINNIS, CHARLES Head Watchman	SVOB, ROBERT Head Gardener

The College

Purposes

Arizona State College aims to serve the people of Arizona by providing an over-all educational program appropriately reflecting the community interests of the people of the State as a whole as well as the needs and desires of individual students who enroll. Present institutional objectives which define the educational program of the college are the result of the evolution of the institution over a period of more than sixty-five years.

The original scope of instruction as set forth in the act creating the Territorial Normal School was confined largely to "the instruction of persons . . . in the art of teaching . . .". As the State and the College have grown, that original scope has been expanded until today, operating under the authority of the Board of Regents of the University and State Colleges of Arizona, the College has become a multi-purpose institution.

The general purpose of the College is to provide means by which all who pass through its doors may become, through increased vocational competence, improved moral and ethical standards, and expanded cultural horizons, better citizens of the state, the nation, and the world.

Attainment of this general purpose is made possible through specific programs of academic and other activities which are designed:

(1) To provide a basic program of general education. Provision for a broad social-cultural base is an essential in programs of education for all vocations. Objectives related to good citizenship, personal efficiency, aesthetic appreciation, general knowledge, and vigorous health are, after all, fundamental and basic in all programs of higher education.

(2) To provide a number of programs of work in the arts and sciences which broaden and extend the basic program of general education and provide the beginning specialization necessary for advanced graduate and professional education. Majors or areas of concentration in the arts and sciences leading to occupational competency and the degree of Bachelor of Arts or Bachelor of Science are offered in: Agriculture, Art, Biological Sciences, Business Administration, English, Foreign Languages, Home Economics, Industrial Arts and Technology, Mathematics, Music, Health Education and Physical Education, Physical Sciences, Psychology, and Social Studies.

(3) To provide programs for the selection and preparation of teachers and administrators for the elementary and secondary schools of Arizona. The people of the State have a right to expect that their

children will be taught by teachers possessing high mentality, broad social cultural background of general education, high ideals of citizenship, thorough knowledge of subject matter, objective and scientific point of view, professional training and spirit, proven skill in the art of teaching, culture and efficiency in social relationships, wholesome personality, vigorous health, and sound character. The College aims to serve in the selection, development, and preparation of teachers of this type by offering three distinct programs: (a) a four-year program leading to the degree of Bachelor of Arts in Education; (b) a program of studies leading to the degree of Master of Arts in Education; and (c) a program of studies leading to the degree of Doctor of Education.

(4) To provide programs of pre-professional training in a number of fields. Pre-professional curriculums are offered in architecture, veterinary medicine, dietetics, forestry, engineering, law, medicine, dentistry, medical technology, nursing, optometry and pharmacy.

(5) To provide a number of less than degree programs of a practical type to give students the general education, skills, knowledge, and understanding needed for entrance into the vocations of their choice.

(6) To provide a rich and balanced program of out-of class activities through the residence halls, student government, professional and special interest groups, organizations, fraternities, and sororities, that provide abundant opportunity for the development of wholesome individual personalities, refined social living, training in leadership and effective citizenship.

(7) To provide a program of help, guidance, and personal counseling that reaches all students.

(8) To provide a program of cultural and educational leadership and service in the community and the state as a whole. These professional and community services are provided through special evening courses, resilient credit centers, correspondence courses, summer sessions, educational conferences, dramatic performances, musical concerts, speech clinic services, published bulletins, radio and T-V programs, placement services, alumni organizations, school visitation, speaker and consultant service.

History

Arizona, the Baby State, has a culture that is exceedingly old. It is an historical coincidence, perhaps, that one of the most advanced cultures known to American archeologists was that of the Ho Ho-Kam Indian (700 A.D. to 1400 A.D.), the center of which, was but a few miles from the campus of Arizona State College. The touch of the white man to this region goes back to 1539 when, only 47 years after the landing of Columbus, Fray Marcos de Niza came into Arizona, passing a short distance from Tempe. He was soon followed by the colorful but ill starred expedition of Coronado.

Settlement by white men proceeded at an extremely slow rate until the mid-19th century when sufficient numbers gathered within the borders of the State to form the Territory of Arizona, organized in 1863. Education in the frontier State progressed slowly until 1885, when on March 12th, the Thirteenth Legislative Assembly made provision for the establishment at Tempe of a Normal School. The Normal began classes on February 8, 1886. Thirty-one students met in a single room under the supervision of Hiram Bradford Farmer. The Normal School, forerunner of the present Arizona State College, was the first institution of higher learning to be opened in the State.

The College has had a variety of names starting with Arizona Territorial Normal School and proceeding to Arizona Normal School, The Normal School of Arizona, The Tempe Normal School of Arizona, and the State Normal School of Tempe, Arizona. In 1925, through the activities of the Alumni Association, the Seventh State Legislature approved a bill providing that the Tempe Normal School become Tempe State Teachers College and establishing a four-year college curriculum. The Ninth Legislature changed the name of the College to read Arizona State Teachers College at Tempe and authorized the College to grant the degree of Bachelor of Arts in Education. In March, 1937, the Thirteenth Legislature authorized the College to grant the advanced degree of Master of Arts in Education, which degree was conferred the first time on May 31, 1938.

A complete revision of the system of governing the state institutions of higher learning took place on March 9, 1945, when the legislature established a Board of Regents of the University and State Colleges of Arizona, and changed the name of the College to Arizona State College at Tempe. This Board has broad powers. It has authorized new curriculums and courses, and during the past seven years, has authorized the College to award the Bachelor of Arts and the Bachelor of Science degrees, and, most recently, the degree of Doctor of Education.

The College has had a gradual, positive evolution from the limited curriculum of a Normal School to an institution composed of eighteen strong departments. From the original single building, there has grown a campus containing forty-two buildings on approximately 120 acres, and the original attendance of thirty-one has expanded to 4523 for the academic year of 1952-53.

Recognition by Accrediting Agencies

Arizona State College is fully accredited by the recognized agencies of evaluation in its field. The College ranks Class A in the North Central Association of Colleges and Secondary Schools, and in the American Association of Colleges for Teacher Education. It has institutional membership in the Association of American Colleges, the American Council on Education, and the Western College Association. Students transferring from this College to other colleges and universities are given the same recognition with respect to transfer of credits, graduate study, and other privileges as are enjoyed by other universities and colleges of the country.

The College Setting

Environment

Location. Arizona State College is located in the City of Tempe in the heart of the Salt River Valley and nine miles from metropolitan Phoenix, the state capital, and one of the fastest growing areas in the nation. Tempe is located on the Southern Pacific Railroad main line and connections with the Santa Re Railway are available at Phoenix. Four transcontinental highway systems run by the college grounds, affording easy access to all parts of the country. One of the nation's outstanding airports is located halfway between Phoenix and Tempe and provides frequent services via Trans World Airlines, American Airlines, Frontier Airlines, and Bonanza Airlines. The airways network extends in all directions and there are at least 40 transcontinental flights daily. There is regular metropolitan bus service between Tempe and Phoenix and other adjacent communities.

Climate. The great adventure of this country has always been the act of heading West. That holds good today. Only in the West can the classic American combination of frontier informality and a civilization in the making still be found. In Arizona—above all, the district around Tempe—there is the additional blessing of the nation's most perfect climate. Here prosperity can be found in a land suited to its enjoyment. Cloudless skies and bright, constant sunshine permit much of the college activity to be conducted outdoors. There is virtually no snow, rain is seldom, and high winds are infrequent.

Historical and Scenic Features. Within easy reach are found such exciting landmarks as Superstition Mountain, Apache Trail, Roosevelt and Coolidge Dams, Canyon Lake, Hieroglyphic Canyon and, somewhat distant, the internationally famous Grand Canyon of the Colorado. Papago Park, a natural scenic attraction retaining much of the original desert flora, lies just north of the campus. This beauty spot and the 1200-acre park is an ideal center for hiking, horseback riding and picnicking.

Grounds

The Campus. There are 120 acres in the college grounds, of which 85 comprise the campus proper. Arranged in a most attractive setting with broad, shady lawns, the campus provides a profusion of orange trees, palm trees and other southwestern flora, typical shrubs, and gayly blooming flowers.

The forty-two buildings comprising the main campus are distributed over the grounds in two groups, commonly designated by students as the north campus and the south campus. The prospective student needs to see the orange, palm, pecan and olive trees growing on the campus, to marvel at the desert's rare coloration, to visit the warm comfortable climate and the fabulous mountains nearby to really appreciate the campus. It's a friendly, democratic campus, where students from every state in the Union seek a source of power and happiness—the gold of knowledge for a richer, fuller life.

The recently completed, new Men's Physical Education Building, of latest type construction, and fully equipped to provide a modern physical education program, becomes the most important element in the athletic plant of the institution. An integral part of the new building is an outstanding basketball court which will ultimately seat 6,000 spectators. A second principal element in the plant is Goodwin Stadium, seating more than 15,000 spectators, and equipped with an outstanding lighting system for night games. The men's athletic field is located between the Stadium and the Men's Physical Education Building and contains a baseball diamond, football field, and an excellent track. The women's athletic field is located in the southwest section of the campus, and equipment in both areas is completely adequate for the needs of a dynamic physical education department.

The campus is well supplied with new tennis courts, volleyball, softball, and archery areas. Splendid golf course facilities are but a short distance from the campus. The city of Tempe maintains an outstanding official AAU swimming pool located near the College.

College Farm. The model farm of seventy-five acres is located one mile south of the campus. It is used for experimental and practical work in various phases of agriculture.

College Buildings

Administration

Administration Building. The administrative offices of the College are housed in the north wing of this imposing structure, the largest on the campus. In it are located the President's Office, office of the Vice President, Dean of the College of Arts and Sciences, the Registrar's Office, the Business Office, the Division of Student Affairs, the Alumni Office, and other administrative sections. It is especially noted for a magnificent entrance-mural in fresco, done by Jean Charlot.

Auditoriums

College Auditorium. The Auditorium is located on the west side of the old quadrangle. It seats 800 persons. Its forty-foot stage and modern equipment permit the staging of dramatic work of high order.

Lyceum. This attractive building contains an auditorium, a stage, a lovely reception room, and a kitchen. It is used by students and faculty for social and educational functions.

College Libraries

Matthews Library. This modern, fire-proof, air-conditioned building provides outstanding facilities, and a growing collection of materials to meet the needs of undergraduate and graduate students and the faculty. Recently remodeled and enlarged at a cost of more than a half-million dollars, the functional plant and the beautiful decor contribute to make the Library a most attractive, comfortable, and efficient place for intensive study or for casual reading. It is indeed a "great new heart" of the institution. Arranged for subject specialization,

there are reading rooms for Education, Humanities, Science and Technology, and the Social Sciences. In addition to these special reading rooms, there are: a well stocked General Reference Room, a Periodical Room with over twelve hundred current subscriptions, and a Browsing Room for recreational reading. A splendidly equipped Music Room, a gift of Mrs. Mary Redewell, widow of the late music patron Eugene Redewell, permits students to listen through individual devices, to the finest in classical recordings and radio programs. There are sixty individual study carrells available in the stacks for graduate students pursuing theses or practicums. The significant Collection of American Art is hung in the library's gallery and reading rooms.

Training School Library. In addition to the general library, there is a children's library in the Training School. This collection contains more than 5,000 carefully selected juvenile books covering all types of literature. The book collection is supplemented by a file of pamphlets, pictures, and other materials; by a selection of outstanding juvenile periodicals; and by a textbook collection for the enrichment of directed teaching as well as for the children's use.

Curriculum Center. The Curriculum Center housed in the new Library Building is a functional part of the teacher-education program of the College. It is designed to serve teachers in training and Arizona teachers in-service by maintaining extensive collections of teaching materials and providing laboratory space for producing materials.

The library of printed materials includes courses of study issued by school systems, publications of various state departments of education, textbooks used in Arizona elementary and secondary schools, monographs, teaching units, and other pertinent publications.

Facilities are available for curriculum workshops, discussion groups, curriculum study and research effort and all types of curriculum production activities.

Bureau of Audio-Visual Aids. The Bureau of Audio-Visual Aids is an audio-visual service agency for the instructional program of the College and for the schools of Arizona.

The Audio-Visual Library, valued at more than a hundred thousand dollars, is the largest library of films in the state of Arizona. The films are cooperatively owned by the forty-nine member schools, by Arizona State College, and by a number of government agencies and industries which deposit films in the Audio-Visual Library. These films are available on a rental basis to any responsible organization or school in Arizona.

A library of educational radio programs on tape recordings is being developed. Schools wishing to acquire these tape programs may send their tapes to the Audio-Visual Library and obtain any program which the Library has.

The Library maintains and services all audio-visual equipment used by the various College departments.

Photography Section: The Photography Section of the Bureau of Audio-Visual Aids handles all of the photography for the College

for both instructional and publicity purposes. A group of nine dark rooms and a photographic studio provide facilities for carrying on the work of the Photographic Section, and provide laboratory facilities for courses in photography and the production of audio-visual aids. These dark rooms are also used by members of the State Camera Club.

In addition to the more usual types of photography, the Photographic Section is also equipped for microfilming, making of identification pictures, making negatives for multilithing, and producing motion pictures with magnetic sound tracks.

Radio-Television Section: The Radio-Television Section of the Bureau of Audio-Visual Aids has a professionally equipped radio set-up in the basement of Matthews Library (Rooms 12, 13, 15, 16) made up of three studios, a master control room, and a sub-control room. The facilities are used for origination of 40 hours of broadcasting each week over KASC, the campus "wired wireless" station; recording and origination of college radio programs broadcast over local commercial stations; and preparing recordings for individuals and organizations connected with the College.

Though there are as yet no television facilities on campus, the Radio-Television Section prepares regular educational television series which are presented over the local commercial stations in Phoenix and Mesa in an effort to extend the educational resources of the College to the people of central Arizona. Many college radio programs are carried through state networks to all parts of the state. The Radio-Television Section also provides the Audio-Visual Library educational tape recordings, copies of which are available to educational institutions throughout the state for classroom use.

Classroom and Laboratory

Agriculture and Business Administration Building. This is one of the most modern and functional classroom and office structures in the Southwest. It comprises the south wing of the building which houses the administrative offices.

Arts Building. This is a modern, fire-proof building of concrete construction faced with cream brick. It houses the departments of Art, Music, and Social Studies. The College Book Store is located in the building.

Band Building. This building is located southeast of the heating plant and is the headquarters for the band. It contains rooms for band rehearsal, ensemble and private practice, instrument storage, and offices.

English Building. This building, formerly known as *Old Science*, has been remodeled to house the English Department. In addition to classrooms and offices for English, speech and journalism, the offices of the student publications are located here.

Farm Buildings. A home and barns are located on the college farm one mile south of the campus.

Home Economics Building. A splendid, completely equipped new structure which houses the Home Economics Department has been constructed at the north edge of the campus adjacent to the Arts Building and in close proximity to the Home Management House and Nursery School. This new structure provides the latest facilities for technical courses in homemaking.

Home Management House and Nursery School. A fine, new building in which students majoring in Home Economics live for a part of a year. A modern nursery school is also housed in this building.

Industrial Arts Building. The Industrial Arts Building is the west wing of Goodwin Stadium. The building houses the machine, electronics, and woodworking shops of the Industrial Arts Department. Close by are quarters for architecture, sheetmetal, aeronautics, and auto mechanics.

Old Main. The early traditions of the college cluster about Old Main with its three stories of ivy-covered brick. Erected in 1894, the building has been completely remodeled inside, and new entrance ways have been installed. It is devoted to classrooms and offices for academic work and houses the School of Education.

Ira D. Payne Training School. This is a one-story structure of brick in the Spanish-Colonial style with open corridors or colonnades enclosing an attractive patio. The classrooms, furniture, apparatus, and equipment are in keeping with a modern, progressive elementary school system.

R.O.T.C. Building. This temporary building located just north of the Moeur Building contains offices of the Department of Air Science and Tactics.

Science Building. This fine, modern building offers outstanding classroom and laboratory facilities for students in the biological and physical sciences.

Physical Education and Recreation

Men's Physical Education Building. Completed in 1952, the magnificent new Men's Physical Education Building is the newest addition to the campus. It is of the latest type construction, contains ample gymnasium space, classrooms, offices and many other features which make it outstanding. The basketball area will ultimately provide seating for 6,000 spectators. The classrooms and offices of the Department of Military Science and Tactics are located on the second floor of this building.

B. B. Moeur Activity Building. This is the instructional center for women's physical education. Many of the large social functions of the college are held here. The building was named in honor of the late Governor Moeur.

Goodwin Stadium. The stadium was named after the late Garfield A. Goodwin, an early graduate of the Territorial Normal School, and a member of the Board of Education for many years. The west unit has

a seating capacity of over 4,000. Another unit located on the east side of the field increases the seating capacity about 7,000. Additional bleacher seats allow 15,000 persons to be seated.

Residences

President's Residence. This is a substantial, two-story, brick structure located on the east side of the campus.

North Campus Cottage. An attractive brick home occupied by the Plant Engineer.

South Campus Cottage. A brick cottage used as a research center.

Residence Halls

Alpha Hall. This dormitory for women is located on the east side of the campus.

Carrie J. Matthews Hall. This hall for women was named after Carrie J. Matthews, the wife of former president Arthur J. Matthews.

North Hall. This women's hall is located on the north side of the dormitory quadrangle.

South Hall. South Hall accommodates women. It is located on the south side of the dormitory quadrangle.

West Hall. This fine, large dormitory for women is located on the west side of the dormitory quadrangle.

Dixie Dees Gammage Hall. This is a modern structure for women. The hall was named in honor of Dixie Dees Gammage.

Dixie Gammage Annex. A new addition to Dixie Gammage Hall has recently been completed, providing accommodations for 108 women students. It is located directly north of Dixie Gammage Hall and embodies the very latest developments in resident hall construction.

East Hall. This dormitory for men is located at the center of the campus.

Irish Quadrangle. This comprises three men's dormitories located just west of Goodwin Stadium. These are designated Unit A, Unit B, and Unit C.

Charles Trumbull Hayden Hall. A new men's dormitory accommodating 146 students has been constructed on the south edge of the campus, facing federal highways. It is modern in construction and contains many conveniences and facilities for pleasant living.

La Ramada Hall. LaRamada Hall is a temporary women's dormitory. It consists of four frame buildings obtained from the United States Government.

Stadium Hall. This dormitory for men is located underneath the east section of Goodwin Stadium.

Victory Village. In this village there are about 66 apartments for the accommodation of veterans and their families.

Palm Grove. These apartments are located one mile south of Tempe and will accommodate 16 families.

Student Services

Student Health Center. An expanded and reconstructed College Health Center was opened for service in mid 1953. This building, located in a quiet section on the east side of the campus, provides most adequate facilities to care for the health needs of college students.

Dining Hall. The dining hall is centrally located, and is conveniently reached from all dormitories. The building and its equipment meet the highest sanitary and health standards. The dining hall is under the supervision of a graduate dietitian.

Danforth Meditation Chapel. A chapel for devotions by individuals and small groups made possible by a gift of \$5,000.00 by William Danforth supplemented by gifts from numerous students, faculty, and friends of the college.

Maintenance

Maintenance Building. This new building located just north of the Men's Physical Education Building is the center for the receiving, storage, and disbursement of all supplies and equipment. The switchboard and the mimeograph office are located here.

Heating Plant. The plant is located centrally just south of the dining hall. It furnishes steam heat and hot water to all college buildings.

Entrance Information

Admission to College

General Requirements

Personal Qualities. Arizona State College desires to admit only persons possessing good character, and serious purpose. They should possess such degree of health that success in the vocation selected may be expected. In addition, candidates for the professions should rank high in personality traits including native ability.

Transcripts. Before any student may register for work in the regular sessions of the college, and be admitted to regular standing and classification, his transcripts of high school and previous college work done must be on file in the Office of the Registrar and Director of Admissions. Students should request the high school principal or college registrar to mail the transcript directly to the Registrar and Director of Admissions. Transcripts should be in the hands of the Registrar and Director of Admissions at least thirty days in advance of the registration date. Transcripts are not required at the time of admission of those taking work in the summer session, in extension, or by correspondence.

Vaccination: A certificate of smallpox vaccination signed by a physician must be on file in the Office of Registrar and Director of Admissions before a student may be notified of his admission status.

Health Examination. A health examination is required, prior to registration, of all students attending regular session and carrying more than 5 semester hours. This is given without charge by the Health Service staff. Late registrants must secure the examination form from the Student Health Service, and have it completed by an M.D. Such students pay the cost of the medical examination. A physician's certificate of small pox vaccination within the past four years must be furnished at the time of the health examination.

A chest X ray, to be interpreted by a roentgenologist, is required without exception of all students at a time to be announced by the Student Health Service. Any student who fails to have an X-ray at this time must bear the cost of having it done later.

Aptitude Tests. Several aptitude tests are required of all *new students before registering* with the following exceptions: those registering for not more than five semester hours of work, summer session students, extension students, and those taking late afternoon, evening or Saturday classes only. These tests have nothing to do with a student's entrance. They are used for student guidance. They require several hours; therefore, a new student cannot complete his tests and registra

tion in one day. Students whose score falls below a critical point in the English achievement test will be required to take Eng. X to improve their reading and study skills before registering for Eng. 101. See the section headed, "The College Guidance Program" for description of tests.

High School Graduates

Graduates of an approved high school may be admitted to freshman standing in any of the curriculums offered by the college.

The units listed below are specified for admission. To meet these specifications, credits will be accepted for any subjects in these fields usually given in high schools. In addition, credits will be accepted for general or unified courses, irrespective of the names or organization of the courses, provided the subject matter covered falls within the fields specified.

English	3 units
Social Studies	2 units
Mathematics (Arithmetic is accepted)	1 unit
Science	1 unit

Conditional Admission

Graduates of Unapproved High Schools. Graduates of unapproved high schools may be admitted provisionally upon passing satisfactorily the regular aptitude tests. Provisional admission will be removed on the successful completion of the first thirty semester hours of college work.

Non-Graduates of High Schools

1. *High School Seniors.* High school seniors under 21 years of age with only a limited amount of work to complete in order to meet the requirements for the high school diploma may be admitted under the following conditions:

- (a) The written recommendation of the high school principal and an affirmative vote of the Admissions and Standards Committee.
- (b) A plan for completing high school work with the written approval of the high school principal, and an affirmative vote of the Admissions and Standards Committee.
- (c) The completion of high school graduation requirements prior to the admission to sophomore standing.

2. *Adult Civilians, and Veterans Over 18.* Civilians over 21 years of age, and veterans over 18 years of age who are not graduates of approved high schools may be admitted to undergraduate standing with conditions. These conditions may be removed during the second semester in college as follows: (a) Carry at least 15 semester hours during a regular semester with an index of 1.75 or better. (b) Pass with an acceptable score the G.E.D. Tests, High School Level. (c) An affirmative vote of the Admissions and Standards Committee indicat-

ing that the student's record on his first semester's work, his G.E.D. tests, and on the college aptitude tests is satisfactory.

Students, not graduates of approved high schools, whose records are not satisfactory may continue in college only if approved by the Admissions and Standards Committee. The Veterans' Education Adviser is located in the Office of the Registrar and Director of Admissions. He advises veterans under P. L. 346. A Veterans' Administration representative is located on the campus. He advises veterans under P. L. 16.

Special Information for Veterans

Arizona State College is fully accredited by the Veterans' Administration. Veterans will follow the procedures outlined above under the heading, "Admission to College." In addition, veterans will observe the following special procedures:

1. Veterans not previously in training under the G.I. Bill will obtain from the Veterans' Administration, Regional Office, Phoenix, Arizona, a Certificate of Eligibility and Entitlement to attend Arizona State College.

2. Veterans previously in training under the G.I. Bill will obtain from the Regional Office nearest the institution which he last attended a supplemental Certificate of Eligibility and Entitlement.

3. Veterans will deliver these certificates to the Veterans' Accounts Officer at the College in person at the time of registration.

4. Veterans should bring their records of military or naval experience, and deliver these in person to the Office of the Registrar and Director of Admissions *not earlier* than one month after registration if they seek college credit for military science.

5. Only advanced standing credit will be recognized where credit is granted on the basis of G.E.D. examinations, i.e., the student who presents official records of having successfully passed the college level G.E.D. examinations as a part of his admissions credentials may be granted credit as recommended by the American Council on Education Guide Book. Such credit will be granted upon admission, if the G.E.D. tests were taken during the time the student was a member of the armed services. Credit based on G.E.D. examinations taken after discharge from the armed services will be granted upon admission only after the merits in each individual case have been considered.

In no instance will credit be granted on the basis of G.E.D. examinations when such examinations have been taken after the student has been admitted to the Arizona State College at Tempe or other college or university. The purpose of granting credit based on G.E.D. examinations is to recognize educational training and experience acquired while serving in the armed forces in the case of those individuals whose educational program was interrupted or delayed by virtue of that period of service.

6. Veterans must be in continual attendance in training after July 25, 1951. Changes of course and/or place of training must be applied

for while the veteran is in actual attendance in a college or university. Failure to comply with either of the above may result in the forfeiture of remaining entitlement by the Veterans Administration.

Admission with Advanced Standing

1. Students from approved institutions of higher education 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 curriculum pursued at Arizona State College. Advanced standing credit for educational experience in the armed services will be granted in terms of the policies and practices recommended for all colleges and universities by the American Council on Education.

2. Failure to report previous college attendance at the time of registration is sufficient cause for cancellation of the student's enrollment, of any credits earned, or both.

3. Students who are disqualified in another college because of scholarship, conduct, or any other reason will not be admitted until such disqualification is removed.

4. Experienced teachers who become candidates for the bachelor's degree may be permitted to substitute academic credits for a part, or, in some cases, all of the required directed teaching, but no academic credit is allowed for teaching experience. A student who wishes to have directed teaching waived must file a petition and letters of recommendation from principals or superintendents with the Director of Teacher Training.

5. Junior-college students planning to transfer to Arizona State College at the end of their first or second year should plan their junior-college courses to meet the requirements of the curriculum selected. Loss of time often results from failure to do this.

The maximum credit that can be accepted from a junior college is sixty-four semester hours or ninety-six quarter hours. In general, required upper division professional courses cannot be taken in junior colleges for credit. Ordinarily, courses transferred from junior colleges cannot be accepted as upper division credit.

Admission to Summer Session

Excepting those who plan to complete the degree requirements in summer sessions only, students will be admitted to the summer session without presentation of transcripts.

Registration

Registration Dates. Students should register on the registration dates announced in the College calendar. New students cannot complete the required aptitude and health examinations and finish registration in one day. Students registering late will be charged a late registration fee. Residence halls will be open to students on the dates scheduled in the College calendar.

Prerequisites to Registration. Before registering in the regular sessions, all students seeking admission must file transcripts of high school or college work, or both, and take the aptitude and health examinations required under the heading, "Admission to College." In addition, students must meet special requirements given hereafter. Undergraduate students file applications for admission and transcripts in the Office of the Registrar and Director of Admissions. Graduate students file theirs in the office of the Director of Graduate Study.

Classification of Students. Freshmen are those students enrolled in a regular curriculum who have acquired less than 30 semester hours of credit; sophomores, those with 30 or more semester hours, but less than 62; juniors, those with 62 or more, but less than 94; seniors, those with 94 or more; graduate students, those holding a bachelor's degree from Arizona State College at Tempe, or any other recognized institution. Special students are those who are not enrolled in any curriculum leading to a degree but who desire instruction in subjects of special interest to themselves.

Curriculum Advisers. Before entering college a student should study the curriculums outlined in order to determine the curriculum best suited to his interests and needs. Before registering, each student must select, tentatively at least, a curriculum. Each student selects a curriculum adviser. This adviser discusses with the student his proposed curriculum, his choice of courses, and approves both. He advises him as needed throughout his stay in college.

Course Loads. Students carrying twelve or more semester hours of work are classified as full-time students for College classification purposes. *Students attending college under the benefits of Public Laws 346 or 16 must be registered for a minimum of 12 semester hours for G.I. benefit and subsistence purposes. Students attending under the Korean G.I. Bill of Rights must be registered for a minimum of 14 semester hours to be classified as a full-time student for G.I. benefit and subsistence purposes. Male students to qualify as full time college students for Selective Service classification purposes must be registered for and complete, each semester, one eighth of the number of semester hours required for a degree. Thus, male students subject to the draft must be registered for and complete sixteen semester hours each semester.* Students may not be registered at any other college or university when in regular attendance here unless approval has been granted by the Admissions and Standards Committee. Residence Center and Campus enrollment must not exceed the maximum load of $17\frac{1}{2}$ semester hours without an approved overload petition. Students who wish to carry more than $17\frac{1}{2}$ semester hours must petition the Admissions and Standards Committee. Freshmen and lower division transfer students attending Arizona State College for the first time will not be permitted to carry an overload. Students having a low scholarship record may be required to carry a light load. Students carrying a full-time school job will be asked to carry a light load unless their previous records in scholarship and on aptitude tests are high.

During the semester in which a student is registered for student teaching, the load should not exceed 16 semester hours.

Planning the Schedule. The schedule of classes covers both morning and afternoon hours, Monday, Tuesday, Wednesday, Thursday, and Friday, and morning hours only on Saturday. Full-time students are expected to devote both mornings and afternoons to their program of studies. They should not plan to take classes mornings only, or afternoons only, or less than five days per week.

Course Restrictions. Freshmen may not register for courses numbered "200-299" without the recommendation of their advisers and the approval of the heads of the departments concerned. Courses numbered "300" and above are open to graduate students only. Courses "400" and above are open only to students who have been admitted to the doctorate program in Education. Courses numbered "200g" may be taken by graduate students for graduate credit.

Freshman Registration. Freshmen, including transfers with 29 semester hours or less of credit, registering for the *first semester*, are expected to be present at all events scheduled for Freshman Week beginning at 8:30 A.M., Tuesday, on the date shown in the college calendar. Failure to attend any meeting may delay the student's registration. See the section on the preceding page headed "Curriculum Advisers."

Freshmen, including transfer students with 29 semester hours or less of credit, registering the *second semester*, will report to Bus. Adm. 203 at 8:30 A.M., Friday preceding the registration dates, and complete their aptitude and health examinations on Friday and Saturday. Those arriving late will be delayed in registering and will be charged late fees.

Registration of Sophomores, Juniors, and Seniors. Sophomores, juniors, and seniors registering in the regular session for the first time the *first semester* will obtain their registration materials beginning Monday morning. They will report for aptitude tests as scheduled on the registration week program. This will enable them to complete their aptitude and health examinations and complete registration before the end of registration week. Those failing to do so will be charged the late fees.

For the *second semester* sophomores, juniors and seniors registering in the regular session for the first time will report for the aptitude and health examinations as scheduled on the registration week program. Those coming later will be delayed in registration and will be charged the late registration fee.

Registration of Graduates. Aptitude tests are not required of graduate students, but the health examinations are; therefore, such students should allot themselves a full day to complete these examinations and registration.

Auditors. Persons wishing to audit courses will register in the regular manner and pay the regular fees. Audited courses carry no credit. Courses audited count toward the student's load. Students once

registered for "audit" are not permitted to change to "credit" (and vice versa) after the close of the drop-add period.

Comprehensive Examinations. An undergraduate student regularly enrolled during the academic year may, under certain conditions, take Comprehensive Examinations for degree credit in courses offered by the college and included in the current catalog. *This procedure is not open to summer session students.*

Students wishing to obtain credit by comprehensive examination will secure application forms from the Office of the Vice President. The charge for the comprehensive examination shall be five dollars (\$5.00) per semester hour credit. An examination may cover one course only.

Letter grades of A, B, C, D and E will be used in grading the examination. If the grade is A, B, or C, a grade of Cr. will be entered on the student's permanent record. If the grade on the examination is D or E, no entry will be made on his permanent record. Entries on the permanent record of credit by examination shall be so indicated. The student will not be given a second opportunity to establish credit by examination for the same course. The number of hours credit granted for the course shall be the number of hours specified in the current catalog.

Late Registration. Late registration fees are charged beginning the day class instruction begins. Ordinarily, students registering during the second week of a semester are required to take less than the normal load. Registration for a given semester is closed Saturday noon of the second week. A student may not register for credit after this date.

Incomplete Registration. Registration is not complete until all fees have been paid and all required examinations have been taken. Failure to satisfy any of the admission or registration requirements is sufficient cause for dropping a student from all classes.

Changes in Registration. Programs should be carefully planned under the guidance of the curriculum adviser so that changes in registration will not be necessary. After a student has completed his registration, changes may be made only through the Registrar's Office by means of a Drop-Add card. Changes may be made as late as Tuesday of the second week of the semester. After Tuesday of the second week of the semester, courses may not be added.

Dropping Courses after Tuesday of the Second Week. The courses for which a student is registered at the close of Tuesday of the second week of a semester constitute his official registration and semester load. A student may drop a course from his official registration any time prior to the beginning of the final examination period. To drop a course after Tuesday of the second week, the student will obtain from the office of the Registrar and Director of Admissions recommendation blanks for dropping; have these signed by instructors; return them to the Office of the Registrar and Director of Admissions and obtain an Authorization for Dropping Card; take it to the Business Office;

pay the 50 cent fee; take receipt and card to the Office of the Registrar and Director of Admissions. An official drop notice is sent to instructors from the Office of the Registrar and Director of Admissions after the drop card has been filed. The drop notice is attached by the instructor to the student's class card and a final semester grade of Wp or We will be reported by the instructor at the end of the semester.

Withdrawal from College. Students who find it necessary to withdraw from college should withdraw officially. Failure to do so may result in marks of E in all classes. Withdrawal procedures are as follows: (1) Obtain a withdrawal card from the Office of the Registrar and Director of Admissions. (2) Obtain the signatures of the Associate Dean of Students, Student Health Service (if withdrawing for health reasons), Women's Physical Education Department (women only), R.O.T.C. (men only if registered for R.O.T.C.), Librarian, Veterans' Accounts (Veterans only), and return card to the Office of Registrar and Director of Admissions, and then to the Cashier.

Unless the student withdraws officially, he is regarded as registered in all courses and runs the risk of receiving E grades in all subjects at the end of the semester. If a student is unable personally to withdraw officially as prescribed above because of illness or other reasons, he should notify the Registrar and Director of Admissions in writing without delay and request that he be officially dropped and that his instructors be notified.

Financial Assistance and Awards

Scholarships and Fellowships

Arizona State College at Tempe Scholarships. A number of scholarships are awarded annually to new students and students currently enrolled who satisfy the requirements established by the Board of Regents of the University and State Colleges. Three types of scholarships are available: (1) Those restricted to students graduating in the upper one fourth of their high school class and giving outstanding promise of high collegiate scholastic achievement; (2) Those selected as representatives of foreign nations who have previous satisfactory scholastic records and show promise of achievement in promoting good international relations; and (3) Those restricted to students graduating in the upper two thirds of their high school class and giving promise of satisfactory collegiate scholastic achievement and of outstanding success for skills or talent in the institution's program of approval activities, and of developing desirable qualities of character and leadership. These scholarships may provide for the remission of one or more of the following fees: regular registration and class fees, fees for private lessons, and out-of-state tuition fee. In addition, they may provide for room and board, or a cash award to aid in defraying the student's expenses. These scholarships may be renewed annually upon re-application by the student and approval of the Scholarship Committee.

A-1 Brewing Company Scholarships. Two scholarships of \$600.00 each are provided annually by the Arizona Brewing Company, Inc. of Phoenix, Arizona to students in the field of Business Administration. These scholarships are awarded on the basis of need, scholarship, and traits of American citizenship. Preference will be given to Arizona students.

Agriculture Scholarships. The Valley of the Sun Kiwanis Club, Phoenix, as one of its service projects, sponsors an agriculture scholarship fund from which a number of scholarships are provided annually to students at Arizona State College at Tempe who are registered under the four year agriculture curriculum. Contributors to the 1953-54 scholarship fund included the following individuals and business firms: Advance Seed Co., Allied Grain Co., Arizona Fertilizers, Inc., and the Valley of the Sun Kiwanis Club. These scholarships provide for a cash stipend of \$300.00, payable \$150.00 each semester. Recipients must be residents of Arizona and be full time students registered

under the four-year agriculture curriculum. In making the awards, the primary factors to be considered will include: scholarship, ability and promise, personality, character, leadership, and financial need.

Alpha Kappa Alpha Scholarship. Alpha Sigma Chapter of Alpha Kappa Alpha Sorority presents annually a scholarship of \$50.00 to an outstanding student of the Carver High School.

Elenore Altman Scholarship. One scholarship is given each year to an A. S. C. student majoring in piano. The scholarship defrays all fees for one year's study of piano.

Alumni Scholarships. At least two \$50.00 scholarships are awarded annually to seniors outstanding in ability and service to the college.

American Institute For Foreign Trade Scholarship. The American Institute For Foreign Trade awards annually a tuition free scholarship to a male graduate of the Arizona State College at Tempe. This scholarship is valued at \$850.000 and covers the total tuition for a full year at the American Institute For Foreign Trade. In making the award, the following qualifications will be given consideration: (a) quality of scholarship throughout the undergraduate years, (b) personality and character, (c) genuine interest in living and serving abroad, (d) professional background, (e) business experience, and (f) financial need. Preference is given to men who are from 25 to 32 years of age.

American Legion Scholarships. Ten scholarships are given to sons of deceased veterans of World War I and II. Selections are made from the United States at large. The awards are \$400.00 for the first year, and \$100.00 for three months of actual attendance thereafter.

Arizona Dairy Technology Society Scholarship. The Arizona Dairy Technology Society awards a \$225.00 scholarship to students enrolled in any Arizona College or University offering a field of study in Dairy Manufacturing. (The term Dairy Manufacturing, as used herein, shall be taken to embrace the field of training in Dairy Technology or Manufactures offered by any university or college. The awarding of scholarships is NOT limited to those schools of higher learning adhering to the specific nomenclature—"Dairy Manufacturing Course.") The award is made to a full time junior or senior student registered under an area of concentration in dairy manufacturing or dairy production, and is based upon interest in the field of dairy manufacturing, scholarship, leadership, character, and financial need. Preference will be given to residents of Arizona.

Miss Arizona Scholarships. The Arizona State Fair Commission each year makes available to each of the three top contestants in the Miss Arizona Contest a \$500.00 scholarship to be used at the Arizona State College at Tempe or Flagstaff or at the University of Arizona. To be eligible for the scholarship the contestant must be qualified to enter one of the State Colleges or the University, or must qualify for entrance within one year.

Arizona Cattle Growers Association Scholarship. A freshman scholarship of \$300.00 is awarded annually by the Arizona Cattle Growers Association to an outstanding boy or girl graduate of an Arizona high school. The primary qualifications for this scholarship include: scholarship, leadership, and character. Need will be given secondary consideration.

Arizona Congress of Parents and Teachers Scholarship. The Arizona Congress of Parents and Teachers awards annually a scholarship of \$100.00 to a student who will enter Arizona State College at Tempe. The applicants for the 1954-55 award must live in Gila, Graham, or Greenlee Counties, and must register in the School of Education under a teacher training curriculum. The primary considerations in awarding this scholarship include: promise of a successful teaching career, above average scholarship, and need.

Arizona Sales Executive Club Scholarship. A Scholarship of \$300.00 is provided annually by the Arizona Sales Executive Club of Phoenix, Arizona to a student in the field of Marketing (Sales). This scholarship is to be awarded on the basis of interest in selling, leadership, character, scholarship, and fitness to do sales research.

Associated Women Students Scholarship. This \$100.00 scholarship is awarded to a high-school senior girl, outstanding in scholarship, personality, and extra-curricular activities.

Blue Key Scholarships. The Arizona State College Chapter of Blue Key awards a number of scholarships to graduates of Arizona high schools. These scholarships provide for the payment of registration fees, R.O.T.C. uniform deposit, and books. The awards are made on the basis of scholarship, character, participation in extra-curricular activities and need. The scholarship may be renewed for the sophomore year.

Commercial Life Insurance Company Scholarship. The Commercial Life Insurance Company of Phoenix, Arizona, offers a scholarship of \$500.00 annually to a resident or transfer student of junior or senior standing at Arizona State College at Tempe. In making the award, need, leadership, character, and promise of future achievement will be given primary consideration. Normally, the student should be a resident of Arizona with a scholarship index equal to the college average.

Delta Sigma Theta Scholarship. Beta Theta Chapter of Delta Sigma Theta Sorority presents each year an award of \$50.00 to the girl student of Carver High School who ranks highest in scholarship.

Eastern Star Scholarship. The Grand Chapter of the Order of Eastern Star of Arizona awards annually a \$200.00 scholarship to a graduate of an Arizona high school. The scholarship is awarded to a junior or senior in college. The recipient must be a daughter or sister of an Eastern Star member, or must herself be a member of an Arizona Chapter of the order of Eastern Star. In selecting the recipient,

character, leadership and scholarship will be given primary consideration.

Foreign Student Scholarships. Eighteen scholarships are available to qualified students from foreign countries. Ability to read and speak the English language is required. Six of the eighteen may be awarded to graduate students. Scholarships cover the regular registration and class fees and out-of-state tuition.

Dixie Dees Gammage Speech Scholarship. A scholarship of \$100.00 given to an outstanding woman speech major by the Associated Women Students.

Dixie Gammage Memorial Scholarship. A scholarship to the Music Camp valued at \$60.00. The award is made by auditions at the College.

Arthur Emery Harvey Scholarship in Applied Music. A scholarship in applied piano is given yearly by Hazel Harvey Quaid to the freshman ranking highest in piano sight-reading, repertoire and general musicianship. Examinations are given during Freshman Week.

W. K. Kellogg Foundation Scholarship. Students in the last or clinical year (within one year of active service) of the medical technology course may be awarded scholarships after they have completed at least 10 weeks of the work of this year. The scholarships are valued at about \$75.00.

Los Conquistadores Scholarships. The club gives each year a scholarship of \$200.00 to a worthy Spanish-speaking high school graduate of Arizona. The scholarship is paid in \$50.00 amounts at the beginning of each semester for four semesters. The award is made on the basis of need, scholarship, character, and promise of future success.

Marshall Foundation Medical Scholarships. The Board of Directors of the Marshall Charitable Foundation has established a fund for a number of scholarships to be made available to graduates of the Arizona State College at Tempe for medical and dental education at any accredited medical or dental school of the student's choice. These funds are available only to graduates unable to otherwise finance such education. Students applying for these grants must be regularly enrolled in a medical or dental school. Recipients will be expected to return to the State of Arizona and practice their professions for a period of not less than two years or to repay such funds to the College.

Music Camp Scholarships. These scholarships are awarded annually by the Arizona State College at Tempe to gifted members of the Music Camp—one each in voice, piano, and instrument. These scholarships provide for the remission of private music lesson fees in an amount not to exceed \$40.00, per semester. Applicants are selected on the basis of auditions given at the College.

Phelps Dodge Scholarships. Four scholarships of \$1,000.00 each are given annually by the Phelps Dodge Corporation. One goes to an

Arizona high school graduate, and one each to a sophomore, junior and senior now in college. They are awarded on the following basis: (a) high scholarship, (b) high ability and promise, (c) personality, (d) character, (e) leadership.

Phoenix Real Estate Board Scholarship. The Phoenix Real Estate Board offers a scholarship of \$500.00 annually to a junior or a senior student majoring in Business Administration and interested in the field of real estate. In making the award, scholarship, leadership, character, and financial need will be given primary consideration.

Phoenix Symphony Orchestra Guild Scholarships. Several scholarships are provided annually by the Phoenix Symphony Orchestra Guild and the Arizona State College at Tempe, to full-time students registered under a four-year music curriculum. These scholarships provide for a cash stipend of \$200.00, payable in \$50.00 amounts at the beginning and middle of each semester, and carry the remission of all regular registration and class fees, and the out-of-state tuition fee. Aptitude and proficiency in music as shown by performance on a musical instrument, promise of further growth and development in musicianship, and good character will receive primary consideration in making the awards. Recipients shall audition for membership in the Phoenix Symphony Orchestra.

Phoenix Symphony Orchestra Guild Graduate Scholarships. One or more scholarships of \$500.00 are provided annually by the Phoenix Symphony Orchestra Guild to graduate assistants in music at the Arizona State College at Tempe. The scholarship is payable in \$125.00 amounts at the beginning and middle of each semester. Recipients shall audition for membership in the Phoenix Symphony Orchestra.

Mary H. Redewill Organ Scholarship. Mary H. Redewill awards annually a scholarship to a student in organ. This scholarship provides for the payment of fees for two and one-half hour lessons each week for two semesters. Any student who has had previous instruction in organ may audition for the scholarship. In making the award, scholarship, character, breadth of musical background — particularly in organ — performing ability, and interest will be given primary consideration.

Rhodes Scholarships. These are competitive scholarships. Three candidates are chosen from the State of Arizona to compete with candidates from five other states. From these 18 candidates, six Rhodes scholars are chosen for Oxford University. The stipend is \$400 per year and may be held for 3 years. Scholars must be citizens of the United States, unmarried and between 19 and 25 years of age.

Salt River Valley Branch of the Association For Childhood Education International Scholarship. The Salt River Valley Branch of the Association for Childhood Education International offers a scholarship of \$50.00 annually to a second semester junior or senior student enrolled under the Kindergarten-Primary or Elementary Curriculum.

In making this award, scholarship, character, leadership, and financial need will be given primary consideration.

Sunshine-Jack Tracy Agriculture Scholarship. This scholarship of \$750.00 is awarded annually to a worthy student enrolled under the four-year agriculture curriculum. In making the award financial need will be given primary consideration. Other factors will include: scholarship, ability and character.

Tempe Kiwanis Club Scholarship. A scholarship of \$100.00 is awarded annually by the Tempe Kiwanis Club to a handicapped Arizona student. Preference will be given to a local student and need will be given primary consideration. Other qualifications include: ability, scholarship, and character.

L. N. Treadaway and Associates Accounting Fellowship. L. N. Treadaway and Associates, Certified Public Accountants, offer a fellowship of \$400.00 annually to a junior or senior student majoring in Business Administration with an area of concentration in accounting. Applicants must be residents of Arizona. In making the award, scholarship, leadership, character, interest in the field of accounting, and those personality traits which we believe desirable in the field of accounting will be given primary consideration.

Harold F. Vinson-Delta Sigma Pi Scholarship. A scholarship in the amount of \$300.00 is made available annually by Harold F. Vinson, General Agent of the Northwestern Mutual Life Insurance Company, to a junior or senior student registered under the curriculum in Business Administration. Applicants must be residents of Arizona. In making the award, scholarship, leadership, character, and interest in the field of life insurance will be given primary consideration.

Write for Information. Apply or write to the Chairman of the Scholarship Committee for information concerning any of these scholarships.

Loan Funds and Foundations

The College is anxious to be of service in assisting worthy students. A number of organizations have loan funds for this purpose.

John W. Allen Loan Fund. This fund of \$1,750.00 was established by John W. Allen for the aid of worthy athletes. It is to be a revolving fund out of which loans are made at no interest.

Alumni Loan Fund. Loans are made to deserving students in small amounts for short terms for necessary college expenses.

Arizona Federation of Women's Clubs Loan Fund. Juniors and seniors may borrow \$100.00 or more from this fund at a low rate of interest.

J. Reuben Clark, Jr. Student Aid Fund. Loans are made to deserving students in small amounts for short terms for necessary college expenses.

D. A. R. Loan Fund. The Charles Trumbull Hayden chapter of the Daughters of the American Revolution has a fund available for the use of responsible and worthy students during their senior year.

DeMund Foundation. Grants for tuition or sustenance are made deserving and needy Arizona students, based upon character, intelligence, effort, aptitude and need. Recipients must be at least partially self-supporting.

Education Foundation of the I.O.O.F. Loan Fund. Loans from the Educational Foundation of the Independent Order of Odd Fellows are made to worthy young people attending accredited schools after graduation from accredited high schools. Loans are made to four year college students only after an acceptable college record has been established. Detailed information may be had by writing to Educational Foundation, I.O.O.F., 412 Volkmann Bldg., Kankakee, Illinois.

Dixon Fagerberg Revolving Fund. Loans are made to junior and senior women at 4% interest to be repaid within two years after graduation.

W. K. Kellogg Foundation Loan Fund. Loans are made in unlimited amounts to students in medical technology, either in their clinical or the pre-clinical years of their courses. The interest rate is not to exceed 2½%.

Freeda Marks Scholarship Loan Fund. A loan of \$250.00 will be given each year to a worthy Jewish student of junior, senior, or graduate standing who is a resident of Maricopa County to enable the student to continue his education. Applications for loans should be made to the Freeda Marks Scholarship Loan Fund Committee through the Business Office of the College.

Marshall Charitable Foundation Student Aid Fund. A grant of \$8,000.00 has been given to the Arizona State College at Tempe by the Marshall Foundation, Tucson, Arizona, the income of which is to be available for the aid of worthy and deserving students.

Methodist Loan Fund. Methodist students attending Arizona State College may borrow limited sums of money in their sophomore, junior, or senior year.

Phoenix-Panhellenic Loan Fund. Available to undergraduate women approved by the Panhellenic Scholarship Committee. The loan may not exceed \$150.00. No interest is charged.

President's Student Aid Fund. Loans are made to deserving students in small amounts for short terms for necessary college expenses.

Rotary Club Student Loan Fund. Open to junior and senior students who are residents of Maricopa County. Rate of interest, 4%. Loan must be approved by a Rotary Club Committee.

Harold V. Smith Educational Fund. Based on integrity, intelligence, character, competency, and aptitude. Loans are made to students

between the ages of 18 and 25 who are self-supporting in whole or in part. The maximum loan for the school year is \$300.00 at 4% interest.

Tempe Rotary Loan Fund. Loans are made to deserving students in small amounts for short terms for necessary college expenses.

Applications. Students who are in need of financial aid may make application to the Business Office for available loan funds.

Honors and Awards

Air Force Association Medal. A decoration is awarded by the Air Force Association to the outstanding junior cadet of the advanced Air Force ROTC.

Alpha Pi Epsilon Secretarial Award. An award given in the Business Administration Department to the outstanding student of the year in secretarial courses.

Alpha Psi Omega Awards. Two books are awarded each year by the national dramatics fraternity, Alpha Psi Omega—one for outstanding work in drama production, the other for distinction in action.

American Association of University Women Awards, Arizona State Division. A national and a state membership in A.A.U.W. is awarded to two outstanding graduating senior women.

American Association of University Women Award, Tempe Branch. An award to a freshman girl for outstanding scholarship during her first year in college.

American Institute of Architects Awards. Two awards totaling \$25.00 are made to the students achieving the highest standard in first and second year architectural design.

American Legion Medal. A medal is awarded by William A. Bloys Post Number 2, American Legion, to the two cadets of the second year basic course, Army and Air Force ROTC, displaying the highest academic proficiency and capacity for military leadership in their respective departments.

Architectural Design Awards. Awards totalling \$100.00 are offered annually by *Arizona Builder and Contractor* and *Arizona Homes* magazines for best commercial and residential designs.

Arizona National Guard Award. A trophy is awarded to the outstanding ROTC cadet who is a member of the Arizona National Guard.

Arizona Society of Certified Public Accountants' Award. Made to a senior graduating with the B.S. degree with an area of concentration in accounting. Based on scholarship and contributions to business.

Associated Men Students' Award. An award presented by the A.M.S. Council to a senior member of the Associated Men Students in recognition of outstanding service to the College.

Associated Women Students' Recognition Award. The A.W.S. Recognition Award is presented each year to a graduating senior woman who is considered the outstanding woman in her class. She is judged on the basis of leadership, personality, scholarship, and service to the College. Recommendations are received from administrators, faculty, and student organizations.

Association for Childhood Education Award. A silver trophy to a kindergarten-primary junior or senior girl outstanding in scholarship and service.

Association of the United States Army Medal. A medal is presented to the member of the second year advanced course, Army ROTC exhibiting the greatest technical proficiency and highest capacity for leadership.

Bandsman's Award. A decoration is presented by the Division of Special Services, Arizona State College, to the outstanding member of the combined Army-Air Force ROTC Band.

Beta Chi Award. An award is given to the graduating senior chosen for her good scholarship, her contribution to the Home Economics Club, to the Home Economics Department, and to the College, and her promise of future development.

Chemical Rubber Publishing Company Award. The Chemical Rubber Publishing Company annually awards a copy of their Handbook of Chemistry and Physics to the Freshman student in General Chemistry with the most outstanding performance during the first semester.

Chi Omega Social Science Award. The Chi Omega Social Science Award of twenty-five dollars is given to the outstanding woman student in the field of Social Studies. It is judged on scholarship and general ability in that field. The recipient is chosen by the head of the Social Studies Department and a committee of professors of Social Studies.

Art Clark Award. For distinguished art work in connection with the student publications (Sahuaro or the State Press).

Commandants' Award. A decoration is presented by the Departments of Military and Air Science and Tactics to the member of the Army or Air Force Rifle Team compiling the highest average score during competitive firing.

Consolidated Vultee Aircraft Corporation Award. A model aircraft is awarded by the Consolidated Vultee Aircraft Corporation to the outstanding junior advanced Air Force ROTC cadet electing to pursue flight training upon graduation.

Judge Thomas J. Croaff Award. An award of \$50.00 is given annually by Mrs. Carolyn B. Croaff in memory of her husband, Judge Thomas J. Croaff, to an undergraduate student for a research paper in the fields of education, sociology, or psychology judged outstanding by the committee.

Delta Sigma Pi Scholarship Key. To encourage high scholarship, Delta Sigma Pi presents annually the Delta Sigma Pi Scholarship Key to the graduating senior who ranks highest in scholarship for the entire course in Business Administration.

Freshman Art Award. An award given to a freshman majoring in art. Selection determined on basis of scholarship, as well as art accomplishments and promise as an artist.

Future Teachers of America Award. An award given by the Arizona State College Chapter of Future Teachers of America to the graduating senior who shows most promise of leadership in the teaching profession.

Bob Gehres Award. An award given each year by Blue Key to the most valuable baseball player in honor of Bob Gehres, an outstanding A.S.C. pitcher, who died in 1950.

Governor's Medal. A decoration is presented by the Governor of the State of Arizona to the respective cadet commanders of the Army and Air Force Corps of Cadets.

Graduating Honors. The honor, "With Distinction," is given to those whose index of scholarship, for all work taken at the College, is from 3.00 to 3.49 points. "With High Distinction" is given those whose index is from 3.50 to 4.00.

Harvard Club Award. A book or set of books given each year by the Arizona Harvard Club for excellence in some field of study designated by the donor.

Hillel Honor Awards. The Hillel Honor Awards are given to students of the Jewish faith, who by their devotion to service, and consecration to duty have made Hillel a worthwhile student organization.

Home Economics Award. An award is given to the sophomore Home Economics major having the highest cumulative scholastic record during her first two years of college.

Interfraternity Council Scholarship Award. Each semester the Interfraternity Council awards a scholarship trophy to the fraternity with the highest scholarship. In addition, a "traveling trophy" moves to the highest fraternity, and at the end of ten semesters becomes the property of that fraternity earning it the greatest number of times.

The Fred M. Jahn Award. An award of fifteen dollars presented annually to a student doing outstanding work in journalism.

Kappa Delta Pi Award. An award of twenty-five dollars by Kappa Delta Pi is made to the student having the highest cumulative index for all courses taken in the freshman and sophomore years at Tempe. The minimum number of hours is sixty.

Kappa Delta Pi Pin. This award goes to a graduating senior who attains the highest cumulative index for the junior and senior years under the conditions prescribed for Kappa Delta Pi award.

Kappa Kappa Psi Award. Beta Omicron Chapter of Kappa Kappa Psi presents an award to the most outstanding senior of the College Band.

Robert E. Krause Award. An award of twenty-five dollars is given to the student ranking highest in a comprehensive examination in the Biological and Chemical Sciences. The examination is held annually on the last Saturday of April.

La Liga Panamericana Award. An award given to a sophomore for outstanding work in Spanish.

McGrew Printery Journalism Award. An award of ten dollars to a student doing outstanding work in journalism.

Mask and Sandal Award. A book is awarded each year by Mask and Sandal for all-around service to the Drama Workshop.

Moeur Award. This award of \$50.00 is given by Sidney B. and Annie Laurie Lassator Moeur, both graduates of the class of 1914, to the graduate of any four-year curriculum who attains the highest standing in academic work during the four years immediately preceding graduation.

Ralph H. Morris Instrumental Music Award. An award of \$100.00 is given by Mary Scott Morris, in memory of her father Ralph H. Morris, to a junior student of exceptional talent in instrumental music.

Mu Rho Alpha Award. An award given by the honorary fraternity, Mu Rho Alpha, to a senior music major outstanding in musicianship and artistic performance.

Panhellenic Scholarship Cup. A Panhellenic Scholarship Cup is awarded each year by the Phoenix Panhellenic Association to that sorority which has the highest scholastic average. Any sorority receiving the award for three consecutive years retains the cup permanently.

Pasteur Scientific Award. An award of the Handbook in Chemistry is given to a freshman outstanding for achievement in general scholarship and in freshman chemistry.

P.E.O. Award. Chapter X, Tempe, of P.E.O. awards \$25.00 to a woman student of high ideals and outstanding service. Selection is based on integrity, intelligence, and aptitude.

Phi Eta Sigma Award. This award is given to the male student who attains the highest cumulative index for all courses taken in the freshman and sophomore years at Tempe.

Pi Kappa Delta Awards. Awards are made annually by this national honorary forensic fraternity to students who achieve forensic proficiency.

Pi Omega Pi Award. Alpha Iota Chapter of Pi Omega Pi presents an award to the graduating senior selected as the most outstanding prospective commercial teacher.

Pleiades Freshman Award is presented at the close of each year to the most outstanding woman in the freshman class.

The Pleiades Plaque. Awarded by Pleiades to the women's hall having the highest collective undergraduate scholarship index. The group winning it three times in succession retains the plaque.

President's Award. A decoration is presented by the President of the College to the two outstanding cadets of the second year advanced course of their respective Cadet Corps.

Psi Chi Award. An award is annually presented to a member of Psi Chi with outstanding scholastic achievement and service.

Charles William Rawlins Memorial Award. Tau Kappa Epsilon Fraternity presents a trophy to the outstanding intramural man within fraternities. This is in tribute to the late Bill Rawlins, a fine fraternity man and a fine athlete.

Religious Activities Awards. Two awards of \$5.00 each are presented each year by the Student Religious Council to the man student and the woman student giving outstanding service in religious activities for the year. These awards are determined on the basis of (1) service to local college group and general church program, (2) service to total campus religious program, (3) personal religious living, and (4) other evidences of leadership.

Republic Aviation Award. A model F-84 Thunderjet is awarded by the Republic Aviation Corporation to the outstanding senior advanced Air Force ROTC cadet electing to pursue flight training upon graduation.

Reserve Officers' Association Scholarship and Medal. A scholarship of twenty-five dollars and a medal are presented by the Phoenix Chapter, Reserve Officers' Association of Arizona to the outstanding member of the first-year advanced course, Army R.O.T.C.

Reserve Officers' Training Corps Medal. A decoration is presented by the Dean of Students to the two cadets making the greatest personal contribution to the activities of their respective Cadet Corps.

Will H. Robinson Award. An award of twenty-five dollars, in honor of Will H. Robinson, is given annually to a freshman. The award is based on high scholarship for the first semester considering the number of hours the student gives to self-support.

Rosenzweig Trophy. This trophy is given annually by I. Rosenzweig & Sons to an outstanding letterman having the highest total point rating on athletic ability, general aptitude index, and scholarship index.

Tau Beta Sigma Award. Sigma Chapter of Tau Beta Sigma presents an award to the most outstanding freshman of the College Band.

Tempe Daily News Journalism Award. An award of ten dollars to a student doing outstanding work in journalism.

Theta Chi Epsilon Award. This award is given annually to a senior student for excellence in scholarship and art achievement.

Veterans of Foreign Wars Medal. A medal is presented by Bob Finch Post Number 3632 (Veterans of Foreign Wars) to the two cadets of the first year basic course, Army and Air Force ROTC, exhibiting the highest academic proficiency and potentiality for military leadership in their respective departments.

Vice President's Award. A decoration is presented by the Vice President of the College to the two cadet commanders, Army and Air Force, winning the annual company—squadron drill competition with in their respective departments.

West Hall Award. An award to a resident of West Hall for outstanding achievement in scholarship, and service to the hall and to the College for four years.

Women's Physical Education Award. An award given by the women's division of the Physical Education Department to a senior major for achievement in physical education.

College Regulations

Conduct of Students

It is the policy of the College to give students the largest degree of liberty consistent with good work and orderly conduct. The authority of the College is exercised over all students individually and over all student groups or organizations bearing the name of the College, representing or purporting to represent the College in any student enterprises, to the extent necessary to safeguard the good name and well-being of the College. Any proposed enterprises by such students or organizations must receive the official sanction of the College before announcements are made of such enterprises. Both within and without the College, students are expected to show such respect for good order, morality, personal honor, and the rights of others as good citizenship demands.

The possession, serving or use of intoxicants of any kind whatsoever is prohibited on the campus. At all social functions held under the auspices of college-sponsored organizations or groups, or at any other event in which college students participate, intoxicants are prohibited whenever and wherever their possession, serving or use reflect on the good name and reputation of the College.

Failure in these matters or neglect of academic duties will be considered sufficient cause for removal from the College.

The College assumes that the act of registering as a student implies full acceptance of these standards of conduct.

Attendance

The college has no uniform system of cuts. The loss incurred by a student for absences depends upon the nature and the amount of work missed, of which the instructor is the sole judge. The instructor will recommend that a student be dropped from class whenever, in his opinion, the student's continuation in the course seems unprofitable to the student or detrimental to the class, and will send a memorandum to the Registrar and Director of Admissions who will initiate the "Authorization for Dropping Course" form. All *veteran students* are to be reported to the Office of the Registrar and Director of Admissions when absent for three or more consecutive class periods or when the instructor considers the total number of absences excessive, whether consecutive or not.

No excuses for absence from class are granted either by the administration or by instructors. This applies to any absence occasioned by a student leaving early for, or returning late from, a scheduled vacation period as announced in the College calendar. The student alone assumes full responsibility for all absences. Instructors will permit students to make up tests and other work missed when the absence was due to causes beyond the control of the student or on account of activities assigned by the College. The instructor is the judge of the validity of reasons given by the students for absence. Students absent from classes because of a confining illness in the infirmary, may request a statement from the Director of the Student Health Service which will give the dates the student was confined as a patient. Students absent from classes because of a confining illness at home, may request a similar statement from the Dean of Students or Associate Dean of Students.

Fees, Deposits, and Expenses

Changes in Fees. The Board of Regents reserves the right to change fees and charges from time to time without notice when necessary.

Extending Credit. The College cannot extend credit, therefore, students must have on hand when registering sufficient funds to pay for registration, incidental fees, books, and board and room for one month.

Definitions. *Regular fees* are those paid by all students. *Special fees* are those paid by certain students only, and under the conditions indicated. *Deposits* are made to cover certain contingencies. All or part of the deposit may be returned depending upon the charges incurred by the student.

Regular Fees

The following are the regular fees paid each semester both by regular students, and by auditors registered for record purposes:

Registration Fee	\$15.00
Paid by all excepting extension and correspondence students.	
Student Activity Fee	\$10.00
Excepting extension and correspondence students, this fee is paid by all who carry more than 5 semester hours. Only those students paying this fee receive activity tickets.	
College Series Fee	\$1.25
Paid by all excepting extension and correspondence students and those students carrying 5 semester hours or less.	
Health Fee	\$4.00
Paid by all excepting extension and correspondence students and those carrying 5 semester hours or less.	
Gymnasium Fee	\$2.00
Paid by all freshman and sophomore students carrying more than five semester hours.	
Student Union Fee	\$5.00
Excepting extension and correspondence students, this fee is paid by all who carry more than 5 semester hours.	
Library Fee	\$2.00
Paid by all excepting correspondence and extension students.	

Special Fees

Special fees are paid by certain students under the conditions given below:

Non-resident Tuition Fee (per semester)	\$125.00
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All students classified as non-residents, who register for 12 or more semester hours, pay the non-resident tuition fee, except graduate students who have been awarded graduate fellowships or teaching assistantships.

Students classified as non-residents who register for less than 12 semester hours are required to pay a non-resident tuition fee of \$10.00 per semester hour.

A student to be considered a legal resident of Arizona for the purpose of registering at the Arizona State College at Tempe must present evidence as follows:

(1) If under 21 years of age—that the supporting parent (or guardian having legal custody) has been a legal resident of the state of Arizona for at least 1 year next preceding registration.

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 1 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.

(2) If over 21 years of age—that legal residence in the state has been established for at least 1 year next preceding registration, and that he is eligible to become a registered voter. (Sec. 3 of Art. 7, Constitution of Arizona provides, "For the purpose of voting, no person shall be deemed to have gained or lost a residence . . . while a student at any institution of learning . . . Sec. 6, Art. 7 provides, "No soldier, sailor or marine . . . shall be deemed a resident of this State in consequence of his being stationed at any military or naval place within this State.")

(3) If an alien who has taken out first naturalization papers—that residence has been maintained in the state for at least 1 year previous to registration.

The student must have the question of his legal residence passed upon previous to registration and payment of fees. The responsibility of registration under proper residence is placed upon the student. If there is any possible question as to the legal residence, the student is responsible for obtaining a blank from the Registrar's Office; filling it out completely; taking it to a notary public in the Business Office, and making a sworn statement concerning the facts given, and returning the blank to the Registrar's Office. Any student found to have made a false or misleading statement as to his residence shall be subject to dismissal from the College.

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.

Non-resident graduate students also pay the tuition fee.

Private Lessons — Music Majors	\$40.00
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In addition to the usual college registration fees, music majors will pay a flat rate of \$40.00, per semester, which covers all private instruction required in the major teaching fields and in areas of concentration. All non-majors will pay the fees for private instruction listed below.

For two half-hour lessons per week in piano, voice, violin, violoncello, band and orchestral instruments, the fee is \$40.00 per semester. For one half-hour lesson per week the fee is \$27.00 per semester.

Class Lessons—Music.....\$9.00 or \$12.50

With seven in a piano class, the fee for two one-hour lessons a week is \$12.50 per semester. For two class lessons of one hour each in voice, the fee is \$9.00 per semester. (Class limit is ten.)

Rentals—Musical Instruments

The rental for school-owned solo instruments is \$2.50 a semester. Students using college-owned instruments are held financially responsible for damage done them from the time received until returned and inspected at the close of the semester.

Rental on the Hammond organ is \$5.00 per semester, for one hour daily practice; Rental on practice pianos is \$5.00 per semester, for one hour daily practice; \$7.50 per semester, for two hours daily practice.

Registration and Other Fees

Students carrying six or more semester hours of work pay the registration and all other regular fees. Those carrying five hours or less pay only the registration and library fees in addition to the special fees.

Refunds

In case an applied music course is dropped because of actual illness or other emergency beyond the control of the student, not more than half of the semester fee paid may be refunded.

Apartment Reservation Deposit\$10.00

The student's or prospective student's name will be placed upon the waiting list for student apartments upon receipt of a \$10.00 deposit and proper application.

Transcript Fee

There is no charge for the first transcript. For each additional transcript there is a fee of \$1.00. Requests for transcripts should be in the hands of the Registrar and Director of Admissions one week in advance of the time needed.

Senior Check-Out

Each senior is entitled to one official check-out, at the time application for graduation is filed, without charge, under the curriculum designated in his application for graduation. A fee of \$1.00 will be charged for any additional check-outs.

Absentia Fee\$7.50

Students who are granted permission to receive the bachelor's or master's degree in absentia pay this fee.

Auditor's Fees

Those taking courses for record purposes register and pay the regular fees.

Laboratory FeesSee course descriptions

With few exceptions such fees are not returnable.

Master's Degree Qualifying Examination Fee.....\$3.50

Master's Thesis Binding Fee\$5.00

Doctoral Dissertation Binding Fee\$10.00

Doctoral Dissertation Fee.....\$50.00

This fee is paid by doctoral candidates who have been admitted to candidacy for the Doctor of Education degree.

Doctoral Dissertation Micro-Film Fee\$10.00

Doctoral Qualifying Examination Fee.....\$7.50

Special Examination Fee\$1.00

When, because of absence, or for any reason, it becomes necessary for a student to request a special examination in any course, a fee of \$1.00 may be required for this special privilege.

Comprehensive Examination Fee.....\$5.00 per semester hour

Paid by all students seeking to establish credit by examination.

Test Fees—Vocational\$0.50

A nominal fee is charged to pay the cost of test materials only.

¹The attention of students who have not attained the age of 22 years and whose parents do not live in the state of Arizona is directed to the fact that presence in the state of Arizona for a period of more than 1 year immediately preceding the opening day of the semester during which it is proposed to attend the Arizona State College at Tempe does not, of itself, entitle the student to classification as a resident.

Application for Graduation Fee\$10.00

See description under another section of the bulletin headed Graduation Requirements and Degrees.

Cap and Gown Rental Fee	\$2.75 to \$7.50
<small>Bachelor's cap and gown for baccalaureate and commencement exercises, \$2.75. Master's cap, gown, and hood, \$6.90. Doctor's cap, gown, and hood, \$7.50. These are approximate amounts and subject to change.</small>	
Fee for Dropping Course	\$0.50
<small>Charged beginning Wednesday of the second week.</small>	

Late Fees

Late Registration	\$5.00
<small>All students registering on the date specified for the beginning of classes, or thereafter, pay this fee.</small>	
Late Aptitude Tests	\$2.00
<small>Paid by students taking the aptitude tests on the date specified for the beginning of classes or thereafter.</small>	
Late Physical Examination	\$1.00 to \$3.00
<small>Charged beginning at noon of the last day scheduled for registration.</small>	
Late X-ray	Actual Cost
<small>Charged all students who fail to take the X-ray on the date specified by the College.</small>	

Deposits

Deposits are required of those students wishing certain privileges or services. The deposits are returnable less any charges which may have been incurred during the term of the service being rendered.

Science Breakage Deposits

In the following courses students are required to purchase a \$2.50 deposit card. When their breakage exceeds this amount, they will be required to purchase additional deposit cards.
Chem. 110, 111, 112, 114, 131, 141, 142, 150, 180, 211, 212, 215, 231, 251, 252, 271g, 273g, 281g.

Women's Gymnasium Deposit (per semester).....	\$5.00
<small>This deposit will be refunded if the gymnasium suit, towels, leotard, and lock are returned in good condition.</small>	
Military Uniform Deposit (returnable).....	\$25.00

General Expenses

Board

A centrally located dining hall is operated on a self-sustaining basis for convenience of students and college staff. Meal tickets are available for meals on a 7-day-a-week plan or a 5-day-a-week plan. Rates for meal tickets on the 7-day plan are approximately \$45.00 per month or \$202.50 for the semester. The rate for a meal ticket, covering meals for 5 days of the week, is approximately \$38.00 per month or \$171.00 for the semester. No credit will be extended for meal tickets. No refunds will be made for meals missed, unless the absence is 7 days or more. Meals may be obtained for cash, at time meals are served, at nominal rates.

Room

Rooms in college dormitories are obtained by making request for a room reservation to the Housing Office. A deposit of \$5.00 is required with the application and is refunded upon withdrawal from college, less any damage or other charges assessed.

If a room is reserved and not occupied, no refund of deposit will be made unless the Housing Office is notified prior to September first.

Rates in all dormitories are approximately \$18.00 per month or \$81.00 for the semester, payable in advance. The college prefers rent in dormitories to be paid on a semester basis. However, monthly payments in advance are permissible.

Sheets, pillow cases, and weekly laundry service are provided all dormitory residents.

Meals for Guests.....	regular rates per single meal
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Textbooks	\$20.00 up
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The outlay for books and stationery will probably vary from \$20.00 to \$30.00 per semester. All books can be obtained at the College Bookstore.

General Summary. The following summary includes the fees and minimum expenses incurred by a student, exclusive of board and room, for one college year:

Registration Fee	\$ 30.00
Activities, Health, etc.	46.00
Tuition (free to Arizona Students)	0.00
Books and Stationery (approximately)	40.00
Laboratory Fees (approximately)	20.00
	<u>\$136.00</u>

Payment and Refund of Fees

Payment of Fees

The payment of fees cannot be deferred. By regulation of the Board of Regents based on a ruling of the Attorney General, registration and other college fees are payable on the day of registration.

Method of Payment

Checks, drafts, and post office or express money orders should be made payable to the Arizona State College.

Refunds

Activities and Other Fees Including Laboratory

Students withdrawing not later than Saturday of the first week receive a refund of eighty per cent of all fees paid; sixty per cent at the close of the second week; forty per cent at the close of the third week; twenty per cent at the close of the fourth week; thereafter, no refund is made.

Forfeiture of Refunds

All refunds and deposits due students for any reason whatsoever will be forfeited unless called for on or before June 30 of the College year in which they are due. Should June 30 fall on Sunday or on a day when the Business Office is closed, the refund will be made on the next business day.

Marking System

Undergraduate Scholarship Ratings. Scholarship grades on the student's report card and on his permanent record card are indicated by the letters and explanations given below:

A, Highest.	Cr, Credit, without definition.
B, Above average.	E, Failure.
C, Average.	Wp., Withdrew, work passing.
D, Lowest passing.	We., Withdrew, work failing.
	Audit, Audit

Inc, Incomplete, given and removed as specified below.

Incomplete. A mark of Inc. is given only when a course is unfinished because of illness or other conditions beyond the control of the student. An incomplete may not be given to any student who has taken the final examination for the particular course. Negligence or indifference are never accepted as reasons for giving an Inc. Incompletes must be removed in a manner prescribed by the instructor, not later than the middle of the following semester. If the Inc. is not removed, the instructor will report a mark of Wp. The Department Head will report the mark of Wp if the instructor in his department who reported the incomplete is no longer in the employ of the College. Incompletes received in summer session courses must be removed in a manner prescribed by the instructor not later than December 31 next following.

Marks of E. Students receiving marks of E must repeat the course in the regular class if they desire credit. Both the E and the new mark remain as a part of the student's permanent record.

Mark of Wp. The mark of Wp is given whenever a course is dropped, and the instructor rates the student's work as passing.

Mark of We. The mark, We, is given if the instructor rates the student's work as failing at the time of withdrawal.

Repetition of Course. Students may repeat a course in which a low grade has been received. In such cases students must secure an Approval Form from the Registrar and Director of Admissions and have it signed by the instructor and curriculum adviser. These forms must be submitted with other registration materials when completing registration.

When a course is repeated, the original grade remains on the student's record and is included in his cumulative scholarship index. Semester hours of credit are counted only once for the course but the honor points are included on the scholarship index both times the course is taken.

Dropping Course at Instructor's Request. A faculty member will drop a student from his class with a mark of Wp or We whenever, because of absence or other reason, he thinks the work of the student is such as to justify it.

Change of Grade. A grade once reported to the Registrar's Office may be changed only if the faculty member issuing the grade certifies in writing an appropriate reason for the change on an Authorization for Change of Grade Form.

Grade Points. For the purpose of computing the scholarship index, grade points are assigned to each of the grades as follows: A, 4 points for each semester hour; B, 3 points; C, 2 points; D, 1 point; E, 0 point; and We, 0 point.

Scholarship Index. The scholarship index is obtained by dividing the total number of grade points earned by the number of semester hours in the student's course load. Courses in which marks of Wp, Inc., Cr., and Audit are given are not included in determining the number of semester hours in the course load, but courses in which the mark, We, is given are included.

Disqualification. All students who, at the close of any semester or term, fail to receive passing marks in fifty per cent of the semester hours for which they are officially registered or who fail to receive a semester scholarship index of 1.00 are disqualified. Students disqualified at the close of the first semester are not eligible for the second semester. Students disqualified at the close of the second semester are not eligible to attend summer session or the first semester of the following college year.

Probation. Where circumstances are deemed sufficient, a student may be reinstated by a vote of the Admissions and Standards Committee.

Any disqualified student has a right to be heard by this committee after making written application to the Registrar and Director of Admissions, who is chairman of the Admissions and Standards Committee. Any students who have been reinstated by the Admissions and Standards Committee are on probation for the semester following reinstatement.

Reports to Students. Each student receives a Deficient Scholarship Report at the mid semester for courses in which his marks are D or E. At the close of each semester, he receives a report showing his standing in each course taken. These Semester Grade Reports are handed to the student by his adviser during a conference held with the student. Only the final semester grades are entered on the student's permanent record card.

Reports to Parents. A duplicate of the report cards of all unmarried students under twenty one showing their standing in each class is mailed to the parent at the close of each semester. Report cards of other students are mailed to their home address unless the Office of the Registrar and Director of Admissions is notified prior to final examination week.

Air Science and Tactics

General. The Arizona State College at Tempe offers courses in basic and advanced Air Force military training. The basic course is designated to develop an understanding of the Air Force, its organization, problems, and techniques. The purpose of the Advanced Course is to train selected prospective graduates in a balanced course of officer training, both theoretical and practical, which will qualify them to perform the duties of a commissioned officer of the United States Air Force. Students who successfully complete the advanced course receive a commission as Second Lieutenant in the Air Force Reserve.

Requirements for Admission. All able-bodied male students under 23 years of age entering the college as freshmen or sophomores and carrying more than 5 semester hours of work are required to complete two years of basic ROTC training. The two years of basic ROTC training is a prerequisite for graduation unless the student is properly exempted. The advanced course is available as an elective to men who have completed the basic course, or who have had adequate service in the Air Force, Army, Navy, Marines or Coast Guard. The Advanced Course, when elected by the student, becomes a prerequisite for graduation unless, for good reason, the requirement is waived by competent authority. Students electing the Advanced Course must not have reached their 25th birthday and must be physically fit for military duty.

Exemptions. Exemptions from AFROTC training will be granted to only the following: (a) aliens; (b) those certified as physically unfit by the college physician; (c) those presenting evidence of at least one year of military service; (d) those transferring sufficient credit for military training from an accredited institution; (e) those

disqualified by age; (For enrollment in the basic course the student must not have reached his 23rd birthday at time of enrollment.) (f) those students who transfer with Junior or Senior standing from institutions not offering or requiring ROTC Training; (g) those offering other reasons acceptable to the Admissions and Standards Committee. Students requesting exemption will present the evidence to the Registrar on which they claim exemption at the time of registration.

Attendance and Credits. Basic students spend 2 hours in class and 2 hours in drill each week, and receive 1.5 semester hours of credit. Advanced students spend 4 hours in class and 2 hours in drill each week, and receive 3 semester hours of credit. Regular attendance in class and drill is required. Advanced students are required to attend one summer camp for approximately 4 weeks, normally at the end of the first year of the advanced course. The military training requirement does not excuse students from any of the physical education requirements.

Pay and Deferments. Advanced students receive pay for subsistence at the rate of \$.90 per day while attending the two year course. The total pay for subsistence will not exceed 595 days. In addition to the subsistence allowance, the student will receive pay at the rate of \$78.00 per month during attendance at the summer encampment. Travel pay, uniforms, housing and dining facilities are provided at camp without cost to the student. Draft deferments for Freshmen, Sophomores, Juniors and Seniors are available to those qualified students who desire to take or who are taking the advanced course.

Uniforms and Texts. Each student registering for ROTC will make a deposit of \$25.00 in the Business Office. He will present the receipt to the Military Property Custodian as the basis for issue of prescribed uniforms, text books, and other materials. The full deposit, less any deductions to defray cost of any items lost or damaged through neglect, is refunded at the end of each semester.

Military Science and Tactics

General. Arizona State College offers basic and advanced courses in General Military Science in the senior division of the Army Reserve Officers' Training Corps. The purpose of these courses is to train college students for positions of leadership in the Army in time of national emergency, and to strengthen their educational foundation for intelligent citizenship. Instruction is given, in both basic and advanced courses, in subjects common to all branches of the Army. The successful completion of the two-year advanced course program satisfies military education requirements for commission as a second lieutenant in the Army Reserve. Students designated as Distinguished Military Graduates are eligible for commission in the Regular Army.

Requirements for Admission. All physically fit male students, who are citizens of the United States, and under 23 years of age, entering

the college as freshmen or sophomores and carrying more than five semester hours of work, are required to complete successfully the two years of basic ROTC training. This requirement is a prerequisite for graduation unless the student is properly exempt. Students without previous active service in the armed forces will not be admitted initially to the basic course after reaching their twenty third birthday. Veterans who have completed one year or more of continuous active service must not have reached age 25 at time of initial enrollment in the basic course. No student will be accepted for initial enrollment in the advanced course if he has reached age 27.

Students having completed three years of junior ROTC training and veterans having completed not less than six months, nor more than twelve months, of active service, may be exempt from the first year of the basic course, provided such previous training or service was completed within five years of date of initial enrollment in the ROTC at this college.

Students having completed the Army ROTC basic course and veterans having completed one year or more of continuous active service in the armed forces may, with the consent of the head of the department, enroll in the advanced course, provided such previous training or service was completed within five years of date of application for enrollment in the advanced course.

Exemptions. Exemptions from the ROTC requirement will be granted only to: (a) aliens; (b) those certified as physically unfit by the college physician; (c) those disqualified by age; (d) those presenting evidence of at least one year of continuous active service in the armed forces; (e) those transferring sufficient credit for ROTC training from an accredited institution; (f) those entering the college with junior or senior standing; (g) those offering other reasons acceptable to the Admissions and Standards Committee.

Students requesting exemption must present the evidence upon which request is based at the time of registration.

Attendance and Credits. Basic course students spend 2 hours in class and 2 hours at drill each week and receive 1.5 semester hour of credit. Advanced course students spend 4 hours in class and 2 hours at drill each week and receive 3 semester hours of credit. Regular attendance in class and drill is required. Unexcused absences are reflected in semester grades.

Advanced course students are required to attend one summer camp for approximately six weeks, normally at the end of the first year of the advanced course.

The ROTC requirement does not satisfy any of the physical education requirements.

Pay and Deferral. Advanced course students receive a subsistence allowance of approximately \$27.00 per month except for the period of summer camp; travel pay to and from summer camp; and pay of approximately \$78.00 per month and subsistence while at camp. For each unauthorized absence of an advanced course student from an

hour of ROTC instruction, an amount equivalent to 2 days commutation of subsistence will be deducted from his next payment of commutation.

Deferment from induction is granted on a competitive basis to those basic course students who apply for and are conditionally selected for advanced course training. Advanced course students receive deferment from induction and from call to active duty with Reserve Corps and National Guard Units.

Uniform and Tests. Each student registering for ROTC training is required to make a deposit of \$25.00 in the Business Office. He will present the receipt to the Military Property Custodian as the basis for issue of prescribed uniforms, text books and other materials. The full deposit, less deductions to defray cost of any items lost or damaged through neglect, is refunded at the end of each semester.

Graduation Requirements

The College grants the following five degrees: Bachelor of Arts in Education, Master of Arts in Education, Doctor of Education, Bachelor of Arts, and Bachelor of Science. The degree of Bachelor of Arts in Education is granted to students who complete satisfactorily the requirements of any one of the teacher-education curriculums offered by the College. The degree of Master of Arts in Education is granted to those who complete satisfactorily a thirty semester hour Master's Degree Program in one of the graduate fields of specialization. The degree of Doctor of Education is granted to graduate students who complete satisfactorily an approved program of graduate courses and an acceptable dissertation. (See Graduate Bulletin.) The Bachelor of Arts degree, and the Bachelor of Science degree are granted to those who complete satisfactorily one of the Arts and Sciences curriculums. To obtain a second bachelor's degree, the student must do an additional 30 hours of work or more and meet all of the requirements of the particular degree.

Requirements for the Bachelors' Degrees

The Unit of Credit. The semester-hour is the unit of credit. It represents one fifty-minute class exercise per week per semester with two hours of outside preparation or the equivalent in laboratory work.

Credit Requirements. A minimum total of 126 semester hours is required for graduation with a bachelor's degree.

Curriculum and Course Requirements. Alternate courses may not be substituted for required generalization courses under a particular curriculum, nor may any such courses be waived without approval of the Admissions and Standards Committee. Alternate courses may not be substituted for required courses, in the major, minor or area of concentration under a particular curriculum, nor may any such courses be waived without the approval of the curriculum adviser in the department in which such major, minor or area of concentration is offered.

Meeting New Requirements. Students who continue their college work without interruption may graduate under the curriculum requirements and regulations as stated in the catalog for the year the student first registered.

When enrollment is not continuous, the student will be required to meet the curriculum requirements and regulations for graduation as stated in the catalog for the year the student registers for final continuous residence prior to graduation. Any exceptions must be recommended by the student's adviser and approved by the Admissions and Standards Committee.

First Year English. Students who fail to pass the First Year English placement examination given during Freshman Week will be required to register for and to complete satisfactorily a course in sub-collegiate, English (English X), 3 hours per week, without credit before they may be admitted to English 101.

Military and Air Science. All male students entering the college as freshmen or sophomores, unless properly exempted, are required to complete two years of basic military or air science. Male students who elect advanced military or air science, unless properly exempted, shall complete that course as a prerequisite for graduation.

Physical Education. All students who are under 25 years of age at the date of entrance and who are classified as freshman or sophomores, are required to complete, during their first two years in residence, two semester hours of credit in physical education activity courses, unless exempt from this requirement because of physical disability or health factors by the College Physician, or because of other reasons by the Admissions and Standards Committee.

Scholarship Requirements. In order that a student may be eligible for graduation, his cumulative scholarship index must be 1.75 or better for all work taken after September 1, 1941, or for all work taken while a student at this College.

Residence Requirements. A minimum of one year in residence as a regular student is required of every candidate for the bachelor's degree, and the final 12 semester hours immediately preceding graduation must be taken in residence. For purposes of record, a year in residence is defined as 30 semester hours of credit earned in on-campus courses offered by regular members of the teaching staff. The phrase, *in residence*, means in regular classes held on the campus or at an established residence center. It has no reference to living in dormitories or in Tempe. Credit earned in correspondence courses cannot be used to meet residence requirements. The 12 semester hours of final residence may be taken during a semester of the regular academic year or during the summer terms. Exception to the residence regulation may be made by the Admissions and Standards Committee. Petitions for an exception must be made in writing and addressed to the Registrar and Director of Admissions.

Application for Graduation and Teaching Certificates. Students who plan to complete requirements for graduation at the end of either

summer term or the first semester should pay the Application for Graduation fee and file their application for graduation with the Registrar and Director of Admissions before registering for their final term or semester. Those planning to complete degree requirements during the first semester must file an Application for Graduation prior to April first of the preceding academic year. Those planning to complete requirements for graduation in May should pay the Application for Graduation fee and file their applications for graduation with the Registrar and Director of Admissions before November 15. After November 15 a \$5.00 late fee is charged students planning to graduate in May who do not file the application for graduation by the November 15th deadline. The filing of late applications for May commencement extends from November 16 to the last day of late registration for second semester. Students cannot change their application from one degree to another after the beginning of the final semester's work.

Application blanks are obtained in the Office of the Registrar and Director of Admissions. Candidates who fail to pay the Application for Graduation fee and file applications at the times specified are required to pay the late fee, and may be scheduled for graduation at a later date. Upon filing an application for graduation, a final check on graduation requirements is made by the Office of the Registrar and Director of Admissions. A check sheet showing the remaining requirements for graduation under the curriculum designated in the application is furnished the student as a guide to his final semester's registration.

Applications for teaching certificates should be obtained at the Office of the Registrar and Director of Admissions at the time of filing Applications for Graduation. Applications should be filed promptly after taking the oath of allegiance.

Graduation Fees. The Application for Graduation fee is \$10.00 if paid on or before the dates specified in the preceding paragraphs. After that date the fee is \$15.00. Five dollars of this fee is for membership in the Alumni Association. If a student is granted permission to receive a degree in absentia, he shall pay an additional fee of \$7.50.

Attendance at Commencement Exercises. Candidates for degrees are required to be present at the commencement exercises in the prescribed academic costume. Exceptions to this rule will be made only in extreme cases, and upon petition to the Registrar. The \$7.50 absentia fee is to be submitted at the time the petition is filed. If the petition is not accepted, the fee will then be refunded.

Financial Clearance. Before a student may participate in the commencement exercises or receive his diploma, he must obtain financial clearance at the Business Office. Financial clearance indicates that the regular fees, library, dining hall, and all other fees have been paid.

Requirements for the Master's Degree and the Doctor's Degree

See the section of the catalog headed "The Graduate Division."

College Services

College Guidance Program

Excellent instruction is one of the chief responsibilities of a progressive college. Instruction is excellent to the extent that it fits the abilities, interests, and personality traits of the students. The purpose of the guidance and counseling program of the College is to help teachers and students discover and develop those traits possessed by each student in order that he may carry out such a program of education, both in class and out, as will best fit his individual needs, and will inspire him to complete it with genuine satisfaction, and with the highest degree of achievement possible.

Orientation. An orientation program, under the supervision of the Division of Student Affairs, is provided for new students at the beginning of the fall term. It includes introduction of student body officers and administrative staff, recreational activities, explanations by individuals and groups of college services, curricula, and the guidance program. Throughout the year students are aided in adjustment to college life through group programs, work, faculty assistance, dormitory councils, and printed materials on study skills and personal and social competence.

The Testing and Counseling Program. The counseling program is a part of the program of the Division of Student Affairs. The Associate Dean of Students (Dean of Women) is directly responsible for testing and counseling.

On entering the College each student is given several aptitude tests. The results of these tests are used only in the counseling and guidance of students. The specific purposes of these tests are to discover the student's native ability and his achievement in reading, English, and other subjects.

The College Testing Center in the Office of the Division of Student Affairs, administers group testing programs and provides a test scoring service for personnel testing programs and for examinations administered by academic departments.

Choosing a Curriculum. During Freshman Week a number of programs are held to assist students in deciding wisely upon a curriculum. Students who are uncertain as to the curriculum they desire to follow may register for a first year program of basic studies. This program may be changed at any time the student definitely decides upon a curriculum and major or area of concentration. At this time, each student will be assigned an adviser and have conferences with him concerning his proposed choice of curriculum. Choosing a curriculum is an exceedingly important decision for a student. This choice may be

postponed until later in his freshman year, but not later than the beginning of the sophomore year. Ultimately, his happiness and success in college depend, in part, upon a selection suited to his abilities, interest, and personality.

Curriculum Advisers. When the student has chosen a curriculum and a major, or area of concentration, he will then be assigned a permanent adviser whose function is to assist the student in the selection of courses. The student remains under the same adviser as long as he continues under his original curriculum and major, or area of concentration. Should the student change his curriculum and major, or area of concentration, a new adviser in that field will be appointed. Due to the crowded schedules of each adviser, students are urged to take the initiative in seeking counsel regarding the adequacy of their programs of studies.

Personal Counseling. Personal counseling is directed by the Associate Dean of Students. In many cases the personal problems of students are referred to other faculty members or the agency best qualified to help. Likewise, the counseling often begins with the faculty and is referred to the deans for assistance.

Housing

Residence Halls. There are eight halls occupied by women students. These are: Alpha Hall, Matthews Hall, North Hall, South Hall, West Hall, and Dixie Dees Gammage Hall, Gammage Annex, and La Ramada (temporary). There are six halls ordinarily occupied by men: East Hall, Stadium Hall, Hayden Hall, and the Units of Irish Quadrangle.

Apartments. The following temporary facilities are available: sixty-six Federal Public Housing Apartments; sixteen Palm Grove Apartments, and twenty apartments for faculty members. All are located on the campus excepting Palm Grove Apartments which are one mile south of Tempe.

Reservations. Accompanying the notification from the Registrar and Director of Admissions that admission has been granted, is an application form for reservation of dormitory space. This should be filled out immediately and mailed to *Housing Clerk, Business Office*, together with a deposit of \$5.00 for residence halls. A \$10.00 deposit is required for an apartment accommodation. Students are placed on reservation lists according to date of receipt of fee.

Preferences of dormitories may be stated at the time of making reservation. Assignments to halls are made by the Housing Clerk. Room assignments are made by the Head Residents under the supervision of the Associate Dean of Students.

Residence in halls, sorority or fraternity houses is restricted to students registered for 12 or more units of regular work. Any exception must be approved by the Associate Dean of Students. The College

reserves the right to change the residence of any student or to deny or cancel residence accommodations of any student in cases where such action is deemed desirable.

Occupancy. Housing accommodations are available for occupancy one day preceding Freshman Week. Students are expected to vacate accommodations by midnight Saturday of the last week of school. Students are admitted to the assigned housing accommodations only upon presentation of the proper assignment card to the head resident or apartment supervisor.

Hall Facilities. All student rooms are provided with electric light, steam heat, and are furnished with a study table, a dressing table, and chairs. Sleeping porches are used the year round. There is a laundry room in each dormitory furnished with ironing boards for the laundering of personal belongings.

Residence Regulations. No single college influence may contribute more to the development of the personality and character of a student than that of dormitory life. The halls are so equipped and managed as to secure the maximum values at a minimum cost. For regulations governing off-campus housing see *Off-Campus Housing*, page 69. No cooking of any kind is permitted in students' rooms. *Vocal or instrumental music may not be practiced in any of the halls.* Arrangements for such practice may be made through the music department. If radios are used, they must be adjusted so as not to interfere with the rights of others. Young women may be absent from the halls overnight only with the written consent of their parents, which must be on file with the head resident at the time of departure. Nominal dues are collected in each hall by the respective Hall Councils. This fee may not be refunded.

Personal Equipment. The following list of equipment is the minimum which students should bring with them when entering a hall: blankets and comforts for a single bed, one bedspread, dresser scarf, and washable laundry bag. All should be clearly marked with the name of the student. *The college provides and launders sheets, pillow slips, hand towels, and bath towels.*

Regulations Concerning Guests. Guests may be accommodated in residence halls when space is available on the following conditions: (a) that the permission of the head resident has been secured; (b) that guests do not accept invitations from residents for the first four nights of the week or during examination time unless absolutely necessary; (c) that guests do not ask for accommodations for more than a three-day period. Visiting student groups may be accommodated when previous arrangements are made in the Office of the Division of Student Affairs. A nominal rental fee is charged for these accommodations.

Care of Halls and Apartments. The College attempts to furnish comfortable and artistic living conditions for students. Students are expected to cooperate by keeping them so. Should any damage, beyond

the usual wear, occur to the decorations and furniture of a room, the cost of redecoration or repair will be charged to the occupants of the room.

Off-Campus Housing. Parents who desire their daughters to live outside the residence halls are requested to fill out the form furnished by the Associate Dean of Students. The householder must also sign an agreement in which she agrees to maintain college standards for residents in her home. Requests for such housing should be made only in special cases. There is no such regulation affecting men students.

Health Service

Student Health Service. This service is maintained for the purpose of constant supervision over the health of students. It is administered under the Division of Student Affairs. A dispensary and infirmary are staffed by a consulting physician and registered nurses. The Student Health Service is located on Normal Avenue.

Health Examination. The health examination is required of all students prior to registration. A physician's certificate of small pox vaccination within the past four years must be furnished at the time of the examination. Students are urged to have all remediable defects, such as eyes, ears, teeth, tonsils, etc., corrected in advance of matriculation to prevent possible loss of time from studies. The Student Health Service makes recommendations concerning activities of students in which health may be a factor. Restricted class schedules or physical activity programs based on the findings of the health examination are recommended. See the item headed "Health Examination" under the section on *Admission to College* for further details of the health examination.

Dispensary and Infirmary Treatment. Dispensary services are available during regularly posted hours and at any hour for emergencies to all regularly registered students. No illness will be cared for in the dormitories, nor will any prescription be made for a student not reporting in person to the Health Service. Infirmary care is given according to need as determined by the staff. No student may have more than one week's bedside care without cost. Contagious diseases must receive care off-campus immediately following diagnosis.

Illness or Injury Must Be Reported. Any illness or injury must be reported to the Student Health Service without delay. A Campus resident is required to report illness immediately to the head resident of his or her hall. Failure to do so may result in his being asked to leave the hall. Before leaving the campus because of illness, students are to report to the Student Health Service. Upon their return they are to report for approval to re-enter classes. In all cases diagnosed as contagious, the student, on his return to the college, will present to the college nurse a written statement from the attending physician. Health reports are sent to the family physician upon request of the student.

Financial Responsibility. With the payment of the health fee of \$2.75 each semester, all regularly registered students are entitled to student health service care according to established policies. Students may be referred to consultant specialists when the college physician considers it advisable, but such fees must be borne by the student. When hospitalization or surgical attention is considered necessary, the college assumes no financial responsibility. Parents are consulted in advance of hospitalization if at all possible. A fee of \$4.00 a day is charged for Infirmary care after one week.

Placement Bureau

The Placement Bureau is maintained to assist undergraduate and graduate students in obtaining employment according to their training, ability, and experience. It is the purpose of the Bureau to serve the state and region by providing adequately trained personnel for business, industry and education. Although the Placement Bureau does not guarantee placement, every effort is made to aid students and those in the field who desire placement assistance. Candidates may enroll by filling out the appropriate blanks. Upon enrolling, candidates receive full information and instructions relative to securing employment. Complete records are kept on file in the office. *Yearly renewal keeps credentials in active file.*

Students can find information regarding the knowledge necessary, the requirements, and the opportunities in a variety of vocations in the Vocational Information Center. This Center makes available general vocational materials, specific information dealing with special fields of interest, and literature furnished by different types of commercial and educational institutions.

Student Placement. The Placement Bureau aids students attending college in securing part-time employment, both on and off the campus, which tends to supplement their educational goals. All students who are interested in on or off campus placement should register with this office.

Teacher Placement. The Placement Bureau assists graduating students in obtaining teaching positions. It seeks, at the same time, to serve the best interests of the superintendents and school trustees of the state who desire to secure teachers adapted to the needs of their particular school.

Commercial Placement. The Placement Bureau also serves graduating students who are interested in commercial and industrial placement. Effort is made to place students in their chosen fields, and at the same time aid industries to obtain properly trained personnel.

All correspondence should be addressed to the appropriate division in the Placement Bureau.

Alumni Association

Membership. The Alumni Association was organized under the leadership of President E. L. Stormont, in June, 1894. Keeping pace with the tremendous growth of the College, the association employed a full-time executive secretary in September, 1947, and has embarked on a broad program of activities with a permanent staff now expanded to three members and a distinguished board of officers and directors. There are about 11,000 graduates including the class of 1953. All students become active members when they pay their graduation fee. All students who have attended the College at least one semester are listed as associate members.

Memorial Student Union Campaign. The Alumni Association has sponsored a fund drive to raise \$350,000 in public contributions toward a million-dollar Memorial Student Union Building for the College. By the end of 1953, this drive had brought in over \$350,000. Charles A. Stauffer, '01, is General Chairman of the campaign.

Endowment Fund. Under the leadership of the late Clarence M. Paddock, '03, and Leona M. Haulot, '02, the Association raised an endowment fund of \$10,000.00 for the assistance of worthy students. The fund has now increased to more than \$30,000.00, and more than 500 students have received aid from the fund. Loans are made only to juniors, seniors or graduate students.

Alumni Scholarships. At least two scholarships are given each year to outstanding students. See description under "Scholarships and Fellowships."

Alumni Housing. To meet the need of housing returning veterans and their families, the Alumni Association has financed a \$40,000 emergency housing development on campus.

Alumni Magazine. The Association's official magazine, the *Statesman*, is published quarterly for all active members. Present circulation is 9,000.

Alumni Induction Ceremony. This ceremony is held annually during Commencement Week. Members of the graduating class receive alumni membership cards and are acquainted with other alumni and with the Alumni Association program.

Alumni Register. The Alumni Association maintains a card file of the names, addresses and occupations of all active members of the Association. This is a difficult task because names and addresses are constantly changing. Alumni and friends can be of real service by sending a post card to the Alumni Secretary giving changes in names and addresses.

Officers of the Alumni Association, 1953-54

Charles C. Stidham, '42, President.....	Phoenix
Robert Ashe, '35, First Vice President.....	Glendale
William E. Tresnon, '39, Second Vice President.....	San Francisco

Donald W. Moore, '38, Third Vice President.....	Illinois
Margaret (Carr) Bouse, '28, Secretary.....	Tempe
George Morrell, '41, Treasurer.....	Tempe
Horace B. Griffen, '14, Board of Directors.....	Phoenix
Don Ellis, '44, Board of Directors.....	Tempe
Hascall Henshaw, '41, Board of Directors.....	Tempe
Sidney B. Moeur, '14, Board of Directors.....	Phoenix
Dr. D. R. Van Petten, '33, Board of Directors.....	Tempe
Sherman R. Payne, '48, Board of Directors.....	Phoenix
John R. Sandige, '14, Trust Officer.....	Phoenix
James W. Creasman, '35, Executive Secretary.....	Arizona State College

Student Affairs

Student Government

Associated Students. Every student of the college is automatically a member of the Associated Student Body. The Board of Regents, the President, and the faculty challenge every student to accept his individual responsibility for stimulating and regulating student activities and customs, and for promoting the intellectual, moral, and social welfare of all students in a truly democratic manner. These objectives are attained by encouraging all students to participate in the government of the College. A Council, elected by the student body, functions as the executive body of the Associated Students.

Associated Men Students. Every man registered in the College is a member of the Associated Men Students. The purpose of this organization is to promote the highest standards of college life, to aid men students in problems of adjustment and social relationships, and to make provisions for social activities and for such other functions as may be in the best interests of the men students and the College. The group is governed by officers elected by the members of the organization.

Associated Women Students. Every woman registered in the College is a member of the Associated Women Students. The purpose of this organization is to bring about greater unity and mutual helpfulness among the women of the College. A governing body called the A.W.S. Council is composed of duly elected officers, the presidents of the women's dormitories, and the president of Off-Campus Women. *Off-Campus Women* is a part of A.W.S. and membership is open to all women not living in residence halls. This group offers an opportunity for these women to feel that they are a part of the College and to enjoy social life along with their studies.

The Student Union. Anticipating the time when a permanent student union will be established, the students are operating a temporary student center which includes eating facilities. It is staffed by a trained manager.

The Student Social Program. The college calendar brings together programs and functions held on the campus and elsewhere. The Division of Student Affairs coordinates over 100 groups in their activities. A wide variety of activities is scheduled throughout the year. These include athletic events; social events including dances, dinners, banquets, teas; entertainment and lecture series; music and other cultural gatherings. Both men's and women's residence halls play an important part in carrying out the social program under the supervision of carefully selected personnel officers and faculty members. In addition to the all-college social and cultural functions, the various organizations offer programs and activities varying with their interests and fields of specialization.

Student Organizations

Program. A wholesome, integrated program for the college student is provided through student organizations. According to the individual interest and available time, any student may choose those activities which meet his desire for congenial companionship, his need for group security, his need for recognition, his need for creative effort, his need for growth—physically or socially—or supplement his classroom work in the many activities which are an extension of classroom programs.

Scholastic Requirements. In order to be eligible for admission to membership in any student organization, a student must have a scholarship index of 2.00 or better in all courses carried for the semester immediately preceding. Any member of such an organization whose semester report shows a scholarship index of less than 2.00 may be suspended from active work in the organization for one semester.

Departmental, Interest, and Recognition Organizations

"A" Club (Men). Consists of all varsity letter winners in all major sports.

The "A" Club (Women). An honorary association for women who have earned 1,000 points in varsity, dance, and/or sports activity. Associate membership is open to those women who have earned 800 points.

Alpha Beta Alpha. A national library science fraternity. Theta Chapter of Arizona State College at Tempe was installed on May 23, 1953, making the Chapter the eighth in the nation. The fraternity is composed of men and women who are interested in the field of library science and librarianship.

Alpha Delta Sigma. A national honorary fraternity for those students interested in advertising and allied fields. Chartered in 1953, the Chapter at Arizona State College at Tempe is named Raymond Rubicam, well known advertising figure. Activities include working with local firms, touring businesses, and selling ads for fraternity and other

publications. As an advertising fraternity, it is not strange that the initial letters of its name are ADS.

Alpha Phi Omega. A national service fraternity which continues the principles of the Scout oath and law.

Alpha Pi Epsilon. A national secretarial honor organization.

Alpha Psi Omega. A national honorary dramatic society open to those who acquire twenty points in dramatics.

American Association of Engineers. For all students taking engineering.

American Chemical Society. (Student Affiliate). A professional society for students majoring or interested in chemistry.

American Institute of Architects. For students interested in architecture and its allied fields of building and construction.

Arizona Sundevil Rodeo Association. Composed of men having an active membership and of women enjoying an honorary membership. Provides for western fellowship and opportunities for participation in rodeo activities.

Arnold Air Society. A National Honorary Air Force fraternity for members of the Advanced Air Force R.O.T.C. course.

ASC Camera Club. The State Camera Club is open to all those interested in photography.

ASC Student "Y" (YMCA and YWCA). To offer a purposeful organization with a motive for service and to provide for additional constructive Christian activities on campus. A co-ed organization.

Association for Childhood Education. A branch of the international organization. Promotes kindergarten-primary education.

Astronomy Club. An opportunity for those interested in astronomy to congregate with others of similar interests to observe the stars and planets through the seasons of the year, and to construct or help construct small telescopes.

Beta Chi Epsilon. For girls whose major interest is in home economics. Affiliated with the National Home Economics Association.

Bios. An organization of students majoring in Biological Science.

Blue Key. A national honorary service organization composed of men students of the junior and senior class.

Civil Air Patrol. An organization devoted to the interests of aeronautical students. An auxiliary of the United States Air Force. Flights are made in government aircraft over the state and nearby states each year. Prerequisite for joining, enrollment in primary ground school.

Delta Sigma Pi. The largest national professional fraternity in the field of Business Administration. This fraternity, under the sponsorship of the Department of Business Administration, installed Gamma Omega chapter at Arizona State College on November 4, 1951. The

purpose of the fraternity is to foster the study of business; to encourage a high level of scholarship; to foster the association of business administration students for their mutual advancement; to provide a closer affiliation between the commercial world and students of business; to further a high standard of business ethics and culture; and to promote the civic and business welfare of the community.

Devils and Dames. The co-ed square dance club of Arizona State College at Tempe.

French Club. Le Cercle Francais is for all students who are currently studying French and for other students interested in French and French culture.

Future Teachers of America. An organization devoted to the interests of prospective teachers.

Gamma Theta Upsilon. A national honorary professional geographic fraternity open to all majors and minors in geography and geology.

German Verein. For students interested in the German language and German culture, and to improve friendship and understanding between the two countries.

Kappa Delta Pi. A national honorary education society fostering high professional and scholastic standards and service.

Kappa Kappa Psi. A national band fraternity whose purpose is to promote the best interests of college bandmen.

Los Conquistadores. Promotes the welfare of the Spanish-speaking students on the campus.

Marketing Club. Promotes the interests and welfare of students majoring in marketing management.

Mask and Sandal. Furthers interest in dramatics. Expedites membership into Alpha Psi Omega.

Modern Dance Club. An organization composed of men and women students interested in modern dance.

Mu Rho Alpha. An honorary fraternity which aims to recognize and develop musical ability and appreciation.

Off-Campus Women. Provides fellowship and facilities for all women not living in residence halls.

Pasteur Scientific Society. Affords opportunities for student activity in the biological and physical sciences.

Pershing Rifles. A national professional honorary for R.O.T.C. cadets. The membership is limited to Basic Corps Cadets with supervision by advanced Corps Cadet Officers.

Phi Eta Sigma. National honor society for freshman men. Seeks to promote scholarship by granting recognition to those men students who attain a 3.5 average during their first year.

Phi Kappa Phi. A national honor society whose members are elected from among graduate and undergraduate students in all departments of the College. Its purpose is to emphasize scholarship and character in the thought of college students, and to stimulate mental achievement by recognition through election to membership. The society elects to membership a certain number from the graduating class on the basis of high scholarship.

Pi Delta Epsilon. A national journalism honorary open to upper-classmen active in journalism and in related fields.

Pi Kappa Delta. National honorary forensic society, is open to those who make outstanding records in inter-collegiate forensics.

Pi Omega Pi. A national honor society for commerce majors interested in becoming teachers of commercial subjects.

Pleiades. An honorary women's service organization composed of twelve women selected from the junior and senior classes.

Press Club. A club composed of journalistic activities.

Psi Chi. Open to majors and minors in Psychology. Promotes interest in Psychology as a science.

Racquet Club. A club for women interested in tennis. Membership limited to fourteen women. Tryouts are scheduled at the beginning of each semester.

Religious Council. Composed of representative students from all denominations. Promotes religious programs, and fosters religious living.

Religious Organizations. Opportunity for participation in religious activities is offered through various organizations for college students meeting on the campus.

Baptist Student Union (Baptist); Baptist Young People's Union (Baptist); Beta Tau Delta (Baptist); Congo Club (Congregational); Delta Phi (L.D.S.); Lambda Delta Sigma (L.D.S.-Phi Alpha, Men; Phi Omega, Women); Martin Luther Society (Lutheran); Newman Club (Catholic); Wesley Foundation (Methodist); Westminster Foundation (Presbyterian).

Russian Circle. Purpose is a better understanding of Russia and its language and literature.

Tau Beta Sigma. A national band sorority interested in promoting the best interests of college bandswomen.

Theta Chi Epsilon. An honorary art fraternity which aims to develop the appreciation of art and to extend art experiences.

Women's Athletic Association. This organization is affiliated with the National Athletic Federation of College Women. The association sponsors and provides opportunities for participation in intramural dance and sports activities, varsity dance and sports activities, inter-collegiate, state, district, and national tournament competition. Mem-

bership in this association is open to all women students who accumulate one hundred (100) points through intramural competition or through membership on varsity teams in either sports or dance activities.

Women's Physical Education Club. For women majoring or minoring in physical education. This organization is affiliated with the American Association for Health, Physical Education and Recreation.

Sororities and Fraternities

Interfraternity Council. Composed of two elected representatives from each member fraternity and the faculty adviser. The Interfraternity Council is the liaison between individual fraternities and the Associated Students and College administration.

Panhellenic Council. The Panhellenic Council is composed of a representative of each sorority and the Associate Dean of Students. Sponsors are members ex-officio.

Sororities. The following Greek letter societies carry on the traditional objectives of each group:

- Alpha Delta Pi* (national)
- Alpha Sigma Alpha* (national)
- Chi Omega* (national)
- Gamma Phi Beta* (national)
- Kappa Delta* (national)
- Sigma Sigma Sigma* (national)
- Theta Sigma Chi* (local)

Fraternities. The following Greek letter societies carry on the traditional objectives of each group.

- Alpha Epsilon Pi* (national)
- Alpha Tau Omega* (national)
- Delta Chi* (national)
- Delta Sigma Phi* (national)
- Kappa Alpha Psi* (national)
- Lambda Chi Alpha* (national)
- Nu Sigma* (local)
- Phi Sigma Kappa* (national)
- Pi Kappa Alpha* (national)
- Sigma Phi Epsilon* (national)
- Sigma Pi* (national)
- Tau Kappa Epsilon* (national)
- Theta Chi* (national)

Special Group Activities

Music Activities

Opportunities are offered through public recitals for the expression of musical talent by the students of voice, piano, brass and woodwind instruments; the Choral Union; the Concert Choir; and the

band and orchestra. College credit is given for regular work in these courses.

Physical Education and Recreation Activities

Play activities are carried on under the sponsorships of the men's and women's division of the Department of Health, Physical Education and Recreation. These activities are generally alluded to as intramurals. In addition, there is the program of intercollegiate athletics under the direction of the Athletic Department.

Facilities. The women's department is housed in the B. B. Moeur Activity Building which is also the center of the social activities on the campus. The men's division is located in the new Men's Physical Education Building which also provides quarters for the Department of Intercollegiate Athletics. Each division has its own athletic field. In addition, ten concrete tennis courts are available. The outdoor part of the intercollegiate program makes use of Goodwin Stadium. Basketball and other indoor events are provided for in the new gymnasium.

Intramurals. Each division of the Department of Health, Physical Education and Recreation maintains an excellent program of intramurals open to all students. The women's division offers competition in volleyball, softball, hockey, basketball, golf, badminton, tennis, archery, as well as folk, tap, and modern dance. The women's division also sponsors sports days and tournaments with other colleges and universities. The men's division maintains such sports as tennis, volleyball, table tennis, cross-country, touch football, badminton, horseshoes, basketball, track, softball, golf and swimming. In addition, a beginning is being made in co-recreational activities.

Intercollegiate Athletics. The College is a member of the Border Conference and is represented in such sports as football, basketball, field and track, baseball, tennis, and golf. The purpose of the program of intercollegiate athletics at The Arizona State College at Tempe is to provide the following important educational experiences, all of which the faculty of the institution believe are fundamental to the American way of life: (a) To train students in legitimate methods of good sportsmanship, in competition, and in the will to win. (b) To aid in character development which includes cooperation and teamwork, leadership qualities, group loyalty, clean living and right thinking. (c) To contribute to the development of institutional morale, loyalty and school spirit. (d) To supply wholesome recreation for the participants and other students. (e) To serve as a laboratory for the professional courses of those interested in physical education and coaching as a career.

Speech and Dramatics

Forensics. The College offers an extensive program of intramural and intercollegiate forensics, including debate, extemporaneous speaking, oratory, impromptu speaking, discussion, and radio speaking. This activity provides one of the few ways in which the students and the school can establish prestige in academic competition. Each year

rival speakers from many of the nation's major colleges and universities are met. The school is affiliated with three forensic leagues — The Arizona Speech League, which sponsors an annual tournament among six colleges in the state; the Western Association of Teachers of Speech, which sponsors a fall tournament for all western states; and the Pi Kappa Delta League which holds a biannual national tournament, as well as tournaments in the western region. Students become eligible for membership in Pi Kappa Delta, national honorary speech fraternity, by a stipulated degree of proficiency in forensics.

Dramatics. The work in dramatics is designed to accomplish the following objectives: (1) To develop talent through participation in plays, recitals, and production. (2) To fulfill the social and therapeutic functions of dramatics in cases of defective personality. (3) To improve audience standards of entertainment. Active participation in dramatics may lead to an invitation to membership in Mask and Sandal, the local dramatics club, or Alpha Psi Omega, national dramatic fraternity.

Radio and Television

Station KASC. For the training of students in radio skills, the Radio-Television Section of the College maintains station KASC, a "wired wireless" radio station run by and for the students of the College. It is heard at 700 on any AM radio dial within the confines of the ASC campus. Programming eight hours of live programs five days a week, station KASC provides students with supervised practical experience in the maintenance and operation of a radio station. Students of all grade levels work at the jobs of writing, producing, and presenting programs over station KASC, which is completely equipped with the finest of professional radio equipment.

Television Programs. As part of its off-campus educational effort, the College prepares and produces over local commercial television stations regular series of educational programs. These programs are produced by the Radio-Television Section, with students assisting in order to gain experience in this newest field of communication. Courses in radio and television production are closely related to the production of these programs, as well as the operation of station KASC. Student participation in the television programs includes art work, properties, dramatic performances, writing, production, and other details involved in the presentation of television programs.

Student Publications

The State Press. Under the joint auspices of the Associated Students and the Division of Journalism, there is published weekly throughout the college year a five-column, eight to twelve page newspaper. Besides rating highly as a student activity, the *State Press* also serves as a workshop or laboratory for the reporting and editing classes in Journalism. Its editors are selected by the student-faculty Board of Publications. The editors select their staffs. The head of the Division

of Journalism serves as adviser. Advertising and other financial matters are under the control of the Associated Students. Student subscriptions are included in the activity fee.

The Sahuaro. The college yearbook likewise is published under Associated Students auspices, and its editorship, advisership and business management are organized like those of the *State Press*. Students interested in yearbook activity, including art work, find opportunity on the *Sahuaro* staff. Individual students may have their portraits in the class section of the *Sahuaro* without charge other than the activity fee. The book is financed from four sources: an Associated Students' appropriation, organization fees, advertising, and sales, which may be on a time payment plan.

College Of Arts & Sciences

Purpose

The College of Arts and Sciences aims to give the student an opportunity to secure a well-rounded liberal education. Life in a changing world calls for a broad training and an appreciative understanding of the varied elements in our own and other cultures. Today the peoples of various nationalities, languages, religions, and vocational interests intermingle in a human society increasingly interdependent and bound together by improved means of communication, transportation, trade, and governmental cooperation. Peaceful and effective living in such a world requires flexibility in personal equipment and ability to make quick and intelligent adjustments in the social as well as the physical environment.

The liberally educated person will have facility with his own, and preferably one or more other languages; he will possess an understanding of himself and a broad knowledge of his physical, social, moral, and spiritual environment; he will be able to deal effectively with the problems of his day in the light of the most reliable and tested knowledge of his time; he will have an appreciative understanding of the fine arts and find enjoyment in them; he will be able to live and act in the home, the local community, the nation, and the international community as an informed, responsible, and understanding human being.

The degree requirements are so arranged as to acquaint the student with the main fields of human knowledge and, at the same time, to bring to light his special aptitudes and interests. Although emphasizing breadth of training, the curriculums permit such a degree of specialization as to prepare the student for work in a professional school, for graduate study, or for the duties of a vocation. Within the limits of the curriculum chosen, the student may elect to take a part of his work from among the course offerings of the School of Education, the Department of Agriculture, the Department of Business Administration, or the Department of Industrial Arts.

Organization

The College of Arts and Sciences is divided into the following Departments of Instruction:

Air Science and Tactics	Library Sciences
Art	Mathematics
Biological Sciences	Military Science and Tactics
English	Music
Foreign Languages	Physical Sciences
Health, Physical	Psychology
Education, and Recreation	Social Studies
Home Economics	

Degrees

The College of Arts and Sciences offers two degrees: the Bachelor of Arts and the Bachelor of Science. They are similar in that both require 126 semester hours of credit for graduation and call for a considerable distribution of studies; yet they also permit of specialization. Indeed, they require sufficient stress in major fields to insure some degree of mastery in particular fields. In general, the distinction between the curriculums offered for these two degrees lies in the fact that for the Bachelor of Arts degree emphasis is placed on a broader, humanistic program, whereas for the Bachelor of Science, greater emphasis is placed on a special scientific field.

Bachelor of Arts Degree Curriculum

The curriculum for the degree of Bachelor of Arts is designed to give the student a broad, general background in the principal fields of human knowledge and a reasonable amount of specialized training in a selected area. It is divided into three parts:

1. Generalization requirements:
 - For women students 47 sem. hours
 - For men students (who must take military training unless exempted) 53 sem. hours
2. Major requirements (depending upon major chosen) 45 to 50 sem. hours
3. Electives (depending upon military status and major) 23 to 34 sem. hours

Generalization Requirements

The generalization requirements are as follows:

English 101 and 102.....	6 sem. hours
Health Education 100.....	2 sem. hours
Physical Education Activity Courses.....	2 sem. hours
Air Science or Military Science 101, 102, 103, 104 (men)	6 sem. hours
Foreign Language*	8 sem. hours
Humanities (Art, Literature, Music, Philosophy, and Speech. Not more than 3 hrs. in one field)	6 sem. hours
Science and Mathematics (Biology, Botany, Chemistry, Geology, Mathematics, Physics, Zoology, Geography, if not taken as a Social Science. Not more than 8 hours in one field).....	11 sem. hours
Social Sciences (Anthropology, Economics, His- tory, Political Science, Psychology, Sociology, Geography, if not taken as a Science. Not more than 6 hours in one field.).....	12 sem. hours
Total	47 or 53 sem. hours

*A student may be exempted from this requirement by passing a proficiency examination or by showing successful completion of three years of high school work in one language.

Recommended courses in the Humanities:

Art: Art 100, 211, 212, 213, 214

Literature and Speech: All courses listed in this catalog in literature and speech.

Music: Music 130, or 117 and 118 with the consent of the instructor.

Philosophy: All courses listed in the catalog in philosophy.

Recommended courses in the Sciences and Mathematics:

Biological Sciences: G. S. 110 or a combination of Bot. 110 and Zool. 110.

Physical Sciences: G. S. 100 or the introductory courses in chemistry, physics, geology, and geography.

Mathematics: Math. 105, 106, 107, 118, 120.

Recommended courses in the Social Sciences:

Anthropology: Anthro. 125.

Economics: B. A. 130, 132.

Geography: Geog. 100, 101.

History: Hist. 101, 102, 103, 104.

Political Science: P. S. 100.

Psychology: Psych. 100.

Sociology: Soc. 120.

Social Studies: S. S. 100.

Since the introductory courses designed to meet the generalization requirements are necessarily elementary, the student is expected to take most of them in his first two years. He will then be able to devote most of his last two years to advanced work in the field of his special interest.

Major Requirements

A major shall consist of from 45 to 50 semester hours of credit in addition to the required generalization courses. At least 24 of these semester hours must be in a single subject field, and at least 15 must be in one or more different but related subject fields.

The majors in the following list which are marked with an asterisk (*) require a four-year sequence of courses. A student who elects them after the first semester of his college career must therefore expect to spend more than four years in attaining the bachelor's degree. Majors not marked with an asterisk can be completed in three years or less, and may therefore be elected at the beginning of the sophomore year with no loss of time.

Department	Major
Art	Fine Arts, with emphasis in Painting Sculpture Art History General Art
Biological Sciences	*Botany *Entomology *General Biology *Zoology
English	English Dramatics Journalism Speech
Foreign Languages	*Spanish
Health, Physical Education, and Recreation	Health Education Physical Education Recreation
Home Economics	Clothing, Textiles, and Related Arts Family Life and Child Development Foods and Nutrition
Mathematics	*Mathematics
Music	*Applied Music General Music *Music Theory
Physical Sciences	*Chemistry Geography Geology *Physics
Psychology	Psychology
Social Studies	Economics History Political Science Sociology Sociology-Anthropology Social Studies Social Welfare
Inter-Departmental	General Studies
Elective Courses	

Sufficient elective courses from the entire offering of the College will be chosen by the student in order to complete 126 semester hours required for graduation. A student may group 15 or more of his elective hours to form a minor if he desires.

Four-year Curriculum Outline

The following is a suggested outline to indicate to the student one way in which the generalization, major, and elective requirements may be worked into a four-year pattern of study. Except in unusual cases, all generalization requirements should be completed during the first two years of study.

FIRST YEAR		SECOND SEMESTER																																			
<table border="0"> <tr><th colspan="2" style="text-align: left;">First Semester</th></tr> <tr><td>Eng. 101 First Year English.....</td><td>3</td></tr> <tr><td>A.S. 101 Basic Air Science or M.S. 101 Basic Military Science....</td><td>1.5</td></tr> <tr><td>Physical Activity (P.E. 101 or 107)....</td><td>.5</td></tr> <tr><td>Foreign Language</td><td>4</td></tr> <tr><td>*G.S. 100 Intro. to Physical Science (or other science or mathematics)....</td><td>4</td></tr> <tr><td>Humanities or Social Science</td><td>2 to 4</td></tr> <tr><td>*H.E. 100 Hygiene (women).....</td><td>2</td></tr> <tr><td colspan="2" style="text-align: right;">15½ to 17½</td></tr> </table>	First Semester		Eng. 101 First Year English.....	3	A.S. 101 Basic Air Science or M.S. 101 Basic Military Science....	1.5	Physical Activity (P.E. 101 or 107)....	.5	Foreign Language	4	*G.S. 100 Intro. to Physical Science (or other science or mathematics)....	4	Humanities or Social Science	2 to 4	*H.E. 100 Hygiene (women).....	2	15½ to 17½			<table border="0"> <tr><td>Eng. 102 First Year English.....</td><td>3</td></tr> <tr><td>A.S. 102 Basic Air Science or M.S. 102 Basic Military Science....</td><td>1.5</td></tr> <tr><td>Physical Activity (P.E. 102 or 108)....</td><td>.5</td></tr> <tr><td>Foreign Language</td><td>4</td></tr> <tr><td>*G.S. 100 Intro. to Biological Science (or other science or mathematics).....</td><td>4</td></tr> <tr><td>Humanities or Social Science</td><td>2 to 4</td></tr> <tr><td>Elective</td><td>2 to 4</td></tr> <tr><td colspan="2" style="text-align: right;">15½ to 16</td></tr> </table>	Eng. 102 First Year English.....	3	A.S. 102 Basic Air Science or M.S. 102 Basic Military Science....	1.5	Physical Activity (P.E. 102 or 108)....	.5	Foreign Language	4	*G.S. 100 Intro. to Biological Science (or other science or mathematics).....	4	Humanities or Social Science	2 to 4	Elective	2 to 4	15½ to 16		
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Many students are not ready to choose a major at the time they enter college. For such students a first year program of basic studies has been devised. Successful completion of this program will qualify a student to enter upon any of the three-year majors at the beginning of his sophomore year with no loss of time. This program may be substituted for the first year program given in the above outline.

FIRST SEMESTER		SECOND SEMESTER	
English 101	3	English 102	3
A.S. or M.S. 101 (Men only)	1.5	A.S. or M.S. 102 (Men only)	1.5
Science or Mathematics	3 to 4	Science or Mathematics	3 to 4
Foreign Language 101	4	Foreign Language 102	4
*Psychology 100	3	*Sociology 120	3
P.E. Activity5	P.E. Activity5
15 to 16		15 to 16	

*May be taken either semester.

Departmental Major Requirements

Art

(1) *Fine Arts*: A major in Fine Arts shall consist of 45 semester hours. The following emphases are available:

(a) *Painting*: Required courses in basic art training: Art 101, 103, 105, 106, 161, 211, 212, 213.

Required courses in painting and drawing: Art 191, 201, 203, 215, 261, 262, 291, 292, and art electives to complete the 45 hours, selected in consultation with the adviser.

- (b) *Sculpture*: Required courses in basic art training: Art 101, 103, 105, 121, 211, 212, 213.
 Required courses in sculpture and drawing: Art 171, 201, 203, 204, 205, 271, 272, 290, and art electives to complete the 45 hours, selected in consultation with the adviser.
 A combined emphasis in sculpture and painting is possible, if the student desires.
- (c) *Art History*: Required courses: Art 101, 105, 106, 211, 212, 213, 214 and sufficient courses in art and related fields to complete 45 hours, selected in consultation with the adviser.
- (d) *General Art*: Required courses in basic art training: Art 101, 103, 105, 106, 211, 212, 213, and art electives to complete the 45 hours, selected in consultation with the adviser.

Biological Sciences

- (1) *Botany*: A major in Botany shall consist of 50 semester hours.
 Required courses: Bact. 110; Biol. 204, 280; Bot. 110, 160, 171, 172, 230, 242; Chem. 110; Phys. 110; Zool. 110. An additional 4 hours of upper division work selected with the approval of the adviser. A minor may be selected with the approval of the major adviser. The following are suggested areas: Agronomy, Art, Chemistry, Entomology, Zoology.
- (2) *Entomology*: A major in Entomology shall consist of 50 semester hours.
 Required courses: Biol. 204, 280; Bot. 110; Chem. 110; Phys. 110; Zool. 111, 112, 180, 216, 222, and 231. An additional 10 hours selected with the approval of the major adviser.
 A minor field may be selected with the approval of the major adviser. The following are suggested areas: Agriculture, Botany, Chemistry, Spanish.
- (3) *General Biology*: A major in General Biology shall consist of 50 semester hours.
 Required courses: Bact. 110; Biol. 204, 280; Bot. 110; Chem. 110; Phys. 110; Zool. 111, 112; Bot. or Zool. 230, 260. An additional 12 hours, 4 of which must be upper division, selected with the approval of the adviser from Biological Science course offerings listed in the catalog, unless otherwise indicated in course description.
 A minor field may be selected with the approval of the major adviser. The following are suggested areas: Agriculture, Art, Botany, Chemistry, English, Entomology, Geology, Physics, Psychology, Social Studies, Zoology.
- (4) *Zoology*: A major in Zoology shall consist of 50 semester hours.

Required courses: Biol. 204, 230; Bot. 110; Chem. 110; Phys. 110; Zool. 111, 112, 163, 180, 231, 232, 270. An additional 6 hours selected with the approval of the major adviser.

A minor field may be selected with the approval of the major adviser. The following are suggested areas: Animal Husbandry, Botany, Chemistry, Entomology.

English

- (1) *English*: A major in English shall consist of 49 semester hours.

Required courses: Eng. 128, 151, 152; Spch. 110; Hist. 105, 106; Foreign Languages, 8 hours in addition to the generalization requirements. One course is required in each of the following groups: Group I, Eng. 253, 254; Group II, Eng. 209, 211, 212, 221, 222; Group III, Eng. 201, 203, 213, 214, 215, 216, 217, 218, 226; Group IV, Eng. 205, 206, 223, 244; Group V, Spch. 120, 121, 127, 170, 260. The hours needed to complete the 49 hours required for the major may be chosen from the complete departmental offering. With the consent of the adviser, an additional 3 hours in related fields may be substituted for English courses.

- (2) *Dramatics*: A major in Dramatics shall consist of 49 semester hours.

Required courses: Spch. 110 or 115, 119, 120, 121, 170, 235, 260; Eng. 128, 151, 152, and 6 hours of upper division literature. The hours needed to complete the 49 semester hours for the major may be selected from other offerings in speech and dramatics or, with the consent of the adviser, from related fields.

- (3) *Journalism*: A major in Journalism shall consist of 49 semester hours.

Required courses: Journ. 130, 140, 141, 243, 250, 251, 299; Spch. 110; Eng. 128, 151, 152, and 6 hours of upper division literature; B. A. 132; P. S. 101; Psych. 225. The hours needed to complete the 49 semester hours for the major may be selected from other offerings in journalism or, with the consent of the adviser, from related fields.

- (4) *Speech*: A major in Speech shall consist of 49 semester hours.

Required courses: Spch. 115, 120, 121, 129, 170, 257, 260, and 8 hours of upper division speech electives; Eng. 128, 151, 152, and 6 hours of upper division literature. The hours needed to complete the 49 semester hours for the major may be selected from other offerings in speech or, with the consent of the adviser, from related fields.

Foreign Languages

- (1) *Spanish*: A major in Spanish shall consist of 45 semester hours in addition to the prerequisite courses, Spanish 101 and 102, which may be taken in fulfillment of the generalization requirements in Foreign Language.

Required courses: Span. 103, 104, 203, 204, 205, 206, and 207 or 224. An additional sequence of courses sufficient to complete the 45 semester hours in the major, to be selected with the approval of the adviser, from among the following: Eng. 151, 152, 153; French 103, 104; Ger. 103, 104; Hist. 115, 116, 205, 207; Lat. 101, 102; Rus. 101, 102; and other courses in Spanish listed in the catalog.

A minor (optional) of 15 semester hours in a related field, selected with the approval of the student's adviser.

Health, Physical Education, and Recreation

- (1) *Health Education*: A major in Health Education shall consist of 45 semester hours. Of these, 24 hours must be in health education or a closely related field. One half of the required 24 hours must be upper division courses.

Required courses: Zool. 171, 172; H. Ec. 101; Spch. 120; Ed. 233; H. E. 215, 237, 241, 242, 243, 244, 245; P. E. 167, 222, 267, 3 semester hours activity; Psych. 200, 215, 225, 243; Soc. 215.

Optional: Psych. 211, 213, 234; Ed. 211, 226, 232, 233, 236, 250; Spch. 120, 215; Soc. 204, 205, 206; H. Ec. 101. Other related courses may be substituted with the approval of the adviser.

- (2) *Physical Education*: A major in Physical Education shall consist of 45 semester hours. Of these, 24 hours must be in physical education or a closely related field. Fifteen hours of the required 24 hours must be upper division courses.

Required courses: Zool. 171, 172; Psych. 114; Soc. 125; P. E. 109, 167, 175, 222, 236, 245, 251, 254, 255, 256, 267, 4 semester hours activity; Psych. 215; H. Ec. 101; Med. Tech. 250.

Optional: Zool. 163, 225; Bact. 110; Chem. 180; Phys. 113; Soc. 225; Psych. 114, 240; Mus. 111; Art 105, 117, 151; I. A. 221, 233; P. E. 195, 196, 4 semester hours activity. Other related courses may be substituted with approval of adviser.

- (3) *Recreation*: A major in Recreation shall consist of 45 semester hours. Of these, 24 hours must be in physical education or a closely related field. Fifteen hours of the required 24 hours must be upper division courses.

Required courses: Zool. 171, 172; Psych. 225; Soc. 206; P. E. 110, 167, 185, 222, 231, 233, 237, 254, 4 hours activity.

Optional: Art 117, 151; B.A. 130, 134, 257; Ed. 160, 161, 205, 231, 233; H. Ec. 205; I. A. 121, 133; Journ. 130; P. E. 175, 191, 192, 193, 195, 196, 205, 217, 218, 219, 224, 225, 229, 234, 235, 251, 256; P. S. 103; Psych. 231, 234; Spch. 120, 230, 235, 240; Soc. 204, 209, 212, 215, 220, 225; Zool. 111, 112, 231. Other related courses may be substituted with approval of adviser.

Home Economics

- (1) *Clothing, Textiles, and Related Arts*: A major in Clothing, Textiles, and Related Art shall consist of 45 semester hours. Required courses: H. Ec. 100, 101, 102, 105 or 106, 107 or 108, 203, 209, 214, 215, and 217. An additional 19 hours will be selected by the student with the approval of the adviser from one of the following:

Clothing and Textiles: H. Ec. 202, 211, 213, 218, 219, 221; Art 103, 105, 106, 117, 131, 217, and 218.

Costume Design: H. Ec. 202, 211, 213, 218, 219, 221; Art 103, 105, 106, 131, 135, 231, and 232.

Interior Decorating: H. Ec. 202, 216, 219, 221, 226; Arch. 100, 130; Art 101, 106, 141, 241; I. A. 105, 136, 236, 284, and 289.

- (2) *Family Life and Child Development*: A major in Family Life and Child Development shall consist of 45 semester hours. Required courses: H. Ec. 100, 101, 102, 105, 107 or 108, 203, 209, 214, 215, and 217. An additional 19 hours to be chosen with the approval of the adviser, from the following: H. Ec. 104, 202, 206, 207, 210, 233; B. A. 130; Ed. 160, 161, 205; Psych. 215, 225, 231, 240; Soc. 203, 204, 225; Zool. 171 and 172.

- (3) *Foods and Nutrition*: A major in Foods and Nutrition shall consist of 45 semester hours.

Required courses: H. Ec. 100, 101, 102, 105, 107 or 108, 203, 209, 214, 215, 217. An additional 19 hours to be chosen with the approval of the adviser from the following: H. Ec. 202, 205, 206, 210, 212, 225, 243; Bact. 110; Chem. 180, 280, 281; Phys. 110; Zool. 171 and 172. By careful selection, a student may, with the exception of two courses, meet the requirements set up by the American Dietetics Association for entrance to dietetic internship.

Mathematics

- (1) *Mathematics*: A major in Mathematics shall consist of 45 semester hours.

Required courses: Math. 119 (or Math. 106, 107, 118), 120, 122, 123, 221, 222, and three or more additional upper division mathematics courses selected by the student with the approval of his adviser. At least one course in Mathematics must be taken each semester. The hours needed to complete the major will be selected by the student with the approval of his adviser, usually from courses in the physical sciences. In addition, it is strongly recommended that the student acquire a reading knowledge of both French and German.

Music

Students planning a major in music under any of the curriculums must take certain tests to determine their general aptitude and

achievement, and their special accomplishments in voice or on instrument. For information concerning the time and extent of these tests, consult the Head of the Department of Music.

All students majoring in music are required to attend fifty per cent of all on-campus recitals. Those failing to do so will be given an incomplete grade in their major performing field. The incomplete must be removed during the following semester or it will automatically become an E grade.

- (1) *Applied Music*: A major in Applied Music shall consist of 47 semester hours in addition to the prerequisite courses, Music 111, and 112.

Required courses:

Major instrument or voice.....	16 hours
Ensemble (to be chosen from Mus. 151-154, 251-254, 161-164, 171-174, and 271-274.).....	4 hours
Mus. 113, 115, 116, 117, 118 and 225 or 226.....	12 hours

Required related courses:

Piano*	8 hours
Keyboard harmony	4 hours
Ensemble	3 hours
(to be chosen from Mus. 141-144, 241-244, 131-134, 231-234)	

Suggested (optional) minor to be selected in consultation with the student's adviser: Music 215, 217, 219, 225 or 226, 284, 288, 292, and 287.

*Piano majors must elect 8 hours in another performing medium.

- (2) *General Music*: A major in General Music shall consist of 45 semester hours in addition to the prerequisite courses, Music 111 and 112.

Required courses: Mus. 113, 115, 116, 117, 118, 119, and 120; Piano, 4 semester hours (except piano students who must select another performing medium); and 12 hours, selected with the approval of the adviser from among the following: Mus. 215, 217, 219, 225 or 226, 284, 288, and 292. An additional 15 hours will be selected from the following:

Large Ensembles	4 hours
(to be chosen from Mus. 151-154, 161-164, 171-174, 251-254, 261-264, and 271-274).	
Small Ensembles	3 hours
(to be chosen from Mus. 131-134, 141-144, 231-234, 241-244).	

Applied Music (Major instrument or voice)8 hours

It is anticipated that students taking this major will be desirous of securing a well-rounded cultural background and will wish to choose a minor in related fields such as Art, Literature, etc. It is possible, however, if the student desires,

to select a minor in another field of music, the courses to be selected with the approval of the student's adviser.

- (3) *Music Theory*: A major in Theory shall consist of 45 semester hours, in addition to a required minor in piano and instrument.

Required courses: Music 111, 112, 113, 115, 116, 215.

Required fields: Modern Harmony, 2 hours; Counterpoint, 4 hours; Composition, 4 hours; Advanced Composition, 4 hours; Form and Analysis, 4 hours; Keyboard, 4 hours; History of Music, 4 hours; Instrumentation, 4 hours; Applied Music, 4 hours.

Required minor: Applied Music, 16 hours, to be selected in consultation with the adviser.

Physical Sciences

- (1) *Chemistry*: A major in Chemistry shall consist of a minimum of 45 semester hours.

Required courses: Math. 106 or 107, 118; Phys. 111, 112; Chem. 111, 112, 141, 211, 212, 231, and an additional 6 hours selected with the approval of the adviser. (Chem. 180 and an additional course in chemistry may be substituted for Chem. 211, 212). It is recommended that 8 hours of the courses used to satisfy the generalization requirements in science and mathematics be selected from Zool. 110 or 111-112, Bot. 110, Bact. 110, Geol. 151.

This major is intended for those who plan a lesser degree of specialization than is required for the Bachelor of Science degree. Students who desire chemistry as a major in the study of pre-medicine, pre-dentistry, pre-osteopathy, or technical sales, etc. may elect this program.

- (2) *Geography*: A major in Geography shall consist of 45 semester hours.

Required courses: Geog. 100, 101, 120, 200, 206, 211; Geol. 151.

Optional courses: 25 additional hours in geography and related subjects to be selected with the approval of the adviser.

- (3) *Geology*: A major in Geology shall consist of 45 semester hours.

Required courses: Geol. 151, 152, 211, 212; Geog. 120.

Optional courses: 29 additional hours in geology and related subjects to be selected with the approval of the adviser.

- (4) *Physics*: A major in Physics shall consist of a minimum of 45 semester hours in addition to 8 hours of biology or geology (selected with the approval of the adviser) and Math. 119 or its equivalent, which may be taken in fulfillment of the generalization requirements in the sciences and mathematics.

Required courses: Math. 120, 122, 123; Chem. 111, 112; Phys. 111-112, or 121-122, and an additional 16 hours of physics chosen with the approval of the adviser.

Psychology

- (1) *Psychology*: A major in Psychology shall consist of 45 semester hours in addition to the prerequisite courses Soc. 120, Psych. 100 and G. S. 110, which may be taken in partial fulfillment of the generalization requirements in the social studies and sciences.

Required courses: Psych. 211, 225, 230 and 244. An additional 19 hours of psychology selected from the course offerings listed in the catalog.

Optional courses: 15 hours, selected with the approval of the adviser from the following: Zool. 171, 172; Biol. 204; B. A. 219, 265; Ed. 232; Spch. 120, 257; Eng. 252; Math. 122; Philos. 150, 200, 202, 203, 204, 205; Soc. 204, 220, 225; Anthro. 125, 206.

Social Studies

- (1) *Economics*: A major in Economics shall consist of 45 semester hours.

Required courses: B. A. 130, 132, 133, 134.

Optional courses: 18 hours, selected with the approval of the adviser, from the following: B. A. 173, 217, 219, 220, 224, 226, 257, 258, 259, 262, 264, 267, 269, 270. Fifteen hours must be completed in courses related to the subject of Economics selected by the student in consultation with his adviser.

- (2) *History*: A major in History shall consist of 45 semester hours.

Required courses: Hist. 101, 102, 103, 104, 220. An additional 6 hours of lower division courses must be completed, and 10 hours of upper division courses, chosen from courses in history listed in the college catalog. Fifteen hours must be completed in courses related to the subject of history, selected by the student in consultation with his adviser.

- (3) *Political Science*: A major in Political Science shall consist of 45 semester hours.

Required courses: P. S. 101, 103, 104, 105. An additional 6 hours of lower division courses must be completed, and 12 hours of upper division courses chosen from courses in political science listed in the college catalog. Fifteen hours must be completed in courses related to the subject of political science, selected by the student in consultation with his adviser.

- (4) *Sociology*: A major in Sociology shall consist of a minimum of 45 semester hours.

Required courses: Soc. 120, 203, 204, 220, 225. An additional 15 hours of upper division courses must be completed, chosen

from courses in sociology or anthropology listed in the college catalog. Fifteen hours must be completed in courses related to the subject of sociology selected by the student in consultation with his adviser.

- (5) *Sociology-Anthropology*: A major in Sociology-Anthropology shall consist of 45 semester hours.

Required courses: Soc. 120, 225, Anthro. 124, 206. An additional 18 hours of upper division courses must be completed, chosen from courses in sociology and anthropology listed in the college catalog. Fifteen hours must be completed in courses related to the subjects of sociology and anthropology, selected by the student in consultation with his adviser.

- (6) *Social Welfare*: A major in Social Welfare shall consist of 45 semester hours in addition to the prerequisite courses, Soc. 120; G. S. 100, 110; Psych. 100, which may be taken in partial fulfillment of the generalization requirements in science and the social sciences.

Required courses: Hist. 105, 106; Psych. 225; Soc. 203, 205, 212, 215, 220, 225; P. S. 102. Soc. 205 and 212 may not be taken simultaneously, nor more than two sociology courses may be taken concurrently without permission of the adviser. Optional courses: 15 semester hours to be selected from the following: Hist. 109, 110, 204, 208; Psych. 114, 140, 141, 200, 226, 231, 234; B. A. 130, 132, 219; P. S. 101, 103, 200, 203; Biol. 204; Eng. 171; Anthro. 125; H. Ec. 103, 203. For students who plan to do social work in the Southwest, it is recommended that at least 16 hours of Spanish be completed, including 8 hours taken in fulfillment of the generalization requirement in Foreign Languages.

- (7) *Social Studies*: A major in Social Studies shall consist of 45 semester hours selected by the student in consultation with his adviser from among the entire course offering of the social studies listed in this catalog. This major is intended to meet the individual needs of the student, particularly those interested in Pre-Law, Latin-American Studies, and the Public Service and Foreign Service training programs.

Inter-Departmental

General Studies: A major in general studies shall consist of 45 semester hours. This major is intended for those students, particularly members of the Armed Forces, who do not desire to concentrate in any one particular field but rather desire a broad, general education without specialization.

Required courses: 6 semester hours in advanced English composition or speech and at least 15 semester hours in one of the following fields: Foreign Language, English, Mathematics, Psychology, Social Studies.

Optional courses: 24 semester hours, selected from two or more fields, to constitute a pattern of related courses in line with the student's needs. These courses may be selected from the entire offering of the College, in consultation with the student's adviser.

Bachelor of Science Degree Curriculum

The curriculum for the degree of Bachelor of Science is designed to give the student a broad general background in the principal fields of human knowledge and an opportunity to specialize in one specific selected area of scientific endeavor. It is divided into three parts:

1. Generalization requirements
 - For women students 39 sem. hours
 - For men students (who must take military training unless exempted) 45 sem. hours
2. Major requirements (depending upon major chosen) 45 to 55 sem. hours
3. Electives (depending upon military status and major) 26 to 41 sem. hours

A student may group 15 or more of his elective hours to form a minor if he desires.

Generalization Requirements

The generalization requirements are as follows:

English 101 and 102	6 sem. hours
Health Education 100	2 sem. hours
Physical Education Activity Courses	2 sem. hours
Air Science or Military Science 101, 102, 103, 104 (men)	6 sem. hours
Humanities (Art, Literature, Music, Philosophy, and Speech. Not more than 3 hours in one field.)	6 sem. hours
Science and Mathematics (Biology, Botany, Chemistry, Geology, Mathematics, Physics, Zoology, Geography, if not taken as a Social Science. Not more than 8 hours in one field.)	11 sem. hours
Social Sciences (Anthropology, Economics, History, Political Science, Psychology, Sociology, Geography, if not taken as a Science. Not more than 6 hours in one field.)	12 sem. hours
Total	39 to 45 sem. hours

Recommended courses in the Humanities:

Art: Art 100, 211, 212, 213, 214

Literature and Speech: All courses listed in this catalog in literature and speech.

Music: Music 130, or 117 and 118 with the consent of the instructor.

Philosophy: All courses listed in this catalog in philosophy.

Recommended courses in the Sciences and Mathematics:

Biological Sciences: G. S. 110, or a combination of Bot. 110 and Zool. 110.

Physical Sciences: G. S. 100, or the introductory courses in chemistry, physics, geology, and geography.

Mathematics: Math. 105, 106, 107, 118, 120.

Recommended courses in the Social Sciences:

Anthropology: Anthro. 125.

Economics: B.A. 130, 132.

Geography: Geog. 100, 101.

History: Hist. 101, 102, 103, 104.

Political Science: P. S. 100.

Psychology: Psych. 100.

Sociology: Soc. 120.

Social Studies: S. S. 100.

Since the introductory courses designed to meet the generalization requirements are necessarily elementary, the student is expected to take most of them in his first two years. He will then be able to devote most of his last two years to advanced work in the field of his special interest.

Major Requirements

A major shall consist of from 45 to 55 semester hours of credit in addition to the required generalization courses. The majors in the following list marked with an asterisk (*) require a four-year sequence of courses. A student who elects them after the first semester of his college career must therefore expect to spend more than four years in attaining the bachelor's degree. Majors not marked with an asterisk can be completed in three years or less, and may therefore be elected at the beginning of the sophomore year with no loss of time.

Department	Major
Art	Applied Arts, with emphasis in Commercial Art Interior Design Fashion Design Fashion Illustration Ceramics Crafts

Biological Sciences	*Botany *Entomology *General Biology *Physiological Zoology *Zoology
Health, Physical Education, and Recreation	Health Education Physical Education Recreation
Home Economics	Clothing, Textiles, and Related Arts Family Life and Child Development Foods and Nutrition General Home Economics
Mathematics	*Mathematics
Physical Sciences	*Chemistry Geography Geology Physical Sciences *Physics
Psychology	Psychology
Social Studies	Economics History Political Science Sociology Sociology-Anthropology Social Studies Social Welfare General Studies
Inter-Departmental Elective Courses	

Sufficient elective courses from the entire offering of the College will be chosen by the student in order to complete the 126 semester hours required for graduation. A student may group 15 or more of his elective hours to form a minor if he desires.

Four-year Curriculum Outline

The following is a suggested outline to indicate to the student one way in which the generalization, major, and elective requirements may be worked into a four-year pattern of study. Except in unusual cases, all generalization requirements should be completed during the first two years of study.

FIRST SEMESTER		FIRST YEAR		SECOND SEMESTER	
Eng. 101 First Year English.....	3	Eng. 102 First Year English.....	3	Eng. 102 First Year English.....	3
A.S. 101 Basic Air Science or M.S. 101 Basic Military Science...	1.5	A.S. 102 Basic Air Science or M.S. 102 Basic Military Science...	1.5	A.S. 102 Basic Air Science or M.S. 102 Basic Military Science...	1.5
Physical Activity (P.E. 101 or 107)...	.5	Physical Activity (P.E. 102 or 108)...	.5	Physical Activity (P.E. 102 or 108)...	.5
*G.S. 100 Intro. to Physical Science (or other science or mathematics)...	4	*G.S. 100 Intro. to Biological Science (or other science or mathematics).....	4	*G.S. 100 Intro. to Biological Science (or other science or mathematics).....	4
Humanities or Social Science Elective	2 to 4	Humanities or Social Science Elective	2 to 4	Humanities or Social Science Elective	2 to 4
*H.E. 100 Hygiene (women).....	2	Major	3 to 4	Major	3 to 4
Major	3 to 4				
	14½ to 17½				15½ to 17

SECOND YEAR	
First Semester	Second Semester
A.S. 103 Basic Air Science or M.S. 103 Basic Military Science..... 1.5	A.S. 104 Basic Air Science or M.S. 104 Basic Military Science... 1.5
Physical Activity 5	Physical Activity 5
*H.E. 100 Hygiene (men)..... 2	Major 3 to 6
Major 3 to 4	Social Studies or Humanities 3
Social Studies or Humanities 3	Elective 3
Elective 3 to 4	Science or Math. Elective..... 3 to 4
Other Electives to complete 15 to 17 hrs.	Other Electives to complete 15 to 17 hrs.
THIRD YEAR	
First Semester	Second Semester
Social Studies or Humanities 3	Social Studies or Humanities 3
Elective 3 to 9	Electives 3 to 9
Major 3 to 9	Major 3 to 9
Other Electives to complete 15 to 17 hrs.	Other Electives to complete 15 to 17 hrs.
FOURTH YEAR	
First Semester	Second Semester
Major 3 to 9	Major 3 to 9
Other Electives to complete 15 to 17 hrs.	Other Electives to complete 15 to 17 hrs.

*May be taken either semester.

Departmental Major Requirements

Art

- (1) *Applied Arts*: A major in Applied Arts shall consist of 50 semester hours. The following emphases are available:
 - (a) *Commercial Art*: Required courses in basic art training: Art 101, 103, 105, 106, 121, 161.
Required Courses in Commercial Art: Art 123, 221, 223, 224, 290, and art electives to complete 50 hours.
 - (b) *Interior Design*: Required courses in basic art training: Art 101, 103, 105, 106, 121, 161, 213.
Required courses in interior design: Art 141, 201, 205, 241, 242, 290 and art electives to complete 50 hours.
 - (c) *Fashion Design*: Required courses in basic art training: Art 101, 103, 105, 106, 121, 161.
Required courses in fashion design: H. Ec. 107, 219; Art 123, 131, 135, 136, 231, 232, 290 and art electives to complete 50 hours.
 - (d) *Fashion Illustration*: Required courses in basic art training: Art 101, 103, 105, 106, 121, 161.
Required courses in fashion illustration: Art 123, 131, 135, 136, 201, 203, 235, 261, 290, and art electives to complete 50 hours.
A combined emphasis in fashion design and fashion illustration is possible, if the student desires.
 - (e) *Ceramics*: Required courses in basic art training: Art 101, 105, 106, 121, 211, 213.
Required courses in ceramics: Art 151, 201, 205, 251, 252, 290, and art electives to complete 50 hours.
 - (f) *Crafts*: Required courses in basic art training: Art 101, 105, 106, 121, 161, 211, 213.
Required courses in crafts: Art 117, 151, 201, 205, 217, 218, 220, 290, and art electives to complete 50 hours.
A combined emphasis in ceramics and crafts is possible, if the student desires.

Biological Sciences

- (1) *Botany*: A major in Botany shall consist of 55 semester hours.

Required courses: Bact. 110; Biol. 204, 280; Bot. 110, 160, 171, 172, 230, 242; Chem. 110; Phys. 110; Zool. 110. An additional 9 hours with the approval of the adviser, 4 of which must be upper division.

A minor field may be selected with the approval of the major adviser. The following are suggested areas: Agronomy, Art, Chemistry, Entomology, Zoology.

- (2) *Entomology*: A major in Entomology shall consist of 55 semester hours.

Required courses: Biol. 204, 280; Bot. 110; Chem. 110; Phys. 110; Zool. 111, 112, 180, 216, 220, 222, 231. An additional 11 hours, with the approval of the adviser.

A minor field may be selected with the approval of the major adviser. The following are suggested areas: Agriculture, Botany, Chemistry, Spanish.

- (3) *General Biology*: A major in General Biology shall consist of 55 semester hours.

Required courses: Bact. 110; Biol. 204, 280; Bot. 110; Chem. 110; Phys. 110; Zool. 111, 112; Bot. or Zool. 230, 260. An additional 17 hours, 4 of which must be upper division, selected with the approval of the adviser from Biological Science course offerings listed in the catalog unless otherwise indicated in course description.

A minor field may be selected with the approval of the major adviser. The following are suggested areas: Agriculture, Art, Botany, Chemistry, English, Entomology, Geology, Physics, Psychology, Social Studies, Zoology.

- (4) *Physiological Zoology*: A major in Physiological Zoology shall consist of 49 semester hours, in addition to the prerequisite courses Phys. 111, and 112 and Math. 106 or 107 which may be taken in partial fulfillment of the generalization requirements in science and mathematics.

Required courses: Bact. 110; Biol. 204, 280; Bot. 110; Zool. 111, 112, 163, 180, 231, 232, 254, 255, 260.

Required minor: Students taking this major are required to take a minor in chemistry consisting of Chem. 111, 112, 211, and 212. Those students who desire, may increase their minor by also taking Chem. 141, and 231.

Alternate minor: Students interested in medical translation or illustration should minor in languages or art instead of chemistry. Chem. 110, 180, and Physics 110 may be substituted for equivalent minor requirements listed above. Acceptable programs in these fields should be selected with the approval of the major adviser.

This major is especially designed for those who are interested in pre-medicine, pre-osteopathy, or pre-dentistry, and at the same time wish a background that will give them a basic training for physiological research.

- (5) *Zoology*: A major in Zoology shall consist of 55 semester hours.

Required courses: Biol. 204, 280; Bot. 110; Chem. 110; Phys. 110; Zool. 111, 112, 163, 230, 231, 254, 260. An additional 10 hours, with the approval of the adviser.

A minor field may be selected with the approval of the major adviser. The following are suggested areas: Animal Husbandry, Botany, Chemistry, Entomology.

Health, Physical Education, and Recreation

- (1) *Health Education*: A major in Health Education shall consist of 45 semester hours. Of these, 24 hours must be in health education or a closely related field. One half of the required 24 hours must be upper division courses.

Required courses: Zool. 171, 172; H. Ec. 101; Spch. 120; Ed. 233; H. E. 215, 237, 241, 242, 243, 244, 245; P. E. 167, 222, 267, 3 semester hours activity; Psych. 200, 215, 225, 243; Soc. 215.

Optional courses: Psych. 211, 213, 234; Ed. 211, 226, 232, 233, 236, 250; Spch. 120, 215; Soc. 204, 205, 206; H. Ec. 101. Other related courses may be substituted with the approval of the adviser.

- (2) *Physical Education*: A major in Physical Education shall consist of 45 semester hours. Of these, 24 hours must be in physical education or a closely related field. Fifteen hours of the required 24 hours must be upper division courses.

Required courses: Zool. 171, 172; Psych. 114; Soc. 125; P. E. 109, 167, 222, 236, 245, 251, 254, 255, 256, 267, 4 semester hours activity; Psych. 215; H. Ec. 101; Med. Tech. 250.

Optional courses: Zool. 164, 225; Bact. 110; Chem. 180; Phys. 113; Soc. 225; Psych. 114, 240; Mus. 111; Art 105, 117, 151; I. A. 221, 233; P. E. 195, 196, 4 semester hours activity. Other related courses may be substituted with approval of adviser.

- (3) *Recreation*: A major in Recreation shall consist of 45 semester hours. Of these, 24 hours must be in physical education or a closely related field. Fifteen hours of the required 24 hours must be upper division courses.

Required courses: Zool. 171, 172; Psych. 225; Soc. 206; P. E. 254; P. E. 110, 167, 185, 222, 231, 233, 237, 4 hours activity. Optional courses: Art 117, 151; B.A. 130, 134, 257; Ed. 160, 161, 205, 231, 233; H. Ec. 205; I. A. 121, 133; Journ. 130; P. E. 175, 191, 192, 193, 195, 196, 205, 217, 218, 219, 224, 225, 229, 234, 235, 251, 256; P. S. 103; Psych. 231, 234; Spch.

120, 230, 235, 240; Soc. 204, 209, 212, 215, 220, 225; Zool. 111, 112, 231. Other related courses may be substituted with the approval of the adviser.

Home Economics

- (1) *Clothing, Textiles, and Related Art*: A major in Clothing, Textiles, and Related Art shall consist of 45 semester hours. Required courses: H. Ec. 100, 101, 102, 105 or 106, 107 or 108, 203, 209, 214, 215, and 217. An additional 19 hours will be selected by the student with the approval of her adviser from one of the following:

Clothing and Textiles: H. Ec. 202, 211, 213, 218, 219, 221; Art 103, 105, 106, 117, 131, 217 and 218.

Costume Design: H. Ec. 202, 211, 213, 218, 219, 221; Art 103, 105, 106, 131, 135, 231, and 232.

Interior Decorating: H. Ec. 202, 216, 219, 221, 226; Arch. 100, 130; Art 101, 106, 141, 241; I. A. 105, 136, 236, 284, and 289.

- (2) *Family Life and Child Development*: A major in Family Life and Child Development shall consist of 45 semester hours. Required courses: H. Ec. 100, 101, 102, 105, 107 or 108, 203, 209, 214, 215 and 217. An additional 19 hours to be chosen with the approval of the adviser from the following: H. Ec. 104, 202, 206, 207, 210, 233, B.A. 130; Ed. 160, 161, 205; Psych. 215, 225, 231, 240; Soc. 203, 204, 225; Zool. 171 and 172.

- (3) *Foods and Nutrition*: A major in Foods and Nutrition shall consist of 45 semester hours.

Required courses: H. Ec. 100, 101, 102, 105, 107 or 108, 203, 209, 214, 215, 217. An additional 19 hours to be chosen with the approval of the adviser from the following: H. Ec. 202, 205, 206, 210, 212, 225, 243; Bact. 110; Chem. 180, 230, 281; Phys. 110; Zool. 171 and 172.

By careful selection, a student may, with the exception of two courses, meet the requirements set up by the American Dietetics Association for entrance to dietetic internship.

- (4) *General Home Economics*: A major in General Home Economics shall consist of 45 semester hours.

Required courses: H. Ec. 100, 101, 102, 105, 108, 203, 209, 214, 215, 217. An additional 19 hours to be chosen with the approval of the adviser from the following: H. Ec. 104, 202, 205, 206, 207, 210, 211, 212, 213, 216, 218, 219, 221, 225, 226, 233, and 243.

Mathematics

- (1) *Mathematics*: A major in Mathematics shall consist of 45 semester hours.

Required courses: Math. 119 (or Math. 106, 107, 118), 120, 122, 123, 221, 222, and three or more additional upper division

courses selected by the student with the approval of his adviser. At least one course in Mathematics must be taken each semester. The hours needed to complete the major will be selected by the student with the approval of his adviser, from courses in the physical sciences. In addition, it is strongly recommended that the student acquire a reading knowledge of both French and German.

Physical Sciences

- (1) *Chemistry*: A major in Chemistry shall consist of a minimum of 48 semester hours.

Required courses: Phys. 111-112 or 121-122; Chem. 111, 112, 141, 142, 150, 211, 212, 251, 252, and an additional 6 hours selected from Chem. 215, 260, 271, 272, 280.

The student is also required to complete a minor in mathematics consisting of Math. 119 or 107-118, 120, 122, 123. A reading knowledge of German, French, or Russian is required. This requirement may be met by taking not less than one year of one of these languages.

It is recommended that 8 hours of the courses used to satisfy the generalization requirements in science and mathematics be selected from Zool. 110, Bot. 110, Bact. 110, Geol. 151.

This major is offered for students preparing for professional work in industrial or research laboratories, or for graduate study.

- (2) *Geography*: A major in Geography shall consist of 55 semester hours.

Required courses: Geog. 100, 101, 120, 200, 206, 209, 211, 275, and Geol. 151, 152. Additional hours to complete 55 hours, to be selected with the approval of the adviser.

- (3) *Geology*: A major in Geology shall consist of 55 semester hours.

Required courses: Chem. 111, 112; Math. 106 or 107, 118; Phys. 111, 112, all of which satisfy the science and mathematics generalization requirements; I. A. 105, 145; Geol. 151, 152, 211, 212, 215, 220; Geog. 120, 200; and the additional hours in geology or geography to be selected with the approval of the adviser.

- (4) *Physics*: A major in Physics shall consist of a minimum of 48 semester hours.

Eight hours selected from Zool. 110, Bot. 110, or Geol. 151, plus prerequisite Math. 119 or its equivalent which may be used to satisfy the generalization requirements in science and mathematics.

Required courses: Math. 120, 122, 123, 221; Phys. 111-112 or 121-122, 3 hours of Phys. 250, and 21 additional hours in physics selected from the following: Phys. 215, 219, 220, 221, 222, 231, 232, 241, and 242. The student is urged to take a minor in chemistry to include Chem. 111, 112, and 141.

- (5) *Physical Sciences*: A major in the Physical Sciences shall consist of 45 semester hours selected from the course offering of the department. A student must complete a minimum of 24 hours in one field of the physical sciences and not less than 15 hours in related subjects in consultation with the adviser. This major may be chosen by students preparing for careers in medicine, dentistry, and for those interested in Civil Service and national defense positions.

Psychology

- (1) *Psychology*: A major in Psychology shall consist of 45 semester hours in addition to the prerequisite courses Soc. 120, Psych. 100, and G. S. 110, which may be taken in partial fulfillment of the generalization requirements in the social studies and sciences.

Required courses: Psch. 221, 225, 230 and 244. An additional 19 hours of psychology selected from the course offerings listed in the catalog.

Optional courses: 15 hours, selected with the approval of the adviser from the following: Zool. 171, 172; Biol. 204; B.A. 219, 265; Ed. 232; Spch. 120, 257; Eng. 252; Math. 122; Philos. 150, 200, 202, 203, 204, 205; Soc. 125, 204, 206, 220, 225.

Social Studies

- (1) *Economics*: A major in Economics shall consist of 45 semester hours.

Required courses: B.A. 130, 132, 133, 134.

Optional courses: 18 hours, selected with the approval of the adviser from the following: B.A. 173, 217, 219, 220, 224, 226, 257, 258, 259, 262, 264, 267, 269, 270. An additional 15 hours must be completed in courses related to the subject of economics selected by the student in consultation with his adviser.

- (2) *History*: A major in History shall consist of 45 semester hours.

Required courses: Hist. 101, 102, 103, 104, 220. An additional 6 hours of lower division courses must be completed and 10 hours of upper division courses chosen from courses in history listed in the college catalog. An additional 15 hours must be completed in courses related to the subject of history, selected by the student in consultation with his adviser.

- (3) *Political Science*: A major in Political Science shall consist of 45 semester hours.

Required courses: P. S. 101, 103, 104, 105. An additional 6 hours of lower division courses must be completed and 12 hours of upper division courses chosen from courses in political science listed in the catalog. An additional 15 hours must be completed in courses related to the subject of political science, selected by the student in consultation with his adviser.

- (4) *Sociology*: A major in Sociology shall consist of a minimum of 45 semester hours.
Required courses: Soc. 120, 203, 204, 220, 225. An additional 15 hours of upper division courses must be completed, chosen from courses in sociology or anthropology listed in the college catalog. An additional 15 hours must be completed in courses related to the subject of sociology selected by the student in consultation with his adviser.
- (5) *Sociology-Anthropology*: A major in Sociology-Anthropology shall consist of 45 semester hours.
Required courses: Soc. 120, 225, Anthro. 124, 206. An additional 18 hours of upper division courses must be completed, chosen from courses in sociology and anthropology listed in the college catalog. An additional 15 hours must be completed in courses related to the subjects of sociology and anthropology, selected by the student in consultation with the adviser.
- (6) *Social Welfare*: A major in Social Welfare shall consist of 45 semester hours in addition to the prerequisite courses, Soc. 120; G. S. 100, 110; Psych. 100, which may be taken in partial fulfillment of the generalization requirements in Science and the Social Sciences.
Required courses: Hist. 105, 106; Psych. 225; Soc. 203, 205, 212, 215, 220, 225; P. S. 102. Soc. 205 and 212 may not be taken simultaneously, nor more than two sociology courses may be taken concurrently without permission from the adviser. Optional courses: 15 semester hours to be selected from the following: Hist. 109, 110, 204, 208; Psych. 114, 140, 141, 200, 226, 231, 234; B. A. 130, 132, 219; P. S. 101, 103, 200, 203; Biol. 204; Eng. 171; Soc. 125; H. Ec. 103, 203. For students who plan to do social work in the Southwest, it is recommended that at least 16 hours of Spanish be completed.
- (7) *Social Studies*: A major in Social Studies shall consist of 45 semester hours selected by the student in consultation with his adviser from among the entire course offering of the social studies as listed in this catalog. This major is intended to meet the individual needs of the student, particularly those interested in pre-law, Latin-American Studies, and the Public Service and Foreign Service training programs.

Inter-Departmental

General Studies: A major in general studies shall consist of 45 semester hours. This major is intended for those students, particularly members of the armed forces, who do not desire to concentrate in any one particular field but rather desire a broad, general education without specialization.

Required courses: 6 semester hours in advanced English composition or speech and at least 15 semester hours in one of the following fields: Foreign Language, English, Mathematics, Psy-

chology, Social Studies. Optional courses: 24 semester hours, selected from two or more fields, to constitute a pattern of related courses in line with the student's needs. These courses may be selected from the entire offering of the College, in consultation with the student's adviser.

Special Programs

Pre-Optometry

The following program meets the entrance requirements of most schools of optometry. It is suggested, however, that the interested student obtain a catalog from the school he intends to enter, in order to allow for any deviations from the program suggested below.

FIRST YEAR			
First Semester	Hours	Second Semester	Hours
Eng. 101 First Year English.....	3	Eng. 102 First Year English.....	3
Chem. 110 or 111 General Chem.....	4	Chem. 112 General Chemistry.....	5
Math. 107 Algebra.....	3	Math. 118 Trigonometry.....	3
Zool. 111 General Zoology.....	4	Zool. 112 General Zoology.....	4
P. E. 107 Sports Survey (men).....	0.5	P. E. 108 Sports Survey (men).....	0.5
M.S. 101 Basic Military Science or A.S. 101 Basic Air Science.....	1.5	M.S. 102 Basic Military Science or A.S. 102 Basic Air Science.....	1.5
	18		17
SECOND YEAR			
*Psych. 100 Elementary Psychology.....	3	*Soc. 120 Sociology.....	3
Phys. 111 General Physics.....	4	Phys. 112 General Physics.....	4
Zool. 163 Comparative Anatomy.....	4	*H. E. 100 Hygiene.....	2
*Speech 110 Elements of Speech.....	2	Math. 120 Anal. Geometry.....	4
Elective.....	2	P. E. Activity (men).....	0.5
P. E. Activity (men).....	0.5	M.S. 104 Basic Military Science or A.S. 104 Basic Air Science.....	1.5
M.S. 103 Basic Military Science or A.S. 103 Basic Air Science.....	1.5	Elective.....	2
	17		17

* May be taken either semester.

Pre-Pharmacy

The requirements for admission to a college of pharmacy is limited to one year of pre-pharmacy training. The pre-pharmacy student should obtain a copy of the catalog of the college of pharmacy that he plans to attend and work out his course of study under the guidance of his adviser. The following program will meet the entrance requirements of most schools of pharmacy. The student should have an average of 2.5 or better in this work.

Eng. 101 First Year English.....	3	Eng. 102 First Year English.....	3
Chem. 111 General Chemistry.....	4	Chem. 112 General Chemistry and Qualitative Analysis.....	5
Zool. 110 Animal Biology.....	4	Bot. 110 General Botany.....	4
Math. 106 or 107 Algebra.....	3	Math. 118 Trigonometry.....	3
M.S. 101 Basic Military Science or A.S. 101 Basic Air Science.....	1.5	M.S. 102 Basic Military Science or A.S. 102 Basic Air Science.....	1.5
P. E. 107 Activity.....	0.5	P. E. 108 Activity.....	0.5
	16		17

Pre-Ministerial

Students preparing to enter a Theological Seminary for advanced training leading to a degree in theology, should secure the catalog of the institution which they hope to enter and be guided by its recom-

mendations during their preliminary training. Although no required course of preliminary training is offered at Arizona State College, it is suggested that the student follow the curriculum leading to the degree of Bachelor of Arts with a major in Social Studies (including history, sociology, and economics) and minors in English literature and psychology.

It is suggested that the student take the following courses:

Latin			Social Studies		
Lat. 101	Elem. Latin	4	Hist 103	U.S. through Civil War	3
Lat. 102	Elem. Latin	4	Hist 104	U.S. since Civil War	3
Lat. 103	Inter. Latin	4	Hist. 208	American Cultural History	2
Lat. 104	Inter. Latin	4	Hist. 209	Amer. Cultural History since 1860	2
		16	P.S. 200	Constitutional Government	3
Speech			Bus. Ad. 130	Intro. to Economics	3
Spch 110	Elements of Speech	2	Bus. Ad. 132	Principles of Economics	3
Spch. 120	Public Speaking	2	Bus. Ad. 219	Labor Relations	3
Spch. 121	Oral Interpretation	3	Soc. 120	Sociology	3
Spch. 125	Voice and Diction	2	Soc. 204	Urban Sociology	3
		9	Soc. 215	Community Organization	3
			Soc. 212	Intro. to Social Work	3
Psychology and Philosophy					34
Psych. 100	Elem. Psychology	3	English		
Psych. 213	Mental Hygiene	2	Eng. 151	Survey of English Lit.	3
Psych. 225	Social Psychology	3	Eng. 152	Survey of English Lit.	3
Psych. 240	Psych. of Personality	3	Eng. 153	World Literature	3
Phil. 100	Logic	3	Literature electives		6
Phil. 200	Intro. to Philosophy	3			15
Phil. 302	Principles of Ethics	3			
Phil 205	Social Philosophy	3			
		23			

Many of the above courses will serve to satisfy the student's requirements under the generalization requirements of the Bachelor of Arts degree.

Pre-Law

The requirements for admission to law schools vary from a minimum of three years of pre-legal college work to a four-year program leading to a bachelor's degree. The pre-law student should obtain a copy of the catalog of the law school that he plans to attend and plan his course of study under the guidance of his adviser.

The Association of American Law Schools has indicated that pre-law education should provide the student with: (a) Ability in the comprehension and expression of words; (b) The critical understanding of human institutions and values with which the law deals; (c) Creative power in thinking. The Association does not recommend any particular courses or sequence of courses for pre-legal training.

The leading law schools prefer that their students shall have completed four years of college work before entrance. Students planning to enter a law school requiring a bachelor's degree for entrance may register within any of the major fields in the Arts and Sciences curriculums, or in the Business Administration Curriculum, paying due regard to the recommendations in the preceding paragraph. The student should check carefully in the catalog of the law school which he hopes to attend in order to determine the entrance requirements of that school.

Some law schools admit students upon completion of three years of college work. Students who have completed 98 semester hours (six semesters) at Arizona State College at Tempe with a scholarship index of 2.0 or above in all hours attempted, and have satisfied the generalization and major requirements of the College of Arts and

Sciences for the degree of Bachelor of Arts or Bachelor of Science, may obtain the degree after completing a full year's work in an accredited school of law with an average grade of "C" or above, providing, before entering the school of law, the student secures a statement in writing from the Dean of the College of Arts and Sciences giving senior-in-absentia privileges. In order to receive the degree in this manner, the student must, at the end of his first year in law school, have completed a total of 126 semester hours of college credit and present a signed testimonial from the Dean of the Law School to the Registrar at Arizona State College, which shall include a statement of courses taken, grades achieved, and a recommendation that the degree be granted.

Students planning a pre-law program should consult the pre-law adviser and work out a program of studies which will satisfy the entrance requirements of the law school or schools in which he is interested and which will meet the requirements for the bachelor's degree at Arizona State College as indicated above.

If the student plans to complete his bachelor's degree before entering the law school, he should select a major not later than the beginning of his sophomore year, and, in consultation with his adviser, work out a program of studies which will satisfy the entrance requirements of the law school or schools in which he is interested and which will meet the requirements for the bachelor's degree at Arizona State College.

Pre-Dental, Pre-Medical, and Pre-Osteopathy

While schools of medicine, osteopathy, and dentistry indicate in their catalog that students may occasionally be admitted with only two or three years of pre-medical training, the competition for admittance is so great that few students can hope for admission unless they have completed the work for their bachelor's degree with a scholarship index of at least 3.0.

The requirements for entrance into schools of medicine, dentistry, and osteopathy are very similar. The following analysis of admission requirements to medical schools, prepared by the Association of American Medical Colleges, is apropos. "Medical schools differ in the specific subjects they require of their applicants. All medical schools require some college work in chemistry, biology, and with one exception, physics. More work is specified in chemistry than any other single subject. Courses in both general and, with one exception, organic chemistry are required by all of the medical schools; quantitative analysis is specified by roughly half, and qualitative analysis and physical chemistry are specified by less than a quarter of the schools. Half of the medical schools require that the total number of semester hours spent in these chemistry courses be 16 or more, while the comparable figure for both biology and physics is 8 semester hours. Required courses in biology, other than general biology and zoology, include comparative anatomy and embryology, specified by approximately a quarter of the schools; and anatomy, genetics, micro-technique, etc., listed by only one or two schools. Nineteen of the

medical schools require one or more courses in mathematics. English is a general requirement of almost all of the schools, and about half of them specify some knowledge of a foreign language. Only 18 of the medical schools require any work in the social sciences, although most of the medical schools believe such work helps to round out the liberal arts background of applicants. The total semester hours of required courses in all fields varies from 27 specified by Cornell to 84 hours for Alabama."

Approximately seventy-five percent of the professional schools of the United States require less than forty semester hours in science and mathematics. While additional work in these fields may be taken, the professional schools generally suggest that the prospective student secure a broad, general education, postponing his professional training until he enrolls in a professional school. They generally recommend study in English, the social sciences, psychology, and other subjects of interest to the student.

At the present time, many more students qualify for entrance into the professional schools than can be admitted. It is advised that those who plan medical careers select their major and electives in such a way as to prepare for a possible alternate career in the event that they are not able to secure immediate admission to the school of their choice. Students may major in almost any field in the Arts and Sciences curriculums, but majors in chemistry, biology, psychology, medical technology, and physiological zoology are most common.

The student should consult the pre-medical adviser and discuss with him the program of studies necessary to qualify for admission to the professional schools in which the student may desire to register. If the student indicates a desire to major in a specific field, the pre-medical adviser will refer him to the adviser in the field indicated. It is wise, however, for the student to keep in touch with the pre-medical adviser, regardless of his major field of study, in order to keep abreast of any changes in admission requirements in the professional schools in which he is interested.

Latin-American Area Studies

The development of closer political, cultural, and commercial relations among the nations of the New World has created a greater awareness in the United States, particularly in college circles, of the vast non-English speaking sections of North and South America. This awareness is rapidly spreading throughout the United States, but it is particularly evident in Arizona, because of its strategic location on the border of Latin America.

The Arizona State College at Tempe, in the hope of strengthening the State's position in Hispanic-American affairs, offers a program of studies designed to be of cultural and vocational value. Governmental departments and agencies, as well as innumerable private organizations, are constantly in need of persons trained in Latin-American affairs.

The program is intended primarily to acquaint American students with the culture and development of Latin America. The course

of studies stresses a broad knowledge of Spanish, Latin-American Literature, history, economics, geography, government, architecture, music, and art.

Students should select a major in Social Studies, with minors in Spanish and Geography, selected from within the curriculum leading to the degree of Bachelor of Arts. It is suggested that the following courses, in addition to the generalization requirements, should be taken:

Social Studies		Spanish	
Hist. 103	U.S. Through Civil War	Span. 101	Elementary Spanish
Hist. 104	U.S. Since Civil War	Span. 102	Elementary Spanish
Hist. 115	Colonial Hispanic America	Span. 103	Intermediate Spanish
Hist. 116	Independent Hispanic America	Span. 104	Intermediate Spanish
Hist. 207	History of Mexico	Span. 241	Spanish-American Civilization
Hist. 218	Development of Mexican Civilization		
	(Summer only, a study course in Mexico)		
Bus. Ad. 130	Intro. to Economics	If possible, the student should also take Span. 120 and 121, Spanish Conversation (4) and Span. 224, Spanish American Literature (3).	
Bus. Ad. 132	Principles of Economics	Geography	
Bus. Ad. 289	International Trade and Finance	Geog. 100	Elements of Geography
Anthro. 127	Indians of Mexico & Peru	Geog. 101	Economic Geography
		Geog. 208	Geography of South America
		Geog. 254	Geog. of Trade and Transportation
		Geog. 275	Political Geography
			18
			33
			15

Public Service Training Program

It is anticipated that persons applying for positions in the public service in non-technical fields will have a broad cultural education with an adequate knowledge of history, political science, psychology, English, sociology, and economics. Non-technical Civil Service examinations stress the breadth of knowledge of a liberally educated person, his ability to reason clearly, his ability to quickly and accurately grasp and understand detail, and his rapidity and accuracy of judgment. While no program of courses is endorsed by the Federal Civil Service Commission, a study of the examinations given indicate that the following could be profitably taken as preparation for a career in the public service. The student should remember that high grades and outstanding accomplishments during his educational preparation is a highly desirable indication of probable ability and is an important factor in a Civil Service application.

Students preparing for public administration should enroll in the curriculum leading to the Bachelor of Arts or to the Bachelor of Science degree, and major in political science with a minor in economics. Work should also be taken in English, particularly composition and speech, and in psychology. It is suggested that the student include the following courses in his program.

Political Science		Economics	
P.S. 101	Intro. to Political Science	Bus. Ad. 130	Intro. to Economics
P.S. 102	Amer. Government: State and Local	Bus. Ad. 132	Principles of Economics
P.S. 103	Municipal Government	Bus. Ad. 134	Economics of Income and Employment
P.S. 104	American Political Parties	Bus. Ad. 219	Labor Relations
P.S. 105	American Government: Federal	Bus. Ad. 257	Public Finance
P.S. 201	Comparative National Governments	Bus. Ad. 265	Personnel Administration
P.S. 203	Public Administration		
P.S. 204	International Law and Relations		
P.S. 206	Contemporary Political Thought	English and Speech	
P.S. 207	Government and the American Economy	Eng. 128	Advanced Composition
P.S. 208	Political Opinion and Propaganda	Spch. 110	Elements of Speech
		Spch. 120	Public Speaking
			7
			28

History		Psychology		
Hist. 103	U.S. Through Civil War _____	3	Psych. 100 Elementary Psychology _____	3
Hist. 104	U.S. Since Civil War _____	3	Psych. 225 Social Psychology _____	3
Hist. 109	Economic History of U.S. _____	3	Psych. 214 Business Psychology _____	3
Hist. 219	Recent American History _____	3		
				9
		12		
Sociology				
Soc. 120	Sociology _____	3		
Soc. 204	Urban Sociology _____	3		
Soc. 215	Community Organization _____	3		
		9		

Within the technical fields of governmental service, there are opportunities for botanists, biologists, zoologists, chemists, physicists, historians, sociologists, psychologists, mathematicians, linguists, journalists, and geographers. Students interested in one of these technical fields should consult with the head of the department of his major interest, or with the Dean of the College of Arts and Sciences.

Foreign Service Training Program

Training for the Foreign Service is designed to prepare the student for Department of State examinations for the position of Foreign Service Officer. Requirements for this examination include no specific courses, but a sequence of courses including the following subjects is recommended. The Department of State endorses no particular courses, but the requirements of the examinations have been carefully studied in preparing this sequence of courses. Because of the highly competitive nature of this examination and the relatively small number of vacancies, it has been found that unless students have a scholarship index of 3.5, they are not likely to qualify with a sufficiently high score to have much chance of appointment.

For specific requirements for the Foreign Service Examinations, the interested student should consult with members of the Political Science faculty. Copies of recent examinations may be had by writing to the Department of State, Washington, D. C.

In selecting a major, the student interested in the Foreign Service would do well to major in Social Studies, History, or Political Science. However, a major in Spanish, supplemented by minors in both History and Political Science would be acceptable.

Regardless of the major selected, the student should include the following courses in his program of study:

Social Studies		Geography		
Hist. 101	Western Civilization _____	3	Geog. 100 Elements of Geography _____	3
Hist. 102	Western Civilization _____	3	Geog. 101 Economic Geography _____	3
Hist. 103	U.S. Through Civil War _____	3	Geog. 209 Geography of South America _____	3
Hist. 104	U.S. since Civil War _____	3	Geog. 211 Geography of Europe _____	3
Hist. 201	History of British Empire _____	2	Geog. 215 Geography of Asia _____	3
Hist. 202	The Far East _____	2	Geog. 275 Political Geography _____	3
Hist. 203	American Foreign Relations _____	3		
Hist. 206	Continental Europe _____	2		
Hist. 211	19th Century Europe _____	2		
Hist. 212	The Pacific Area _____	2		
Hist. 214	History of Russia and East Europe _____	2		
Hist. 219	Recent American History _____	2		
Hist. 220	Historical Literature _____	2		
P.S. 105	American Government: Federal _____	3		
P.S. 106	History of Political Thought _____	3		
P.S. 201	Comparative Government _____	2		
P.S. 204	International Law and Relations _____	2		
P.S. 206	Contemporary Political Thought _____	2		
		43		
			Business Administration	
			B.A. 130 Introduction to Economics _____	3
			B.A. 132 Principles of Economics _____	3
				6
			English	
			Eng. 128 Advanced Composition _____	3
			Eng. 151 Survey of English Literature _____	3
			Eng. 152 Survey of English Literature _____	3
			Eng. 153 World Literature _____	3
				12
			Sciences	
			G.S. 100 Introduction to Physical Science _____	4
			G.S. 110 Introduction to Biological Science _____	4
				8

The student should include three years of foreign language in his program, and, if possible, continue his language study for a fourth year. He may substitute language for three or four semester hours of work in history and geography in those regions of the world in which he has little interest. The student's language study should complement his study in history and geography.

Medical Technology

The following curriculum meets the needs of those specializing in Medical Technology. It is ranked Class A by the American Medical Association. The work of the senior year, twelve months, is given at St. Joseph's, Good Samaritan, and Memorial Hospitals, Phoenix. At the conclusion of the fourth year, the student will take an examination formulated by the Board of Registry of the American Society of Clinical Pathologists. Upon the successful completion of this four-year curriculum the student will be granted the degree of Bachelor of Science. Through the W. K. Kellogg Foundation worthy students in Medical Technology may obtain loans of money and scholarships. The third year of work under this curriculum must be taken in residence at this college, unless arrangements have been approved in advance by the Admissions and Standards Committee. Fee, \$50.00 for the senior year at the hospital plus regular college registration fees.

FIRST YEAR			
First Semester	Hours	Second Semester	Hours
Eng. 101 First Year English.....	3	Eng. 102 First Year English.....	3
Chem. 111 Gen. Chem.	4	Chem. 112 General Chemistry.....	5
Zool. 111 General Zoology.....	4	Zool. 112 General Zoology.....	4
*Soc. 120 Sociology.....	3	*Psych. 100 Elementary Psychology.....	3
H. E. 100 Hygiene.....	2	P.E. 102 Basic P.E. (women).....	0.5
P.E. 101 Basic P.E. (women).....	0.5	P.E. 103 Sports Survey (men).....	0.5
P.E. 107 Sports Survey (men).....	0.5	M.S. 102 Basic Military Science or	
M.S. 101 Basic Military Science or		A.S. 102 Basic Air Science.....	1.5
A.S. 101 Basic Air Science.....	1.5	Electives.....	0 or 1.5
	16.5 or 18		17
*May be taken either semester.			
SECOND YEAR			
Chem. 141 Quantitative Analysis.....	4	Chem. 180 Organic Chemistry.....	4
Zool. 163 Comparative Anatomy.....	4	Bact. 110 Introd. to Bacteriology.....	4
Social Science elective.....	3	Humanities elective.....	3
Math. 106.....	3	Math. 118.....	3
P.E. Activity.....	0.5	P.E. Activity.....	0.5
M.S. 103 Basic Military Science or		M.S. 104 Basic Military Science or	
A.S. 103 Basic Air Science.....	1.5	A.S. 104 Basic Air Science.....	1.5
	16		16
THIRD YEAR			
Phys. 111 General Physics.....	4	Phys. 112 General Physics.....	4
Zool. 232 Parasitology.....	4	Chem. 280 Biochemistry.....	3
Zool. 255 Human Mechanism.....	4	Zool. 254 Embryology.....	4
Humanities elective.....	3	Social Science elective.....	4
	15		15
FOURTH YEAR			
Med. Tech. 240 Laboratory Techniques.....	4	Med. Tech. 250 Histology.....	4
Med. Tech. 225 Pathogenic		Med. Tech. 265 Serology.....	3
Bacteriology.....	4	Med. Tech. 271 Parasitology.....	2
Med. Tech. 282 Biochemistry.....	4	Med. Tech. 264 Blood Chemistry.....	4
Med. Tech. 273 Hematology.....	4	Med. Tech. 285 Urinalysis.....	2
	16	Med. Tech. 289 Chemistry of Digestion.....	2
	16		16

Nursing and Pre-Nursing

The college offers a one-year and a two-year curriculum for students planning to go into nursing.

ONE YEAR PRE-NURSING CURRICULUM

Some schools of nursing require one year of college and three years of nursing school.

First Semester	Hours	Second Semester	Hours
Eng. 101 First Year English.....	3	Eng. 102 First Year English.....	3
*Soc. 120 Sociology.....	3	*Psych. 100 Elementary Psychology.....	3
H. Ec. 101 Elementary Nutrition.....	2	*G. S. 110 Introd. to Biol. Sciences.....	4
Chem. 110 Introductory Chemistry.....	4	Mathematics Elective.....	3
Zool. 171 Human Anatomy.....	3	Zool. 172 Human Physiology.....	3
P. E. 101 Basic P. E. (women).....	0.5	P. E. 102 Basic P. E. (women).....	0.5
	15.5		16.5

*May be taken either semester.

TWO YEAR PRE-NURSING CURRICULUM

This curriculum is designed for nursing schools that require two years of general college education. The selection of electives should be made after consulting the catalog of the nursing school that the student plans to attend, and the pre-nursing adviser.

FIRST YEAR			
First Semester	Hours	Second Semester	Hours
Eng. 101 First Year English.....	3	Eng. 102 First Year English.....	3
*Soc. 120 Sociology.....	3	*Psych. 100 Elementary Psychology.....	3
Chem. 110 Introductory Chemistry.....	4	Chem. 120 Organic Chemistry.....	4
H. Ec. 101 Elementary Nutrition.....	2	*G. S. 110 Introd. to Biol. Sciences.....	4
Mathematics Elective.....	3	P. E. 102 Basic P. E. (women).....	0.5
P. E. 101 Basic P. E. (women).....	0.5	Elective.....	3
	15.5		17.5
SECOND YEAR			
*Eng. 171 Introduction to Literature.....	3	*Speech 110 Elements of Speech.....	2
Zool. 171 Human Anatomy.....	3	Zool. 172 Human Physiology.....	3
Social Science elective.....	3	Social Science elective.....	3
H. Ec. 105 Applied Food Principles.....	3	Electives.....	7
Bact. 110 General Bacteriology.....	4	Physical Education activity (women).....	0.5
Physical Education activity (women).....	0.5		
	16.5		15.5

* May be taken either semester.

DEGREE CURRICULUM FOR NURSING

A degree curriculum for nurses is offered which combines a general college program and a basic clinical course in nursing. This curriculum is designed to meet the needs of two groups of students: (1) those who wish to pursue a program of training to be taken jointly at the College and at the Good Samaritan Hospital, Phoenix, leading to the Certificate of Registered Nurse in Arizona and to the Bachelor of Science degree, and (2) those who hold the Certificate of Registered Nurse in Arizona and who wish to complete, in addition, a program of college work that will lead to the Bachelor of Science degree.

I. FIVE YEAR PROGRAM FOR NURSING

Students without nursing training will meet the regular college admission requirements and will take the general college courses dur-

ing the first year as outlined in the following curriculum. The basic training in professional nursing will be taken during the next three years at the Good Samaritan Hospital. As a part of the nursing program, students must take the courses that are outlined in the second year of the curriculum given below.

As a prerequisite for graduation, the student must pass the Arizona State Board examinations in nursing. Upon passing the State Board Examination, the student must file with the Registrar and Director of Admissions, a statement from the Secretary of the State Board that the student has been granted registration and holds a currently valid license to practice nursing in Arizona. Upon satisfactory completion of the requirements of a registered nurse in Arizona, and those of the college for this curriculum, the student is eligible for graduation with the Bachelor of Science degree.

Before beginning the fifth year of the degree program in nursing, the student is advised to consult with the nursing adviser at the college, and select courses that will best meet her interest and needs. This work may be selected from the following fields, or combinations of them: English, Education and Sociology, Home Economics, Foreign Languages, Physical Education, Psychology, and Science.

FIRST YEAR

(At Arizona State College at Tempe or other accredited college)

First Semester	Hours	Second Semester	Hours
Eng. 101 First Year English.....	3	Eng. 102 First Year English.....	3
*Speech 110 Elements of Speech.....	2	*Eng. 171 Introd. to Literature.....	3
Math. 105 Basic Mathematics.....	3	*G.S. 110 Introd. to Biological Sciences	4
P. E. 101 Basic P. E. (women).....	0.5	P. E. 102 Basic P. E. (women).....	0.5
Social Studies Elective.....	3	Humanities Elective.....	2
*Chem. 110 Introductory Chemistry.....	4	Social Studies Elective.....	3
	15.5		15.5

* May be taken either semester.

SECOND YEAR

Good Samaritan Hospital School of Nursing.

THIRD YEAR

Good Samaritan Hospital School of Nursing

FOURTH YEAR

Good Samaritan Hospital School of Nursing

FIFTH YEAR

(At Arizona State College at Tempe)

Soc. 212 Introd. to Social Work.....	3	Chem. 180 Elem. Organic Chem.	4
Psych. 208 Mental Hygiene & Abnormal Psychology.....	3	Soc. 220 Modern Social Problems.....	3
Psych. 225 Social Psychology.....	3	Psych. 234 Child Psychology.....	3
Restricted electives.....	8	Restricted electives.....	7

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II. DEGREE PROGRAM FOR REGISTERED NURSES

Graduates of accredited three-year schools for nurses will, in addition to meeting the regular admission requirements, file with the Registrar and Director of Admissions, well in advance of registration, official transcripts of all work done in high school, college, and nursing schools together with a statement from the Secretary of the State

Board that the student has been granted registration and holds a currently valid license to practice nursing in Arizona. Upon acceptance of those credentials, advanced standing credit, not to exceed 46 hours, will be allowed for work completed in an approved school of nursing.

To meet the requirements for the Bachelor of Science degree, students admitted to this curriculum will be required to complete not less than 80 semester hours of credit of which 24 hours should be upper division courses to be distributed as follows:

English 101-102	6 hrs.
Humanities (see page 85)	6 hrs.
Social Science (see page 85).....	12 hrs.
Science—Biol. 110, Bact. 110, Chem. 110, 180.....	16 hrs.
Restricted electives, to be chosen from	
English, Education, Psychology, Home Economics,	
Social Studies, Sociology and Science.....	40 hrs.
Total—not less than.....	80 hrs.

The restricted electives are to be selected under the guidance of the nursing adviser. Students enrolled are not required to meet the physical education and hygiene requirement for the Bachelor of Science degree.

School of Education

Purpose

The purpose of the School of Education is to promote interest in the teaching profession and to prepare students to carry on effective work as teachers and administrators in the public schools. To accomplish this end the aim is to acquaint the student with human nature, educational subject matter, methods of teaching and administration, and methods of social reconstruction commensurate with democratic social theory.

It is the belief of those concerned with teacher education that those who work with the children in our schools should be educated as well as trained. To this end a wide array of cultural and general educational background is provided. There is no conflict in the approach to develop a person who lives wholesomely and happily as well as one who realizes his greatest potentialities, both professionally and in other phases of living. The School is dedicated to these purposes as well as to a program of training leading to the degrees and certificates listed below.

Organization

The courses of instruction offered by the School of Education are organized into groups so that a well-related sequence is established for important areas. These groups include Childhood Education, Secondary Curriculum and Methods, School Administration and Supervision, Audio Visual Education, Guidance, Social Foundations, and Basic Education. These divisions make for better organization in selecting courses to meet requirements for the various teacher education curriculums.

Degrees

Bachelor of Arts in Education Degree

The Bachelor of Arts in Education Degree is awarded after successful completion of a four year curriculum in teacher education. A minimum of 126 semester hours of work is required for each of the curriculums. A balanced program of activities for this degree provides work in well recognized basic areas.

General Education. It is assumed that all teachers should have a background of general knowledge and culture. Therefore, many of the required courses in the first two years in all of the teacher-education curriculums are identical. Liberal allowance has been made for electives to meet individual needs and desires for service in public education.

The generalization requirements under each of the teacher education curriculums include the following:

First year English and Speech.....	8
Health Education, Hygiene.....	2
Military Science or Air Science (men only).....	6
Physical Education, Activity.....	2
Psychology	3
Social Science	12
Science	8

Eight hours of humanities in addition to Freshman English, or Freshman English plus two hours of Speech, and six hours of literature and/or Drama must be included. The following courses may be used to meet this requirement:

1. Music: 130
2. Art: 100, 211, 212, 213g
3. Physical Education: 193
4. English (literature) 151, 152, 153, 171, 203, 205, 206, 209g, 211g, 212g, 213, 214, 215, 216, 221, 222, 223g, 226, 227g, 231g, 244g, 252, 253g.
5. Foreign Languages: All courses
6. Philosophy: 150, 200, 202, 203, 204, 205g
7. Speech: 110, 119, 120
8. Architecture: 100

Major and Minor Teaching Fields. A major or minor teaching field is not required of students pursuing the kindergarten-primary or the elementary curriculum. In the five-year secondary curriculum the student must complete at least one major teaching field consisting of forty-five semester hours and one minor teaching field of at least fifteen semester hours.

Professional Education. In each teacher education curriculum, 24 semester hours of education and psychology are required. The specific courses vary with the curriculum. Each required professional education course is selected for its specific contribution to the preparation of a well-trained and well-balanced teacher.

Master of Arts in Education Degree

A graduate program consisting of a minimum of 30 semester hours of properly arranged work leads to the degree of Master of Arts in Education. Students who complete any of the teacher education curriculums at Arizona State College at Tempe, may arrange for a program of studies leading to the degree of Master of Arts in Education. This degree is also available to graduates of other recognized institutions of higher learning by meeting the prescribed requirements. For specific reference to this program, see pp. 158-159 of this catalog.

Doctor of Education Degree

The degree, Doctor of Education, is awarded for satisfactory completion of the Doctoral program of graduate studies. For specific reference to this degree, see pp. 160-161 of this catalog.

Certification

Arizona Certification

The State Board of Education issues the following types of certificates, preparation for which may be obtained at the Arizona State College at Tempe: (1) Kindergarten-Primary, (2) Elementary, (3) Pre-Secondary, (4) Secondary, (5) Administrative, (6) Special in Art, Music, and Home Economics, (7) Vocational in Home Economics. For complete details concerning certification, students should refer to the Rules and Regulations published by the State Board of Education, or consult with the Director of Teacher Education.

The four-year Kindergarten-Primary and Elementary Teacher Education curriculums lead directly to the corresponding Arizona teaching certificates. The Pre-Secondary certificate (good for four years) may be obtained by completing the four-year Secondary Teacher Education Curriculum, and an additional six semester hours of graduate credit. The five-year Secondary Teacher Education Curriculum leading to the Master of Arts in Education degree encompasses all of the requirements for the full secondary certificate. The administrative certificate (either elementary or secondary) may be obtained by completing any of the teacher education curriculums and an appropriately chosen post-graduate program including master's degree program with at least 15 semester hours of education taken subsequent to the bachelor's degree. The special certificates in Art, Music, and Home Economics may be obtained by completing the four-year Secondary Teacher Education Curriculum with the appropriate major teaching field. The Vocational certificate in Home Economics may be achieved by following the Secondary Teacher Education Curriculum with a major teaching field in Home Economics, which contains specific course requirements.

In some instances, transfer students or others not enrolled in a teacher education curriculum may meet certification requirements through education courses not listed in teacher education curriculums. In each case, a teacher education adviser should be consulted before the course is selected. Information regarding certification requirements may be obtained from the State Superintendent of Public Instruction.

Directed Teaching

Admission

Before admission, all candidates for directed teaching must meet the following requirements: (1) Junior or senior standing. (2) A cumulative scholarship index of 1.75 or better. (3) Have credit in all the required courses of the first two years of a teacher-education curriculum being followed. (4) Those pursuing the *Kindergarten-Primary Curriculum* must have credit in Construction Activities, Plays and Games for the Kindergarten-Primary School, Kindergarten-Primary Curriculum, Science in the Elementary School, Language Arts, and Educational Measurements. (Educational Measurements may be taken

concurrently with directed teaching.) (5) Those taking the *Elementary Curriculum* must have credit in Educational Psychology, Language Arts, Elementary Curriculum, and Educational Measurements. (Curriculum and Measurements may be taken concurrently with directed teaching.) (6) Those taking the *Secondary Curriculum* must have credit in Educational Psychology, Secondary School, Methods of Teaching in Secondary Schools, and Educational Measurements. (Educational Measurements and Secondary Methods may be taken concurrently with directed teaching.) Modification of course sequences may be made for irregular and transfer students by the Director of Teacher Education.

Requirements

All students who are candidates for the bachelor's degree and elementary certification teach in the cooperating schools for one-half day for one semester either the first or second half of the third or fourth year. Students who are preparing for secondary certification teach for one-quarter day for one full semester in either the first or second half of the fourth year. Students whose programs permit them to devote their full time to directed teaching spend all day in the cooperating schools and receive one semester hour of credit per week of successful directed teaching. Regularly scheduled conferences at the College are held during the directed teaching period. The student's load is limited to sixteen semester hours during the semester in which he is teaching. Student teachers are not permitted to take part in activities that interfere with their directed teaching, conferences, or other activities related to teaching in the cooperating school.

Effective September 1956, students must count full time or part time employment as part of their load while they are doing directed teaching. Each five hours of employment per week will be considered equivalent to a load of one semester hour in calculating the total 16 semester hour load permitted during the semester in which the student is teaching. It is recommended that students plan not to be employed during the directed teaching period.

Training Schools Available

The College has available the following schools for the training of student teachers: The Ira D. Payne Training School, Tempe Elementary School, The Rural School, Phoenix Grade Schools, Phoenix Union High Schools, Mesa Schools, Glendale Elementary Schools, Glendale High School, and others. Students are assigned to schools other than those listed above only on special request.

Each of these schools presents its own particular type of organization and problems so that the student may receive training in any type of work desired from the kindergarten through the high school. All of these are regular public schools; therefore, students obtain their training under actual classroom conditions of the public school. Each student teacher is under direct guidance of a cooperating teacher and the Director of Teacher Education.

Waiver

Students who have been employed as regular teachers in public, parochial, or Indian schools, may apply to the Director of Teacher Education, School of Education, for waiver of the Directed Teaching requirement. Waiver of Directed Teaching is finally granted by the Admissions and Standards Committee upon recommendation of the Director of Teacher Education. Waiver of this requirement in no way changes the total number of semester hours required for graduation or for establishing residence.

Regular teaching experience of two years' duration within the past five years will be considered sufficient to waive the total directed teaching requirement.

Regular teaching experience of one year's duration within the past five years will be considered sufficient to waive one-half the directed teaching requirement.

Regular teaching experience of two or more years' duration prior to the past five years will be considered sufficient to waive one-half the directed teaching requirement.

Teacher Education Curriculums

Kindergarten-Primary Curriculum

The kindergarten-primary curriculum offers specialized training for students who wish to teach young children. The courses are designed to give the student a better understanding of young children and of their total personality development during the first years of their school adjustment. Special emphasis is given to the growth and development of the child and how he learns rather than to specific subject matter. There is a wide demand every year for teachers who complete the kindergarten-primary curriculum.

This curriculum leads to the degree of Bachelor of Arts in Education and to certification for teaching in the kindergarten and grades one, two and three.

FRESHMAN YEAR

First Semester		Hours	Second Semester		Hours
Eng. 101 First Year English	3		Eng. 102 First Year English	3	
*G.S. 100 Intro. to Phys. Sciences	4		*G. S. 110 Intro. to Biol. Sciences	4	
*Psych. 100 Elementary Psychology	3		*Soc. 120 Sociology	3	
P. E. 101 Basic P.E. (women)	0.5		P. E. 102 Basic P. E. (women)	0.5	
P. E. 107 Sports Survey (m'n)	0.5		P. E. 108 Sports Survey (men)	0.5	
M. S. 101 Basic Military Science or			M.S. 102 Basic Military Science or		
A. S. 101 Basic Air Science	1.5		A. S. 102 Basic Air Science	1.5	
Humanities	3 or 4		Humanities	3 or 4	
Electives	0 to 2.5		Electives	0 to 2.5	
	16			16	

SOPHOMORE YEAR

*Speech 110 Elements of Speech	2		*H. E. 100 Hygiene	2	
Psych. 140 Growth and Development	2		Psych 141 Growth and Development	2	
Hist. 101 Western Civilization or			Hist. 102 Western Civilization or		
Hist. 103 U. S. History	3		Hist. 104 U. S. History	3	
Mus. 125 Music Fundamentals for			Mus. 126 Music Fundamentals for		
Kdgn.-Elem. Teachers	2		Kdgn.-Elem. Teachers	2	
*Ed. 160 Children's Literature	3		*Ed 115 Orientation to Education	1	
P. E. Activity (men), (women)	0.5		P. E. Activity (men), (women)	0.5	
M. S. 103 Basic Military Science or			*Ed. 161 Techniques in Story Telling	2	
A. S. 103 Basic Air Science	1.5		M. S. 104 Basic Military Science or		
Electives	2 or 3.5		A. S. 104 Basic Air Science	1.5	
	16		Electives	2 or 3.5	
				16	

JUNIOR YEAR

*Ed. 205 Construction Activities.....	4	*Sci. 231 Science for Elem. School.....	3
*Ed. 212 Plays & Games for the K-P School.....	3	H.E. 242 School-Community Health.....	3
Mus. 227 Music in the K.P. Grades.....	2	*Ed. 203 Reading Problems in the K-P School.....	3
*Ed. 201 Language Arts.....	3	*Ed. 209 K-P Curric. & Tch. Problems.....	4
*Psych. 200 Ed. Measurements.....	3	*Ed. 233 Audio-Visual Aids in Education	2
	15		15

SENIOR YEAR

*Ed. 260 Directed Teaching.....	10	*Ed. 211 History of Education or	
Electives.....	6	*Ed. 250 Philosophy of Education.....	3
		*P. S. 200 Constitutional Government.....	3
		Electives.....	10
	16		16

GRADUATE YEAR

For Graduate Degree Programs, See Graduate Bulletin.

Professional Semester. Students in the Kindergarten-Primary curriculum, whose program will permit, may register for Ed. 250g, 3 hours; Ed. 260, 10 hours; and Ed. 200, 3 hours during the same semester. By registering for these courses and no others, students may enjoy a more flexible schedule of classes and a richer student teaching experience.

Special Requirements and Electives. Recommended courses for electives: Art 100, 211; Ed. 202, 230; Eng. 151, 171; H. Ec. 101, 102, 103, 104, 106; Math. 205; Mus. 117, 118, 121, 122, 123, 124; Psych. 213; Spch. 119, 230, 240. See also *Electives and Specialization* topic pp 122.

In addition, kindergarten-primary students must be able to play the piano and to sight sing and sight read with sufficient ability to meet the needs of young children.

Students who play the piano may meet this requirement by individual examination during the registration period. The examination will consist of playing simple songs and rhythms (e.g., march, skip, gallop) musically. Mus. 121, 122, 123, and 124 are offered for those students who cannot pass the examination or who do not play the piano. All Kindergarten-Primary students are required to register for Mus. 125, 126. During the first two weeks of these classes, individual examinations in sight singing and sight reading will be given upon request. Students passing the examinations will not be required to remain in these courses.

Students interested in young children but not in certification may elect any of the kindergarten-primary courses.

Students holding a bachelor's degree may work for the kindergarten-primary certificate on the graduate level. These courses are listed in the Graduate Bulletin.

*May be taken either semester.

†Eight semester hours of Humanities, in addition to Freshman English, or Freshman English plus two hours of speech and six hours of literature and/or drama are required. Humanities, in general, include art or music (appreciation or theory), literature, drama, philosophy, and foreign languages.

Elementary Curriculum

This curriculum prepares students for service in the elementary school. No major or minor teaching fields are required. It is advisable that the student take some work in the various departments of the college so as to have a broad knowledge covering many fields. Opportunities for employment as teachers are greatest in the elementary fields. By proper selection of courses of instruction it is possible for students who care to take the necessary extra time to qualify eventually for the secondary certificate also. Interested students will consult an educational adviser who will explain how both certificates may be obtained.

This curriculum leads to the degree of Bachelor of Arts in Education and to certification for teaching in the elementary school, grades one to nine inclusive.

FRESHMAN YEAR

First Semester		Hours	Second Semester		Hours
Eng. 101 First Year English	3		Eng. 102 First Year English	3	
*G. S. 100 Introd. to Phys. Sciences	4		*G. S. 110 Introd. to Biol. Sciences	4	
*Psych. 100 Elementary Psychology	3		*Soc. 120 Sociology	3	
P. E. 101 Basic P. E. (women)	0.5		P. E. 102 Basic P. E. (women)	0.5	
P. E. 107 Sports Survey (men)	0.5		P. E. 108 Sports Survey (men)	0.5	
M. S. 101 Basic Military Science or A. S. 101 Basic Air Science	1.5		M. S. 102 Basic Military Science or A. S. 102 Basic Air Science	1.5	
§Humanities	3 or 4		§Humanities	3 or 4	
Electives	0 to 2.5		Electives	0 to 2.5	
		16			16

SOPHOMORE YEAR

Psych. 140 Growth and Development	2		Psych. 141 Growth and Development	2	
*Speech 110 Elements of Speech	2		*H. E. 100 Hygiene	2	
*Ed. 160 Children's Literature	3		*Geog. 100 Elements of Geography	3	
Hist. 101 Western Civilization or Hist. 103 U. S. History	3		Hist. 102 Western Civilization or Hist. 104 U. S. History	3	
P. E. Activity (men) (women)	0.5		*Ed. 115 Orientation to Education	1	
M. S. 103 Basic Military Science or A. S. 103 Basic Air Science	1.5		P. E. Activity (men) (women)	0.5	
Electives	4 to 5.5		M. S. 104 Basic Military Science or A. S. 104 Basic Air Science	1.5	
		16	Electives	3 to 4.5	
		16			16

JUNIOR YEAR

*Psych. 200 Ed. Measurements	3		*Psych. 213 Ed. Psychology	3	
*Ed. 201 Language Arts	3		*Ed. 202 Language Arts	3	
Math. 205 Arithmetic in the Elem. School	3		*Ed. 233 Audio-Visual Aids in Education	2	
Electives	7		*Sci. 231 Science for the Elem. School	3	
		16	*P. E. 229 Playground Leadership	2	
		16	Electives	3	
		16			16

SENIOR YEAR

*Ed. 260 Directed Teaching	10		*P. S. 200 Constitutional Government	3	
*Ed. 230 Elementary Curriculum	3		*Ed. 211 History of Education or Ed. 250 Philosophy of Education	3	
*Art 210 Public School Art	2		H. E. 242 School-Community Health	3	
		15	Electives	6	
		15			15

GRADUATE YEAR

For Graduate Degree Programs, See Graduate Bulletin.

*May be taken either semester

§Eight semester hours of Humanities, in addition to Freshman English, or Freshman English plus two hours of speech and six hours of literature and/or drama are required. Humanities, in general, include art or music (appreciation or theory), literature, drama, philosophy, and foreign languages.

Professional Semester. Students in the elementary curriculum, whose program will permit, may register for Ed. 250g, 3 hours; Ed. 260, 10 hours; and Ed. 200, 3 hours during the same semester. By registering for these courses and no others, students may enjoy a more flexible schedule of classes and a richer student teaching experience.

Pre-secondary Certificate. Students registered under the elementary curriculum may qualify for the pre-secondary certificate in addition to the elementary certificate by taking Ed. 215, Secondary School; Ed. 228, Methods of Teaching in the Secondary School; five hours of directed teaching in grades seven to twelve; a major of not less than twenty-four semester hours and a minor of not less than fifteen semester hours in fields or subjects usually taught in high schools; and not less than six semester hours of graduate work acceptable toward an advanced degree at an accredited institution.

Electives and Specialization. Recommended electives include:

1. Art 100, 101, 117, 121, 151, 206g, 207, 219, 249g.
2. Botany 243.
3. Ed. 161, 232, 240g.
4. Eng. 171.
5. Foreign Languages, any.
6. Geog. 101, 200, 206, 250, 270.
7. Health Ed. 215.
8. Hist. 109, 110, 111, 112.
9. Home Ec. 101, 102, 103, 106, 107, 202, 203, 207, 209, 226.
10. I. A. 100, 103, 105.
11. Lib. Sci. 201, 203, 204, 205.
12. Math. 105, 106, 107, 255.
13. Music 125, 126, 227, 229.
14. P. E. 103, 105, 117, 119, 167, 185, 190, 222, 223, 228, 230, 231.
15. Phys. Sci. 101, 102.
16. Psych. 215.
17. Soc. Stud. 100.
18. Speech 230, 240, 257.
19. Zool. 171, 172, 231, 233.

Students who wish to secure a special certificate in art or music, may do so by arranging elective courses to cover the requirements of thirty semestr hours of academic work and five hours of directed teaching in the special field.

Students registered under the elementary curriculum who wish to specialize in industrial arts, home economics, art, or music, may omit the following required courses in the elementary curriculum provided these 13 semester hours are used together with the existing semester hours of electives to develop a teaching field.

Ed. 160 Children's Literature	3
Math. 205 Arithmetic in the Elementary School.....	3
G.S. 231 Science for the Elementary School.....	3
Art 210 Public School Art.....	2
P.E. 220 Playground Leadership.....	2

Students who request this option must have the major teaching field approved by the appropriate department head and the entire program must be approved by the Dean of the School of Education.

Students who plan to teach at the junior high school level may group their electives in major and minor teaching fields to suit their teaching interests.

While a major is not required for either kindergarten-primary or elementary curriculums, it may be desirable to take additional work in selected subject fields. Electives may be used toward specialization in a field. Suggested electives and programs of specialization in each of the subject fields follow:

Art

Students Not Specializing in Art. The student in the elementary curriculum will find the following courses valuable in teaching: Art 101, 105, 117, 121, 151, 161, 207, and 210.

Students Specializing in Art. Students registered in the elementary curriculum wishing to major in art education or to secure the special certificate in art should take the following courses: Art 101, 103, 105, 106, 117, 121, 151, 161, 207 and 211. Additional courses to complete the requirement of 30 semester hours in art for the special certificate or 45 semester hours for a major teaching field in art should be selected from the upper division offering. Art 207 should precede Directed Teaching. Students majoring in art should complete Art 101, 103, 105, and 106 during the freshman year.

Biological Sciences

G. S. 110 is the only biological science course required in both these curricula except for those students who wish to do special work in this field. In addition to G. S. 110, these students should take Bot. 110, 242; Zool. 110, 180, 230 and 231.

English

Students Not Specializing in English. Prospective teachers following either one of these curriculums will find English 171, Speech 230, 240 and 257 especially helpful as professional training. They may also wish to take other English and speech courses for personal development.

Students Specializing in English. Students wishing a limited number of courses may choose any for which they have the prerequisites. Those wishing a major or minor teaching field, see topic under secondary curriculum.

Foreign Languages

Students Not Specializing in Language. It is suggested that students wishing to take some work in Spanish may elect courses from among the following: Span. 101, 102, 103, 104, 120.

Students Specializing in Language. Students wishing a limited number of courses will choose them with the advice of the head of the department. Those wishing a major teaching field, see topic under secondary curriculum.

Home Economics

Students Not Specializing in Home Economics. It is suggested that prospective teachers may profitably elect some courses from the following: H. Ec. 101, 102, 103, 104, 106, 107, 202, 203, 207, 209, 210 215, 217, 219, 226.

Students Specializing in Home Economics. Students wishing special work, 30 semester hours for the special certificate, or 45 semester hours for a major teaching field, should select H. Ec. 101, 102, 105 or 106, 107 or 108, 203, 209, 217; Ed. 228h and such other courses as fit their individual interests and abilities.

Industrial Arts

Students Not Specializing in Industrial Arts. The following courses will prove helpful to those students who are preparing to teach in these grades. The experience and training gained will give an insight into phases of design, construction, and production useful to teachers. I.A. 133 Plastics, I.A. 136 Upholstery, I.A. 151 General Shop, I.A. 221g Industrial Arts for the kindergarten-primary teachers.

Students Specializing in Industrial Arts. Students desiring to specialize in Industrial Arts must take a minimum of 30 semester hours of work, including 6 hours each, in four of the following divisions of the department: Aeronautics, Building and Construction, Drafting, Electronics, and Mechanics, including I.A. 211, 212. Students will be required to choose 12 semester hours from the following courses: I.A. 100, 103, 111, 115, 122, 126, 136, 160, 200, 269.

Students who prefer to have a more intensive specialty in Industrial Arts may take a major teaching field of 45 semester hours. The additional 15 hours may be electives chosen under the guidance of an adviser.

Library Science

A Library Science minor is recommended for students planning to prepare for the positions of teacher-librarian or school librarian. The courses are: L.S. 203, 204, 205, and 206, and a choice of either L.S. 201, 202 or 290.

Mathematics

Arithmetic in the Elementary School is the only course in mathematics required in the elementary curriculum, and is recommended in the kindergarten-primary curriculum as an elective. For students desiring further work in mathematics, such courses as the following are recommended: Math. 105, 106, 107, 118, 119, 120.

Music

Students Not Specializing in Music. Students not specializing in music may elect any work in theory, voice, or instruments for which they have sufficient background. Those who wish to teach music in their own classrooms should take Mus. 125, 126, and 229.

Students Specializing in Music. Students who wish to complete 30 semester hours for the special certificate, or 45 semester hours for a major teaching field, should plan their programs under the guidance of both an elementary curriculum adviser and an adviser in music.

Health Education and Physical Education

Students Not Specializing in Health Education. In addition to the required 5 semester hours in health education, students preparing to handle a limited program of health education, will find it helpful to select from the following courses: H.E. 215, 237, 241; P.E. 167, 185, 222, 267; Psych. 215, 225; Ed. 226.

Students Not Specializing in Physical Education. In addition to the 4 semester hours of required courses in physical education, students who are preparing to handle a limited program of physical education activities, may find it helpful to select from the following courses: Men P.E. 110, 141, 167, 185, 191, 195, 196, 217, 218, 222, 225, 229, 230, 231, 257; Women—P.E. 103, 105, 110, 117, 119, 131, 134, 167, 185, 222, 223, 224, 225, 226, 228, 229, 233, 238.

Students Specializing in Physical Education. Students specializing in this department should take the following courses: Zool. 171, 172; P.E. 109, 167, 236, 251; and Ed. 228p. Men also take P.E. 254 and Chem. 110. Men may choose additional courses from the following: P.E. 110, 185, 195, 196, 217, 218, 222, 228, 229, 230, 231, 233, 255, 256, 257. In addition, women should select from the following: P.E. 110, 171, 172, 173, 174, 185, 190, 191, 192, 222, 220 or 223, 224, 226, 227, 228, 229, 233, 236, 253, 254, 255, 257; and Ed. 226.

Students under the Elementary Curriculum may complete a major teaching field of forty five semester hours in Physical Education. Courses should be approved by the curriculum adviser.

Physical Sciences

Students Not Specializing in Science. In addition to G.S. 100, 110, and 231 required of all students, it is suggested that courses in geography will be especially helpful.

Students Specializing in Science. Students doing special work in science should choose the following: G.S. 100, 110, 231; Geog. 100; Zool. 171, 172. It is suggested that they add enough courses selected from the following to make 24 semester hours: Bot. 110; Chem. 110, 180; Phys. 105, 110; Geog. 101, 200, 209, 211, 215; Zool. 110. Those desiring a major teaching field, see topic under secondary curriculum.

Social Studies

Students Not Specializing in Social Studies. In addition to the courses required in the teacher-education curriculums, P.S. 200, Hist. 101 102 or 103-104, the following are recommended as electives: Hist. 109, 110, 111-112; P.S. 101, 102; S.S. 100.

Students Specializing in Social Studies. It is suggested that students desiring a limited number of courses choose them as follows: not less than twelve hours in lower division courses chosen from S.S. 100, Hist. 101-102, 103 104, 105-106, 110, 111 112; P.S. 101, 102, 103, 104, and twelve hours of upper division courses such as Hist. 200, 201, 202, 203, 204, 205, 206, 207, 208 209, 210, 211, 212, 213, 214, 216, 217; P.S. 201, 203, 204, 205, 206, 207. Students desiring a major teaching field, see topic under secondary curriculum.

Secondary Curriculum

This curriculum prepares students for service in the secondary school. Majors and minors are completed in the teaching fields desired. The curriculum has considerable flexibility for those who wish to pursue specialized work in addition to the regular expectations for teaching. This curriculum leads to the degree of Bachelor of Arts in Education and to the certification for teaching in the secondary school.

FRESHMAN YEAR			
First Semester		Second Semester	
	Hours		Hours
Eng. 101 First Year English.....	3	Eng. 102 First Year English.....	3
*G. S. 100 Introd to Phys. Sciences.....	4	*G. S. 110 Introd. to Biol. Sciences.....	4
*Psych. 100 Elementary Psychology.....	3	*Soc. 120 Sociology.....	3
P. E. 101 Basic P. E. (women).....	0.5	P. E. 102 Basic P. E. (women).....	0.5
P. E. 107 Sports Survey (men).....	0.5	P. E. 108 Sports Survey (men).....	0.5
M. S. 101 Basic Military Science or A. S. 101 Basic Air Science.....	1.5	M. S. 102 Basic Military Science or A. S. 102 Basic Air Science.....	1.5
Humanities.....	3 or 4	Humanities.....	3 or 4
Electives.....	0 to 2.5	Electives.....	0 to 2.5
	18		18

SOPHOMORE YEAR			
*Speech 110 Elements of Speech.....	2	*H. E. 100 Hygiene.....	2
Psych. 140 Growth and Development.....	2	Psych. 141 Growth and Development.....	2
Hist. 101 Western Civilization or Hist. 103 U. S. History.....	3	Hist. 102 Western Civilization or Hist. 104 U. S. History.....	3
P. E. Activity (men) (women).....	0.5	P. E. Activity (men) (women).....	0.5
*Ed. 115 Orientation to Education.....	1	M. S. 104 Basic Military Science or A. S. 104 Basic Air Science.....	1.5
M. S. 103 Basic Military Science or A. S. 103 Basic Air Science.....	1.5	Major, minor or electives.....	7 or 8.5
Major, minor or electives.....	6 or 7.5		
	18		16

JUNIOR YEAR			
*Psych. 213 Ed. Psychology.....	3	*Psych. 200 Ed. Measurements.....	3
*Ed. 215 Secondary School.....	2	*Ed. 228 Methods, Secondary School.....	3
Major, minor or electives.....	11	Major, minor, or electives.....	10
	10		16

SENIOR YEAR			
*Ed. 211 History of Education or *Ed. 250 Philosophy of Education.....	3	*P. S. 200 Constitutional Government.....	3
*Ed. 260 Directed Teaching.....	5	H. E. 242 School-Community Health.....	3
Major, minor or electives.....	7	Major, minor or electives.....	9
	15		15

GRADUATE YEAR

For Graduate Degree Programs. See Graduate Bulletin.

Major and Minor Teaching Fields. Students under the secondary curriculum are required to complete a major and a minor teaching field. It is recommended that a second minor teaching field be completed if possible.

A major teaching field shall consist of a minimum of 45 semester hours of work, 25 semester hours of which shall be in courses in a subject field from one department, 20 semester hours of which shall consist of courses from the same or related departments. A minimum of 18 semester hours in the major teaching field shall be upper division courses.

*May be taken either semester.

Eight semester hours of Humanities, in addition to Freshman English, or Freshman English plus two hours of speech and six hours of literature and/or drama are required. Humanities, in general, include art or music (appreciation or theory), literature, drama, philosophy, and foreign languages.

A minor teaching field shall consist of at least 15 semester hours in a subject field in a department exclusive of courses counted toward the major teaching field. Each of the courses included in the generalization requirements, as listed on this page, count toward the total number of semester hours required for the respective major and minor teaching fields.

In selecting major and minor teaching fields, students should keep in mind the requirements of the North Central Association, the Arizona State Board of Education, and the combinations usually assigned beginning teachers in Arizona high schools. Information concerning these matters can be obtained at the office of the Director of Teacher Education.

The required courses found in the Secondary Curriculum count toward the completion of major and minor teaching fields. Students pursuing a major teaching field in science or social studies are permitted to substitute the lower division requirements in the respective major teaching fields for the generalization requirements: G. S. 100 and 110; and History 101 and 102, or 103 and 104.

Major Teaching Fields Available

Art	Vocal Music
Biological Sciences	Instrumental Music
Business Education	Vocal & Instrumental Music
English	Health Education
Speech and Dramatics	Physical Education
Spanish	Earth Science
Home Economics	Physics and Chemistry
Industrial Arts	General Social Studies
Mathematics	History
	Political Science

Minor Teaching Fields Available

In addition to minors in the above fields, the following minors are available:

Journalism	Library Science
Speech	Music
Dramatics	Physical Sciences
French	

Considerable attention should be given to the selection of teaching combinations. In many instances, teachers must assume positions which call for a major and one or two minors. Although there is no definite pattern concerning teaching combinations, it should be profitable to consider the more prevalent ones. Information regarding these may be obtained from the student's adviser or the Director of Placement.

Professional Requirements. In addition to the courses listed under the generalization requirements, all students registered under the secondary curriculum are required to take 24 semester hours of work in education and psychology. The following must be included: Ed. 115, 215, 211 or 250, 228, 260; Psych. 140, 141, 200, 213.

It is essential that each student plan the proper sequence of professional courses. Education 215, Secondary School, is a prerequisite for all methods courses, History of Education, and Philosophy of Education. If special methods courses are taken in lieu of Ed. 228, they must be taken in the major teaching field of the student.

Recommended Electives and Specialization. The following electives are recommended for students registered under the secondary curriculum: Art 100; Ed. 232, 233; Eng. 171; Geog. 100; Hist. 110; Math. 105; Mus. 130.

In order that students under the Secondary Curriculum may complete a 60 hour major teaching field in music and a minor teaching field in certain subject areas, they may take either G.S. 100 or 110 and omit Speech 110 and H.E. 100 from the above curriculum requirements. Students taking a major teaching field in home economics may substitute H.E. 203 for Psych. 140 in the sophomore year.

Certification for Teaching in Arizona. Completing the requirements for the degree of Bachelor of Arts in Education under the Secondary Curriculum does not meet the requirements for a certificate to teach in Arizona high schools. Students who graduate under this curriculum must have in addition to the degree of Bachelor of Arts in Education, *at least six semester hours of graduate work to qualify for a Pre-Secondary Teaching Certificate.*

Students registered under the Secondary Curriculum may qualify for the elementary certificate by meeting the minimum requirements as set forth by the State Department of Public Instruction, that is, Ed. 230, Elementary Curriculum, a course in Language Arts, and five additional hours of directed teaching in grades one to nine, inclusive. The additional teaching shall be in grades exclusive of those in which the first five semester hours of directed teaching were taken. However, it is strongly recommended that Ed. 201 and Ed. 202, Language Arts, be taken before directed teaching.

MAJOR AND MINOR TEACHING FIELDS

Following are detailed course requirements for teaching in each of the respective major and minor fields.

The Teaching of Art

To complete a major teaching field in art, at least 45 semester hours of work must be completed in the first four years. Candidates for the master's degree planning to teach art in the secondary schools should complete 13 to 15 additional semester hours of graduate credit in the fifth year. The student should consult with his adviser in the selection of his course program. As the stress in modern art education is upon creative expression carried on for the development of integrated personalities, adjusted to society, and upon art as a functional agent which helps pave the way to better social understanding, the art teacher must secure in his training a broad concept of art in relation to general education. All teacher candidates must become qualified to coordinate the broad social values of art with the total public school program.

Major Teaching Field in Art. Art courses in the undergraduate program, to secure a balance of creative art experience, technical mastery, art education theory and appreciation, should be distributed as follows: Design, minimum of 4 credits; Crafts, minimum of 6 credits; Drawing and Painting, minimum of 8 credits; Three-dimensional Art (Space Design, Sculpture, Interior Design, Ceramics), minimum of 4 credits; Commercial Art, minimum of 5 credits; Understanding and Appreciation, (Art History), minimum of 6 credits; Professional Art Education, minimum of 2 credits.

Optional courses to complete 45 semester hours of art in the undergraduate program should be selected under the guidance of the adviser.

Minor Teaching Field in Art. This field consists of not less than 15 hours. The following should be included: Art 101, 105, 211; Ed. 228a.

The Teaching of Biological Sciences

The courses required in the major teaching field in the Biological Sciences have been especially selected for meeting the needs of teaching modern high school biology. Young people of the high school sophomore age are of an inquisitive frame of mind and in order to successfully guide them in their varied interests the teacher must be well informed.

Major Teaching Field in the Biological Sciences. Required undergraduate courses: Bact. 110; Biol. 204; Bot. 110, 242 or 244; Zool. 111-112, 180, 230, 231, 254; Bot. or Zool. 260.

Supporting courses required: G.S. 100; Chem. 110, and Phys. 110.

Graduate Requirements: The following courses, or their equivalent, are required: Biol. 204; Biol. 280g; Bot. 242g; Bot. or Zool. 260g; Zool. 180; Zool. 231g; and Zool. 254. If the above courses, or their equivalent, have been taken in the undergraduate level, then a further selection from the following may be made: Bot. or Zool. 230g; Bot. 243g; Bot. 244g; Zool. 232g, 233g, 234g, 255g, 270g.

Those electing the physical sciences as a minor can use either Chem. 110 and/or Physics 110 as part of the 15 semester hour minimum requirement.

As soon as the student decides to major in the biological sciences he should inquire at the department office, Science Building, Room 132, for a curriculum check sheet and arrange for a guidance conference with his adviser. Failure to do this may result in a needless loss of time toward graduating.

Minor Teaching Field in the Biological Sciences. The minimum requirement is 15 semester hours which must include Bot. 110 and Zool. 110 or Zool. 111-112. Biol. 204 is strongly recommended. Optional courses should be selected only with the approval of the minor adviser. G. S. 110, Zool. 171 and 172 will not fulfill this requirement.

The Teaching of Business

Major Teaching Field in Business. The major teaching field for business subjects in high school consists of the following 45 semester

hours taken in the first four years: Bus. Ad. 101, 102, 120, 130, 132, 141, 173, 202, 205, 206, 233, 235, 236, 241; Ed. 228b.

Minor Teaching Field in Business. The minor teaching field consists of the following 16 semester hours: Bus. Ad. 101, 102, 114, 120, 141.

The Teaching of English, Speech, Dramatics and Journalism

This department offers major teaching fields in English and in speech and dramatics as outlined below. To complete either of these, at least 45 semester hours in the field must be completed in the first four years. At least 20 of these hours must be upper division. Candidates for the master's degree planning to teach English, speech, or dramatics in secondary schools should complete additional courses in these subjects during the fifth year.

Major Teaching Field in English. First year, Eng. 101 and 102. Second year, Eng. 103, 104, 128, 151, and 152; Speech 110 or 120; Hist. 105 and 106. Third year, Eng. 221, 222; Ed. 228e, and 6 hours of upper division English electives. Fourth year, Eng. 231, 252 or 254, and 2 or 3 hours of upper division English electives.

Major Teaching Field in Speech and Dramatics. First year, Speech 115 and 121. Second year, Speech 119, 122, 127; Eng. 128. Third year, Speech 120, 230, 235; Eng. 252. Fourth year, Speech 257, 260; Eng. 254; plus 11 additional hours during the four years selected from the following courses: Eng. 203, 205, 206, 217, 218; Psych. 240, and any other courses in speech.

Minor teaching fields are offered in English, journalism, speech, and dramatics.

Minor Teaching Field in English. Speech 110 or 120; Eng. 103, 104, and 152; 6 hours of upper division English; any other 3 hours in English, Speech, or journalism, except English 101 and 102.

Minor Teaching Field in Journalism. Eng. 128; Journ. 130, 140, 141, and 243.

Minor Teaching Field in Speech. Speech 115, 120, 121, 127, 170, 257, 260.

Minor Teaching Field in Dramatics. Speech 110 or 120, 119, 121, 122, 230, 235.

The Teaching of Foreign Languages

Major Teaching Field in Spanish. The field consists of 45 semester hours of work of which 18 hours should be in upper division courses. The following courses are required: Span. 101, 102, 103, 104, 203, 204, 205, 206, 224; Eng. 151.

Minor Teaching Field in Spanish. The following courses or their equivalents are required: Span. 101, 102, 103, 104, or 103, 104, 203, 204.

Minor Teaching Field in French. The following courses are required: Fr. 101, 102, 103, 104.

The Teaching of Home Economics

The Major Teaching Field in Home Economics. To complete a major teaching field in home economics at least 45 semester hours of work must be completed in the first four years and not less than 18 of the total shall be upper division. Candidates for the master's degree planning to teach home economics in the secondary schools should complete additional courses in the fifth year. The vocational certificate may be earned in four years by meeting the following requirements: H.Ec. 100, 101, 102, 104, 105, 108, 202, 203, 206, 207, 209, 211, 212, 214, 215, 217; Art 100; Ed. 228h, 260; and a minor in general science or social science.

Minor Teaching Field in Home Economics. This field requires 15 semester hours. H.Ec. 106, 107 are recommended. The remaining courses may be chosen with the approval of the head of the department.

The Teaching of Industrial Arts

Major Teaching Field in Industrial Arts. For students planning to teach in the secondary schools, a minimum of 45 semester hours of Industrial Arts courses are required, including I.A. 109, 211, 212. The student will select 15 semester hours from the following courses: I.A. 100, 104, 105, 111, 113, 115, 122, 124, 126, 145, 160, 200. A minimum of 12 hours of work is required in each of two of the following divisions of the department: Aeronautics, Architectural or Industrial Drafting, Building and Construction, Electricity and Electronics, and Mechanics. In each case half of these semester hours should be in upper division courses.

Minor Teaching Field in Industrial Arts. A minimum of 19 semester hours of work is required, including I.A. 211 and 212.

Library Science

Under the secondary curriculum, students who desire to prepare for high-school librarianship may choose a minor teaching field in Library Science. The undergraduate program of professional education for high school librarians should also include a systematic survey of the various fields of knowledge, concentration in one or more subject fields taught in Arizona High Schools, background courses of special value in library science, study of professional principles and methods common to school libraries.

Students who have completed a minor teaching field in Library Science at the undergraduate level may select Library Science as a field of specialization at the graduate level.

Minor Teaching Field in Library Science. The minor in Library Science consists of at least 15 semester hours. The courses are: L.S. 203, 204, 205, and 206, and a choice of either L.S. 201, 202 or 290.

The Graduate Field of Specialization in School Library Services. Ordinarily at least 10 semester credit hours should be earned among the following professional courses: L.S. 223g, 224g, 225g, 226g, 251g, 252g, 390.

The Teaching of Mathematics

Major Teaching Field in Mathematics. For students who choose mathematics as their major teaching field, forty-five or more hours in mathematics and related subjects are required, including Advanced Calculus (Math. 221, 222), and at least three other courses on the 200 level in consultation with the adviser. At least one mathematics course must be taken each semester. In addition, various courses in physical science and foreign languages (both French and German) are strongly recommended. Transfer students must take at least two courses in mathematics at this college.

Minor Teaching Field in Mathematics. The minor teaching field in mathematics consists of a minimum of fifteen hours in mathematics, including a year of calculus and Ed. 228m. Transfer students must take at least one course in mathematics at this college.

The Teaching of Music

Under the secondary curriculum, students may choose a major teaching field in vocal, instrumental, or vocal and instrumental music. The major teaching field in vocal music prepares for teaching all vocal classes commonly taught in high schools. The major teaching field in instrumental music is for those desiring to teach band, orchestra and instrumental ensembles. The major teaching field in vocal and instrumental music is for those preparing to teach in both fields.

Students planning a major teaching field in music must take certain tests to determine their general aptitude and achievement, and their special accomplishments in voice or on instruments.

All students taking a major teaching field in music are required to attend fifty per cent of all on-campus recitals. Those failing to do so will be given an incomplete grade in their major performing field. The incomplete must be removed during the following semester, or it will automatically become an E grade.

Prerequisites. Music 111, 112 or equivalents are requisites in all major teaching fields. These requirements may be met either by taking the courses or comprehensive examinations.

Major Teaching Field in Vocal Music. The courses listed below are required. Freshman year, Mus. 113, 117, 118; voice, 4 hours; piano, 4 hours; ensemble, 2 hours. Sophomore year, Mus. 115, 116; voice, 4 hours; piano, 4 hours; ensemble, 2 hours. Junior year, Mus. 119, 120, 215, 217, 235; Ed. 228 and voice, 4 hours. Senior year, Mus. 225; voice, 4 hours. Graduate year; 226g, 284g, 288g, 292g, 303, 310, 321, 322, 323, 324 and 390. All students taking this field are advised to take 8 hours of foreign language.

Major Teaching Field in Instrumental Music. The courses listed below are required. Freshman year, Mus. 117, 118; major instrument, 4 hours; piano, 4 hours; ensemble, 2 hours. Sophomore year, Mus. 115, 116; major instrument, 4 hours; piano, 4 hours; ensemble, 2 hours. Junior year, Mus. 119, 120, 215, 219, 235; Ed. 228mu; major instrument, 4 hours; minor instrument, 2 hours. Senior year, Mus.

225; major instrument, 4 hours; minor instrument, 4 hours. Graduate year, Mus. 226g, 245g, 255g, 284g, 288g, 292g, 303, 310, 321, 322, 323, 324 and 390.

Major Teaching Field in Vocal and Instrumental Music. Only students with a good background in both vocal and instrumental music will be accepted as candidates for the major teaching field in vocal and instrumental. The courses listed below are required. Freshman year, Mus. 113, 117, 118; voice, 4 hours; piano, 4 hours; ensemble, 2 hours. Sophomore year, Mus. 115, 116; voice, 4 hours; piano, 4 hours, ensemble, 2 hours. Junior year, Mus. 119, 120, 215, 217, 219, 235; Ed. 228mu; instruments 4 hours. Senior year, Mus. 225; instruments, 4 hours. Graduate year, Mus. 226g, 245g, 255g, 284g, 288g, 292g, 303, 310, 321, 322, 324, and 390.

Minor Teaching Field in Music. The minor in Music consists of at least 15 semester hours. For a minor in vocal music the following sequence of courses is suggested: Mus. 111, 112, 117, 118, 217, 235 and Ed. 228mu. In addition, courses should be chosen from applied music, piano, voice, and chorus. For a minor in instrumental music the following sequence is recommended: Mus. 111, 112, 117, 118, 219, 235 and Ed. 228mu. Participation in band and orchestra should be included.

Admission Tests in Music. Students planning a major teaching field in music must take certain tests to determine their general music aptitude and achievement, and their special accomplishments in voice or on instruments. See department head for additional information.

Attendance at Recitals Required. All students taking a major teaching field in music are required to attend student and faculty recitals.

The Teaching of Health and Physical Education

Major Teaching Field in Health Education. This teaching field consists of at least 45 semester hours to be completed during the first four years. At least 24 hours must be in Health Education or in related subjects. At least 18 of the 45 hours must be in upper division courses. Required courses for this teaching field are:

First and second years: Zool. 171, 172; Bact. 110; H.E. 100, 242; P.E. 167.

Third and fourth years: H.E. 215, 237, 241, 243, 244, 245; P.E. 267; and Psych. 215. The remaining semester hours may be selected from the following: P.E. 185, 222, 245, 251, 254; H.Ec. 101, 104; Psych. 225, 227, 231, 234; Ed. 216, 226, 232; Zool. 111.

Fifth year: It is suggested that students choose electives from the following courses: H.E. 241g, 244g, 245g, 301; P.E. 255g, 300, 301, 330, 340, 345; Ed. 226g, 304, 306, 318, 320; Psych. 239g, 313.

Minor Teaching Field in Health Education. Required courses: P.E. 167, 267; H.E. 215 or 243, and 237. Optional courses may be approved by the head of the department or the director for women. A minimum of 15 hours is required including 6 hours in upper division courses.

Major Teaching Field in Physical Education. This teaching field requires at least 45 semester hours to be completed during the first four years. At least 24 semester hours must be in physical education courses. At least 18 of the 45 hours must be in upper division courses. Additional courses in physical education should be completed in the fifth year. The requirements for this teaching field are:

First and second years: Men may select P.E. 185 and 110. Both men and women are required to take the following courses: Zool. 171, 172; P.E. 109, 167. Additional required courses for men are: Chem. 110; P.E. 195, 196. Additional required courses for women are: P.E. 171, 172, 173, 174, 191, 193, and one semester hour each in sports and dance activity.

Third and fourth years: The following courses are required of both men and women: P.E. 236, 251; Ed. 228p. Men also take P.E. 217, 218, 254. Men may select a minimum of other courses from P.E. 170, 219, 222, 228, 229, 230, 231, 233, 245, 255, 256g, 257g. Women may select other courses from P.E. 205, 222, 224, 225, 228, 229, 230, 231, 232, 233, 234, 235, 245, 253, 254, 255, 257; Ed. 226, 233, 237.

Fifth year: It is suggested that students choose electives from the following courses: H.E. 241g, 244g, 245g; P.E. 229g, 255g, 256g, 257g, 300, 301, 330, 336, 340, 345; Ed. 226g, 304, 318, 320, 327.

Minor Teaching Field in Physical Education. Should be started in sophomore year. A minor teaching field of 15 hours is required. This includes 6 hours of upper division courses. Men take P.E. 109, 167, 195, 196, 251 or 254, and select the remaining courses with the approval of the department head. Women take P.E. 109 or 236, 167, 224, 225, 235, and select other courses with the approval of the Director for Women.

The Teaching of the Physical Sciences

Students planning to teach general science, chemistry or physics in the high school should take basic courses in biology, chemistry, physics and mathematics. Over-specialization is to be avoided because the prospective science teacher may find it necessary to give instruction in most of the above fields.

To complete a major teaching field at least 45 semester hours of work, in physical sciences and related fields, must be completed in the undergraduate program. A minimum of 18 semester hours shall be upper division courses. Not less than 25 semester hours must be completed in one subject field and the remaining 20 hours from related fields. Major teaching fields are offered in: (1) Earth Science, (2) Physics and Chemistry.

Each student should begin to plan his program with his adviser not later than the second year. Required courses for each teaching major are listed. The optional courses in science and related subjects should be selected under the guidance of the adviser. Candidates for the Master's degree in secondary science teaching should complete additional science work during the period of graduate training. In each major teaching field a number of courses for graduates are recommended.

Major Teaching Field in Earth Science. Students planning to teach geography, social studies, and related subjects should select this field. Undergraduate courses required: Geog. 100, 101, 105, 200, 206, 209, 211, 215; Geol. 151, 152. Optional courses: at least 20 semester hours will be selected from geography, and related fields with adviser's approval. Recommended courses for graduates: Geog. 254g, 270g, 275g, 289g.

Major Teaching Field in Physics and Chemistry. Those interested in teaching physics should take a minor in mathematics, while the prospective chemistry teacher is advised to minor in either mathematics or biology. Undergraduate courses required: (Bot. 110, Zool. 110), or G.S. 110; Chem. 110 or 111, 112, 141, 180; Phys. 111, 112, 113, 200, 210; Geol. 151. Remainder of semester hours are to be selected from chemistry and physics under guidance of adviser. Recommended courses for graduates: Chem. 251g, 252g, 260g, 271g, 272g, 280g, 281g; Phys. 222g, 231g, 241g, 242g, 250g.

Minor Teaching Fields in Physical Sciences. Minor teaching fields are offered in general science, geography, chemistry, and physics. Each student desiring a science teaching minor shall begin planning with his science adviser not later than the beginning of his third year. Any courses required for the major will not be accepted as meeting the requirements for the minor teaching field. A minor consists of at least 15 semester hours, of which not less than 3 semester hours shall normally be upper division. Suggested program for each minor teaching field is given below. The student may select the courses in any one of the following fields that fits his interests and requirements.

Minor Teaching Field in Chemistry. Chem. 110 or 111, 112, 141, 142, 180, 260, 280.

Minor Teaching Field in Geography. Geog. 100, 101, 120, 200, 206, 209, 211, 215, 250, 270; Geol. 151, 152.

Minor Teaching Field in General Science. G.S. 110; Chem. 110, 180; Phys. 105, 110, 210; Geol. 151.

Minor Teaching Field in Physics. Phys. 111, 112, (or 121, 122), 113, 200, 210.

The Teaching of Social Studies

It is recommended that students planning to teach social studies complete basic courses in history, sociology, economics and political science, since they may be expected to teach several branches of social science. Major teaching fields are offered in general social studies, history and political science. Courses recommended to students majoring therein include work in other related departments. A major teaching field requires the completion, within the first four years, of at least 45 semester hours of work in one of the three fields specified above. At least 25 hours must be in one subject field and not less than 18 of the total shall be upper division. Lower division courses must total at least 27 hours out of 45. Candidates for the master's degree preparing to teach social studies should complete additional courses in one or more of these fields during the fifth year. Programs for

each of the teaching fields are outlined below. At least two-thirds of the hours completed toward a major must be completed in the Social Studies Department.

Major Teaching Field in General Social Studies. This field is for prospective teachers who may teach several different phases of social studies. In addition to Hist. 101-102 or 103-104, and P.S. 200, this teaching field requires at least 16 hours in lower division courses chosen from the following: S.S. 100; Hist. 101-102, 103-104, 105-106, 109, 110, 111, 112; P.S. 101, 102, 103, 104; Bus. Ad. 130, 132; Geog. 101, and 18 hours in upper division courses chosen from the following: Hist. 200, 201, 202, 203, 204, 206, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217; P.S. 201, 204, 206; Bus. Ad. 219, 262; Geog. 200, 206, 250, or from other courses selected in conference with the adviser.

Major Teaching Field in History. This field is for those who expect to teach mainly history. In addition to Hist. 101-102 or 103-104 and P.S. 200, the student will complete at least 16 hours in lower division courses chosen from the following: S.S. 100; Hist. 101-102, 103-104, 105-106, 107-108, 109, 110, 111-112, 113, 114, 115-116; P.S. 101, 104; Bus. Ad. 130; Geog. 101, and 18 hours in upper division courses chosen from the following: Hist. 200, 201, 202, 203, 204, 205, 206, 207, 208-209, 210, 211, 212, 213, 214, 215, 216, 217; P.S. 200; S.S. 212; Geog. 200, 206, 209, 211, 215, 270, or from other related courses selected in conference with the adviser.

Major Teaching Field in Political Science. This field is for those who plan to teach mainly political science or civics. In addition to Hist. 101-102 or 103-104 and P.S. 200, the student will complete at least 16 hours in lower division courses chosen from the following: S.S. 100; Hist. 101-102, 103-104, 105-106, 109, 110; P.S. 101, 102, 103, 104; Bus. Ad. 130, 132; Geog. 101, and 18 hours in upper division courses chosen from the following: Hist. 203, 208-209; P.S. 201, 203, 204, 205, 206, 207; Bus. Ad. 205, 206, 217, 219, 262, 265; Geog. 200, 206, 209, 211, 215, 250, 270, or from other related courses selected in conference with the adviser.

A minor teaching field may be selected from any of the three groups of the social studies subjects. It consists of at least 15 semester hours in a subject field in the department, exclusive of courses counted toward the major field. The appropriate general education courses in social studies required by the college may be applied toward a teaching major or minor. At least 6 of the 15 hours in a minor should be in upper division courses. P.S. 200 may be counted toward a minor. At least two-thirds of the hours completed toward a minor must be taken in the Social Studies Department.

Minor Teaching Field in General Social Studies. First year, S.S. 100; Hist. 101-102 or 103-104; choice of P.S. 101, 102 or Bus. Ad. 130; second year, Hist. 101-102 or 103-104; choice of P.S. 103, 104; Geog. 101; Bus. Ad. 132, or Hist. 105-106, 109, 110; third and fourth years, choice of Hist. 200, 201, 203, 204, 206, 208-209, 211, 213, 214, 215, 216, 217; P.S. 201, 204, 206; Bus. Ad. 219, 262; Geog. 200, 209, 250.

Minor Teaching Field in History. First year, S.S. 100; Hist. 101-102 or 103-104; choice of Hist. 105-106, 107, 108, 109, 110, 111-112, 113; Bus. Ad. 130; P.S. 101, 102; Geog. 101; second year, Hist. 101-102 or 103-104; and choice of Hist. 105-106, 107-108, 109, 110, 111-112, 113, 114, 115-116; P.S. 103, 104; Bus. Ad. 132; Geog. 101; third and fourth years, choice of Hist. 200, 201, 202, 203, 204, 205, 206, 207, 208-209, 210, 211, 212, 213, 214, 215, 216, 217; P.S. 203, 204, 205, 206, 207; Geog. 200, 206, 209, 211, 215, 270.

Minor Teaching Field in Political Science. First year, S.S. 100; Hist. 101-102 or 103-104; P.S. 101, 102; choice of Hist. 109, 110; Bus. Ad. 130; second year, Hist. 101-102 or 103-104; P.S. 103, 104; choice of Hist. 105-106; Bus. Ad. 132; Geog. 101; third and fourth years, choice of Hist. 203, 208-209; P.S. 200, 201, 203, 204, 205, 206, 207; Bus. Ad. 205, 206, 219, 262, 265; Geog. 200, 206, 209, 211, 215, 250, 270.

Department of Agriculture

Purpose

The primary purpose of agriculture training at the Arizona State College at Tempe is to prepare students for the production and management phases of agriculture. The curriculum and courses offered are planned to meet the needs of the following students: (1) Those who are interested in preparing for farm and ranch management and who wish to obtain a degree of Bachelor of Science with emphasis on some particular phase of livestock or crop production. (2) Those preparing for a career in some phase of agriculture production and who wish to obtain a degree of Bachelor of Science with an area of concentration in Agronomy or Animal Husbandry. (3) Those not planning to graduate but desiring to take one or more years of college training as a preparation for some agricultural vocation. (4) Those who wish to take certain electives in agriculture while pursuing another curriculum at the college. (5) Those who desire pre-forestry or pre-veterinary training.

Organization

Courses of Instruction in the Department of Agriculture are offered in three general areas with subdivisions as follows:

Farm Management & Economics

Crop Production

Agronomy

Horticulture

Agricultural Mechanics

Livestock Production

Animal Husbandry

Dairy Husbandry

Poultry Husbandry

For counsel and assistance in planning his program of study a student will select an adviser from the instructional staff in his special interest field.

Bachelor of Science Degree Curriculum in Agriculture

The completion of a four-year agriculture curriculum leads to the Bachelor of Science degree. A total of 126 semester hours of credit is required for graduation including the generalization and area of concentration requirements as outlined below:

Generalization Requirements

Students taking a four-year curriculum in Agriculture must complete the following generalization requirements:

GENERAL (10 or 16)
 Eng. 101, 102 First Year, English (6)
 H. E. 100 Hygiene (2)
 P. E. Activity (2)
 Military Science or Air Science (6)
 (Men Only)

HUMANITIES (6)
 In Art, Literature, Music, Philosophy,
 Speech.
 (Not more than 3 semester hours in any
 one subject.)

SOCIAL SCIENCE (12)
 In Economics, History, Political Science,
 Psychology, Sociology, Geography. (Not
 more than 6 semester hours in any one
 subject.)

SCIENCE AND MATHEMATICS (11)
 In Biology, Botany, Zoology, Chemistry,
 Geography or Geology, Mathematics, Phys-
 ics. (Not more than 8 semester hours
 in any one subject, or in Geography and
 Geology.) It is recommended that 15 se-
 mester hours be completed from the fol-
 lowing:
 Math. 105, 106, or 107 (3)
 Physics 110 (4), or
 Physics 111 and 112 (8)
 Chemistry 110 or 111 (4);
 Botany 110 (4) or
 Zoology 110 or 111 (4)

In addition to the academic requirements outlined, students are required to demonstrate ability in the practical phases of production and husbandry related to their field of specialization. Students without adequate farm background can gain experience in farm practices at the College Training Farm or on any farm that meets the approval of the adviser. Upon application for graduation the student's adviser will indicate satisfactory completion of this requirement.

Areas of Concentration

An area of concentration consists of (1) departmental required courses; (2) required courses within the selected field of emphasis; and (3) optional courses within the selected field of emphasis.

Departmental Required Courses. The following basic courses in agriculture are required as a part of each area of concentration:

Course	Sem. Hrs.
Ag. 101 Crop Production	3
Ag. 105 Soils	3
Ag. 121 Principles of Animal Husbandry	3
Ag. 144 Agricultural Economics	3
	—
Total	12

Production and Management. This area of concentration is designed to prepare students to enter the business of farming and ranching as operators or managers of productive agricultural enterprises. Within this area students may specialize in the management of crop production or livestock production enterprises. The area includes three important requirements: (1) Training in agricultural economics and management; (2) Training in the applied sciences of agricultural production; (3) Practical experience in production and management.

The practical experience program is initiated at the College Training Farm at the beginning of the sophomore year. During the junior and senior year this experience program will be planned to meet individual student needs and will be carried out under the supervision of the student's adviser. The courses in this area of concentration may be selected for emphasis on crop production or livestock production.

(1) Emphasis on Crop Production. The following courses are required: Ag. 107, 109, 110, 149, 161, 163, 200, 241, 242, 244, 245, 247, 250, 252, and 15 hours are to be selected from Ag. 103, 181, 183, 202, 204, 206, 208, 210, 214, 219, 222, 287, 292; Bot. 160; Zool. 210, 220.

(2) Emphasis on Livestock Production. The following courses are required: Ag. 107, 126 or 129, or 123 and 124, 141, 149, 161, 163, 200, 241, 242, 244, 245 or 234, 247, 250, 252, and 15 hours are to be selected from Ag. 103, 122, 125, 127, 222, 223, 224, 225, 226, 228, 230, 234, 235, 236, 238, 239; Biol. 204.

Agronomy. This area of concentration is designed for students desiring practical training in crop production. It prepares students for positions as field representatives for commercial fertilizer and insecticide companies, for machinery companies, and other businesses associated with crop production. It also provides valuable training for students preparing for positions as field foremen on farms and ranches, or as agronomists with U. S. Government or state agencies where practical knowledge is essential.

For the student who wishes to continue his training toward an advanced degree in agronomy this area of concentration will give him the basic courses. With the help of his adviser, he should select additional science courses which will provide an adequate foundation for advanced study.

To meet the requirements of an area of concentration in agronomy, the following courses are required: Chem. 180; Biol. 204; and 24 hours are to be selected from: Ag. 103, 107, 109, 163, 181, 183, 202, 204, 206, 208, 210, 212, 214, 216, 218, 219, 287, 292; Bot. 160; Zool. 210, 222.

Animal Husbandry. This area of concentration is planned for the student desiring practical training in animal husbandry. It prepares students for positions on farms or ranches as herdsmen of beef, dairy, sheep or swine enterprises. It also prepares students for positions with commercial companies, or with U. S. Government or state agencies concerned with livestock production. The students who desire further training toward an advanced degree should consult his adviser, and choose elective courses that will adequately prepare him for advanced study.

To meet the requirements of an area of concentration in animal husbandry, the following courses are required: Chem. 180; Biol. 204; Ag. 123 and 124 or Ag. 126; and 24 hours to be selected from Ag. 103, 122, 125, 127, 222, 223, 224, 225, 226, 228, 230, 234, 235, 236, 238, 239, 240, 245.

Special Programs

Pre-Veterinary and Pre-Forestry

The requirements for the first two years of courses in forestry and veterinary work vary considerably in the different colleges offering these programs. The student is advised to obtain a copy of the

catalog from the school he plans to attend and select his program accordingly. The following course of study will meet most of the requirements if the student carefully selects electives to meet the requirements of the college that he plans to attend.

PRE-VETERINARY**FIRST YEAR**

First Semester	Hours
Eng. 101 First Year English.....	3
Zool. 111 General Zoology.....	4
Chem. 110 or 111 General Chemistry.....	4
Math. 107 College Algebra.....	3
P. E. 107 Sports Survey (men).....	0.5
M.S. 101 Basic Military Science or A.S. 101 Basic Air Science.....	1.5
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	16

Second Semester	Hours
Eng. 102 First Year English.....	3
Zool. 112 General Zoology.....	4
Chem. 112 General Chemistry.....	5
Math. 118 Trigonometry.....	3
P. E. 108 Sports Survey (men).....	0.5
M.S. 102 Basic Military Science or A.S. 102 Basic Air Science.....	1.5
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SECOND YEAR

First Semester	Hours
Bot. 110 General Botany.....	4
Phys. 111 General Physics.....	4
Chem. 211 Gen. Organic Chemistry.....	4
P. E. Activity.....	0.5
M.S. 103 Basic Military Science or A.S. 103 Basic Air Science.....	1.5
Electives.....	3
	<hr/>
	17

Second Semester	Hours
Biol. 204 Genetics & Eugenics.....	3
Phys. 112 General Physics.....	4
Chem. 112 General Chemistry.....	5
P. E. Activity.....	0.5
M.S. 104 Basic Military Science or A.S. 104 Basic Air Science.....	1.5
Electives.....	3
	<hr/>
	16

PRE-FORESTRY**FIRST YEAR**

First Semester	Hours
Eng. 101 First Year English.....	3
Bot. 110 General Botany.....	4
Math. 107 College Algebra.....	3
Chem. 110 or 111 General Chemistry.....	4
P. E. Activity.....	0.5
M.S. 101 Basic Military Science or A.S. 101 Basic Air Science.....	1.5
	<hr/>
	16

Second Semester	Hours
Eng. 102 First Year English.....	3
Chem. 180 Organic Chemistry.....	4
Math. 118 Trigonometry.....	3
Bot. 171 Plant Anatomy.....	4
P. E. 107 Sports Survey.....	0.5
M.S. 102 Basic Military Science or A.S. 102 Basic Air Science.....	1.5
	<hr/>
	18

SECOND YEAR

First Semester	Hours
I. A. 103 Mechanical Drawing.....	3
Bot. 172 Plant Physiology.....	4
Ag. 105 Soils.....	4
Zool. 111 General Zoology.....	4
P. E. Activity.....	0.5
M.S. 103 Basic Military Science or A.S. 103 Basic Air Science.....	1.5
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	17

Second Semester	Hours
I.A. 145 Elementary Surveying.....	3
Bot. 242 Systematic Botany.....	4
Ag. 209 Conservation of Ag. Resources.....	3
Zool. 210 Entomology.....	4
P. E. 108 Sports Survey.....	0.5
M.S. 104 Basic Military Science or A.S. 104 Basic Air Science.....	1.5
	<hr/>
	16

Department of Business Administration.

Purpose

The Department of Business Administration offers courses to meet the needs of five groups of students:

(1) Those preparing for some phase of business as a career and those who wish to obtain the degree of Bachelor of Science with special training in

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|---------------------------------|---------------------------------|
| (a) Advertising | (j) Medical or Dental Secretary |
| (b) Applied Business Management | (k) Office Training |
| (c) Economics | (l) Personnel |
| (d) Finance | (m) Public Accounting |
| (e) Foreign Trade | (n) Purchasing |
| (f) Industrial Management | (o) Real Estate |
| (g) Insurance | (p) Retailing |
| (h) Managerial Accounting | (q) Selling |
| (i) Marketing Management | |

(2) Those not planning to graduate but who desire one or more years of college work in preparation for business pursuits.

(3) Those preparing to teach business subjects in public secondary schools.

(4) Those pursuing any of the other curriculums of the college, but desiring certain electives in business administration.

(5) Those who are employed or engaged in business pursuits and who wish to take advantage of self improvement opportunities offered by the Evening College Program on the campus and the night Extension Classes offered off-campus, mostly in Phoenix.

In addition to the academic divisions, the Department of Business Administration maintains a Bureau of Business Services for the purpose of providing factual data from the surrounding community for class discussion, and further providing students majoring in Business Administration with practical experience in the study and analysis of various fields of business.

Organization

The courses of instruction offered by the Department of Business Administration are organized under the following subject areas: Accounting; Economics and Management; Insurance; Marketing and Advertising; Real Estate; Office Training and Management and Business Teacher Training.

Bachelor of Science Degree Curriculum in Business Administration

The satisfactory completion of a four-year curriculum of 126 semester hours, including both generalization requirements and an area of concentration in business administration with the completion of a minimum of 51 semester hours in business administration courses, leads to the degree of Bachelor of Science.

Students seeking the Bachelor of Science degree with an area of concentration in business administration must complete the generalization requirements, the departmental required courses, and the requirements in one of the four areas of concentration as outlined below, and sufficient elective courses to total 126 semester hours.

Generalization Requirements

Students taking a four-year curriculum in business administration must complete 51 semester hours in non-business administration courses as follows:

GENERAL (10 or 16)
Eng. 101, 102 First Yr. English (6)
H. E. 100 Hygiene (2)
P. E. Activity (2)
Military Science or
Air Science, Men Only (6)

SOCIAL SCIENCE (12)
In Economics, History, Political Science,
Psychology, Sociology, Geography. (Not
more than 6 semester hours in any one
subject.)
Required: Economics, Bus. Ad. 130, 132 (6)
History, Hist. 109 (3)

HUMANITIES (6)
In Art, Literature, Music, Philosophy,
Speech. (Not more than 3 semester hours
in any one subject.)

SCIENCE AND MATHEMATICS (11)
In Biology, Chemistry, Geography, or
Geology, Mathematics, Physics.
(Not more than 8 semester hours in any
one subject or in Geography and Geology.)

Electives (6 or 12) Men 6; Women 12 - Non-business subjects

Areas of Concentration

An area of concentration consists of: (1) departmental required courses; (2) required courses within the selected field of emphasis; and (3) optional courses within the selected field of emphasis.

Departmental Required Courses. The following 30 semester hours of basic business courses are required as a part of each area of concentration:

Course	Sem. Hrs.
Bus. Ad. 101, 102 Elementary Accounting.....	8
Bus. Ad. 173 Principles of Marketing.....	3
Bus. Ad. 205, 206 Business Law	6
Bus. Ad. 215 Business Organization and Industrial Management	3
Bus. Ad. 224 Business Statistics.....	4
Bus. Ad. 233 Business Communication.....	3
Bus. Ad. 217 Money and Banking, <i>or</i>	
Bus. Ad. 225 Business Finance, <i>or</i>	
Bus. Ad. 266 Corporation Finance	3

Total 30

Exceptions in business course requirements will be made only on written application to the adviser and with written approval of the Business Administration Departmental Standards Committee.

Every student in business administration will be required to take Bus. Ad. 141, Business Mathematics, prior to, or concurrently with, Bus. Ad. 101 or 102, Elementary Accounting. However, any student who demonstrates superior ability by means of a test may be exempted from this requirement. Any student who wishes to take Bus. Ad. 141 after he has taken Bus. Ad. 102 must have the written approval of his adviser.

Required Courses Within the Selected Field of Emphasis. In addition to the basic business courses above, each student must select one of the fields of emphasis within the area of concentration in which he wishes to specialize. And he must complete the courses listed as required in that field.

Optional Courses Within the Selected Field of Emphasis. In each field of emphasis, the student must complete the required number of optional courses. These should be selected from the group of related courses listed for that particular field.

Accounting. Students selecting Accounting as an area of concentration will complete one of the following fields of emphasis.

(1) *Emphasis on Managerial Accounting.* This program is designed for those students who wish to prepare themselves to use accounting as an effective tool in the management of their own business or that of an employer. The subject matter and instruction are both carefully planned to give the student a thorough training in managerial accounting. The following 20 hours are required: Bus. Ad. 103, 201, 202, 208, 210, 221, 228, 229. In addition to the above required courses, the student should select 16 hours from the following: Bus. Ad. 133, 211, 212, 213, 214, 217, 219, 220, 222, 226, 257, 262, 277; Spch. 110, 120, 215; Pol. Sci. 101; Math. 106. Other courses may be selected with the consent of the student's adviser.

(2) *Emphasis on Public Accounting.* The subject matter and instruction are designed to prepare outstanding accounting students for the certified public accountants' examination given by the American Institute of Accountants in May and November of each year. Also, the courses outlined are chosen to provide a broad academic training which is believed essential to the needs of the public accounting profession. Students selecting this emphasis should complete Bus. Ad. 266 to satisfy the departmental finance requirement and should select Math. 106 or 107 to be applied toward satisfying the science and mathematics portion of the general requirements. The following 40 hours are required: Bus. Ad. 201, 202, 203, 204, 207, 208, 209, 210, 211, 212, 213, 230, 231, 268.

Students who have chosen the field of emphasis in Public Accounting are not to register for any Business Administration elective course without written approval of an accounting adviser. The generalization requirements, together with the required courses of the

Business Administration Department in this field of emphasis, aggregate 121 hours.

Economics and Management. Students selecting Economics and Management as an area of concentration will complete one of the following fields of emphasis.

(1) Emphasis on Applied Business Management. Students selecting this emphasis should complete Bus. Ad. 225 to satisfy the departmental finance requirement. The following 18 semester hours are required: Bus. Ad. 133, 216, 219, 263, 265, 268; and 18 semester hours are to be selected from the following: Bus. Ad. 151, 171, 175, 201, 202, 208, 217, 220, 221, 222, 241, 243, 250, 266, 269, 270, 271, 272, 277, 279, 284; Spch. 215; Psych. 214.

(2) Emphasis on Economics. Students selecting this emphasis should complete Bus. Ad. 217 to satisfy the departmental finance requirement. The following 21 semester hours are required: Bus. Ad. 133, 134, 219, 226, 257, 267, 268; and 15 semester hours are to be selected from the following: Bus. Ad. 220, 258, 259, 262, 263, 264, 266, 269, 270, 271, 272; Geog. 101; Geol. 215; P. S. 203, 204; Soc. 225.

(3) Emphasis on Finance. Students selecting this emphasis should complete Bus. Ad. 217 to satisfy the departmental finance requirement. The following 18 semester hours are required: Bus. Ad. 133, 134, 220, 257, 266, 268; and 18 semester hours are to be selected from the following: Bus. Ad. 151, 174, 201, 202, 219, 221, 222, 226, 258, 259, 264, 269, 271, 272, 277; Geog. 101.

(4) Emphasis on Foreign Trade. The following 30 semester hours are required: six semester hours of business courses including Bus. Ad. 262, 271, 272, and 24 semester hours of Foreign Languages. In addition, a coordinated sequence of 19 semester hours is to be selected from the following: Bus. Ad. 171, 226, 256, 268, 279, 280, 283, 298, 299; Geog. 209, 211, 215, 221, 254, 270, 275; Hist. 201, 202, 203, 206, 207, 212; P. S. 201, 204, 206; Psych. 214; Spanish 241. Other courses may be selected in consultation with the adviser.

Students selecting Foreign Trade as an emphasis should not register for generalization courses without consulting the adviser. Prerequisite courses essential to Foreign Trade may serve as partial fulfillment for the generalization requirements in Science and Mathematics, Social Sciences, and Humanities.

(5) Emphasis in Industrial Management. The following 21 semester hours are required: Bus. Ad. 201, 208, 219, 250, 263, 265, 268, and 15 semester hours are to be selected from the following: Bus. Ad. 133, 216, 254, 269, 284; I. A. 103, 111, 114, 157, 179, 223; Chem. 111, 112; Phys. 111, 112; Psych. 214.

(6) Emphasis on Insurance. Students selecting this emphasis should complete Bus. Ad. 217 to satisfy the departmental finance requirement. The following 24 semester hours are required: Bus. Ad. 151, 171, 220, 221, 222, 223, 244, 245, 266, 268; and 12 semester hours are to be selected from the following: Bus. Ad. 133, 134, 175, 201, 202, 210, 212, 219, 225, 226, 257, 258, 259, 265, 269, 271, 272, 280

(7) **Emphasis on Personnel.** The following 18 semester hours are required: Bus. Ad. 219, 265, 268; Psych. 114, 225, 250; and 18 hours to be selected from the following: Bus. Ad. 103, 221, 222, 257, 262, 278; Ed. 232; P. S. 203; Psych. 214, 215, 240; Soc. 204, 212, 225.

(8) **Emphasis on Real Estate.** Students selecting this emphasis should complete Bus. Ad. 225 to satisfy the departmental finance requirement. The following 20 semester hours are required: Bus. Ad. 133, 151, 152, 171, 251, 252, 268; and 16 semester hours are to be selected from the following: Bus. Ad. 175, 217, 220, 221, 222, 253, 266; Spch. 215; Soc. 215; I. A. 284; Arch. 100; P. S. 102, 103; Ag. 246; H. Ec. 215.

Marketing and Advertising. Students who select Marketing and Advertising as an area of concentration will, in consultation with the adviser, complete one of the following fields of emphasis.

(1) **Emphasis on Advertising.** The following 25 semester hours are required: Art 121; Bus. Ad. 171, 174, 175, 277, 283, 286, 287, 288; and 11 hours are to be selected from the following: Art 123, 135, 223; Bus. Ad. 280, 281, 294; Eng. 128; Journ. 130, 140; Speech 170, 215; Psych. 214, 225.

(2) **Emphasis on Marketing Management.** The following 26 semester hours are required: Bus. Ad. 174, 175, 254, 277, 279, 281, 283, 284, 293, 294; and 10 hours are to be selected from the following: Bus. Ad. 133, 171, 201, 202, 216, 226, 256, 269, 273, 284, 286, 289; Geog. 101; Psych. 214, 225.

(3) **Emphasis on Purchasing.** The following 26 semester hours are required: Bus. Ad. 174, 228, 250, 279, 283, 284, 293; Psych. 214; Spch. 215; and 10 hours are to be selected from the following: Bus. Ad. 171, 217, 226, 254, 256, 263, 265, 277.

(4) **Emphasis on Retailing.** The following 24 semester hours are required: Bus. Ad. 171, 174, 175, 277, 278, 279, 283, 288; H.Ec. 219; and 12 hours are to be selected from the following: Bus. Ad. 201, 202, 221, 265, 287, 293; Art 131, 135, 231; H. Ec. 215.

(5) **Emphasis on Selling.** The following 26 semester hours are required: Bus. Ad. 171, 174, 175, 277, 279, 280, 281, 283; Spch. 215; Psych. 214; and 10 hours are to be selected from the following: Bus. Ad. 151, 221, 222, 254, 282, 284, 287, 288, 293, 294; Psych. 225.

Office Training and Management. Students must complete the following 24 semester hours of required courses: Bus. Ad. 103, 120, 121, 171, 235, 236, 238, 241, 243, and 12 hours to be selected from the following: Bus. Ad. 201, 202, 217, 221, 225, 262, 265, 277; Eng. 128; H. Ec. 202; Spch. 110.

Special Programs

Pre-Law

A comprehensive statement of pre-law college work before entering law school is presented in the College of Arts and Sciences section of this catalog.

Pre-Law students may pursue a program of study in the Business Administration Department as well as in the College of Arts and Sciences. The value of a thorough understanding of the principles and practices in business is apparent. In addition to elementary courses in Business Administration, certain more advanced courses are clearly indicated because of their practical importance to the lawyer. These include courses in Economics, Corporation Finance, Insurance, Statistics, Taxation, Public Finance, Labor Relations, Public Control of Business, and Accounting. Accounting is especially valuable, affording as it does, an understanding of the meaning and interpretation of balance sheets, income statements, etc. It is a part of the "language of the lawyer."

Students interested in Business Administration and Law may secure a Bachelor of Science degree with an area of concentration in Business Administration and a Law degree from an accredited law school in six years providing the law school selected will admit students upon completion of only three years of college work.

Under this program the student must register in the Department of Business Administration and must complete 98 semester hours of class work. Included among these semester hours must be all generalization requirements and departmental required courses. This will normally require the 51 semester hours in General Education and the 30 semester hours of departmental required basic business courses described on page 144 of this catalog. Additional courses required to complete the required 98 semester hours will be determined by the student's Business Administration pre-law adviser and will be in accordance with all applicable requirements as described in this catalog. A point-ratio of 2.0 or above in all courses taken is required. Students who pursue this six-year program must obtain a statement in writing from the head of the Business Administration Department giving senior-in-absentia privileges before entering the law school. At the end of his first year in law school, the student must have completed a total of 126 hours of college credit in pre-law and law combined and must have maintained an average of C or better in law school. He must then present a signed testimonial from the Dean of the Law School to the Registrar at Arizona State College, Tempe, which shall include a statement of courses taken, grades achieved, and a recommendation that the degree of Bachelor of Science be granted by this college.

Students planning a pre-law program in Business Administration, whether for the combined six-year program as indicated above or merely for a non-degree elective program, should consult the pre-law adviser in the Department of Business Administration in the freshman year and work out a program of studies which will satisfy the entrance requirements of the law school or schools in which he is interested and which will meet the requirements of Arizona State College.

If the student plans to complete his Bachelor of Science degree in Business Administration at Arizona State College, Tempe, before entering the law school, he should select an area of concentration in

Business Administration not later than the beginning of his sophomore year, and, in consultation with his Business Administration adviser, work out a program of studies which will satisfy the entrance requirements of the law school or schools in which he is interested and which will meet the requirements for the Bachelor of Science degree at this college.

Non-Degree Programs

Medical and Dental Secretaryship. For those students who want specialized preparation for work as secretaries and assistants in medical and dental offices, a two-year program is available.

Accounting and Office Training and Management. For those students who do not wish to attend college for four years to earn the B.S. degree, but who desire to secure specialized training on a college level in the fields of Accounting and Office Training and Management, there are available one-year and two-year programs in these fields.

Full details about these programs are available at the office of the Vice-President of the College, the Registrar, or the heads of the accounting or office training divisions.

Department of Industrial Arts and Technology

Purpose

The Department of Industrial Arts and Technology offers four-year curriculums, the satisfactory completion of which, lead to the degree of Bachelor of Science in the following areas of concentration: aeronautics, building and construction, industrial and or architectural drafting and design, electronics, industrial arts, and mechanics.

The areas of concentration indicated above afford excellent training and preparation in the techniques, skills, and processes essential to the complex requirements of highly specialized industrial and commercial occupations, together with an insight in the organization and administration of these fields, that assure the future progress and success of the student.

In the area of concentration "Industrial Arts," opportunity is given students to select courses, with the aid of an adviser, which prepare students for such professional occupations as building superintendent, chief electrician, master mechanic, and manual arts therapist.

This department also provides educational and technical training and experience of a professional character in aeronautics, building and construction, architectural and industrial drafting, electricity and electronics, and mechanics for young men and women who plan to become teachers of the industrial arts in the kindergarten-primary, elementary, and secondary schools.

Students who do not wish to graduate under the Bachelor of Science degree curriculum, but who desire to secure specialized training at the college level in industrial activities which will enable them to participate immediately in industrial pursuits, may choose one of the following two-year courses: (1) Aeronautics; (2) Architectural Drafting; (3) Building and Construction; (4) Electronics; (5) Industrial Drafting; (6) Mechanics.

Organization

The courses of instruction offered by the Department of Industrial Arts and Technology are organized under the following subject areas: Aeronautics; Building and Construction; Drafting; Electricity and Electronics; Mechanics; Industrial Arts Education; and Architecture.

Bachelor of Science Degree Curriculum in Industrial Arts and Technology

The satisfactory completion of a four-year curriculum of 126 hours, including the generalization and area of concentration requirements as outlined below, leads to the degree of Bachelor of Science.

Generalization Requirements

Students taking a four-year curriculum in Industrial Arts and Technology must complete the following generalization requirements:

GENERAL (10 or 16)
Eng. 101, 102 First Year English (6)
H. E. 100 Hygiene (2)
P. E. Activity (2)
Military Science or Air Science (6)
(Men Only)

HUMANITIES (6)
In Art, Literature, Music, Philosophy,
Speech.
(Not more than 3 semester hours in any
one subject.)

SOCIAL SCIENCE (12)
In Economics, History, Political Science,
Psychology, Sociology, Geography.
(Not more than 6 semester hours in any
one subject)

SCIENCE AND MATHEMATICS (11)
In Biology, Botany, Zoology, Chemistry,
Geography or Geology, Mathematics, Phy-
sics.
(Not more than 8 semester hours in any
one subject, or in Geography or Geology.)

Areas of Concentration

An area of concentration consists of (1) required courses within the selected field of emphasis and (2) optional courses within the selected field of emphasis.

Aeronautics. In the aeronautical division of the Industrial Arts Department it is assumed that the average student has a limited technical education in aeronautics. Under this assumption, an attempt is made to give an insight into, and understanding of, the complicated theories involved in aeronautics by emphasizing elementary individual phases of the work and their practical application. This combination of theory and practice makes for ready understanding of the technical aspects of meteorology, radio, navigation, aerodynamics, and aircraft mechanics. Aeronautic students learn enough about the theory and practice of related subject matter to practice flying, do mechanical work, or give instructions in aeronautics. The proper use of navigation aids, weather aids, and training facilities, provided by the government are also taught.

Required Courses. The student, with the aid of his adviser, will choose the required industrial arts courses from the following group: I. A. 100, 101, 103, 104, 105, 108, 109, 111, 113, 114, 115, 119, 124, 126, 127, 130, 131, 145, 155, 160, 179, 200, 202, 211, 220, 225, 234, 269, 286, 290, 291, 292, 298.

Building and Construction. This area of concentration provides for specialization in this phase of the Industrial Arts field. The subject matter, shop experiences, and training provided in this area are designed to prepare the students for efficient service as builders, contractors, and estimators.

Required Courses. The student, with the aid of his adviser, will choose the required industrial arts courses from the following group: I. A.

100, 103, 105, 106, 109, 110, 121, 122, 134, 145, 151, 154, 160, 207, 208, 211, 213, 217, 218, 222, 223, 258, 268, 283, 285, 286, 290, 291, 292. Arch. 160, 161.

Optional Courses. The student, with the aid of his adviser, will choose the optional industrial arts courses from the following group: I. A. 124, 136, 163, 179, 201, 224, 233, 236, 245, 260, 262, 264, 280, 284, 285. Recommended courses: Bus. Ad. 101, 102, 103, 141, 205, 206.

Industrial and Architectural Drafting and Design. This area of concentration is designed for students, who desire to become draftsmen in manufacturing plants or architects' offices, who desire to qualify under various civil service programs .

The subject matter and instructions are both carefully planned to give the student a good scientific background, experience in manufacturing processes, a knowledge of materials industrially and commercially used, and also, intensive drafting practice geared to modern industrial and commercial needs.

Emphasis on Industrial Drafting and Design. Required courses. The student, with the aid of his adviser, will choose the required industrial arts courses from the following group: I. A. 100, 103, 105, 109, 111, 112, 113, 114, 122, 123, 124, 125, 134, 145, 155, 160, 161, 179, 201, 202, 211, 246, 254, 266, 267, 286, 290.

Optional Courses. The student, with the aid of his adviser, will choose the necessary optional industrial arts courses from the following group: I. A. 110, 154, 157, 208, 224, 233, 258, 268, 280, 291, 292.

Emphasis on Architectural Drafting and Design. Required Courses: Arch. 100, 120, 121, 130, 140, 150, 160, 161, 180, 181, 220, 221, 241, 260, 261; I. A. 100, 105, 124, 145, 157, 208, 211, 245, 258, 262, 267, 283, 291, 292.

Optional Courses. I. A. 122, 134, 161, 207, 217, 218, 222; Arch. 120, 121, 130, 141, 181.

Electronics. This area of concentration is designed for those students contemplating entering the fields of radio broadcasting, television broadcasting, industry, the military or naval services, research and design, where a comprehensive theoretical, practical, and technical knowledge of electronics and allied fields is required.

This area of concentration provides sufficient preparation of a professional character especially needed for those students who desire successful careers in commercial broadcasting and television station operation, maintenance, and repair; radar and other military applications of electronics; industrial application of electronics; and commercial activities associated with the field of electronics.

Laboratory work is done under supervision in the electronics laboratories, the mobile communications and radar laboratories, in the various campus studios, and at the various radio stations in the Phoenix area cooperating with the college electronic program.

Provision is made for those students who prefer a greater emphasis on D. C. and A. C. electricity and machinery. Consult with your adviser.

Required Courses. The student, with the aid of his adviser, will choose the required courses from the following group: I. A. 100, 109, 111, 113, 115, 116, 119, 120, 127, 140, 160, 165, 203, 211, 219, 251, 259.

Optional Courses. The student, with the aid of his adviser, will choose the optional courses from the following groups: I. A. 101, 103, 108, 124, 145, 154, 155, 161, 179, 205, 215, 216, 228, 251, 254, 265, 272, 273, 279, 281, 282, 286, 290, 291, 292; Math. 107, 118, 120, 123; Physics 111 and 112, or 121 and 122.

Industrial Arts. This area of concentration is designed for those students who desire a broad training in the field of industrial arts. By following this program, the student will gain an insight into several phases of industrial arts work, shop practices, and techniques. This area will provide excellent preparation for those who desire to be foremen, inspectors, managers, salesmen, supervisors or shop owners. This curriculum is also recommended for those students who desire to fit themselves for the position of manual arts therapist and for employment by the Veterans Administration in the Physical Medicine and Rehabilitation Service, as specified in Civil Service Bulletin M5-3, Part 1, Change 45, April 1, 1949.

Required Courses. The following 17 semester hours or their equivalent are required: I.A. 100, 109, 111, 113, 122, 160, 211.

Optional Courses. The student must select a minimum of 15 semester hours from one of the five special emphases. In addition, he must select a minimum of 30 hours which may be chosen from any of the industrial arts courses offered by the department. All selections made by the student should have the approval of the adviser.

Emphasis on Aeronautics: I.A. 126, 130, 131, 132, 153, 179, 200, 204, 205, 220, 225, 234, 269, 298.

Emphasis on Building and Construction: I.A. 105, 106, 134, 136, 145, 154, 164, 207, 208, 217, 218, 222, 224, 245, 258, 270, 283, 284, 285, 286, 291, 292; Arch. 160, 161.

Emphasis on Drafting: I. A. 103, 105, 106, 113, 123, 124, 125, 141, 145, 154, 155, 156, 165, 201, 212, 224, 225, 258, 262, 270, 271, 276, 277, 278, 284, 285, 291, 292, 294, 295; Arch. 100, 120, 121, 130, 140, 141, 150, 160, 161, 220, 221, 240, 241, 250, 260, 261.

Emphasis on Electricity and Electronics: I. A. 115, 116, 119, 120, 127, 154, 165, 203, 205, 215, 216, 219, 249, 251, 256, 259, 272, 273, 281, 282, and/or 101, 108, 223, 228, 279.

Emphasis on Mechanics: I.A. 101, 104, 107, 111, 112, 131, 145, 154, 157, 160, 179, 213, 223, 226, 227, 228, 231, 232, 233, 261, 262.

Mechanics. This area of concentration is designed to meet the needs of those students who are preparing themselves for service in welding and machine shops, garages, and other industrial and commercial pursuits.

Required Courses. I. A. 100, 101, 103 or 113, 104, 109, 111, 112, 134, 154, 155, 156, 157, 160, 179, 201, 211, 213, 223, 227, 228, 231, 232, 233, 241, 275, 288.

Special Programs

Architecture

This curriculum is similar to that of the first three years at Institutions conferring a five-year professional degree in Architecture. Students desiring to obtain such a degree are advised to secure a copy of the catalog of the school they plan to attend and select their programs accordingly. Students credited with advanced standing on the basis of work done at other institutions and those interested in other fields of building construction or teaching may in any year undertake in part the work of more advanced years, subject to the completion of courses listed as prerequisites. Students are required to earn a mark of C or better in each design course before advancing to the next.

FIRST YEAR

First Semester		Hours	Second Semester		Hours
Eng. 101 First Year English	3		Eng. 102 First Year English	3	
Math. 119 Algebra and Trigonometry	4		Art. 105 Basic Design	2	
Arch. 100 Introduction to Architecture	2		Arch. 116 Descriptive Geometry	3	
Chem. 110 Introductory Chemistry	4		Math. 170 Analytical Mechanics- Statistics	3	
Art 101 Drawing and Perspective (Freehand)	2		Phys. 110 Introduction to Physics	4	
M.S. 101 Basic Military Science or A.S. 101 Basic Air Science	1.5		M.S. 102 Basic Military Science or A.S. 102 Basic Air Science	1.5	
P.E. 107 Sports Survey (Men)	0.5		P. E. 108 Sports Survey (Men)	0.5	
		17			17

SECOND YEAR

Arch. 110 Introduction to Design	3	Arch. 121 Architectural Design	3
Arch. 160 Elementary Working Drawings	2	Arch. 161 Architectural Working Drawings	2
Arch. 150 Arch. Sketching & Rendering	3	Arch. 270 Design and Planning in Wood	3
Arch. 140 History of Architecture	3	Arch. 130 Landscape Design	2
Arch. 112 Strength of Materials	3	Arch. 141 History of Architecture	3
M. S. 103 Basic Military Science or A. S. 103 Basic Air Science	1.5	Art 171 Sculpture	2
P. E. Activity	0.5	M.S. 104 Basic Military Science or A.S. 104 Basic Air Science	1.5
		P. E. Activity	0.5
			17

THIRD YEAR

Arch. 220 Architectural Design	5	Arch. 221 Architectural Design	5
Arch. 260 Architectural Working Drawings	2	Arch. 261 Architectural Working Drawings	2
Arch. 180 Mechanical Equipment in Buildings	2	Arch. 181 Mechanical Equipment in Buildings	2
Arch. 271 Design and Planning in Steel	3	Arch. 272 Design and Planning in Concrete	3
Arch. 190 Specifications and Estimating	2	Arch. 250 Architectural Sketching and Rendering	3
Arch. 240 Theory of Architecture	2	Arch. 241 Theory of Architecture	2
			17
	18		

Pre-Engineering

Completion of the following curriculum will fulfill the lower division requirements for a degree in general engineering. The pre-engineering student is urged to obtain a catalog of the engineering school that he plans to attend, and alter the following curriculum to meet the lower division requirements of that school. The student's choice of courses for electives depends on whether he plans to specialize in civil, mechanical, chemical or electrical engineering.

FIRST YEAR					
First Semester		Hours	Second Semester		Hours
Eng. 101 First Year English.....	3		Eng. 102 First Year English.....	3	
Chem. 111 General Chemistry.....	4		Chem. 112 General Chemistry.....	5	
I. A. 113 Engineering Drawing.....	3		Math. 120 Analytic Geometry.....	4	
Math. 119 Algebra & Trigonometry.....	4		I. A. 124 Descriptive Geometry.....	3	
P. E. 107 Sports Survey (men).....	0.5		P. E. 108 Sports Survey (men).....	0.5	
M.S. 101 Basic Military Science or A.S. 101 Basic Air Science.....	1.5		M.S. 102 Basic Military Science or A.S. 102 Basic Air Science.....	1.5	
	16			17	
SECOND YEAR					
(Civil Engineering Option)					
I. A. 145 Surveying.....	3		I. A. 280 Advanced Surveying.....	3	
Math. 122 Differential Calculus.....	4		Phys. 122 Engineering Physics.....	5	
Phys. 121 Engineering Physics.....	5		Math. 123 Integral Calculus.....	4	
I. A. 134 Materials of Construction.....	2		*Bus. Ad. 130 Introd. to Economics or I. A. 224 Estimating & Contracting.....	3	
P. E. Activity (men).....	0.5		P. E. Activity (men).....	0.5	
M.S. 103 Basic Military Science or A.S. 103 Basic Air Science.....	1.5		M.S. 104 Basic Military Science or A.S. 104 Basic Air Science.....	1.5	
	16			17	
(Chemical Engineering Option)					
I. A. 155 Mechanisms.....	3		Chem. 142 Quantitative Analysis.....	4	
Chem. 141 Quantitative Analysis.....	4		Math. 123 Integral Calculus.....	4	
Math. 122 Differential Calculus.....	4		Phys. 122 Engineering Physics.....	5	
Phys. 121 Engineering Physics.....	5		*Bus. Ad. 130 Introd. to Economics or P. E. Activity.....	0.5	
P. E. Activity.....	0.5		M.S. 104 Basic Military Science or A.S. 104 Basic Air Science.....	1.5	
M.S. 103 Basic Military Science or A.S. 103 Basic Air Science.....	1.5			18	
	18			18	
(Electrical and Mechanical Engineering Option)					
I. A. 145 Surveying.....	3		P.S. 101 Introd. to Political Science or I.A. 209 Surveying.....	3	
Math. 122 Differential Calculus.....	4		Math. 123 Integral Calculus.....	4	
Phys. 121 Engineering Physics.....	5		Phys. 122 Engineering Physics.....	5	
I. A. 155 Mechanisms.....	3		*Bus. Ad. 130 Introd. to Economics or I.A. 224 Estimating & Contracting.....	3	
P. E. Activity.....	0.5		P.E. Activity.....	0.5	
M.S. 103 Basic Military Science or A.S. 103 Basic Air Science.....	1.5		M.S. 104 Basic Military Science or A.S. 104 Basic Air Science.....	1.5	
	17			17	

* May be taken either semester.

Two-Year Technical Curriculums

Students who do not wish to graduate with either the B.A. or B.S. degree, and who desire to secure specialized training on a college level in the industrial activities to enable them to participate immediately in industrial pursuits may choose one of the following two-year courses: (1) Aeronautics, (2) Architectural Drafting, (3) Building and Construction, (4) Electronics, (5) Industrial Drafting, and (6) Mechanics.

Graduate Division

The Graduate Program

In March, 1937, an Act of the Thirteenth Legislature authorized the Arizona State Colleges to grant the advanced degree of Master of Arts in Education. A program of graduate work has been offered since the 1937 summer session.

In June, 1952, the Board of Regents of the University and State Colleges of Arizona authorized Arizona State College at Tempe to grant the degree of Doctor of Education.

Organization. The Graduate Council is responsible for the development and formulation of general policies and for the approval of procedures essential to the organization and administration of the graduate program. The members of the Council are appointed by the President of the College. The Director of Graduate Study acts as chairman of the Graduate Council and is directly responsible for the administration of its policies and program.

Purposes: The graduate program of Arizona State College at Tempe has for its primary purpose the preparation of professionally competent teachers and other educational workers. To serve this purpose a full year of graduate work leading to the degree of Master of Arts in Education and an additional two years of graduate work leading to the degree of Doctor of Education is provided.

The graduate program is designed to serve not only the needs of students who desire advanced degrees in Education, but to meet the needs of students who may wish to continue their professional preparation, meet certification requirements, or broaden their education without reference to the requirements for a degree.

Admission to Graduate Work

A student who has received the bachelor's degree, or its equivalent, from an approved college or university, may be admitted to the Graduate Division at Arizona State College at Tempe upon filing with the Director of Graduate Study an Application for Admission. Admission to the Graduate Division permits the student to register in any course, graduate or undergraduate, for which he has sufficient background and which meets his needs and interests. *Admission to the Graduate Division does not commit the student to a program of studies leading to an advanced degree, nor does admission to the Graduate Division imply enrollment in the Master's Degree Program or Doctorate Program, or admission to candidacy for the degree.*

Students who declare their intention of entering upon a program of graduate work to meet the requirements for an advanced degree

must (1) take a qualifying examination, and (2) file transcripts. These transcripts should be sent to the Office of the Director of Graduate Study. Transcripts filed with the Director of Graduate Study become the property of the College and may not be released.

Graduate students who desire to earn credit which will meet State certification requirements should have transcripts of all undergraduate and graduate work earned in institutions other than Arizona State College at Tempe sent to the Director of Certification, Office of the State Superintendent of Public Instruction, Arizona State Capitol Building, Phoenix, Arizona.

Master of Arts in Education Degree

The interests, needs, abilities, and purposes of each student are utilized in organizing a unified and balanced program of work directed toward the realization of a definite and worthy educational objective. Programs of graduate work leading to the degree of Master of Arts in Education are provided for students who have as a central purpose preparation for primary, elementary, and secondary school teaching, administration and supervision of elementary and secondary schools, and special educational services such as audio-visual education, school library service, and counseling and guidance work. High scholarship and professional competency are required in at least one of these fields.

Enrollment in the Master's Degree Program. Students who wish to earn the master's degree must enroll in the Master's Degree Program as early as possible in the period of their residence so that they will not chance losing credits that might otherwise apply toward the requirements for the degree. Ordinarily, no more than twelve semester hours of graduate credit earned before enrollment in the Master's Degree Program may be applied toward the requirements for the degree.

Students may enroll in the Master's Degree Program at any time after being admitted to the Graduate Division by filing an Application for Enrollment in the Master's Degree Program. Applications and transcripts will be evaluated and the student will be enrolled when evidence of the following is found.

1. The student has earned a bachelor's degree in an approved institution and has a satisfactory undergraduate scholarship average.
2. The student has taken the qualifying examination.
3. The student's scholarship in any graduate work done elsewhere has been satisfactory.
4. The student has earned the prerequisite undergraduate credits in Education and Psychology courses.
5. The student has selected a field of graduate specialization for which he has the prerequisite undergraduate credits.
6. The student has been assigned a graduate adviser.

7. The student has planned a tentative graduate program of studies which has been approved by his graduate adviser.

Program of Studies. The degree of Master of Arts in Education is awarded for the satisfactory completion of an intensive study of a program in an educational field. Concentration of work for this degree is required, as contrasted with the diversification frequently prescribed in undergraduate studies. The student, in consultation with an adviser, plans this program of concentration under one of two plans.

Plan I. *With Research Study* (Thesis or Practicum). This program is designed for those students who have the desire and capabilities to reach their objectives through research and individual study. It is especially recommended for those who wish to work toward a doctoral degree. The program shall consist of twenty-six semester hours of course work, including a research seminar, and four semester hours devoted to a research project (Thesis or Practicum), according to the following schedule:

- A. A minimum of 15 semester hours of credit in Education and Psychology courses numbered 300 and above.
 1. At least one course in each of the following areas:
 - a. Philosophy and social foundations.
 - b. Curriculum and methods.
 - c. Psychology.
 2. Two semester hours of credit in Educ. 300 (Educational Research and Scientific Method), or a similar research field.
 3. Four semester hours of credit earned by either one of the following choices:
 - a. Completing an acceptable master's thesis.
 - b. Completing an acceptable project in a practicum in the field of graduate specialization.
- B. Fifteen semester hours of credit in courses selected in consultation with the graduate adviser and directed toward the student's professional needs in the field of specialization.

Plan II. *Without Research Study.* This program is designed for those students who wish to reach their objectives through course work rather than through individual study and research. The student shall complete satisfactorily, a planned program of not less than thirty semester hours. At least fifteen semester hours must be taken in the field of Education; the remaining fifteen hours may be taken in the student's graduate field of specialization.

Doctor of Education Degree

The doctor of Education Degree Program is designed to provide professional training and experience for a variety of workers in the broad field of education. The structure provides flexibility to meet

individual needs and interests. The principal groups to be served by this program are as follows: (1) those seeking to increase professional competence as school administrators; (2) those seeking further preparation for teaching in elementary, secondary, junior college, and higher education; and (3) those seeking advanced training in other recognized professional education pursuits.

Admission to the Doctoral Program. Students who seek admission to the Doctoral Program must assume the responsibility for:

1. Filing an application for admission.
2. Filing transcripts of all college work completed.
3. Submitting to a qualifying examination.
4. Filing letters of recommendation.

Applications, transcripts, and examination results will be evaluated by the Doctoral Committee on Admissions. This committee will be guided by the complete profile of each individual student and may consider the following questions as criteria in determining his eligibility for the program:

1. Has the student earned a bachelor's degree in an accredited institution, and has he a satisfactory undergraduate record?
2. Has the student satisfactory scholarship in any graduate work completed at Arizona State College at Tempe, or elsewhere?
3. Has the student completed a satisfactory undergraduate program in Education and Psychology courses?
4. Has the student adequate background in general and professional education?
5. Has the student the scholastic aptitude and ability for the successful pursuit of a program of doctoral work in professional education?
6. Has the student filed for consideration three letters or statements from persons in a position to judge his readiness for doctoral work?

Upon being admitted to the Doctoral Program on the basis of the above criteria, a doctoral advisory committee will be appointed, the chairman of which will be the student's adviser. The student should consult his adviser, plan a doctoral program of studies approved by his advisory committee and the Dean of the School of Education, and file that program, in triplicate, in the Office of the Director of Graduate Study. This program should be planned and filed before the end of the first semester or summer session in residence.

Program of Study for Doctor of Education Degree. The degree of Doctor of Education is conferred on the basis of a high degree of attainment in the constructive study of an educational problem and for demonstrated ability to pursue independent research in some phase of education. It is not conferred solely for the reason of faithful study for a prescribed period of time, nor as a certificate of the satisfactory completion of course requirements.

Experience shows that for students to meet the standards set, at least three years of study beyond the bachelor's degree are necessary. The amount of time a student needs to spend in residence depends to a large degree on his individual program of studies.

Transfer of credits from other recognized institutions is permissible. The amount and kind depends largely upon the objectives agreed upon between student and adviser. Regardless of how many may be accepted by transfer, a sufficient number of credits must be taken at Arizona State College to assure competency in the field the candidate selects. Minimum residence requirements must also be met.

In addition to course work, an acceptable dissertation is required. The dissertation carries no semester hours of credit.

All course work taken beyond the point of admission to the Doctoral Program must be completed, except by petition to and approval by the Graduate Council, within a period of seven consecutive years.

Upon making application for the final examination for the Doctor's degree, the candidate must submit evidence of at least two years experience either in teaching or other educational service.

Graduate Courses

Graduate courses consist of those numbered 200g, 300 and 400. Courses open only to graduate students are numbered 300 and above and 400 and above. Courses open primarily to doctoral students are numbered 400 and above.

Individual Problems. A special type of graduate work is provided through Individual Problem courses. Individual Problem courses carry the number 390 in each department, including the Department of Education 490 is offered in the Department of Education only.

1. 390. Ordinarily registration for such courses is limited to students who have been enrolled in the Master's Degree Program and have completed, or are currently registered for, five or more semester hours of graduate course work. Ordinarily not more than six semester hours in Individual Problem courses will be accepted toward the master's degree. Prior to registering for an Individual Problem course, the student must prepare a written statement of the title, purpose, and scope of the problem. This statement of the problem must be approved by the staff member under whose direction the problem is to be carried out, the student's graduate adviser and the Director of Graduate Study. Blanks for this purpose may be obtained in the Office of the Director of Graduate Study. A course fee may be required.

2. 490. Registration for Education 490 is limited to students who have been admitted to the Doctor of Education Degree Program. Wide latitude is provided for selection of a problem of major interest toward which the student may devote intensive effort, while under the direction of his major professor. Prior to registering for Educa-

tion 490, the student must file with the Director of Graduate Study a statement of the problem approved by the major professor and the Dean of the School of Education. A course fee may be required.

Graduate Bulletin

In the Graduate Bulletin will be found a detailed description of the Graduate Program at Arizona State College at Tempe. For a listing of the requirements for the degree of Master of Arts in Education and Doctor of Education, and other regulations governing graduate work, the student should refer to this Bulletin. Copies of the Graduate Bulletin and Applications for Admission to the Graduate Division may be obtained in the Office of the Director of Graduate Study.

Summer Session

Terms. The summer session consists of a one-week pre-session, two terms of five weeks each, and a post-session of three weeks.

Air Cooling. Most of the buildings are cooled by refrigeration systems. The other buildings are cooled by evaporative coolers.

Forenoon Classes. Most classes meet in the forenoon, leaving the afternoons open for study, reference reading, laboratory work, conferences with faculty members or recreation.

College Credit. Students are permitted to earn a maximum of six semester hours of credit each five-week session. Four semester hours is the maximum credit which may be earned in the three-week post session. In three ten-week summer sessions, the residence requirement of the college can be met. By attending summer sessions, students can graduate in three years or less.

Admission to the Summer Session. In general, applicants for admission are expected to present evidence of graduation from an approved four-year high school, or evidence of good standing in an accredited college. Mature students, over 21 years of age, are admitted without the above qualifications, but with the understanding that all admission requirements must be satisfied before they can become candidates for the bachelor's degree.

Graduate Study. The summer session offers an excellent opportunity for those who have already acquired a bachelor's degree to do graduate work for personal edification or to work for advanced degrees in Education.

Fees and Expenses. The summer school fee is \$7.50 per semester hour. Textbooks and supplies may be purchased at the college book store on the campus. Board and room for the summer are furnished on campus at the prevailing rates.

Bulletin. A preliminary announcement of the offerings will be mailed to the teachers in the State early in 1955. Requests for the Summer Bulletin or other information should be addressed to the Director of Summer Session.

Extension Division

Many people who desire to continue their studies while actively engaged in their business or professional activities find it impossible to attend the regular sessions of the College. In response to this demand, the Extension Division has been established and offers two special types of service: extension courses offered at residence centers and correspondence courses. By these two methods, the regular college courses are made available to these people at a moderate cost.

In addition, the College offers radio service, speaker and consultant service, bureau of audio visual aids, school visitations, published bulletins, and other means of assistance.

Residence Center Classes

Residence centers will be organized where there is sufficient demand, when approved instructors are available, and when library or laboratory facilities are adequate to provide college level instruction. A residence center and offering must be approved by the Director of Extension. Two types of programs are carried on at the Residence Centers: (1) recognized and accepted college credit courses that serve to meet degree requirements at the undergraduate and graduate levels, and (2) informal educational experiences for personal pleasure, general cultural advancement, refresher training courses, and the acquisition of new interests, without reference to college level standards or credit. Courses taken in Residence Centers are counted as residence credit toward Bachelors degree requirements.

The fee for all extension courses is \$7.50 per semester hour, and is payable at the time of registration. For further information concerning residence center courses, write the Director of Extension.

Correspondence Courses

Through the use of the mail, the privileges of the college campus and service of the teaching faculty are extended to the student whose daily occupation prevents enrollment in the regular sessions.

Persons desiring to enroll for correspondence courses will write to the Correspondence Division for an enrollment blank and a copy of the Bulletin which give a list of the courses offered. When this enrollment blank, properly filled out and accompanied by remittance to cover the fee, is received, the first lesson assignments will be mailed to the student.

The fee for correspondence courses is \$7.00 per semester hour of credit carried. Credit earned in correspondence courses may be applied toward the bachelor's degree; however, not more than 16 semester hours of correspondence work will be accepted toward the degree. Correspondence courses are not accepted for credit toward the advanced degrees in Education.

No student doing work in residence may register for a course by correspondence without obtaining the approval of the Admissions and Standards Committee. All inquiries concerning correspondence courses should be addressed to the Correspondence Division.

Courses of Instruction

Descriptions of all courses offered by the College during the regular academic year are found in the section which follows. Courses offered as "summer only" courses are not included in this section. For convenience instructional departments are arranged in alphabetical order.

Classification of Courses

Courses numbered from 100-199 are lower division courses primarily for freshmen and sophomores. Courses numbered from 200-299 are upper division courses primarily for juniors and seniors. Courses numbered 200-299 may be taken by graduate students for graduate credit. Courses numbered 300 and above are graduate courses and may be taken only by graduate students. Courses numbered 400 and above are graduate courses primarily for students who have been admitted to the doctorate program in Education.

Special Problem Courses

The course number 290 has been reserved for special problem courses at the undergraduate level in each of the departments of the College. These are honor courses given only to outstanding students capable of carrying on individual work effectively. The approval of the instructor and the head of the department must be obtained before a student will be registered for a special problem course. Freshmen and sophomores are not eligible to take special problems. A course fee may be required.

Individual Problem Courses

The course number 390 has been reserved for individual problem courses at the graduate level in each department of the College, and, in addition, 490 has been reserved in the Department of Education for individual problem courses for students who have been admitted to the Doctor of Education Degree program. For additional information regarding 390 and 490 individual problem courses see "Graduate Courses" pp. 161-162. A course fee may be required.

Starred Courses

In curriculum outlines, certain courses have a star placed in front of them. This indicates that the course is given both the first and second semester of that year. The desire is to have one half of the students take the course the first semester, and the other half the second semester.

Withdrawal of Courses

The College does not offer each year all of the courses listed in the catalog. The Schedule of Classes should be consulted for those courses offered each semester and during the summer terms.

Cancellation of Scheduled Courses

The College reserves the right to cancel any course listed in the Schedule of Classes if the student enrollment is not sufficiently large to warrant offering it.

Agriculture

ROBINSON (Head of the Department), BARRETT, CHAVEZ, JUDD,
MOODY, PARKER, RASMUSSEN, G. L. RICHARDSON,
RIGGINS, TAYSOM.

Agronomy or Crop Production

Ag. 101 *Crop Production*. The principles of field crop production. Special emphasis on cultural practices in Arizona. Prerequisite for all succeeding agronomy courses. Fee, \$1.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

103 *Forage Crops*. The principal forage crops of the United States with particular reference to the Southwest. Prerequisite: Ag. 101. Fee, \$1.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

105 *Soils*. The formation, classification, and properties of soils; their relation to crop production; soil conservation. Prerequisite: one course in college chemistry. Fee, \$2.00. Three lectures or equivalent. Credit, 3 hours.

107 *Irrigation Principles and Practices*. History of irrigation, extent and importance, water measurements, application and conservation of irrigation water. Prerequisite: Ag. 105. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

109 *Crop Production Practices*. Supervised farm experience in field crop production including operation of farm machinery, methods of tillage, planting, irrigation and harvesting. Prerequisites: Ag. 101 and approval of adviser. One discussion period, 2 four-hour laboratories. Credit, 3 hours.

110 *Crop Production Practices*. Continuation of Ag. 109. Credit, 3 hours.

150 *Projects in Agriculture*. Practical experience in agriculture production problems. Prerequisite: approval of adviser and head of department. Credit, to be arranged.

200 *Conservation of Agricultural Resources*. Basic course devoted to developing an understanding of the relationships of agricultural resources to society and the necessity for maximum production from the agricultural resources of land, water, timber, and minerals. Fee, \$2.00. Three lectures or equivalent in field work. Credit, 3 hours.

202 *Weeds and Weed Control*. Identification of weed seeds and plants. The weed problem in agriculture and methods of control. Prerequisite: Bot. 110. Fee, \$1.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

204 *Cereal Crops*. Classification, history, distribution, and cultural methods involved in the production of cereal crops. Fee, \$1.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

206 *Crop Judging and Commercial Grading*. Seed, sheaf, and hay judging of cereal, legumes, grass, and other crops, and the application of the Federal Standard in the grading of field crops. Prerequisite: Bot. 110. Fee, \$2.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

208 *Soil Fertility*. Problems involved in the use of fertilizers, crop rotations, and irrigation water in the management of soils. Prerequisite: Ag. 105. Fee, \$2.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

210 *Alfalfa Production*. Cultural methods concerned with the production and improvement of alfalfa. Fee, \$1.00. Two lectures or equivalent in field work. Credit, 2 hours.

212 *Cotton Production*. Study of the cultural methods and the problems involved in the production and improvement of cotton. Fee, \$1.00. One lecture, 3 hours laboratory. Credit, 2 hours.

214 *Agriculture Seminar*. Current policies concerning agriculture will be considered. Credit, 1 hour.

216 *Plant Breeding*. The principles of plant breeding, and selection and hybridization. Prerequisites: Biol. 204; Bot. 110. Fee, \$2.00. Credit, 3 hours.

218 *Soil Conservation*. The study of soil management as a conservation agency. Prerequisite: Ag. 105. Fee, \$2.00. Credit, 3 hours.

219 *Agricultural Entomology*. Insect pests of major economic importance in agriculture in Arizona and the West, including their recognition, type of damage, distribution, life history and methods of control. Consideration of insecticides will be included. Prerequisite: Zool. 210. Fee, \$1.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

Animal Husbandry or Livestock Production

Ag.121 *Principles of Animal Husbandry*. Principles of livestock management and production. Score card and judging practices. Prerequisite to other animal husbandry courses. Fee, \$1.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

122 *Breeds of Livestock*. Characteristics of breeds of farm animals; origin, history, and development; pedigree studies. Fee, \$1.00. Two lectures. Credit, 2 hours.

123 *Livestock Production Practices*. Supervised farm experience in animal feeding, breeding, fitting for show, keeping records, and other practices in the field of livestock production. Prerequisite: Ag. 121. One discussion period, 6 hours laboratory. Credit, 2 hours.

124 *Livestock Production Practices*. Continuation of Ag. 123. Credit, 2 hours.

125 *Principles of Dairy Husbandry.* A study of the principles of dairy husbandry such as feeding, breeding, management, selection, herd improvement, artificial insemination, diseases, calf raising, milking, and dairy equipment. Fee, \$1.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

126 *Dairy Production Practices.* Supervised farm experience in dairy feeding, breeding, fitting for show, keeping records and the attainment of proficiency in skills associated with a dairy enterprise. Prerequisite: Ag. 125. One discussion period, 6 hours laboratory. Credit, 2 hours.

127 *Poultry Husbandry.* Poultry management, and application to local and regional conditions. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

129 *Poultry Production Practices.* Supervised farm experience in poultry feeding, handling eggs, poultry raising for meat production, sanitation practices, and disease prevention (vaccination). Prerequisite: Ag. 127. Six hours laboratory. Credit, 2 hours.

130. *Selection and Culling of Poultry.* Selecting poultry adapted to southwestern conditions; separating layers from poor layers and non-layers; practice in culling flocks on valley farms. Prerequisite: Ag. 127. Fee, \$2.00. One lecture, 3 hours laboratory or equivalent in field work. Credit, 2 hours.

222 *Animal Feeding.* Study of the different feeds and feeding methods, physiology of nutrition, and balancing rations. Prerequisites: Ag. 121 and one course in college chemistry. Fee, \$2.00. Three lectures or equivalent in field work. Credit, 3 hours.

223 *Animal Nutrition.* Fundamental principles of animal nutrition, in regard to the metabolism of proteins, carbohydrates, fats, minerals, and vitamins. Deficiency symptoms shown in the animal. Prerequisites: Ag. 121, 222; Chem. 110, 180. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours..

224 *Market Milk.* The classes of market milk, sanitation, milk inspection, and scoring of dairies. Prerequisite: Bact. 110. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

225 *Livestock Judging.* A study of various breeds of livestock. Trips to stock farms, ranches, and livestock fairs. Prerequisites: Ag. 121, 122. Fee, \$2.00. Two lectures, 3 hours laboratory; or equivalent in field work. Credit, 3 hours.

226 *Swine Production.* Production, breeding, feeding, and management of swine. Prerequisites: Ag. 121, 122, 222. Fee, \$1.00. Two lectures or equivalent in field work. Credit, 2 hours.

228 *Beef Production.* Production, breeding, feeding, and management of beef cattle. Prerequisites: Ag. 121, 122, 222. Fee, \$1.00. Two lectures or equivalent in field work. Credit, 2 hours.

229 *Poultry Production and Management.* The application of the principles of feeding, breeding, and sanitation to the economics of poultry production; marketing of poultry products; profit calculations. Prerequisite: Ag. 127. Fee, \$2.00. Three lectures or equivalent in field work. Credit, 3 hours.

230 *Sheep Production.* Production, breeding, feeding, and management of sheep. Prerequisites: Ag. 121, 122, 222. Fee, \$1.00. Two lectures or equivalent in field work. Credit, 2 hours.

234 *Dairy Production and Management.* An integration of the principles of feeding, breeding, and management that are fundamental to economical production and successful operation of the dairy enterprise. Prerequisites: Ag. 125, 126, 222. Fee, \$2.00. Three lectures or equivalent in field work. Credit, 3 hours.

235 *Range Management.* Grazing regions, range forage, range improvement, range plants. Prerequisites: Ag. 121; Bot. 110. Fee, \$2.00. Three lectures or equivalent in field work. Credit, 3 hours.

236 *Anatomy and Physiology of Domestic Animals.* Study of the anatomy and physiological functions of domestic animals. Special attention given to the digestive and reproductive systems. Prerequisites: Ag. 121; Zool. 110. Fee, \$2.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

237 *Poultry Diseases and Sanitation.* Study of health problems of poultry as encountered on the farm. Description and classification of poultry diseases, their diagnosis, control and prevention. Laboratory includes post-mortem examinations and microbiological studies. Prerequisite: Ag. 127. Fee, \$2.00. One lecture, 3 hours laboratory. Credit, 2 hours.

238 *Livestock Hygiene and Sanitation.* Study of animal health problems as encountered on the farm and ranch. The importance of sanitation and management in disease control and animal health. Prerequisites: Ag. 236; Zool. 110. Fee, \$2.00. Three lectures or equivalent in field work. Credit, 3 hours.

239 *Animal Breeding.* The principles of genetics applied to animal breeding. Prerequisites: Biol. 204; Zool. 110. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

240 *Advanced Livestock Judging.* An advanced course in the judging of livestock. Trips to farms, ranches, and livestock fairs. Prerequisite: Ag. 225. Fee, \$1.00. One lecture, 3 hours laboratory. Credit, 2 hours.

Management and Economics

Ag. 141 *Principles of Farm and Ranch Organization.* The principles, concepts, and procedures of farm and ranch organization as applied in the business of farming and ranching. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

144 *Agricultural Economics*. Deals with the principles of economics as they apply to agricultural problems. The economic factors governing crop production and its distribution will be given major consideration. Credit, 3 hours.

149 *Agricultural Marketing and Merchandising*. Underlying principles, concepts, and factors that control the efficient marketing and merchandising of agricultural products. Credit, 3 hours.

241 *Farm and Ranch Management*. Designed primarily to teach underlying business principles of farm and ranch management as they affect the over-all administration of agricultural-production-business enterprises; and to develop business judgment in the actual, practical business of operating and managing farms, ranches, and business enterprises closely connected with agricultural production. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

242 *Advanced Farm Management*. Factors contributing to success of selected farm enterprises are studied. Also, considered are factors responsible for farm business losses from legal and natural causes, business mistakes, and poor judgment. Three lectures or equivalent in field work. Credit, 3 hours.

244 *Agricultural Finance*. Acquisition of capital, use of credit, legal aspects of finance and financial management of working capital. Three lectures or equivalent in field work. Credit, 3 hours.

245 *Livestock Production and Management*. Such problems as methods of production, livestock enterprises, economics, budgeting, finance, loss prevention, and marketing are considered in relation to livestock production and management. Prerequisite: Ag. 222. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

246 *Land Utilization*. Land management including basic factors of land value, land use capabilities, fertility maintenance, conservation practices, and farm diversification. Credit, 2 hours.

247 *Crop Production and Management*. Types of crop farms, cropping systems, finance, harvesting, and pest control as applied to crop production are considered. Prerequisite: Ag. 107. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

248 *Management of Supplies and Equipment*. Selection, purchasing, economics of servicing and financing of equipment and supplies. Fee, \$1.00. Two lectures or equivalent in field work. Credit, 2 hours.

250 *Farm Labor Management*. General principles and economics of farm labor requirements related to farm management costs and income. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

252 *Public Relations*. Public relations techniques, government's interest in agriculture, agricultural programs such as production control, subsidies, supports and the interrelated economic problems of agriculture. Three lectures or equivalent in field work. Credit, 3 hours.

254 *Farm Cooperatives*. Principles of cooperation in agriculture, methods of organization, operation and management of cooperative sales, purchasing and service associations. Fee, \$1.00. Credit, 3 hours.

256 *Homestead Management*. The farm homestead and its relation to the farm business. Fee, \$1.00. Two lectures or equivalent in field work. Credit, 2 hours.

Horticulture

Ag. 181 *Vegetable Crops*. Areas of production and cultural practices. Emphasis on the vegetable garden. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

183 *Principles of Horticulture*. Plant propagation. Nursery practices. Orchards and home grounds. Fee, \$1.00. One lecture, 3 hours laboratory. Credit, 2 hours.

184 *Practical Horticulture*. Ornamental trees and shrubs, flowering plants, and landscaping. Fee, \$1.00. One lecture, 3 hours laboratory. Credit, 2 hours.

287 *Citriculture*. Study of orchard operation skills to acquaint students with methods of operating commercial orchards, with emphasis on origin and distribution of citrus, varieties, economic importance, pest control, and orchard tillage. Prerequisite: Ag. 183. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

289 *Landscaping and Floriculture*. Fundamental principles and practices in landscaping and the culture of annual and perennial flowers, bulbs, houseplants, shade trees, shrubs, lawn grasses and greenhouse plants. Prerequisite: Ag. 184. Fee, \$1.00. Three lectures or equivalent in field work. Credit, 3 hours.

292 *Commercial Vegetable Crops*. Soil practices, cultural methods, harvesting and marketing of leading truck crops. Three lectures or equivalent in field work. Credit, 3 hours.

Agricultural Mechanics

Ag. 161 *Agricultural Mechanics*. Study and application of various mechanical skills important to agriculture. Prerequisite to all other courses in agriculture mechanics. Fee, \$4.00. One lecture, 3 hours laboratory. Credit, 2 hours.

163 *Farm Machinery*. Care, adjustment, and field operation of tillage and cultivating implements, planting, fertilizing, and harvesting machinery. Fee, \$2.00. One lecture, 3 hours laboratory. Credit, 2 hours.

164 *Farm Structures and Equipment*. Functional requirements of farm buildings, use of building materials, farm carpentry, and constructional methods. Fee, \$4.00. One lecture, 3 hours laboratory. Credit, 2 hours.

260 *Farm Tractors*. Operation, servicing, and repairing of gasoline and diesel-powered tractors. Fee, \$4.00. One lecture, 6 hours laboratory. Credit, 3 hours.

263 *Advanced Agriculture Mechanics*. Design, construction, and repairing of farm equipment. Fee, \$4.00. One lecture, 6 hours laboratory. Credit, 3 hours.

268 *Farm Refrigeration*. Study of various refrigeration equipment, its care, repair, adjustment, and actual operation. Fee, \$4.00. One lecture, 3 hours laboratory. Credit, 2 hours.

Air Science and Tactics

MULLIGAN (Head of Department), ADAMSON, DALE, NEWLAND,
POOLE, SWANGER.

Air Science

A.S. 101 *Basic Air Science (First Year)*. An introduction to the AFROTC Program and a study of the development of aviation, the classes and structure of aircraft, the basic principles of flight, and the fundamentals of global geography. Two lectures and 2 hours of drill instruction per week. Credit, 1.5 hours.

102 *Basic Air Science (First Year)*. A study of the factors and forces influencing international relations, the nation's defense organization, and the role of military aviation. Two lectures and 2 hours of drill instruction per week. Credit, 1.5 hours.

103. *Basic Air Science (Second Year)*. A presentation of the elements of aerial warfare which includes: types of targets, intelligence procedures, aerial weapons, and the type of delivery aircraft. Prerequisite: A.S. 101 and 102, or equivalent. Two lectures and 2 hours of drill and exercise of command per week. Credit, 1.5 hours.

104. *Basic Air Science (Second Year)*. A study of the elements of aerial warfare to include; the air ocean, air bases, and USAF combat and support organizations; a survey of the USAF Officer Career Program. Two lectures and 2 hours of drill and exercise of command per week. Credit, 1.5 hours.

201 *Advanced Air Science (First Year)*. A study of command and staff concepts, problem solving techniques, principles and techniques of learning and teaching, Air Force correspondence, and military courts and boards. Prerequisite: Basic Air Science or equivalent. Four lectures and 2 hours of leadership laboratory per week. Credit, 3 hours.

202 *Advanced Air Science (First Year)*. A survey of aerodynamics and propulsion, aerial navigation, and weather. A study of the organization of a typical air base and the functions of the key base officers. Four lectures and 2 hours of leadership laboratory per week. Credit, 3 hours.

203 *Advanced Air Science (Second Year)*. Instruction in leadership and air power concepts which includes: principles of leadership and

management (seminar), career guidance, and military aspects of world political geography. Prerequisite: A.S. 202. Four lectures and 2 hours of leadership laboratory per week. Credit, 3 hours.

204 *Advanced Air Science (Second Year)*. Continuation of military aspects of world political geography, military aviation and the art of war, and briefing for commissioned service. Prerequisite: A.S. 203. Four lectures and 2 hours of leadership laboratory per week. Credit, 3 hours.

ART

WOOD (Head of the Department), BURGESS, HARTER, KLOSTER, SANDERSON, SCHAUMBURG.

Art

Art 100 *Introduction to Art*. A study of painting, sculpture, and architecture, to develop comprehension and appreciation of the fine arts. Some laboratory experience. Fee, \$1.00. Credit, 2 hours.

101 *Drawing and Perspective*. General drawing and principles of elliptical, parallel, and angular perspective. Four hours a week. Credit, 2 hours.

103 *Life Drawing*. The basic construction of the human figure. Emphasis on solidity and proportion. Fee, \$2.50. Six hours per week. Credit, 3 hours.

105 *Basic Design*. Problems in two and three-dimensional design. A study of design elements through experimentation with wood, wire, and other materials. Fee, \$1.50. Four hours a week. Credit, 2 hours.

106 *Basic Design*. Problems in two-dimensional design. A study of colors and color harmony. Fee, \$1.00. Four hours a week. Credit, 2 hours.

111 *Photography*. A laboratory type course in the basic principles of photography and darkroom procedures. Discussion and practice sessions on the use and functions of cameras, exposure meters, flash-photography, photo sensitive materials, etc. Darkroom work in film developing, paper developing, contact printing, and enlarging. Fee, \$10.00. One hour class, 3 hours laboratory. Credit, 2 hours.

117 *Allied Crafts*. A laboratory course dealing with modern design in materials such as leather, metal, textiles. Processes of block printing, silk screen, stenciling, weaving, and bookbinding explored. Prerequisite: Art 105 or 106 for art majors. Fee, \$10.00. Leather, metal, textile paint furnished. Six hours a week. Credit, 3 hours.

121 *Lettering*. Construction, spacing, and arrangement of Roman and Gothic letters. Analysis of Italics, script, and miscellaneous letter forms. Fee, 50c. Four hours a week. Credit, 2 hours.

123 *Commercial Art*. Practical problems in six major advertising media. Recommended for journalism and commerce majors. Prerequisite: Art 121. Fee, \$1.00. Six hours a week. Credit, 3 hours.

- 131 *Fashion Design*. Initial course in designing and constructing fashions. A survey of manufacturers, retailers, designers and illustrators. Prerequisites for art majors: Art 103, 105. Fee, \$2.00. Six hours a week. Credit, 3 hours.
- 135 *Fashion Illustration*. Introduction to fashion illustration. Emphasis upon sketching and rendering. Prerequisites: Art 103, 106. Six hours a week. Credit, 3 hours.
- 136 *History of Fashions*. Research and study of historic costume. Consideration will be given to the adaptation of past styles in dress in designing present day fashions. Fee, \$1.00. Credit, 2 hours.
- 141 *Interior Design*. Problems in interior design, renderings of floor plans, elevations, and interior sketches. Prerequisites: Art 101, 106. Fee, \$2.00. Six hours a week. Credit, 3 hours.
- 151 *Ceramics*. A laboratory course in practical production methods, and an introduction to the nature of clay and glazes. Prerequisite: for art majors: Art 105. Fee, \$5.00. Four hours a week. Credit, 2 hours.
- 161 *Water Color*. Painting in gouache and transparent water color. Emphasis on techniques, composition, and color. Prerequisites for art majors: Art 101, 106. Fee, \$1.00. Six hours laboratory. Credit, 3 hours.
- 171 *Sculpture*. Modeling in round and relief, casting, and mold making. Building armatures. Plaster carving. Prerequisites for art majors: Art 103, 105. Four hours a week. Fee, \$4.00. Credit, 2 hours.
- 191 *Oil Painting*. Emphasis upon composition, color, and technical mastery of the oil medium. Prerequisites for art majors: Art 101, 106. Fee, \$1.00. Six hours a week. Credit, 3 hours.
- 201g *Advanced Drawing*. Emphasis on drawing techniques and composition. Prerequisite: Art 101. Four laboratory hours a week. Credit, 2 hours.
- 203 *Advanced Life Drawing*. Emphasizes form and anatomical structure of figure and head. Various mediums and techniques. Prerequisite: Art 103. Fee, \$2.50. Six hours a week. Credit, 3 hours.
- 204g *Advanced Life Drawing*. Continuation of Art 203 with anatomical research, one hour additional each week. Group criticism. Prerequisites: Art 103, 203. Fee, \$2.50. Six hours laboratory, 1 hour outside preparation. Credit, 3 hours.
- 205g *Space Design*. Creative design with emphasis on volume and space relationships. Construction in a variety of materials. Continuing use of hand tools and machine tools. Prerequisite: Art 105. Fee, \$5.00. Six laboratory hours a week. Credit, 3 hours.
- 206g *Crafts for the Elementary School Teacher*. Laboratory experiences in puppetry, woodcraft, tin craft, leather, and native crafts materials. Procedures for allied activities in the integrated program. Fee, \$2.00. One lecture, 3 hours. Credit, 2 hours.

- 207 *Art in the Elementary School*. Required of those specializing in elementary school art. Emphasis on instructional methods, materials, and procedures in teaching art. Should precede student teaching. Two hours a week. Credit, 2 hours.
- 210 *Public School Art*. Emphasizes tools, materials and procedures of importance in directing children's art activities. Should precede student teaching. Fee, \$2.00. Four hours a week. Credit, 2 hours.
- 211 *Western Art to the Renaissance*. A survey of western art to the Renaissance. Fee, \$1.00. Three hours a week. Credit, 3 hours.
- 212 *Renaissance Art*. Continuation of Art 211. A survey of the art of the Renaissance in Italy and Northern Europe. Fee, \$1.00. Three hours a week. Credit, 3 hours.
- 213g *Contemporary Art*. A survey of philosophy and trends in twentieth-century art. Prerequisite for art majors: Art 211. Fee, \$1.00. Two hours a week. Credit, 2 hours.
- 214g *American Art*. A comprehensive survey including research in the field of American art. The collection of original examples of American art owned by the College will be used as the basis for much of the study. Prerequisite: Art 211 or equivalent. Fee, \$1.00. Credit, 2 hours.
- 215g *Painting Mediums and Techniques*. A laboratory course dealing with the materials of painting. Preparation of grounds, compounding of egg tempera, casein, oil and synthetic resin mediums will precede actual painting problems in these techniques. Four laboratory hours a week. Credit, 2 hours.
- 217 *Advanced Crafts*. Correlation of function with medium and design. Problems in weaving, book-binding, and costume jewelry. Individual problems. Prerequisite: Art 117. Fee, \$3.00. Six hours a week. Credit, 3 hours.
- 218g *Advanced Crafts*. Students specialize in a particular craft medium or technique. Prerequisite: Art 217. Fee, \$3.00. Six hours a week. Credit, 3 hours.
- 219g *Stage Craft*. Study and practical work in scenery and costume design for classroom and art teachers. Also open to art education majors. Prerequisites: Art 207, Ed. 228a or Art 210, or equivalent. Fee, \$2.00. One lecture, 3 hours laboratory. Credit, 2 hours.
- 220g *Jewelry*. Methods in the use of tools, processes, and materials in designing jewelry having originality and good craftsmanship. Prerequisites for art majors: Art 105, 106, 117. Fee, \$2.00. Four laboratory hours a week. Credit, 2 hours.
- 221 *Advanced Lettering*. Emphasis on arrangement and spacing. Prerequisite: Art 121. Fee, \$1.00. Four hours a week. Credit, 2 hours.
- 222 *Advanced Lettering*. Recommended only to those having a special interest in lettering. Prerequisite: Art 221. Fee, \$1.00. Four hours a week. Credit, 2 hours.

223 *Advanced Commercial Art.* The student specializes in areas in which he is most interested. Prerequisites: Art 121, 123. Fee, \$1.00. Six hours a week. Credit, 3 hours.

224g *Advanced Commercial Art.* Planning and preparation of samples of work for presentation to prospective employers. Prerequisite: Art 223. Fee, \$2.50. Six hours a week. Credit, 3 hours.

231 *Advanced Fashion Design.* Designing clothes with relation to price ranges and materials. Style forecasting. Prerequisite: Art 131. Fee, \$2.00. Six hours a week. Credit, 3 hours.

232 *Advanced Fashion Design.* Students may specialize in designing clothes for special types, for the junior miss, or for children. Prerequisite: Art 231. Fee, \$2.00. Six hours a week. Credit, 3 hours.

235 *Advanced Fashion Illustration.* Illustrating clothes and accessory merchandise for newspaper, magazine, and catalog advertising. Prerequisite: Art 135. Six hours a week. Credit, 3 hours.

241 *Advanced Interior Design.* Coordinated planning in decorating interiors. Emphasis upon modern ways of achieving space, renderings in color and perspective, and scale models. Prerequisite: Art 141 or its equivalent. Fee, \$2.00. Six hours a week. Credit, 3 hours.

242g *Advanced Interior Design.* Continuation of Art 241. Prerequisites: Art 141, 241. Fee, \$5.00. Six hours per week. Credit, 3 hours.

249g *Art Education for Elementary Teachers.* Integrating art activities in curriculum planning. A course for experienced teachers; creative laboratory activities, lectures, discussions, and visual aids. Teaching demonstrations with children. Prerequisite: for elementary teachers. Fee, \$3.00. One lecture, 4 hours laboratory. Credit, 3 hours.

251 *Advanced Ceramics.* Students specialize in more advanced production methods, glaze formula interpretation, some experimental work in clays and glazes. Prerequisite: Art 151. Fee, \$5.00. Six hours a week. Credit, 3 hours.

252g *Advanced Ceramics.* Studio problems adapted to meet individual needs. Curriculum problems, procedures, and techniques for teachers. Advanced research for the individual potter. Prerequisite: Art 251 or equivalent. Fee, \$5.00. Six hours a week. Credit, 3 hours.

261 *Advanced Water Color.* More advanced problems in picture construction. Prerequisite: Art 161. Fee, \$1.00. Six hours a week. Credit, 3 hours.

262g *Advanced Water Color.* Prerequisite: Art 261. Fee, \$1.00. Six hours laboratory a week. Credit, 3 hours.

271 *Advanced Sculpture.* Experimenting with various materials and working from model. Prerequisite: Art 171. Fee, \$5.00. Four hours a week. Credit, 2 hours.

272g *Advanced Sculpture.* For those with a serious interest in the art of sculpture. Prerequisite: Art 271. Fee, \$5.00. Four hours laboratory a week. Credit, 2 hours.

280g *Graphic Arts Processes*. Introduction to printing processes in wood cut, etching, and lithography. Emphasis on black and white composition as well as technical processes will be stressed. Prerequisites: Art 101, 103, 106. Six laboratory hours a week. Fee, \$3.00. Credit, 3 hours.

291 *Advanced Oil Painting*. Advanced problems in oil painting. Prerequisite: Art 191. Six hours a week. Credit, 3 hours.

292g *Advanced Oil Painting*. For those with a serious interest in painting. Prerequisite: Art 291. Six hours laboratory and 1 hour research a week. Credit, 3 hours.

295 *Figure Painting*. Painting from model in oil, gouache, tempera or water color. Prerequisites: Art 203, 291. Fee, \$4.00. Four hours a week. Credit, 2 hours.

296g *Figure Painting*. Prerequisite: Art 295. Fee, \$4.00. Four hours a week. Credit, 2 hours.

310 *Seminar in Art Education*. Critical evaluation of current philosophy, theory, and trends in modern art education. Group discussion of curricular problems. Prerequisite: Art 207 or Ed. 228a or teaching experience. Credit, 2 hours.

Biological Sciences

STAHNKE, (Head of Department), BENDER, HANSON, MCCLEARY,
MAUGHAN, MORTENSEN, TULECKE

General Science

G.S. 110. *Introduction to Biological Sciences*. A survey of the major biological principles. Illustrated by both plants and animals with moving pictures and other visual aids. Does not meet science requirements in preprofessional curriculum. Fee, \$2.00. Credit, 4 hours.

231 *Science for the Elementary School*. Development of an integrated science program in each grade of the elementary school. Lectures, library reports, class discussion, field observation and a three-day camping trip. Prerequisites: G.S. 100, 110; Geog. 100. Fee, \$3.00. Credit, 3 hours.

310 *Seminar in Science Education*. Review and survey of current publications. Consideration and solution of problems dealing with the field. Credit, 2 hours.

Bacteriology

Bact. 110 *Introduction to Bacteriology*. The principles and techniques used in the study of the bacteria, molds, and other microorganisms, and their application in industrial, agricultural, hygienic and domestic problems. Prerequisites: Chem. 110 or 111; either G.S. 110, Bot. 110, Zool. 110 or equivalent. Fee, \$5.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

210g *General Bacteriology*. Comparative morphology, taxonomy, and physiology of bacteria. Prerequisites: Bact. 110 and Chem. 211, and consent of instructor. Fee, \$6.00. Three lectures, 6 hours laboratory. Credit, 5 hours.

Biology

Biol. 190 *Special Techniques in Biology*. Individual projects in the biological sciences. A type of honors course, open only to outstanding students. Approval of the instructor and head of the department required. Fee, \$1.00 per semester hour. Credit arranged.

204 *Genetics and Eugenics*. Principles and facts of heredity developed from plants and animals. Principles of race improvement. Prerequisites: G.S. 110 or Bot. 110, and Zool. 110 or equivalent. Credit, 3 hours.

280g *Principles of Biology*. A study of the major biological principles. Designed to bring together the principles drawn from the various fields of biology and to integrate these into a whole philosophy of biology. Prerequisites: Twenty-five hours biological sciences, including: Biol. 204; Bot. 110; Zool. 111, 112. Fee, \$1.00. Credit, 3 hours.

Botany

Bot. 110 *General Botany*. Brief survey of lower plant life. More detailed study of flowering plants. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

160 *General Plant Pathology*. The principles and agents of disease, including field observations and methods of control. Prerequisite: Bot. 110. Fee, \$5.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

171 *Plant Anatomy*. A detailed study of flowering plants, relating structure and function in the case of stems, leaves, roots, flowers, fruits, and seeds. Prerequisite: Bot. 110. Fee, \$4.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

Bot. 172 *Plant Physiology*. An investigation of plant growth, nutrition, food synthesis, respiration and reproduction. Prerequisites: Bot. 110; Chem. 180. Fee, \$4.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

230g *Plant Ecology*. Plant associations in relation to the major environment factors. Prerequisite: Bot. 242g or permission of the instructor. Fee, \$4.00. Three lectures, 3 hours laboratory or field trip, one week-end field trip. Credit, 4 hours.

242g *Systematic Botany*. Principles underlying the classification and naming of plants, their identification, and methods of collecting, preserving, and mounting. Prerequisite: Bot. 110. Fee, \$4.00. Two lectures, 6 hours laboratory, and one week-end field trip. Credit, 4 hours.

243g *Cacti and Succulents of Arizona*. Identification of the principle desert cacti and succulents in the area. Prerequisites: Bot. 110 or

equivalent. Fee, \$3.00. One lecture and 3 hours field work, or 6 hours field work. Credit, 2 hours.

244g *Morphology of Lower Plants*. Morphology and economic importance of thallophytes, bryophytes, and pteridophytes. Prerequisite: Bot. 110, Fee, \$4.00. Two lectures, 6 hours laboratory, including field trips. Credit, 4 hours.

260g *Plant Microtechnic*. Methods of handling plant materials for cytological and anatomical examination. Prerequisite: Bot. 110. Fee, \$5.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

Zoology

Zool. 110 *Animal Biology*. A study of those main zoological principles and representative members of the animal kingdom that are of special interest to the farm and home. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

111 *General Zoology*. The form, activities, relationships and economic importance of the main groups of invertebrate and vertebrate animals together with the fundamental principles of zoology. Recommended prerequisite: high school biology, or G.S. 110. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

112 *General Zoology*. Continuation of Zool. 111. Prerequisite: Zool. 111. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

163 *Comparative Anatomy*. Structure, development, and homology of the vertebrate systems. Prerequisites: Zool. 111, 112. Fee, \$6.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

171 *Human Anatomy-Physiology*. Skeletal, articulatory, muscular, integumentary, and nervous systems, and special senses. Prerequisites: high school biology and chemistry; or G.S. 100 and G.S. 110, or equivalent. Not open to biology majors, pre-medical, or pre-dental students. Fee, \$2.00. Credit, 3 hours.

172 *Human Anatomy-Physiology*. Circulatory, respiratory, digestive, excretory, endocrine and reproductive systems. Prerequisites: high school biology and chemistry; or G.S. 100 and G.S. 110, or equivalent. Zool. 171 should be taken first, but not required. Not open to biology majors, pre-medical, or pre-dental students. Fee, \$2.00. Credit, 3 hours.

180. *General Entomology*. Form, activities, and classification of insects. Prerequisite: Zool. 110, 111 or equivalent. Fee, \$4.00. Three lectures, 4 hours laboratory. Credit, 4 hours.

212 *Apiculture*. A study of bees and their ways, including methods of management. Students work with bee hives and honey, performing most of the operations essential to good bee-keeping and honey production. Prerequisite: Zool. 180. Fee, \$2.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

215 *Insect Morphology*. Morphology of typical insects including both external and internal structure. Prerequisite: Zool. 180. Fee, \$4.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

216g *Insect Physiology*. A survey of the life processes of insects. Prerequisite: Zool. 180 (chemistry desirable but not required). Fee, \$4.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

220g *Insect Taxonomy*. Classification, nomenclature and taxonomic practices in entomology. Emphasis is placed on the identification of adult insects. Immature forms are considered briefly. Prerequisite: Zool. 180. Fee, \$4.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

222g *Applied Entomology*. Principles and methods of chemical, cultural and biological control of insect pests. Prerequisite: Zool. 180. Fee, \$4.00. Three lectures, 4 hours laboratory. Credit, 4 hours.

228g *Entomological Techniques*. A practical consideration of important techniques not adequately treated in other courses, particularly: scientific illustration, use of the literature, mounting, preserving, and preparing insects for study, record keeping, elementary mathematical treatment of data, interpretation of graphs, charts and maps. Prerequisite: Zool. 180. Fee, \$2.00. One lecture, 3 hours laboratory. Credit, 2 hours.

230g *Animal Ecology*. Wild animals of North America—their adaptations, communities, habitat, conservation, etc. Prerequisites: Bot. 110; Zool. 111, 112. Fee, \$4.00. Three lectures, 4 hours laboratory or field trips. Credit, 4 hours.

231g *Poisonous Animals of Arizona*. Form, activities, and identification of venomous animals of Arizona and others thought venomous. Prerequisite: Zool. 112 or equivalent. Fee, \$4.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

232g *General Parasitology*. Pathogenic protozoa, worms, and arthropod parasites. Prerequisite: Zool. 112. Fee, \$5.00. Three lectures, 4 hours laboratory. Credit, 4 hours.

233g *General Herpetology*. Form, activities, and identification of lizards and snakes. Special emphasis on those of the Southwest and the United States. Prerequisite: Zool. 112. Fee, \$4.00. Three lectures, 4 hours laboratory. Credit, 4 hours.

234g *Biology of Arthropods*. Identification, life history and ecology of crustacea, myriopods, spiders and related forms not adequately treated in other courses. Prerequisite: Zool. 111. Fee, \$2.00. One lecture, 4 hours laboratory. Credit, 2 hours.

254g *Vertebrate Embryology*. Animal development from the egg to the period of extra-uterine or extra-ovular existence. Prerequisite: Zool. 112. Fee, \$6.00. Three lectures, 4 hours laboratory. Credit, 4 hours.

255g *Human Mechanisms*. Stressing the functions of the human body: muscle activity; metabolic processes and systems involved, co-

ordination mechanisms; the life cycle. Prerequisites: Chem. 110; Zool. 112, or equivalent. Fee, \$4.00 Three lectures, 3 hours laboratory. Credit, 4 hours.

260g *Animal Histology*. Microscopic anatomy of vertebrate tissues with techniques of preparation and identification. Prerequisite: Zool. 112. Fee, \$5.00. Two lectures, 6 hours laboratory a week. Credit, 4 hours.

261g *Animal Cytology*. Structure, differentiation, and functions of cells. Prerequisite: Zool. 112. Fee, \$4.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

270g *General Ornithology*. Morphology, classification, distribution, life histories, and evolution of birds, particular emphasis given to their environmental relations, habitats, behavior, and ornithological field methods. Prerequisite: Zool. 112. Fee, \$4.00. Two lectures, 4 hours laboratory. Recommended particularly for majors in the biological sciences. Credit, 3 hours.

271g *Game Animals*. A study of the classification, structure, habits, ecology, and distribution of mammals, with emphasis on North American forms. Prerequisite: Zool. 112. Fee, \$4.00. Two lectures, 3 hours laboratory. One week-end field trip. Credit, 3 hours.

Business Administration

HILKERT (Head of the Department), BEALS, BRATCHER, BRIDENSTINE, BURTON, GUTENBERG, HEADINGTON, KELSO, MCKINNON, MOUNT, NELSON, ROBERT ZACHER, ZIDNAK.

Accounting

Bus. Ad. 101 *Elementary Accounting*. A beginner's course. Covers the bookkeeping cycle and preparation of business reports. Lectures and laboratory 5 days a week. Credit, 4 hours.

102 *Elementary Accounting*. A continuation of Bus. Ad. 101. Prerequisite: Bus. Ad. 101. Credit, 4 hours.

103 *Payroll and Miscellaneous Taxes with Accounting Procedures*. Social security and unemployment laws with respect to taxes, benefits payable, merit ratings, payroll records, sales tax and payroll reports. Prerequisite: Bus. Ad. 102. Credit, 2 hours.

141 *Business Mathematics*. Gives practice in arithmetic used by the business man. Credit, 3 hours.

201 *Intermediate Accounting*. Financial statement analysis, ratios, percentages, proper classification of items in financial statements, financial reporting standards. Interpretation is emphasized for managerial purposes. Prerequisite: Bus. Ad. 102. Credit, 3 hours.

202 *Intermediate Accounting*. Corporations, surplus, reserves, appraisals, goodwill, source and application of fund changes, single

entry methods, inventories, investments, fixed assets, etc. Emphasis is placed on current accounting theories and problems. Prerequisite: Bus. Ad. 201. Credit, 3 hours.

203g *Advanced Accounting*. Partnership organization, dissolution and liquidation. Parent and subsidiary companies, consolidated balance sheets and profit and loss statements, estates and trusts. Prerequisite: Bus. Ad. 202. Credit, 3 hours.

204g *Advanced Accounting*. A continuation of 203g. Prerequisite: Bus. Ad. 203g. Credit, 3 hours.

207g *Auditing Theory and Practice*. Auditing practices and procedures, working sheets, audit reports. See 230g for continuation. Prerequisite: Bus. Ad. 202. Credit, 3 hours.

208g *Cost Accounting*. Cost accounting systems, job order, process costs, standard costs, estimate costs, cost accounting procedure. See 231g for continuation. Prerequisite: Bus. Ad. 201. Credit, 3 hours.

209g *Governmental and Institutional Accounting*. Accounting principles applied to governmental units—city, county, and state—and to public institutions. Prerequisite: Bus. Ad. 201. Credit, 3 hours.

210g *Income Tax—Federal and State*. Laws, regulations, tax returns and procedures especially for individuals. Prerequisite: Bus. Ad. 201. Credit, 3 hours.

211g *Income Tax—Federal and State*. Income taxes of partnerships, corporations and fiduciaries, reorganizations, holding companies, estate and gift taxes. Tax refunds, tax procedures, etc. Prerequisite: Bus. Ad. 210g. Credit, 3 hours.

212 *Mathematics of Accounting*. Application of pure mathematics to business situations including simple interest, discount, retail merchandising, and introduction of methods of computation of income tax and consolidated balance sheet equations. Prerequisites: Math. 106; Bus. Ad. 102. Credit, 2 hours.

213 *Mathematics of Accounting*. Continuance of methods for computation of income tax and consolidated balance sheet equations, and a study of compound interest, annuities, bond valuation and amortization, and building and loan problems. Prerequisites: Math 106; Bus. Ad. 212. Credit, 2 hours.

214 *Accounting Systems*. Review of the various systems of accounting, adaptation of the system to the business need, and installation procedures. Prerequisite: Bus. Ad. 202, or concurrent registration. Credit, 2 hours.

228g *Budgetary Control*. The relationship of budget practice to accounting and good management; the preparation of the budget; sources from which estimates are drawn; comparison of estimates with performance; budget revisions; the accounting problems involved. Prerequisites: Bus. Ad. 202, 208. Credit, 2 hours.

229g *Controllership*. An analysis of the functions of the controller and the organization of his department; consideration is given to the

responsibilities of the controller as a part of the administrative group and to the scope of the problems with which he deals. Prerequisites: Bus. Ad. 202, 208. Credit, 2 hours.

230g *Auditing Theory and Practice*. Continuation of course Bus. Ad. 207g; emphasis will be placed on practical application of theoretical principles. Prerequisite: Bus. Ad. 207g. Credit, 3 hours.

231g *Advanced Cost Accounting*. Continuation of Bus. Ad. 208g. A further study of job order cost accounting with a major portion of the time being devoted to process, estimated, and standard costs, with some attention being given to distribution costs. Prerequisite: Bus. Ad. 208g. Credit, 3 hours.

232 *Farm Accounting and Related Tax Problems*. Accounting methods and procedures applicable to farm and ranch operations, including income tax and employment tax problems. Credit, 3 hours.

260g *C.P.A. Problems and Review*. Intensive training for C.P.A. Examinations in Accounting Practice, Theory of Accounts, Auditing, and Business Law. Various types of problems and questions given by the C.P.A. Examiners are studied. Prerequisite: senior or graduate standing in accounting area of concentration, or equivalent. Fee. \$5.00. Credit, 3 hours.

261g *C.P.A. Problems and Review*. A continuation of 260g. Prerequisite: senior or graduate standing in accounting area of concentration, or equivalent. Fee, \$5.00. Credit, 3 hours.

291 *Seminar in Accounting*. Students select a special field of accounting and do individual study and research. Open only to students whose area of concentration is in accounting. Prerequisite: approval of instructor. Hours arranged. Credit, 1 to 3 hours.

292 *Seminar in Accounting*. A continuation of 291. Prerequisite: Bus. Ad. 291. Credit, 1 to 3 hours.

Note: A laboratory fee of 50 cents is charged for each accounting course, but the maximum laboratory fee in any semester, regardless of the number of accounting courses taken, is \$1.00, except for Bus. Ad. 260g and 261g.

Economics and Management

Bus. Ad. 129 *Personal Economics*. Personal economic and financial problems, credit purchases, banking procedures, consumer loans, home ownership, insurance, social security, pricing practices, personal law, government regulation and protection. Credit, 3 hours.

130 *Introduction to Economics*. Descriptive analysis of the structure and operation of the American economy. Consideration of basic economic institutions, processes, and contemporary economic problems. Open to non-majors and required of all majors in Business Administration. Credit, 3 hours.

132 *Principles of Economics*. Determination of production, prices and distribution of income in the American economy. Examination of basic

economic principles and their application to contemporary problems. Optional for non-majors; Business Administration majors must complete both Bus. Ad. 130 and 132. Prerequisite: Bus. Ad. 130. Credit, 3 hours.

133 *Economics of Enterprise*. Price and output decisions of the individual business firm under conditions of competition, monopoly, monopolistic competition, and oligopoly. Prerequisite: Bus. Ad. 132. Credit, 3 hours.

134 *Economics of Income and Employment*. Analysis of determinants of aggregate level of employment, output and income of an economy. Prerequisite: Bus. Ad. 130 or 132. Credit, 3 hours.

205 *Business Law*. Contracts, sales, agency, partnerships, corporations, negotiable instruments, personal property, real property, and federal and state regulation of business. Credit, 3 hours.

206 *Business Law*. A continuation of 205. Prerequisite: Bus. Ad. 205. Credit, 3 hours.

215 *Business Organization and Industrial Management*. General principles of business organization and their application to American industry. Prerequisite: Bus. Ad. 102, 132. Credit, 3 hours.

216 *Managerial Economics*. Bridges the gulf between economic theory and business decisions. Approaches managerial problems from an economic standpoint. Involves an application of economic analysis to practical business decisions in those areas of business policy where economic insight and research are most needed. Prerequisite: Bus. Ad. 133. Credit, 3 hours.

217 *Money and Banking*. Functions of money, monetary systems, credit functions, banking practices and policies. Prerequisites: Bus. Ad. 102 and 132. Credit, 3 hours.

219 *Labor Relations*. Appraisal of problems confronting labor and capital as well as legislation and administrative regulations affecting employers and employees. Prerequisite: Bus. Ad. 130 or 132. Credit, 3 hours.

220g *Investments*. Analysis and evaluation of various types of securities. Business cycles, currency problems, and governmental control. Prerequisite: Bus. Ad. 132. Credit, 3 hours.

224 *Business Statistics*. Sources, classification and tabulation of data, index numbers, graphs, statistical inference, time series analysis, correlation, and their applications to business. Prerequisite: Bus. Ad. 132. Fee, \$1.00. Credit, 4 hours.

225 *Business Finance*. Practices, problems, and procurement of funds for small and medium size business. Prerequisites: Bus. Ad. 102, 132. Credit, 3 hours.

226g *Business Cycles*. Historical, statistical and analytical study of business cycle theory. Comparison of theories of leading economists. Methods of control of cyclical fluctuations. Prerequisites: Bus. Ad. 133 or 134, and 224 or concurrent registration. Credit, 3 hours.

250g *Production Management and Control*. Study of the principal functions, departmental activities, and industrial policies of industries. Includes materials handling, statistical quality control, and production controls. Prerequisites: Bus. Ad. 215 or 174, and 224. Credit, 3 hours.

257 *Public Finance*. Principles and practices of taxation, public expenditures, credit, budgetary policy. Prerequisite: Bus. Ad. 134. Credit, 3 hours.

258 *Economics of Public Utilities*. Economic, legislative and administrative problems in the regulation of public utility rates and service standards. Study of public utility costs, pricing policies, rates, plant utilization, and competition. Prerequisite: Bus. Ad. 132. Credit, 3 hours.

259g *Economics of Transportation*. Theory and practice of railroad transportation. Principles of rate-making, valuation, and Interstate Commerce Commission procedure. Regulation of railroad, motor truck, and air transportation. Prerequisite: Bus. Ad. 132. Credit, 3 hours.

262 *Comparative Economic Systems*. Economic aspects of communism, fascism, nazism, capitalism, socialism. Prerequisite: Bus. Ad. 132. Credit, 2 hours.

263g *Business Policies*. Analysis of problems covering management in its daily operations. Investigation of sound business principles and practices. Prerequisite: approval of instructor. Credit, 3 hours.

264g *Economic Policy in War and Peace*. Application of economic analysis to problems of military preparedness, war, and peace. Evaluation of government policies in the fields of money and credit, expenditures and taxes, wages and prices, international relations and other relevant topics. Prerequisite: Bus. Ad. 134, or approval of instructor. Credit, 3 hours.

265 *Personnel Administration*. Personnel selection, placement, training, promotion, wage incentives, absenteeism, counseling, etc. Prerequisite: Bus. Ad. 130 or 132. Credit, 3 hours.

266g *Corporation Finance*. Promotion, corporate organization, financing, selling securities, dividend policies. Prerequisites: Bus. Ad. 102, 132. Credit, 3 hours.

267g *History of Economic Thought*. Development of economic doctrines. Ancient and medieval writings, mercantilists, classical and neo-classical foundations. Prerequisite: Bus. Ad. 133. Credit, 3 hours.

268g *Business Research*. Techniques and procedures of general business research, statistical investigation, interpretation and presentation of results, with practical application applied to actual problems of the business community. Prerequisites: Bus. Ad. 173, 224. Fee, \$1.00. Credit, 3 hours.

269. *Business Regulation and Public Policy*. Economic aspects and consequences of public policy and regulation of economic activity,

relationship of government and business. Prerequisite: Bus. Ad. 132. Credit, 3 hours.

270g *Advanced Economic Analysis*. Value, price, and distribution theories; national income analysis and application to public policy; recent developments in economic theory. Prerequisites: Bus. Ad. 133, 134. Credit, 3 hours.

271g *International Trade*. Principles and practices of international trade, balance of payments, controls, commercial policies, international organizations. Prerequisites: Bus. Ad. 132, 173, 262. Credit, 2 hours.

272g *International Finance*. Principles and practices of international finance, national incomes, exchange controls, monetary policies, international financial organizations. Prerequisites: Bus. Ad. 217, 271g. Credit, 2 hours.

298g *Investigation of Business Problems*. Individual study of selected business problems such as resources, labor supply, production organization, finance, and marketing. Prerequisite: Approval of department head. Hours, arranged. Credit, 1 to 3 hours.

299g *Investigation of Business Problems*. Continuation of Bus. Ad. 298g. Prerequisite: Bus. Ad. 298g. Credit, 1 to 3 hours.

Insurance

Bus. Ad. 221 *General Insurance*. Coverage available, buying methods, procedures in settling claims, insurance companies, and vocational opportunities. Prerequisite: Bus. Ad. 132. Credit, 2 hours.

222 *Life Insurance*. A thorough study of life insurance principles. Prerequisite: Bus. Ad. 221. Credit, 2 hours.

223 *Life Insurance*. A continuation of the study of life insurance principles. Prerequisite: Bus. Ad. 222. Credit, 2 hours.

244 *Fire Insurance*. A complete and thorough study of all fire contracts and related contracts together with an examination of current practices. Prerequisite: Bus. Ad. 221. Credit, 2 hours.

245 *Marine and Casualty Insurance*. A complete and thorough study of Marine and Casualty contracts and underwriting practices. Prerequisite: Bus. Ad. 221. Credit, 2 hours.

246 *Fire and Liability Insurance, C.P.C.U.* A study of insurance principles and practices as required by The American Institute for Property and Liability Underwriters for employed men in the field. Credit, 4 hours.

247 *Fire and Liability Insurance, C.P.C.U.* A study of rate making, rating bureaus, claims, claims service, and related topics. Credit, 4 hours.

248 *Fire and Liability Insurance, C.P.C.U.* A study of economics, government, social legislation and English as required by The American Institute for Property and Liability Underwriters for employed men in the field. Credit, 4 hours.

249 *Fire and Liability Insurance, C.P.C.U.* A study of general commercial law, insurance law, accounting, personal finance, business organization and agency management as required by The American Institute for Property and Liability Underwriters for employed men in the field. Credit, 4 hours.

273 *Life Insurance, C.L.U.* A study of life insurance principles as required by The American College of Life Underwriters for employed life insurance salesmen. Credit, 4 hours.

274 *Life Insurance, C.L.U.* A study of economics, sociology, and political science as required by The American College of Life Underwriters for employed life insurance salesmen. Credit, 4 hours.

275 *Life Insurance, C.L.U.* A study of corporation finance, banking, and investments as required by The American College of Life Underwriters for employed life insurance salesmen. Credit, 4 hours.

276 *Life Insurance, C.L.U.* A study of law, trusts, and taxes as required by The American College of Life Underwriters for employed life insurance salesmen. Credit, 4 hours.

Marketing and Advertising

Bus. Ad. 171. *Introduction to Selling.* Training in the development of a good sales personality, and the fundamentals of selling. Prerequisite: Bus. Ad. 132 or concurrent registration. Fee, \$1.00. Credit, 2 hours.

173 *Principles of Marketing.* Survey of principles and trends. Prerequisite: Bus. Ad. 132 or concurrent registration. Credit, 3 hours.

174 *Marketing Practices.* Practices and problems confronting the marketing executive and the development of techniques found useful in their solution. Prerequisite: Bus. Ad. 173. Credit, 3 hours.

175 *Introduction to Advertising.* Introductory study of advertising theory and practice in relation to marketing and business management. Prerequisite: Bus. Ad. 173 or Journ. 130. Two lectures, 2 hours laboratory. Credit, 3 hours.

254 *Industrial Marketing.* An analysis of the marketing structure for industrial goods. Such problems as the industrial market, product lines, channels of distribution, selling, pricing, and warehousing are considered. Attention will be given to the marketing of installations, accessory equipment, operating supplies, and to fabricating materials and parts including agricultural implements and installations. Foreign markets for industrial equipment and the special problems of serving that market will be considered. Prerequisite: Bus. Ad. 174. Credit, 2 hours.

256g *Commodity Markets.* The sources and conditions of supply; the nature and extent of demand; the channels of distribution used; functions performed by the various marketing agencies, including risk bearing; price-setting, and sales promotion. Prerequisite: Bus. Ad. 173. Credit, 3 hours.

- 277 *Principles of Retailing.* The scope of retailing, merchandise planning and control, purchases and inventory, markup, store system and store service. Prerequisites: Bus. Ad. 102, 173. Two lectures, 3 hours laboratory. Credit, 3 hours.
- 278g *Retail Store Management.* Problems of store management including location, layout, customer services, personnel, and operational factors as they affect successful retailing. Prerequisite: Bus. Ad. 277. Credit, 3 hours.
- 279 *Wholesaling.* Its organization and function in the marketing channel, services, price policies, regulation and recent trends. Prerequisite: Bus. Ad. 174. Credit, 2 hours.
- 280 *Advanced Selling.* The salesman's place in the marketing process including: the selling job, information about the firm, the product, the customer, and building good will. Includes practice in meeting sales situations. Prerequisites: Bus. Ad. 171, 174 and senior standing. Fee, \$1.00. Credit, 2 hours.
- 281g *Sales Administration.* Administration of a sales organization; sales planning, sales quotas, selection, training, and compensation. Prerequisite: Bus. Ad. 283. Credit, 2 hours.
- 282 *Projects in Selling.* Supervised laboratory work in selling. Open to qualified students who are given actual selling assignments with business firms in the area. Prerequisites: Bus. Ad. 171, 174, 280. Six hours laboratory a week. Credit, 2 hours.
- 283g *Marketing Analysis.* Analysis of marketing data as a basis for determining consumer demand, product development, sales potentials and quotas; and, the interpretation of data, preparation of reports, application of findings and methods of follow-up. Prerequisites: Bus. Ad. 174, 224. Fee, \$1.00. Credit, 3 hours.
- 284g *Purchasing.* Practices and problems confronting the purchasing agent, including sources of supply, market information, material specification and inspection, control records, inventories, stores, and the purchase budget. Prerequisite: Bus. Ad. 174 or 215. Credit, 3 hours.
- 286g *Advertising Problems.* A study of advertising planning, media selection, and the creation of advertising matter, including preparation of complete advertising campaigns and the solving of typical advertising problems. Prerequisites: Bus. Ad. 174, 175. Credit, 3 hours.
- 287 *Radio and Television Advertising.* Techniques and problems of radio and television as advertising media including program selection and planning, preparation of continuity, and coordination with other forms of advertising. Prerequisite: Bus. Ad. 175. Fee, \$1.00. Credit, 3 hours.
- 288 *Newspaper Advertising.* A study of the special techniques and problems encountered in the use of newspapers as advertising media, together with practice in the preparation of advertising material. Prerequisite: Bus. Ad. 175. Two lectures plus laboratory work on the *State Press*. Credit, 3 hours.

293g *Price Policies*. Price making on organized exchanges; pricing and price systems. Prerequisites: Bus. Ad. 277, 279. Credit, 2 hours.

294g *Marketing Management*. An advanced study of the application of practices, techniques, and skills to the management of marketing problems. Prerequisites: Bus. Ad. 281g, 283g, 293g. Credit, 3 hours.

295 *Projects in Advertising*. Supervised laboratory work open to qualified students who are given actual advertising assignments with business enterprises in the area. Prerequisite: Bus. Ad. 287 or 288. Six hours laboratory a week. Credit, 2 hours.

Real Estate

Bus. Ad. 151 *Introduction to Real Estate*. A study of real estate practices, appraisals, financing, and other pertinent subject matter. Prerequisites: Bus. Ad. 102, 132. Credit, 3 hours.

152 *Real Estate Management*. Management of commercial, residential, and farm property; rentals and leases; operation of the Real Estate Office. Prerequisites: Bus. Ad. 102, 151, and 171. Credit, 3 hours.

251 *Advanced Real Estate*. Appraisals, mortgages, and financing of Real Estate; insurance on real property; taxation and meeting of problems of the day to day operations of the Real Estate Office. Prerequisites: Bus. Ad. 151, 152. Credit, 3 hours.

252 *Real Estate Law*. Legal practices as they apply to the Real Estate field in general and to the field of titles, mortgages, lending, and trust work in particular. Prerequisites: Bus. Ad. 152, 206. Credit, 3 hours.

253g *Real Estate Land Development*. Neighborhood and city growth; municipal planning and zoning; development of sub-divisions; agricultural land utilization. Prerequisites: Bus. Ad. 132, 252. Credit, 3 hours.

Office Training and Management, and Business Teacher Training

Bus. Ad. 110 *Techniques in Typewriting*. Fundamentals of touch typewriting. Emphasis upon technique and development of vocational and personal-use skill. Not open to students with two semesters of high school typewriting. Fee, \$2.00. Daily. Credit, 2 hours.

113 *Elementary Shorthand—Gregg*. The study and application of the principles of Gregg shorthand. Four days per week. Credit, 2 hours.

114 *Intermediate Shorthand—Gregg*. A continuation of Bus. Ad. 113 with increasing emphasis on dictation and transcription. Prerequisite: Bus. Ad. 113. Fee, \$1.00. Four days per week. Credit, 2 hours.

120 *Projects in Typewriting*. Advanced instruction in applied typewriting with emphasis upon skill requirements needed in a modern

office. Prerequisite: Bus. Ad. 110 or 2 semesters of high school typing. Fee, \$2.00. Daily. Credit, 2 hours.

121 *Projects in Typewriting.* A continuation of Bus. Ad. 120. Prerequisite: Bus. Ad. 120. Fee, \$2.00. Daily. Credit, 2 hours.

233 *Business Communication.* Techniques and principles underlying effective business messages, the mechanics and format of business correspondence, the role of the letter writer in the business office, and training in the organization and writing of business reports. Prerequisites: Eng. 102; Bus. Ad. 110. Credit, 3 hours.

235 *Advanced Shorthand and Transcription.* Review of the principles of shorthand and continuing with graded dictation and transcription. Prerequisites: Bus. Ad. 114, 120. Fee, \$2.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

236 *Transcription.* Integration of skills acquired in shorthand, typewriting, and related secretarial courses developed to a level of job proficiency. Prerequisite: Bus. Ad. 235. Fee, \$2.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

237 *Medical-Dental Shorthand Terminology.* The development of shorthand skill in medical and dental terminology; training in the use of forms, records, and reports common to the medical and dental offices. Prerequisites: demonstration of competence in shorthand and typewriting; permission of instructor. Fee, \$2.00. Four days per week. Credit, 2 hours.

238 *Secretarial Office Practice and Problems.* Training in the operation of selected office equipment specifically designed for use by secretaries, and a study of the attitudes, personal characteristics, and procedures required of workers in the modern office. Prerequisites: Bus. Ad. 120, 235. Two lectures, 3 hours laboratory. Fee, \$5.00. Credit, 3 hours.

241 *Office Machines.* Operation of selected office machines and their adaptation to office needs and procedures. Prerequisites: Bus. Ad. 101, 141. Fee, \$5.00. Daily. Credit, 2 hours.

243g *Office Organization and Management.* Analysis of function and costs of operating office departments. Prerequisite: Bus. Ad. 241. Credit, 3 hours.

301 *Improving Instruction in Typewriting.* An intensive consideration of principles and modern methods in teaching typewriting and of office practices as they relate to typewriting. Registration subject to approval of instructor. Credit, 2 hours.

302 *Improving Instruction in Shorthand and Secretarial Procedure.* Various methods of presenting Gregg shorthand with consideration given to the importance of secretarial procedure. Prerequisite: Bus. Ad. 236 or equivalent. Registration subject to approval of instructor. Credit, 2 hours.

303 *Improving Instruction in Bookkeeping and Accounting.* The latest methods of teaching bookkeeping and accounting and recent

surveys in the field of education and business practice. Registration subject to approval of instructor. Credit, 2 hours.

304 *Foundations of Business Education*. The history, philosophy, principles and objectives of business education; problems of curriculum and curriculum evaluation; contribution of business education to general education. Registration subject to approval of instructor. Credit, 2 hours.

310 *Seminar in Business Education*. Problems in organization, administration, and instruction in the field of business education. Registration subject to approval of instructor. Credit, 1 to 3 hours.

Education

MCGRATH (Dean of the School), ABRAHAM, M. ANDERSON, AUSTIN, BELL, BENEDICT, BURKHARD, NELLIE BYERS, DAVIS, FRENCH, HEIMANN, JELINEK, JAMES JONES, MANNING, MENKE, PAYNE (Emeritus), PHILLIPS, PODLICH, ROY RICE, H. D. RICHARDSON, ROVER, STOUT, TIMMONS, WOCHNER.

Childhood Education

Ed. 160 *Children's Literature*. Folk and modern literature for elementary school children; a study of types; wide reading. Prerequisite: Eng. 102. Credit, 3 hours.

161 *Techniques in Story Telling*. The art of story telling, preparation, adaptation, creative writing. Emphasis upon and practice in story telling to young children. May be taken concurrently with Ed. 160 or following. Credit, 2 hours.

200g *Measurement and Evaluation in the Elementary School*. The evaluation of the child in a total learning situation is developed. Emphasis is placed on the broader scope of evaluation in terms of each activity in the school program. Credit, 3 hours.

201 *Language Arts*. For the kindergarten and grades 1, 2, 3. Emphasis on teaching beginning reading and prevention of reading difficulties. Other phases of language arts considered. Credit, 3 hours.

202 *Language Arts*. For intermediate and upper grades. Emphasis on the development of skill in reading as a means of doing research work. Spelling, handwriting, composition, and creative writing are considered. Credit, 3 hours.

203 *Reading Problems in the Kindergarten-Primary School*. Emphasis upon teaching beginning reading, experience charts, manuscript and cursive writing, and prevention of reading difficulties. Credit, 3 hours.

205 *Construction Activities in the Kindergarten-Primary School*. Work with clay, paper, textiles, wood, paint, etc., contributing to creative expression in the integrated activity program. Fee, \$5.00. Eight hours a week. Credit, 4 hours.

- 209 *Kindergarten-Primary Curriculum and Teaching Problems*. The philosophy, principles, and practices of kindergarten-primary education; discusses all phases of the curriculum. Includes observations in nearby schools. Prerequisites: Ed. 201 or 203, 205, 212, or approval of instructor. Fee, \$3.00. Three hours class, 3 hours observation a week. Credit, 4 hours.
- 212 *Plays and Games for the Kindergarten-Primary School*. Creative and traditional plays and games. A study of types, and actual playing of games for analysis and evaluation. Credit, 3 hours.
- 230g *Elementary School Curriculum and Techniques*. Principles and scope of curriculum construction, modern practices and problems of instruction. Includes two hours of classwork and three hours of arranged participation weekly. Credit, 3 hours.
- 240g *Construction Activities in the Elementary School*. Use of textiles, paper, wood, paint, leather, plastics, and salvage materials. Experience in working with materials available to pupils in typical elementary school classrooms. Guidance in directing construction activities related to total instructional program. Fee, \$5.00. One lecture, 3 hours laboratory. Credit, 2 hours.
- 253g *Reading Problems at the Elementary School Level*. Practical suggestions for meeting the reading problems encountered in teaching at elementary school levels are treated with diagnosis of unique problems faced by members taking the course. Credit, 3 hours.
- 303 *Evaluation of Children's Literature*. Social and educational concepts expressed in literature and changes in values and principles that are needed. Prerequisite: at least one course in literature. Credit, 2 hours.
- 308 *Play Education*. Treatment at the advanced level of the theories of play. Practical application to the utilization of rhythms, plays and games. Credit, 3 hours.
- 309 *The Kindergarten Movement*. Development of the kindergarten; foreign influences contributing to its establishment; early pioneers; progressive techniques in kindergarten practice. Credit, 3 hours.
- 310 *Practices and Techniques in Construction Activities*. The place of construction materials and their function in the learning process. Experiences with diversified materials in terms of the needs of the teacher. Fee, \$5.00. Credit, 3 hours.
- 311 *Planning, Organizing, and Establishing Kindergartens*. Practical steps are suggested for inaugurating a kindergarten program. Related problems are brought into focus. Credit, 3 hours.
- 312 *Modern Elementary Curriculum Development*. An analysis of the best educational thought, practices, and trends of the elementary program. Special attention given to innovations of proven value. Credit, 2 hours.
- 313 *Reading and Language in the Curriculum*. The course will consider the problems of teaching reading from the standpoint of the

developmental approach to learning. Principles and procedures for preventing reading problems and the personal and social values of reading will be stressed. Problems of spelling, composition and handwriting will be considered in relation to the development of other phases of language power. Credit, 2 hours.

331 *Modern Practices in the Kindergarten-Primary School.* Practices, materials, and policies with emphasis on curriculum trends, methods of instruction, pupil-teacher and teacher-parent relationships. Prerequisites: Ed. 209, Ed. 230, or the equivalent. Credit, 2 hours.

342 *Improving Instruction in the Elementary School.* Methods of determining the elements of strength and weakness in the school program will be considered. The problems of providing an environment favorable to learning and adjusting the curriculum to the developmental needs of pupils will be analyzed. Methods of applying the principles in public school situations will be stressed. Credit, 2 hours.

392 *Practicum in Kindergarten-Primary and Elementary Education.* Required of graduate students who pursue Kindergarten-Primary Education or Elementary Education as the field of specialization in the Master's Degree Program and who do not write a master's thesis. Not open for credit to students who register for Thesis. Prerequisites: Enrollment in the Master's Degree Program and fifteen hours of graduate credit including Ed. 300. Credit, 4 hours.

412 *Problems in Elementary Curriculum Development.* A systematic analysis of factors bearing upon the development of a qualitative learning environment in the modern elementary school. Research evaluation and intensive individual study of a fundamental problem in elementary curriculum development are included. Credit, 4 hours.

442 *Advanced Techniques in Elementary Education.* Extensive consideration of the research in elementary education which applies more specifically to the learning of tool and social skills. Formulation of hypotheses and practices compatible with research findings; analysis of factors resisting change and of procedures to implement newer practices showing promise. Credit, 4 hours.

Secondary Curriculum and Methods

Ed. 215 *Secondary School.* The principles of secondary education: its functions, objectives, curriculum, problems, and trends. Credit, 2 hours.

226g *Safety Education.* Various phases of safety education: home, school, on-the-job, and driver education. Emphasis on special interests of class members. Credit, 3 hours.

228 *Methods of Teaching in the Secondary School.* Objectives of secondary education, methods of instruction, socialized procedures, individual differences, testing procedures, individual work in field of interest. Prerequisite: Ed. 215. Credit, 3 hours.

228a *Methods of Teaching Art in the Secondary School.* Required of students in the secondary curriculum with a major teaching field

in art. Emphasis on methods, materials and subject areas. Should precede student teaching. Prerequisite: Ed. 215. Two hours a week. Credit, 2 hours.

228b *Methods of Teaching Business Education in the Secondary School.* A general survey of high school business education. Methods and materials used in the teaching of business subjects in public schools. Prerequisites: Bus. Ad. 120, Ed. 215. Credit, 3 hours.

228e *Methods of Teaching English in the Secondary School.* Those specializing in English should substitute for Ed. 228. Preparation of units in high school literature and composition, methods of teaching, laboratory in composition clinic. Prerequisites: Eng. 152, Ed. 215. Credit, 3 hours.

228f *Methods of Teaching Spanish in the Secondary School.* For seniors specializing in Spanish and for teachers of Spanish. Methods of presenting the subject matter in more attractive and practical ways. Prerequisites: Span. 204, Ed. 215. Credit, 2 hours.

228h *Methods of Teaching Home Economics in the Secondary School.* Philosophy, content, and methods of teaching Home Economics in the secondary school. Required of those under the Secondary Curriculum. Prerequisite: Ed. 215. Credit, 3 hours.

228i *Methods of Teaching Industrial Arts in the Secondary School.* For students preparing to teach Industrial Arts. Making lesson plans, organization and presentation of materials to students; methods of instruction; types of community problems. Prerequisite: I.A. 122; Ed. 215. Fee, \$3.00. Credit, 3 hours.

228m *Methods of Teaching Mathematics in the Secondary School.* Advanced topics in algebra, geometry, trigonometry, non-euclidean geometry as time allows, teaching methods. Prerequisite: Ed. 215. Credit, 3 hours.

228mu *Methods of Teaching Music in the Secondary School.* Continuation of Music 235 with concentration on problems, materials and teaching methods for secondary school music and special attention to the relationship of music to the whole school program. Prerequisites: Mus. 235; Ed. 215. Credit, 3 hours.

228p *Methods of Teaching Health and Physical Education in the Secondary School.* A methods course required of men and women pursuing the Secondary Curriculum, with a major teaching field in physical education. Credit, 3 hours.

228sc *Methods of Teaching Science in the Secondary School.* Principles and methods of teaching general science, biology, chemistry and physics. Prerequisite: Ed. 215. Credit, 3 hours.

228ss *Methods of Teaching Social Studies in the Secondary School.* Methods of teaching history, civics, and other social sciences. Given when demand is sufficient. Prerequisite: Ed. 215. Credit, 2 hours.

254g *Reading Problems at the High School Level.* Practical suggestions for meeting the reading problems encountered by junior and senior high school pupils. Credit, 2 hours.

332 *The Junior High School.* The development, population, organization, curriculum, purposes and methods of the Junior High School, with a major emphasis upon curriculum. Credit, 2 hours.

333 *Secondary School Curriculum Development.* Principles of the secondary school curriculum, methods and techniques of instruction, curriculum-making programs and trends, and experimental practices. Credit, 3 hours.

334 *Directed Learning.* The principles of learning and application to the teaching-learning situations of the secondary school. Emphasizes the improvement of assignments, the use of class time, and the evaluation of learning outcomes. Credit, 3 hours.

340 *Improving Instruction in the Secondary School.* Principles of teaching and their significance are taken up in light of the needs of the members of the class. Individual reports. Credit, 3 hours.

341 *Evaluation of Learning.* Essential steps in evaluating learning: (1) the discovery and formulation of objectives, and (2) the use of techniques and skills in ascertaining the extent to which pupils achieve these objectives. Credit, 2 hours.

347 *The Junior College.* The development, population, organization, curriculum, purposes, and methods of the Junior College, with a major emphasis upon methods of teaching. Credit, 2 hours.

397 *Practicum in Secondary Education.* Required of graduate students who pursue any one of the Secondary Education fields of specialization in the Master's Degree Program and who do not write a master's thesis. Not open for credit to students who register for Thesis. Prerequisites: Enrollment in the Master's Degree Program and fifteen hours of graduate credit including Ed. 300. Credit, 4 hours.

433 *Problems in Secondary Curriculum Development.* A systematic analysis of factors bearing upon the development of a qualitative learning environment in the modern secondary school. Research evaluation and individual study of a fundamental problem in secondary curriculum development are included. Credit, 4 hours.

440 *Seminar: Improvement of Instruction in the Secondary School.* Extensive reading and group discussions on the theory of method and sound principles of instruction with their significance for modern secondary education. Credit, 4 hours.

School Administration and Supervision

Ed. 220g *Arizona School System, Laws, and Records.* The organization and legal set-up of the Arizona school system, with special reference to the work of the teacher and administrator. Credit, 2 hours.

302 *Curriculum Determination and Construction.* Methods, procedures and techniques for curriculum construction are treated after

an analysis of general principles and criteria effective in formulating curriculum practices. Credit, 2 hours.

314 *Secondary School Administration.* The duties of the high school principal are approached through an analysis of the principles, procedures, and techniques in the administration of the secondary school. Credit, 2 hours.

315 *Public School Administration.* An introductory course in school administration which emphasizes problems of general control, organization, and personnel administration in public education. Credit, 2 hours.

316 *Supervision in the Elementary School.* Principles of supervision, types of supervisory programs, techniques of supervision, and evaluation of supervisory practices. Credit, 2 hours.

317 *Elementary School Administration.* The place of the elementary school in the public system; its internal organization, relationship of school to community; problems of the principal. Credit, 2 hours.

319 *Supervision in the Secondary School.* Principles of supervision, types of supervisory programs, techniques of supervision, and evaluation of supervisory practices, in the light of modern secondary education. Credit, 2 hours.

330 *Public School Surveys.* The history and development of public school surveys, with a critical study of current practices, trends, and objectives. Practical experience will be provided in collecting and preparing survey data. Credit, 2 hours.

336 *Public School Supervision.* A general introductory course in school supervision with emphasis upon principles, types, aims, techniques, and evaluation of supervisory programs. Credit, 2 hours.

337 *Public School Finance.* A study is made of methods and problems of financing public education and current problems in school support. Attention is also given to the preparation of the school budget and financial accounting systems for use in schools. Credit, 2 hours.

338 *School House Planning and Maintenance.* Includes planning building programs, school plant, school furniture and equipment, maintenance, financing, and legal regulations of school construction. Credit, 2 hours.

339 *School-Community Relationships.* A study is made of principles, philosophy, and techniques for improving the educational program through school-community action. Special attention is given to the role of the school administrator in coordinating school-community experiences. Credit, 2 hours.

345 *Supervision of Student Teaching.* Designed to provide experiences and content for those planning to become supervisors of student teaching in teacher education programs. Also serves as in-service training for those already working in student teaching. Credit, 2 hours.

396 *Practicum in Administration and Supervision*. Required of graduate students who pursue Administration and Supervision of Elementary or Secondary Schools as the field of specialization in the Master's Degree Program and who do not write a master's thesis. Not open for credit to students who register for Thesis. Prerequisites: Enrollment in the Master's Degree Program and fifteen hours of graduate credit including Ed. 300. Credit, 4 hours.

414 *The Administrator and School Community Planning*. A study of the various basic areas of school-community integration and improvement; applications are made in school surveys, finance, evaluation of school systems, and cooperative development of local school systems. Credit, 4 hours.

416 *Leadership in Education*. Special emphasis is given the role of the school administrator in curriculum improvement. Processes and conditions for a professional climate contributing to effective educational leadership are stressed. Credit, 4 hours.

419 *Instructional Improvement Through Modern Supervision*. Organization, personnel, and procedures involved in upgrading instruction through supervisory practices. Democratic theory, creative school control, and supervisor-teacher relationships are included. Credit, 4 hours.

446 *Adult Education*. History, trends, objectives, and philosophy for the adult education movement; programs, cultural and vocational implications, administration and methodology. Credit, 4 hours.

Audio-Visual Education

Ed. 231g *Photography in Public Education*. A laboratory course in the fundamentals of photography and darkroom procedure. For the teacher who wishes to use photography in preparing instructional materials. Fee, \$10.00. One hour class, 3 hours laboratory. Credit, 2 hours.

233 *Audio-Visual Aids in Education*. Principles underlying the selection and use of materials for instructional purposes. Laboratory experiences include the operation of equipment and the selection, preparation, and evaluation of audio-visual materials. One hour class, 3 hours laboratory. Fee, \$5.00. Credit, 2 hours.

234g *Radio and Television in Education*. For students and teachers interested in making more effective use of radio and television broadcasts in the classroom situation. Designed to acquaint teachers with the possibilities available and the means of adapting materials for learning experiences. Credit, 2 hours.

236g *Production of Educational Radio-TV Programs*. For students wishing to gain experience in the planning and production of educational radio-TV programs. Specific activity in college sponsored programs is provided. Credit, 2 hours.

237g *Production of Audio-Visual Aids*. Making of photographs, slides, filmstrips, motion pictures, and recordings. Preparation of scripts.

Technical problems of production. Prerequisite: Ed. 231g. Fee, \$10.00. One hour class, 3 hours laboratory. Credit, 2 hours.

323 *Audio-Visual Methods*. Principles of audio-visual methods of teaching. Survey of literature of field, and experience in constructing teaching units. Not open to students having credit in Ed. 233. One hour class, 3 hours laboratory. Credit, 2 hours.

329 *Administration of Audio-Visual Aids Programs*. The qualifications and duties of the director, preparing the budget, buying equipment, handling materials, in service training, and evaluation of the program. Credit, 2 hours.

343 *Theory and Research in Audio-Visual Education*. A survey of the history, literature, and research in the field with implications for production and for classroom utilization of audio-visual materials. Prerequisite: Ed. 233 or 323. Credit, 2 hours.

344 *Seminar in Audio-Visual Education*. An analysis of typical problems confronting audio-visual services in schools with discussion of plausible solutions. Credit, 2 hours.

393 *Practicum in Audio-Visual Education*. Required of graduate students who pursue Audio-Visual Education as the field of specialization in the Master's Degree Program and who do not write a master's thesis. Not open for credit to students who register for Thesis. Prerequisites: Enrollment in the Master's Degree Program and fifteen hours of graduate credit including Ed. 300. Credit, 4 hours.

395 *Practicum in School Library Services*. Required of graduate students who pursue School Library Services as the field of specialization in the Master's Degree Program and who do not write a master's thesis. Not open for credit to students who register for Thesis. Prerequisites: Enrollment in the Master's Degree Program and fifteen hours of graduate credit including Ed. 300. Credit, 4 hours.

Guidance

Ed. 232 *Introduction to Guidance*. The need, objectives, prevailing practices, and the development and administration of guidance programs. Credit, 3 hours.

304 *Basic Course in Guidance*. Acquaints the student with all important aspects of a student personnel program. Required of those specializing in guidance who have not had Ed. 232 or equivalent preparation. Prerequisite to other graduate courses in the guidance sequence. Credit, 2 hours.

320 *Counseling*. Concerned with the understanding and application of principles, methods, and techniques of counseling individual students effectively. Credit, 2 hours.

321 *Techniques of Guidance in the Elementary School*. Nature and use of interview, tests, inventories, records and reports, observations, rating scales, and the case study, as applied to the elementary school. Prerequisite: Ed. 304. Credit, 2 hours.

322 *Techniques of Guidance for the Secondary School.* Nature and use of interview, tests, inventories, records and reports, observations, rating scales, and the case study, as applied to the secondary school. Prerequisite: Ed. 304. Credit, 2 hours.

325 *Vocational Guidance.* Origin, philosophy, principles, practices, and services of vocational guidance; its relationship to other types of guidance, to organized education, and to the student personnel program. For secondary teachers, counselors, principals, and directors of guidance. Credit, 3 hours.

326 *Educational and Occupational Information.* An appraisal of programs in secondary schools. Considers educational opportunities in higher institutions, technical institutes, trade schools, etc.; executing a job analysis program; occupational families; standard sources of data; occupational opportunities. Should be preceded by Ed. 325. Credit, 2 hours.

327 *Organization and Administration of Guidance Programs.* For those directing or preparing to direct the guidance program. Specific organizational patterns, procedures, and problems. Prerequisite: two or more courses in the guidance sequence. Credit, 2 hours.

328 *Supervised Practice in Guidance.* Designed to enable the trainee to develop a background of real experience; to help understand the relationship of guidance services to other school services, and to give the trainee confidence in use of guidance techniques. Credit, 2-6 hours.

394 *Practicum in Guidance.* Required of graduate students who pursue Guidance as the field of specialization in the Master's Degree Program and who do not write a master's thesis. Not open for credit to students who register for thesis. Prerequisites: Enrollment in the Master's Degree Program and fifteen hours of graduate credit including Ed. 300. Credit, 4 hours.

406 *Professional Relationships in Education.* A framework is developed for understanding and facilitating human and professional relationships between school personnel and workers in other youth-serving agencies. Ways and means of mobilizing community agencies to serve needs of youth are treated. Credit, 4 hours.

420 *Research Problems in Guidance.* Students are expected to familiarize themselves with outstanding research undertakings during the past 15 years. Each will conduct one or more research projects dealing either with a guidance problem growing out of individual situations or as preparatory to a more exhaustive project suitable for his doctoral thesis. Credit, 4 hours.

Social Foundations

Ed. 211g *History of Education.* The social life, ideas, and institutions that gave direction to western education. A background for understanding and evaluating present educational and social problems. Credit, 3 hours.

216g *Educational Sociology.* A study of education in relation to social institutions. Considers methods of gathering data in social research,

the family, problems of educational reconstruction, social relationships, and social measurements. Credit, 3 hours.

245g *History of Education in the United States.* The evolution of the public school in the light of the many social forces that have come into conflict in the growth of our institutions. Credit, 3 hours.

250g *Philosophy of Education.* A study of social and educational theories. An examination of some of the assumptions on which various philosophies of education rest. An introduction to considerations necessary for the development of a systematic and consistent philosophy of education. Credit, 3 hours.

305 *Education and Social Control.* A study of human affairs designed to give satisfactory direction to them. Considers social measurement and techniques for carrying on investigations. Credit, 3 hours.

306 *Character Education.* Problems of educating for citizenship are evaluated in the light of democratic ideals and conflicting social theories. Credit, 2 hours.

307. *Comparative Education.* A study of contemporary education in other lands with implications for the United States educational structure. Credit, 2 hours.

348 *Philosophic Foundations of Education.* The aim is to evaluate assumptions on which different philosophies rest with a view to constructing a philosophy to meet the needs of modern life. Credit, 3 hours.

349 *Education Classics.* The great literature and wisdom of the centuries for the educational world are analyzed for any present day implications. Credit, 2 hours.

439 *Historical and Social Foundations.* A study of institutions, human relations, and social forces influencing the nature of educational problems current in American society. Significant cultural trends are treated from local, national, and international perspective. Credit, 4 hours.

Basic Education and Unclassified Courses

Ed. 115 *Orientation to Education.* Deals with teacher supply and demand, qualities which are associated with successful teaching, the professional responsibilities of teachers, and areas of specialization open to teachers. Provides for individual and group guidance. Credit, 1 hour.

259 *Observation and Participation in the Elementary School.* This course provides an opportunity for students to observe and work directly with elementary children in a classroom situation. It includes a critical evaluation of the student's experiences. Credit, 3 hours.

260 *Directed Teaching.* Students seeking kindergarten-primary or elementary certification observe and teach for a half-day session during the first or second semester of the senior year. Those seeking the secondary certificate teach one-quarter day. Class work in school management. Credit, 5 to 10 hours.

- 300 *Educational Research and Scientific Method*. Acquaints the student with the essential steps in scientific method and with the techniques and skills used in educational research. Required of all candidates for the master's degree. Credit, 2 hours.
- 350 *Curriculum Workshop*. An intensive study of student selected curriculum problems, directed by regular staff and visiting consultants. Recommended for in-service training of teachers, supervisors, and administrators. Credit, 3 or 6 hours.
- 399 *Thesis*. For students who write a master's thesis. Not open to students who receive credit in a practicum. Prerequisite: Enrollment in the Master's Degree Program. No scheduled class meetings. Open for credit for period of two years from time of registration. Credit, 4 hours.
- 400 *Research in Education*. Advanced procedures of research in education; special techniques and investigations in selected educational fields. Credit, 4 hours.
- 413 *Psychological Foundations in Education*. Implications for practice from research and psychological investigations in human learning as applied to curriculum, method, evaluation, and educational leadership. Credit, 4 hours.
- 430 *Field Work and Surveys*. Observation and participation in work-study programs in selected schools. Available in guidance, administration and supervision, secondary education, or elementary education. Prerequisite: Consent of doctoral adviser. Credit, 4 hours.
- 499 *Dissertation*. Ordinarily designed to require two semesters of intensive application to a problem in education. A scholarly piece of work is required. Credit.

English

MYERS, (Head of Department), BURKE, FRANK BYERS, CONLIN, DAVIES,
JOHN GIRDLER, LEW GIRDLER, HENSHAW, HOPKINS, MCSLOY,
MORRIS, OSENBURG, PLUMMER, PORTNOFF, SCHILLING,
SOUTHERN, TAYLOR, KATHERINE TURNER, WELSH,
WILLSON, YATES, ZIMMERMAN.

Literature and Language

Eng. X. *Remedial English*. A sub-collegiate course for students who fail to pass the college placement examination in English. Such students are required to complete this course satisfactorily before they may be admitted to Eng. 101. Clinical facilities for discovering and attempting to eliminate causes of individual difficulties. Counts on course load, but carries no credit. Fee, \$3.00. Three hours per week.

101 *First Year English*. Narrative and descriptive writing; emphasis on paragraph structure, correctness in English fundamentals, exactness and concreteness of statement; dictionary and library practice; intensive and extensive reading. Credit, 3 hours.

- 102 *First Year English*. Expository writing; emphasis on organizing and unifying long papers, improvement in style, expansion of vocabulary. Introduction to word study; practice in research, including the writing of a model term paper. Intensive and extensive reading. Prerequisite: Eng. 101. Credit, 3 hours.
- 103, 104 *Directed Reading for English Majors and Minors*. Supervised reading with a weekly individual conference with instructor. Credit, 1 hour each.
- 128 *Advanced Composition*. For students interested in further training in organization and expression of ideas. Factual and imaginative discourse are treated. Prerequisite: Eng. 102. Credit, 3 hours.
- 151 *Survey of English Literature*. English literature considered chronologically against the social and political background from Anglo-Saxon times to the end of the eighteenth century. Prerequisite: Eng. 102. Primarily for English majors and minors. Credit, 3 hours.
- 152 *Survey of English Literature*. Nineteenth century literature. The major writers in relation to the aesthetic, social, and economic trends of the century. Prerequisite: Eng. 102. Credit, 3 hours.
- 153 *World Literature—The Classical and Medieval Periods*. Selections from the great literature of the world in translation and lectures on the cultural background of the writings. Prerequisite: Eng. 101. Credit, 3 hours.
- 154 *World Literature—The Renaissance and Modern Periods*. A continuation of Eng. 153. Selections from the great literature of the world in translation, and lectures on the cultural background of the writings. Prerequisite: Eng. 101. Credit, 3 hours.
- 171 *Introduction to Literature*. An introduction to literature and literary types. Reading of short stories, essays, novels, biographies, plays, and poetry, mainly from modern writers. Credit, 3 hours.
- 201g *Development of the Novel*. The origins of prose fiction, the novel in England and America, with attention to significant examples of foreign literature. Analysis of typical examples and reading of outside assignments. Prerequisite: Eng. 152. Credit, 3 hours.
- 203g *History of the Drama*. The English drama from the Middle Ages to the present with selective examples of foreign influences. Reading of representative plays of each period. Prerequisite: Eng. 152. Credit, 3 hours.
- 205g *Shakespeare: The Tragedies*. Critical study of five plays. An introduction to the problems of Shakespearean scholarship. Prerequisite: Eng. 151. Credit, 3 hours.
- 206g *Shakespeare: The Comedies*. A rapid reading of all the comedies. Studies of the comic spirit and Shakespeare's comic genius. Prerequisite: Eng. 151. Credit, 3 hours.
- 209g *Age of Johnson*. The chief writers, movements, and books during Johnson's career as a dominating literary figure, together

with their most important relationships to predecessors and followers. Prerequisites: Eng. 151, 152. Credit, 3 hours.

211g *Nineteenth Century Poetry: Romantic Period.* Study of and readings in the poetry of Wordsworth, Coleridge, Shelley, Keats, Byron. Prerequisite: Eng. 152. Credit, 3 hours.

212g *Nineteenth Century Poetry: Victorian Period.* The poetry of the second half of the century. Special study of Tennyson, Browning, Arnold. Prerequisite: Eng. 152. Credit, 3 hours.

213 *Modern Fiction.* A study of the modern novel beginning with Meredith. Prerequisite: Eng. 152. Credit, 3 hours.

214 *Contemporary Fiction.* A study of important contemporary writers; their careers and distinctive traits, with particular attention to the relationship of their ideas with present-day problems. Prerequisite: Eng. 152. Credit, 3 hours.

215 *Contemporary British Poetry.* British poetry of the twentieth century; techniques, aims, and significance. Prerequisite: Eng. 152. Credit, 3 hours.

216 *Contemporary American Poetry.* American poetry of the twentieth century; techniques, aims, and significance. Prerequisite: Eng. 152. Credit, 3 hours.

217g *Modern Drama.* The chief dramatic writers of the generation preceding World War I, with special attention to experimental techniques. Prerequisite: Eng. 152. Credit, 3 hours.

218g *Contemporary American Drama.* A study of the American Drama since World War I, with special attention to experimental techniques. Prerequisite: Eng. 152. Credit, 3 hours.

221 *American Literature.* From colonial times to the Civil War, including the growth of nationalism and the rise of the New England school. Open to those specializing in other departments who have junior standing. Prerequisite: Eng. 102. Credit, 3 hours.

222 *American Literature.* From Whitman to the present. The influence of westward expansion, the growth of regionalism, the literature of social protest. Open to those specializing in other departments who have junior standing. Prerequisite: Eng. 102. Credit, 3 hours.

223g *Milton.* The life of Milton, his relation to the literary and social background of his period, and textual study of his chief works. Prerequisite: Eng. 151. Credit, 3 hours.

226 *Short Story.* The development of the short story as a literary form; analysis of its technique through study of examples from the work of representative authors. Prerequisite: Eng. 152. Credit, 3 hours.

227g *The Form of Verse: Theory and Practice.* A study of the types, history, criticism, and schools of theory of metrical form. Analysis of lyric, narrative, and dramatic poetry. Original verse

writing optional. Prerequisite: one semester survey of American or British literature, or equivalent. Credit, 2 hours.

231g *Literature for Junior and Senior High School Students.* A study of prose and poetry which meet the interests, desires and capabilities of the high school boy and girl. Recent literature stressed. Prerequisites: Eng. 152; Ed. 215, and Ed. 228e. Credit, 3 hours.

234g *Creative Writing.* Writing laboratory. Lectures and conferences dealing with the various forms of imaginative writing. Prerequisite: Eng. 128. Credit, 3 hours.

235g *Creative Writing.* Continuation of Eng. 234g. Prerequisite: Eng. 234g or consent of instructor. Credit, 3 hours.

244g *Chaucer.* A study of Chaucer's language, poetry, and intellectual background. Prerequisite: Eng. 151. Credit, 3 hours.

252 *Introduction to Semantics.* Nature of meaning and the function of language, designed to improve accuracy of communication and to provide a technique for analyzing false or misleading statements. Prerequisite: junior standing. Credit, 2 hours.

253g *History of the English Language.* Development of the language from the earliest times to the modern period. Prerequisites: Eng. 128, 151. Credit, 3 hours.

254g *Current English Usage.* Recent changes and current trends in the language, with emphasis on American English and the factual basis of grammar. Prerequisites: Eng. 128, 151. Credit, 3 hours.

261g *Professional Writing.* Lectures and conferences concerning techniques of writing for publication. Prerequisites: Eng. 128, 234 or consent of instructor. Credit, 3 hours.

301 *Seminar in Methods of Research in English.* A study of the various types of research in literary scholarship. Credit, 3 hours.

302 *Seminar in Criticism.* A study of the development of critical theories and their application to English literature. Credit, 3 hours.

310 *Seminar in English Education.* Primarily for in-service teachers. A general problem will be selected each time the course is offered. Each student will work individually on a phase of this. Credit, 3 hours.

Speech and Dramatics

Speech 110 *Elements of Speech.* Adjustment to the speech situation. Obtaining and organizing material. The conversational mode. Articulation, pronunciation, and tone. Bodily movement. Fee, \$1.00. Credit, 2 hours.

115 *Speech Fundamentals.* An introduction to the physical and functional bases of speech production. Required of Speech majors and minors, who may substitute it for Spch. 110 as a prerequisite for advanced courses in Speech. Credit, 2 hours.

- 119 *Introduction to Drama.* A study of the various types of drama with reference to their theatric representation. Credit, 3 hours.
- 120 *Public Speaking.* Organization and delivery of various types of speeches. Emphasis on types which occur most often in everyday life. Prerequisite: Spch. 110 or consent of instructor. Credit, 2 hours.
- 121 *Oral Interpretation.* Techniques of the reading aloud of prose, poetry, and drama. Credit, 3 hours.
- 122 *Acting.* Reading in theory; laboratory projects. Prerequisites: Spch. 110, 119. Credit, 3 hours.
- 125 *Voice and Diction.* A course designed to develop and improve the speaking voice. Background discussion and individual and group exercises and drills. Prerequisite: Spch. 110 or 115. Credit, 2 hours.
- 127 *Principles of Argumentation.* Construction and delivery of various types of argumentative speeches. Essential to students engaging in intercollegiate debate. Prerequisite: Spch. 110. Credit, 2 hours.
- 129 *Principles and Methods of Discussion.* The use of reflective thinking in learning and policy determining groups. The panel, dialogue, symposium, and forum-lecture. Prerequisite: Spch. 110. Credit, 2 hours.
- 170 *Radio Speech.* A background for greater listening enjoyment. Practice in microphone delivery, script writing, and acting. Auditions given for participation in radio dramatizations over local stations. Prerequisite: Spch. 110. Fee, \$1.00. Credit, 3 hours.
- 210 *Advanced Radio Speech.* A survey of current tendencies in radio and a continuation of production activities of Speech 170. Prerequisites: Spch. 110, 170. Fee, \$1.00. Credit, 3 hours.
- 215 *Business and Professional Speech.* A study of business and professional speech situations. Conversations; interviews; conferences; speeches of good will, to inform, and to persuade. Reading written reports; radio speaking; and banquet speaking. Prerequisite: Spch. 110. Credit, 3 hours.
- 227 *Intercollegiate Debate.* Preparation for and participation in intercollegiate debates. Prerequisites: Spch. 110, 127 or consent of instructor. Credit, 2 hours.
- 228 *Intercollegiate Debate.* Continuation of Spch. 227. Prerequisite: Spch. 227. Credit, 2 hours.
- 229 *Intercollegiate Debate.* Continuation of Spch. 228. Prerequisite: Spch. 228. Credit, 2 hours.
- 230 *Creative Dramatics.* Methods of making a play from a lesson or story, helping children to improvise their own roles; selection of literature and subject matter suitable for play making. Laboratory work with school children during latter part of course. Prerequisites: Spch. 110 or 121. Credit, 3 hours.

235 *Play Production*. Problems connected with staging of plays in elementary and secondary schools. Prerequisites: Spch. 110, 119. Fee, 50c. Credit, 3 hours.

240 *Children's Theatre*. Formal dramatics for children. The selection and production of plays and pageants suitable for children through the elementary grades. Prerequisites: Spch. 110 or 121. Credit, 3 hours.

257g *Speech Correction*. Cause and correction of disorders of speech. Prerequisite: Spch. 110. Three times a week. Credit, 3 hours.

258g *Advanced Speech Correction*. A clinical-laboratory course for practice in correction of speech defects. Seminar for extensive acquaintanceship with literature in the field. Prerequisite: Spch. 257g. One hour lecture, 2 hours clinic a week. Credit, 2 hours.

259g *Clinical Practice in Speech Correction*. A laboratory course consisting of case treatment of speech disorders in the College Speech Clinic. Prerequisites: Spch. 257g and 258g. Credit, 1-3 hours. Note: This course may be taken for more than one semester.

260g *Phonetics*. Study of phonetics, including phonetic symbols, the production, the general characteristics and the application of the sounds of American speech to the acquisition and teaching of good pronunciation. Prerequisite: Spch. 110. Credit, 2 hours.

Journalism

Jour. 130 *Introduction to Journalism*. Survey of the journalistic field; study of the representative newspapers; concepts of news, news values, and reporting; laboratory practice in elements of newswriting. Prerequisite: Eng. 101. Fee, \$1.00. Two lectures, 2 laboratory hours. Credit, 3 hours.

140 *Journalism: Reporting*. Study and practice in the coverage and writing of news; structure of the news story and development of news values; laboratory practice; experience as reporter on the *State Press*. Prerequisite: Jour. 130. Fee, \$1.00. One lecture, 4 laboratory hours. Credit, 3 hours.

141 *Advanced Reporting*. Continuation of Jour. 140. Main types and sources of news; interviewing and re-writing; laboratory and *State Press* experience. Prerequisite: Jour. 140. Fee, \$1.00. One lecture, 4 laboratory hours. Credit, 3 hours.

201 *News Photography*. Instruction with field and laboratory practice in camera and darkroom techniques for newspaper and magazine photographic work. Prerequisites: Jour. 130; Art 111, or permission of instructor. Fee, \$10.00. One lecture, 3 hours activity. Credit, 2 hours.

235g *Advising High School Publications*. A course designed for high school journalism advisers. Problems of annual and newspaper staffs discussed. Credit, 2 hours.

241 *Newspaper Law*. The rights and duties of the press, the legal limits and liberty of the press; study of libel, privilege, constitutional guarantees, copyright, contempts, legal background of court reporting. Prerequisite: Jour. 141. Credit, 3 hours.

242g *The Interpretation of News*. The byline story, column, editorial and general field of newspaper policy writing involving the interpretation of current events. Prerequisite: Jour. 141. Credit, 2 hours.

243 *Copy Reading and Editing*. Practical work in copy reading and headline writing; use of the stylebook; accuracy and speed in handling copy; typography; principles of makeup. Prerequisite: Jour. 141. Credit, 3 hours.

244 *History of Journalism*. Development of American journalism from colonial times to the present, projecting the press as an institution against a background of the history of the nation. Prerequisite: Jour. 141. Credit, 2 hours.

245 *Radio News*. Technic and practices of editing and preparing local and wire news copy for radio news broadcasts; laboratory practice in preparation of same for actual broadcasting. Prerequisite: Jour. 141. Credit, 2 hours.

246 *Feature Writing*. A study of the feature article, magazine article and journalistic book. Prerequisite: Jour. 241 or 242. Credit, 3 hours.

250 *Newspaper Making*. An advanced course in editing a complete newspaper with laboratory experience in the staff work and production of the *State Press*. Prerequisite: Jour. 243. Credit, 2 hours.

251 *News Problems and Policies*. Seminar in journalism with emphasis upon major difficulties encountered and editorial decisions required in the writing, handling and publishing of news. Prerequisite: Jour. 241 or 242. Credit, 2 hours.

299 *Special Assignment*. Selection and performance of a major project or projects on an individual basis. Prerequisites: Jour. 241, 242, 250. Credit, 2 to 5 hours.

Foreign Languages

WILSON (Head of Department), ESCUDERO, POOLE, VON DER HEYDT,
WALL.*

French

Fr. 101 *Elementary French*. Gradual study of French sounds. Collateral teaching of reading, writing and speaking through the direct method. For beginners. Credit, 4 hours.

102 *Elementary French*. Continuation of Fr. 101. Optional outside reading. Prerequisite: Fr. 101. Credit, 4 hours.

103 *Intermediate French*. Grammar review. Systematic study of verbs. Reading of a novel or a play. Conversation. Prerequisite: Fr. 102. Credit, 4 hours.

* Special Faculty

104 *Intermediate French.* Continuation of Fr. 103. Prerequisite: Fr. 103. Credit, 4 hours.

110 *Practical Phonetics for Singers.* To acquaint singers with the fundamentals of French phonetics and sound production. Correct pronunciation in reading and singing. Credit, 2 hours.

120 *French Composition and Conversation.* Composition and conversation based on materials concerning the social and cultural background of France. Prerequisite: Fr. 104. Credit, 2 hours.

121 *French Composition and Conversation.* Continuation of Fr. 120. Prerequisite: Fr. 104. Credit, 2 hours.

205 *Survey of French Literature.* French literature from its beginnings to the end of the seventeenth century; readings and reports on selections from major authors; readings from the earliest documents will be done in English translations. Prerequisite: Fr. 104 or consent of instructor. Credit, 3 hours.

206 *Survey of French Literature.* Continuation of Fr. 205. The writers of the eighteenth, nineteenth, and twentieth centuries; readings from selected authors such as Voltaire, Rousseau, Victor Hugo, Marcel Proust, and Andre Gide. Prerequisite: Fr. 104 or consent of instructor. Credit, 3 hours.

German

Ger. 101 *Elementary German.* Grammar, reading and conversation. Credit, 4 hours.

102 *Elementary German.* Continuation of Ger. 101, with emphasis on reading and conversation. Prerequisite: Ger. 101. Credit, 4 hours.

103 *Intermediate German.* Reading of modern novels, plays and short stories, composition and conversation. Prerequisite: Ger. 102. Credit, 4 hours.

104 *Intermediate German.* Continuation of Ger. 103, with more emphasis on rapid reading. Prerequisite: Ger. 103. Credit, 4 hours.

106 *Scientific German.* Introductory readings in the various branches of science, with analysis of the special syntactical practices peculiar to scientific German. Prerequisite: Ger. 103. Credit, 3 hours.

110 *Practical Phonetics for Singers.* To acquaint singers with the fundamentals and the elements of German phonetics and sound production. Correct pronunciation in reading and singing. Credit, 2 hours.

120 *German Composition and Conversation.* Composition and conversation based on materials concerning the social and cultural background of Germany. Prerequisite: Ger. 104. Credit, 2 hours.

121 *German Composition and Conversation.* Continuation of Ger. 120. Prerequisite: Ger. 120. Credit, 2 hours.

205 *Survey of German Literature.* German literature from its beginnings; the Middle Ages through the Period of Reformation, Renaissance and Rococo to the Age of Classic Achievement. Prerequisite: Ger. 104 or consent of instructor. Credit, 3 hours.

206 *Survey of German Literature.* German literature from the middle of the 18th century to the present; works and writers in the Age of Enlightenment and the Storm and Stress Movement; special emphasis on the Classical period. Prerequisite: Ger. 104 or consent of instructor. Credit, 3 hours.

Latin

Lat. 101 *Elementary Latin.* A beginner's course. Emphasizes vocabulary and derivations rather than grammar. Credit, 4 hours.

102 *Elementary Latin.* Continuation of Lat. 101 with use of a simple Latin reader. Prerequisite: Lat. 101. Credit, 4 hours.

103 *Intermediate Latin.* Readings from the orations of Cicero; attention also to the political and social conditions of Rome during the first century B.C. Prerequisite: Lat. 102 or equivalent. Credit, 4 hours.

104 *Intermediate Latin.* Readings from the first six books of the *Aeneid*; selected readings from other authors. Prerequisite: Lat. 102 or equivalent. Credit, 4 hours.

Russian

Rus. 101 *Elementary Russian.* Study of Russian sounds, vocabulary, and grammar essential for simple oral and written composition. Credit, 4 hours.

102 *Elementary Russian.* Continuation of Rus. 101. Emphasis on reading and conversation. Prerequisite: Rus. 101. Credit, 4 hours.

103 *Intermediate Russian.* Development of a sound reading knowledge of Russian. Systematic review of grammar. Oral and written composition. Prerequisite: Rus. 102. Credit, 4 hours.

104 *Intermediate Russian.* Continuation of Rus. 103 with greater emphasis upon rapid reading and oral expression. Outside reading in the student's field of interest. Prerequisite: Rus. 103. Credit, 4 hours.

Spanish Language and Literature

Span. 101 *Elementary Spanish.* A study of pronunciation, vocabulary, the grammar essential for simple oral and written expression, and reading. Beginners only. Credit, 4 hours.

102 *Elementary Spanish*. The reading of several elementary texts. Prerequisite: Span. 101. Credit, 4 hours.

103 *Intermediate Spanish*. A review of grammar and reading, stressing vocabulary-building and accuracy of expression. Prerequisite: Span. 102. Credit, 4 hours.

104 *Intermediate Spanish*. Continuation of Span. 103 with greater emphasis upon rapid reading and oral expression. Prerequisite: Span. 103. Credit, 4 hours.

120 *Spanish Conversation*. Conversation to develop fluency and accuracy. Material based on everyday Spanish life. Prerequisite: Span. 104. Credit, 2 hours.

121 *Spanish Conversation*. Continuation of Span. 120. Prerequisite: Span. 104. Credit, 2 hours.

203 *Advanced Spanish Composition*. Translating English prose into Spanish, and original composition. Grammar review through writing. Collateral reading of modern short stories, novels and plays. Conducted in Spanish. Prerequisite: Span. 104. Credit, 3 hours.

204 *Advanced Spanish Composition*. Continuation of 203. Prerequisite: Span. 203. Credit, 3 hours.

205 *Survey of Spanish Literature*. Characteristics of the Middle Ages, Renaissance and the Golden Age, the evolution of Spanish thought and literary ideals. Conducted in Spanish. Prerequisite: Span. 204. Credit, 3 hours.

206 *Survey of Spanish Literature*. Continuation of 205. Prerequisite: Span. 205. Credit, 3 hours.

207g *Spanish Literature of the Nineteenth Century*. A study of the Romantic dramatists of this century and the most representative novelists and poets of the second half of the century. Credit, 3 hours.

210g *Spanish Literature of the Twentieth Century*. A study of the creative achievements of the Generation of 1898 and significant tendencies in the works of contemporary writers. Credit, 3 hours.

224g *Spanish American Literature*. A study of the outstanding novelists and poets. Credit, 3 hours.

227g *The Regional Novel*. The chief characteristics of the Spanish regional novel. Credit, 3 hours.

241g *Spanish-American Civilization*. A study of the people, the growth of institutions and culture, and the aspirations of their great men. A knowledge of Spanish is not necessary. Credit, 2 hours.

310 *Seminar in Foreign Language Education*. Study of recent contributions in the area of foreign language instruction. Prerequisite: graduate standing in Spanish. Credit, 2 hours.

Health, Physical Education, and Recreation

LAVIK (Head of Department), MURPHY (Director of Women), HOWARD BROWN, BRYANT, CASTILLO, DICKINSON, FETTER, KAJIKAWA, ONOFRIO, CLYDE SMITH, STEVERSON, THOMSON, WHITE, MARILYN CRAWFORD, GILLANDERS, KLANN, PAVLICH, PITTMANN, SOMERS, STEVENS.

Physical Education—Courses for Men Only

P.E. 107 *Sports Survey—Men*. Individual and team sports. Required of men in first semester of freshman year. Members of varsity teams may be excused from attendance but only during the actual playing season. Credit, $\frac{1}{2}$ hour.

108 *Sports Survey—Men*. Continuation of P.E. 107. Required of all men in second semester of freshman year. Members of varsity teams may be excused from attendance but only during the actual playing season. Credit, $\frac{1}{2}$ hour.

113 *Athletics—Men. Second year*. Participation in football, basketball and other first semester varsity sports. Five times a week. Credit, $\frac{1}{2}$ hour.

114 *Athletics—Men. Second year*. Participation in baseball, track and other second semester varsity sports. Five times a week. Credit, $\frac{1}{2}$ hour.

115 *Sophomore Sports—Men*. Continuation of Sports Survey, P.E. 108. Twice a week. Credit, $\frac{1}{2}$ hour.

116 *Sophomore Sports—Men*. Continuation of P.E. 115. Twice a week. Credit, $\frac{1}{2}$ hour.

124 *Beginning Gymnastics*. Techniques of performing and teaching gymnastic skills. One section for tumbling and one for apparatus. Twice a week. Credit, $\frac{1}{2}$ hour.

125 *Advanced Gymnastics*. Continuation of P.E. 124. Twice a week. Credit, $\frac{1}{2}$ hour.

170 *Fundamentals of Scoutmaster Training*. This course involves actual practice in scoutcraft and camping activities. Emphasis is placed upon leadership techniques for boys and men, and the philosophy of scouting organization and practice. Credit, 2 hours.

195 *Professional Activities*. History, organization and techniques of physical activities and minor sports. Present day problems confronting teachers. Two semesters required of men specializing in physical education. Credit, 2 hours.

196 *Professional Activities*. Continuation of P.E. 195. Prerequisite: P.E. 195. Credit, 2 hours.

211 *Athletics—Men. Third year*. Participation in football, basketball and other first semester varsity sports. Five times a week. Credit, $\frac{1}{2}$ hour.

212 *Athletics—Men. Third year.* Participation in baseball, track, and other second semester varsity sports. Five times a week. Credit, $\frac{1}{2}$ hour.

213 *Athletics—Men. Fourth year.* Participation in football, basketball and other first semester varsity sports. Five times a week. Credit, $\frac{1}{2}$ hour.

214 *Athletics—Men. Fourth year.* Participation in baseball, track and other second semester varsity sports. Five times a week. Credit, $\frac{1}{2}$ hour.

217 *Coaching.* Theory and techniques of basketball, track and baseball. Lecture and laboratory, 3 times a week. Credit, 2 hours.

218 *Coaching.* Theory, techniques and officiating of football. Lecture and laboratory, 3 times a week. Credit, 2 hours.

219 *Officiating Football, Basketball, Baseball and Track.* A study of rules and the mechanics of officiating used in football, basketball, baseball and track. Credit, 3 hours.

256g *Techniques of Athletic Training.* Emphasizes the correct use of personal and field equipment, support procedures and therapeutic aids. Laboratory work includes practical techniques in the clinical use of supporting apparatus, physiotherapy. Prerequisites: Zool. 171, 172. Two lectures, 1 hour laboratory. Credit, 2 hours.

270 *Advanced Scouting.* Principles and practice in scout and cub organization and leadership. For staff officers and field executives. Prerequisites: Scoutmaster certificate and senior standing. One lecture, 2 laboratory hours. Credit, 2 hours.

Physical Education—Courses for Women Only

P.E. 101 *Basic Physical Education.* Required of freshman women not specializing in physical education. Fee, \$2.00, per semester. Twice a week. Credit, $\frac{1}{2}$ hour.

102 *Basic Physical Education.* Required of freshman women not specializing in physical education. Fee, \$2.00, per semester. Twice a week. Credit, $\frac{1}{2}$ hour.

111, 112 *Team Sports.* Classes in volleyball, hockey, softball, basketball, soccer, speedball and track. Twice a week. Credit, $\frac{1}{2}$ hour each.

113, 114 *Team Sports.* Intermediate classes in volleyball, hockey, softball, basketball, soccer, speedball and track. Prerequisite: P.E. 111, 112. Twice a week. Credit, $\frac{1}{2}$ hour each.

165 *Team Sports.* Advanced classes in volleyball, hockey, softball, basketball, soccer, speedball and track. Twice a week. Credit, $\frac{1}{2}$ hour each.

166 *Team Sports.* Continuation of P.E. 165. Credit, $\frac{1}{2}$ hour.

171, 172, 173, 174 *Professional Activities.* The activities included are designated professional because of their value to women students specializing in physical education. Four hours required. Five times a week. Credit, 1 hour each.

205 *Theory and Practice of Teaching Physical Education in the Elementary Schools.* Analysis and study of programs and materials for the elementary school. Practice in and development of units. Credit, 3 hours.

224 *Theory and Practice of Teaching Major Team Sports.* Class organization, teaching and coaching of volleyball, basketball, softball, speedball. Prerequisites: P.E. 171, 172, 173, 174 or the equivalent. Three times a week. Credit, 2 hours.

225 *Theory and Practice of Teaching Individual and Dual Sports.* Class organization, teaching and coaching of tennis, archery, badminton, golf, track and field. Prerequisites: P.E. 171, 172, 173, 174 or the equivalent. Three times a week. Credit, 2 hours.

Physical Education—Courses for Both Men and Women

P.E. 103 *Beginning Tap Dance.* Twice a week. Credit, $\frac{1}{2}$ hour.

104 *Advanced Tap Dance.* Twice a week. Credit, $\frac{1}{2}$ hour.

105 *Beginning Square Dance.* Twice a week. Credit, $\frac{1}{2}$ hour.

106 *Advanced Square Dance.* Twice a week.. Prerequisite: P.E. 105 or the equivalent. Credit, $\frac{1}{2}$ hour.

109 *Introduction to Physical Education. Men.* For men who wish to major or minor in physical education. A cumulative index of 1.75 is required for admission to this course. No freshman admitted. Credit, 3 hours. *Women.* An orientation and guidance course. Required of freshmen women specializing in physical education. Credit, 3 hours.

110 *Introduction to Community Recreation.* Orientation to the field of organized recreation in terms of its history, philosophy, and development; and the contribution of organized recreation to the school and community. Credit, 2 hours.

117 *Recreational Games.* Instruction and playing experience in table tennis, shuffleboard, bowling, paddle tennis, deck tennis, croquet. Twice a week. Credit, $\frac{1}{2}$ hour.

119 *Beginning Folk Dance.* European, early American, and Latin American dances. Twice a week. Credit, $\frac{1}{2}$ hour.

120 *International Folk Dance.* Prerequisite: P. E. 119. Twice a week. Credit, $\frac{1}{2}$ hour.

121 *Beginning Golf.* Twice a week. Credit, $\frac{1}{2}$ hour.

122 *Intermediate Golf.* Twice a week. Credit, $\frac{1}{2}$ hour.

131 *Beginning Tennis.* Twice a week. Credit, $\frac{1}{2}$ hour.

132 *Intermediate Tennis.* Twice a week. Credit, $\frac{1}{2}$ hour.

133 *Advanced Tennis.* Twice a week. Credit, $\frac{1}{2}$ hour.

134 *Beginning Badminton.* Twice a week. Credit, $\frac{1}{2}$ hour.

135 *Intermediate Badminton.* Twice a week. Credit, $\frac{1}{2}$ hour.

136 *Advanced Badminton.* Twice a week.. Credit, $\frac{1}{2}$ hour.

141 *Beginning Archery.* Fee, \$1.00. Twice a week. Credit, $\frac{1}{2}$ hour.

- 142 *Intermediate Archery*. Fee, \$1.00. Twice a week. Credit, $\frac{1}{2}$ hour.
- 143 *Advanced Archery*. Fee, \$1.00. Twice a week. Credit, $\frac{1}{2}$ hour.
- 150 *Beginning Social Dance*. Twice a week. Credit, $\frac{1}{2}$ hour.
- 151 *Intermediate Social Dance*. Twice a week. Credit, $\frac{1}{2}$ hour.
- 160 *Beginning Fencing*. Twice a week. Credit, $\frac{1}{2}$ hour.
- 161, 162, 163, 164 *Restricted Activities*. Limited activities for students who cannot, because of disabilities, enroll in regular physical education classes. Written recommendation of the school physician required. Twice a week. Credit, $\frac{1}{2}$ hour.
- 167 *First Aid*. Prevention of accidents, methods of examination and temporary care for victims of accident or sudden illness. Red Cross certification. Credit, 2 hours.
- 181 *Beginning Modern Dance*. Twice a week. Credit, $\frac{1}{2}$ hour.
- 182 *Intermediate Modern Dance*. Twice a week. Credit, $\frac{1}{2}$ hour.
- 183 *Advanced Modern Dance*. Twice a week. Credit, $\frac{1}{2}$ hour.
- 185 *Camping Activities and Skills*. An introductory course in camp counseling involving outdoor cookery, nature study, nature crafts, camp crafts, story telling, dramatics, songs and music, overnight trips, shelters, orienting, axmanship, firecraft, food preservation, and cooking devices. One hour discussion, 3 hours laboratory. Credit, 3 hours.
- 191 *Dance Production*. Experience in dance production. Required of women specializing in physical education. Prerequisite: P.E. 181. Three times a week. Credit, 2 hours.
- 192 *Dance Production*. Continuation of P.E. 191. Three times a week. Credit, 2 hours.
- 193 *History and Philosophy of Dance*. A study of dance from ancient times to the present. Consideration of dance as an art in relation to other arts; primitive, pre-classic, and modern forms. Dance composition, rhythm analysis, and accompaniment for dance. Three times a week. Credit, 2 hours.
- 220 *Playground Leadership*. A course designed to present games of low organization, team sports, and rhythmic activities, as prescribed in the state course of study for the elementary grades. Required for elementary certificate. Separate sections for men and women. Credit, 2 hours.
- 222 *Youth Organizations*. Orientation in principles, practices, and leadership experience of national youth serving organizations. Prerequisites: Psych. 141, 142. Credit, 3 hours.
- 228 *Public School Camping and Program Planning*. Designed to equip the student with materials, procedures, and plans for a school camp program, and to establish the relationship of camping to other areas of education. Credit, 3 hours.
- 229g *Camp Organization and Administration*. The organization and administration of camps with special emphasis on school camps;

preparation for camp management; consideration of budget, equipment, camp site, personnel, and community interpretation. Credit, 3 hours.

231 *Social Recreation*. The development of methods and materials for leadership in social recreational activities for school, church, home, club, and other social groups. Credit, 2 hours.

233 *Program Planning and Recreational Leadership*. Study of principles and practices involved in planning and carrying out programs of recreation for playgrounds, community centers and youth serving organizations. Acquisition of methods, materials and leadership skills and techniques through laboratory practice. Credit, 3 hours.

234 *Theory and Practice of Teaching Dance*. Theory of and practice in the teaching of folk, square, social, and tap dance. Study, analysis, and acquisition of materials suitable for elementary, secondary, college, and recreational use. Credit, 3 hours.

235 *Theory and Practice of Teaching Dance*. A continuation of P.E. 234. Theory of and practice in the teaching of fundamental rhythms and modern dance. Study, analysis, and acquisition of materials suitable for elementary, secondary, college, and recreational use. Credit, 3 hours.

236 *Organization and Administration of Physical Education*. Organization, administration, and supervision of the physical education program in elementary and high schools. Separate sections for men and women. Prerequisite: P.E. 109. Credit, 3 hours.

237 *Organization and Administration of Recreation*. The study and analysis of the administrative structure and organizational policies and practices on the local, state, and national level. Analysis of methods of operation, finance, personnel standards and problems, legal aspects and study of modern trends in terms of present and projected future community needs. Credit, 3 hours.

245 *Tests and Measurements in Health and Physical Education*. Types of tests and uses, including classification and grading of students. Practice in administering tests. Credit, 3 hours.

251 *Applied Anatomy and Kinesiology*. Analytic and synthetic studies of body movements with emphases on neuromuscular skills and body mechanics. Prerequisites: Zool. 171, 172. Credit, 3 hours.

253 *Techniques of Officiating*. Qualification of officials, techniques of officiating, interpretation of rules and opportunity to qualify as an NSGWS rated official in tennis, volleyball, basketball, softball. Credit, 3 hours.

254 *Physiology of Exercise*. The effects of exercise upon bodily functions. Prerequisites: Zool. 171, 172. Credit, 3 hours.

255g *Corrective Physical Education*. The organization and administration of the preventive and corrective aspects of the body mechanics program. Discussions of corrective exercises and other aspects of body mechanics. Laboratory observations will be provided at the Children's Hospital. Prerequisites: Zool. 171, 172; P.E. 251, 254. Credit, 3 hours.

257g *Organization and Administration of Intramural Activities.* Deals with materials and methods for the organization and administration of an intramural program on the elementary and secondary level. Credit, 2 hours.

267 *First Aid Instructorship.* For individuals who wish to receive certification as Red Cross First Aid Instructors. Prerequisite: must be 20 years of age and hold current advanced certificate. Credit, 1 hour.

271, 272, 273, 274 *Physical Activities.* Participation in individual and dual sports; major team sports and dance. Prerequisite: recommendation of instructor. Twice a week. Credit, $\frac{1}{2}$ hour each.

281g *Dance Composition.* Theory and practice in dance composition. Form in music related to dance composition. Study of archaic, pre-classic, and modern style. Prerequisites: P.E. 191, 192, or teaching experience. Credit, 2 hours.

282g *Percussion and Improvisation.* Theory and practice in use of percussion instruments. Improvisation of simple dance studies. Compositions of percussion accompaniment for modern dance studies. Prerequisites: P.E. 191, 192, or teaching experience. Credit, 2 hours.

300 *Seminar in Health, Physical Education and Recreation.* Practices and procedures in the various areas of health, physical education and recreation. Credit, 3 hours.

301 *Seminar in Health, Physical Education and Recreation.* Continuation of P.E. 300. Either semester's work may precede the other. Credit, 3 hours.

330 *Research Procedure and Critical Analysis of Professional Literature.* A study of the methods and techniques of research in health and physical education and a critical analysis and evaluation of the professional literature. Credit, 3 hours.

336 *Problems in Physical Education.* Consideration of problems and controversial issues in physical education with particular stress on methods of approach toward solution of such problems. Credit, 2 hours.

340 *Curriculum Construction in Health Education and Physical Education.* Principles, practices and a functional philosophy of curriculum making with application of this theory. Prerequisites: Major in P.E., or minor in Health Education or teaching experience. Credit, 2 hours.

345 *Advanced Test and Measurements in Health and Physical Education.* A study of various types of measurements in the field of health and physical education with emphasis upon administration and use of results obtained. Prerequisite: P.E. 245. Credit, 3 hours.

Health Education

H.E. 100 *Hygiene.* Required of all students. Separate sections for men and women. Credit, 2 hours.

215 *Health in Elementary Schools.* Materials and methods of health instruction. Required for minor in health education. Prerequisite: H.E. 242 Credit, 3 hours.

237 *Organization and Administration of Health Education.* The areas of health service, health instruction and physical education are shown in their relationships to each other and to the general educational scheme in schools and communities of different sizes. Required of minors in health education. Prerequisite: H.E. 215 or 243. Credit, 3 hours.

241g *School Health Problems.* An advanced and more intensive study of the school health program. Designed to help teachers develop skills in screening techniques, analysis of individual pupil health needs, and use of community resources. Prerequisites: H.E. 242; Ed. 260 or teaching experience. Credit, 2 hours.

242 *School-Community Health.* This course includes the three main divisions of the school health program—Health Services, Health Instruction, Healthful School Living—and the role and duties of the classroom teacher in relationship to each of these divisions, so far as the health of the school child is concerned. Practical experiences in screening tests and techniques, survey of available free materials, discussion of available health texts and health readers, and previewing of usable films in each of the broad areas of health education. Prerequisite: H.E. 100. Credit, 3 hours.

243 *Health in Secondary Schools.* Methods and materials of health instruction. Required for a minor or major teaching field in Health Education. Prerequisites: P.E. 100, 242. Credit, 3 hours.

244g *Principles and Practices of Public Health.* Survey of the field of public health and the principles involved in the development of such a program for community. Field practice with organization in the immediate community. This course is one of the requisites for a fellowship that may be offered to students having interest and ability in this particular type of work. Prerequisites: H.E. 100; H.E. 242; Soc. 215 or Ed. 266; Psych. 225 or 215. Credit, 3 hours.

245g *School-Community Health Council.* Steps involved in the organization of a School-Community Health Council. The use of this organization as an approach to the solution of existing health problems. Prerequisites: H.E. 241, 244. Credit, 3 hours.

301 *Problems in Health Education.* Consideration of problems and controversial issues in health education with particular stress on methods of approach toward solution of such problems. Prerequisite: major in Health Education. Credit, 2 hours.

Home Economics

RANNELS (Head of Department), ELLSWORTH, ESSIG, KAGY, NORTON, PAXTON,* STAFF.*

Home Economics

H.Ec. 100 *Orientation to Home Economics.* A preview of the home economics field, including opportunities for employment. First year, first semester. Credit, 1 hour.

*Special Staff

- 101 *Elementary Nutrition*. Principles of nutrition, diet, food in its relation to health. Open to men and women. Credit, 2 hours.
- 102 *Clothing Selection*. The selection of clothing with consideration of materials, cost, style, design, the individual, and the occasion. Credit, 2 hours.
- 103 *Introduction to Family Living*. For students not specializing in home economics. Deals with the establishment of a home, children, finances, foods, selection of clothing, and art in the home. Open to men and women. Fee, \$1.00. Credit, 3 hours.
- 104 *Home Nursing*. Information on health for the family, care of the sick, the mother through pregnancy and childbirth, and infant care. Credit, 1 hour.
- 105 *Applied Food Principles*. Principles of cookery and nutritive facts involved. Open only to those specializing in the department. Fee, \$5.00. Six hours a week. Credit, 3 hours.
- 106 *Food Preparation and Meal Service*. Fundamental processes in food preparation, meal planning, and table service. Open to those not specializing in home economics and to students specializing in clothing, textiles and related art. Fee, \$5.00. Six hours a week. Credit, 3 hours.
- 107 *Clothing Construction*. Selection and construction of inexpensive garments. Limited amount of experience in selecting materials and design. Open to non-majors and home economics majors not specializing in teaching. Six hours a week. Credit, 3 hours.
- 108 *Clothing Construction*. Principles of dressmaking and construction of inexpensive garments. Emphasis on fundamental processes. Open only to those specializing in teaching of home economics. Six hours a week. Credit, 3 hours.
- 202 *Problems of the Consumer*. Problems, wants, needs, and practices of the consumer-buyer of foods, textiles, clothing, and home equipment. Influence of advertising, retail stores, and government agencies. Fee, 50 cents. Credit, 2 hours.
- 203 *Child Development*. Physical, emotional, social, and intellectual development of children from birth to five years. Observation in the nursery school one hour each week during the morning. Open to men and women. Prerequisite: Psych. 100. Fee, 50 cents. Four hours a week. Credit, 3 hours.
- 205 *Large Quantity Cookery*. Theory and practice in preparing food for large groups. Laboratory work in the college dining hall. Prerequisite: H.Ec. 105. Fee, \$2.00. Six hours laboratory and one hour discussion a week. Credit, 3 hours.
- 206 *Food for the Family*. The production, economic selection, and nutritive value of foods, types of meals, and table service. Practice in planning, preparing and serving meals. Open only to those specializing in the department. Prerequisites: H.Ec. 101, 105. Fee, \$3.00. Six hours a week. Credit, 3 hours.

207g *Nursery School Education.* Discussion and application of methods for guiding the young child in family and school relationships. Curriculum planning toward meeting fundamental needs of pre-school children. Opportunity for practical experience with a group of children in the Nursery School. Four laboratory hours per week arranged, preferably in blocks of two consecutive hours during the morning. Prerequisites: H. Ec. 203 or Psych. 140, 141 or 234. Fee, \$1.00. Six hours a week. Credit, 3 hours.

209 *Family Relationships.* Understanding of family life and current problems including preparation for marriage. Open to men and women. Credit, 3 hours.

210 *Household Equipment* A study of the selection, construction, use, care, and repair of all types of household equipment. Credit, 3 hours.

211 *Clothing: Tailoring.* Construction of coat or suit; tailoring techniques, alteration of patterns, and fitting emphasized. Prerequisites: H.Ec. 102, 108. Six hours a week. Credit, 3 hours.

212g *Advanced Nutrition.* Special problems in diet and nutrition. Prerequisites: H.Ec. 101; Chem. 110. Fee. \$1.00. Credit, 3 hours.

213g *Clothing: Pattern Designing.* Fundamental principles in designing, cutting, and fitting individualized garments. Flat patterns used. Prerequisites: H.Ec. 102, 107 or 108. Fee, \$2.00. Six hours a week. Credit, 3 hours.

214 *Home Management House.* Students live in Home Management House for a six-week period, and carry on all duties involved in home-making. Open to seniors in home economics. Prerequisites: H.Ec. 104, 203, 206, 217. Board and room at regular college rate. Credit, 3 hours.

215 *Home Furnishing.* Housing; selection, combination, and arrangement of furniture; color schemes; choice of wall finishes, floor coverings, draperies, and accessories. Fee, 50 cents. Credit, 3 hours.

217 *Home Management.* A study of the management of various resources available to the family with a view to promoting family well being and satisfaction. Goals, standards of living, use of time, money and energy considered. Fee, 50 cents. Credit, 3 hours.

218g *Clothing: Draping and Dress Design.* Working with fabric on a dress form expressing original ideas in dress design; emphasis upon the understanding of the principles involved in fitting and pattern construction. Prerequisites: H.Ec. 102, 107 or 108. Fee, \$3.00. Six hours a week. Credit, 3 hours.

219 *Textiles.* Textile fibers, their construction, finish, sources, characteristics, identification, and uses. Fee, 50 cents. Credit, 2 hours.

225g *Experimental Cookery.* Application of experimental methods to preparation of common foods. Prerequisites: H.Ec. 105 and Chem. 180. Fee, \$5.00. Six hours a week. Credit, 3 hours.

226g *The Teaching of Art Related to the Home.* The application of principles of art to problems of daily living. Use made of pertinent illustrative material. Opportunity provided to participate in teaching projects. Fee, 50 cents. Credit, 2 hours.

Industrial Arts

NEEB, (Head of Department), BURK, CAVALLIERE, DOUTHIT, ELMORE, ENSIGN, FINLEY, GOODWIN, KAUFMAN, KEITH, MERRITT, PEABODY.

Aeronautics

I.A. 126 *Aircraft Covering and Doping.* Fabric materials and testing, accessories, inspection of assemblies prior to covering, sewing of covers, rib stitching, repairs, hand doping, spray doping, including study of equipment used. Fee, \$4.00. One lecture, 3 hours laboratory. Credit, 2 hours.

130 *Aircraft Woodwork.* Materials used, rib construction, wing construction, spar splicing, alignment of drag truss, general wood repairs, inspection, testing, and use of power and hand tools. Fee, \$4.00. One lecture, 3 hours laboratory. Credit, 2 hours.

131 *Aircraft Engines.* Disassembly and assembly of aircraft engines including complete top overhaul. Timing of engines, synchronizing magnetos, carburetion, ignition and oil systems. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

132 *Airplane Mechanics.* Types of wood rib construction, use of power sewing machine, covering, doping and painting, riveting, and uses of metals for aircraft construction. Fee, \$6.00. Prerequisites: I.A. 160, 179. One lecture, 6 hours laboratory. Credit, 3 hours.

153 *Theory of Flight.* A study of the forces on solids in motion relative to air, and the study of motion of air. Theory of lift and drag, stability performance, and control. Fee, \$4.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

200 *C.A.A. Primary Ground School Course.* Sponsored by the Civil Aeronautics Authority. A total of 72 hours in class are required as follows: History of Aviation, 2 hours; Theory of Flight, 15 hours; Civil Air Regulations, 12 hours; Practical Air Navigation, 15 hours; Meteorology, 15 hours; Parachutes, 1 hour; Aircraft Power Plants, 5 hours; Aircraft Instruments, 5 hours; Radio Uses and Terms, 2 hours. Prerequisites: College Algebra and Trigonometry or equivalent. Flight instruction costs are extra. Fee, \$4.00. Four times a week. Credit, 4 hours.

204 *The Secondary Ground School Course.* A minimum of 128 hours in the following: Aerodynamics, 32 hours; Navigation, 48 hours; Powerplants, 48 hours. Prerequisite: I.A. 200. Passing of Government examination required for college grade. Fee, \$8.00. Eight lectures a week. Credit, 8 hours.

220 *C.A.A. Ground Instructors Rating: Civil Air Regulations.* A detailed study of the various regulations affecting airmen including

preparation of visual aid materials as an aid to making the subject more interesting. Fee, \$3.00. Credit, 3 hours.

225 *Aircraft Instruments*. Construction and operation of instruments used with aircraft powerplants and those recommended for successful flight operation. Fee, \$6.00. Credit, 3 hours.

234g *Aeronautical Instructional Materials*. Design, construction, and operation through models and mockups of visual aid devices for aviation construction for use in pre-flight and mechanics courses in aviation. Prerequisites: I.A. 103, 111, 121 or 179. One lecture, 3 hours laboratory. Fee, \$4.00. Credit, 2 hours.

269g *Pre-Flight Aeronautics for Teachers and Laymen*. Gives an insight into the world of aviation and practical applications of navigation, meteorology, use and care of instruments, civil air regulations, and operation of aircraft engine power plants. Meets the needs of teachers, and those planning to do technical work. Fee, \$3.00. Three lectures, 1 hour laboratory. Credit, 3 hours.

298g *Celestial Navigation for Ground School Instructors and Teachers*. Location of stellar bodies in the celestial sphere. Locating the substellar positions, circles of position, and establishment of fixes from sextant observations. Solving the astronomical triangle. Prerequisites: I.A. 200, or I.A. 204 or I.A. 269g or 15 hours aeronautics or equivalent. Fee, \$3.00. Three lectures. Credit, 3 hours.

Building and Construction

I.A. 105 *Architectural Drawing*. For students preparing to teach or for drafting and engineering work. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

106 *Architectural Drawing*. Complete plans and estimates of materials for a two-story house. Prerequisite: I.A. 105. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

121 *Wood Work*. Basic types of furniture construction and repair suitable for use in school shops. No machine work. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

122 *Cabinet Making*. Principles of furniture construction, and correct use of hand tools and machines. Prerequisite: I.A. 121. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

133 *Plastics*. Practical uses of plastics and their uses for school work shops and hobby shops. Fee, \$6.00. Six hours a week. Credit, 3 hours.

134 *Materials of Construction*. A study of cement and concrete mixes, stucco, plaster materials, brick and concrete block work, roofing materials, lumber, wood, preservatives, paints and varnishes. Prerequisite: I.A. 103 or 105. Fee, \$4.00. Credit, 2 hours.

136 *Upholstery*. Selection of fabrics and materials. Practice in the various craft processes used. Construction of necessary frames and

bases. Design of jigs. Use of hand and power tools. Wood finishing. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

145 *Elementary Surveying*. Care, adjustment and use of surveying instruments, and computations. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

151 *General Shop*. The practical application of accepted industrial processes in the use of supplies and materials by industrial art shops in the elementary and secondary schools. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

161 *Properties of Materials*. Laboratory and class work in analyzing the properties of materials in terms of their use in machines and construction. Fee, \$5.00. Two lectures. Credit, 2 hours.

163 *Wood Turning*. Drills in spindle, face plate, and chuck work, with practice in finishing and polishing. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

165 *Theory of Acoustics*. Acoustical theory and problems relating to studios, theaters, auditoriums, amphitheaters, and homes. Two lectures. Credit, 2 hours.

180 *Mechanical Equipment in Buildings*. Water supply, drainage systems, heating, ventilating, and air conditioning. Fee, \$1.00. Two lectures. Credit, 2 hours.

181 *Mechanical Equipment in Buildings*. Electrical systems, refrigeration, and vertical transportation (elevators). Fee, \$1.00. Credit, 2 hours.

206 *Advanced Plastics*. Emphasis on materials, machine operations, carving, cementing, embossing and inlaying. Prerequisite: I.A. 133. Six hours a week. Fee, \$6.00. Credit, 3 hours.

207 *Cabinet Making and Mill Work*. Advanced types of furniture; construction and tenoning; panels; gluing; finishes; design; power machines. Prerequisite: I.A. 122. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

208 *Carpentry and House Construction*. Use of steel square and carpenter tools; sharpening tools; framing processes; short cuts; trade terminology; FHA standards. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

217 *Stair Building*. Construction of straight stairways, platforms, and circular stairways to one-third scale. Prerequisite: I.A. 208. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

218g *Steel Square and Roof Framing*. Problems involving the steel square in carpentry, framing, stair building, and sheet metal. Prerequisite: I.A. 208. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

222g *Geometry of the Steel Square*. Use of steel square and layout of irregular roofs, geometrical problems, and marquetry and their

application to the fields of building and construction and design. Prerequisite: I. A. 208 or equivalent. Fee, \$66.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

224g *Estimating and Contracting.* Making cost analysis of structures and utilities placed in them. Procedures concerning titles, mechanic liens, obligations of contractors, etc. Quality values and costs. Writing specifications and contracts. Prerequisites: I.A. 106, 121, 122. Fee, \$3.00. Credit, 3 hours.

236 *Advanced Upholstery.* Design and construction of large pieces of upholstered projects. Advanced wood finishing. Prerequisite: I.A. 136. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

242g *Industrial Production of Upholstered Projects.* The design, construction, and assembly of upholstered projects on an industrial basis. Students are taught industrial and commercial procedures in the use of sewing machines, cushion stuffers, welting and button making equipment, blind stitching, pattern layouts, and advanced wood working machinery. Prerequisite: I.A. 236. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

245 *Route Surveying.* Techniques of using instruments in the field, and associated office computations in surveying and laying out of highways, horizontal curves, vertical curves, cuts, fills, borrow pits and haulage. Prerequisite: I.A. 145. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

252g *General Shop.* An advanced course giving additional emphasis in mechanical and industrial practices of value to those planning to teach industrial arts. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

258g *Utilities Services.* Pipe cutting, threading, fitting, calking, roughing in, venting pipe lines, cesspools, toilet fixtures and plumbing requirements. Study of materials used. Prerequisites: I.A. 100, 105, 109, 122, 160. Fee, \$6.00. Two lectures, 4 hours laboratory Credit, 3 hours.

260 *Advanced Wood Turning.* All kinds of built-up, segmented and jointed projects. Prerequisite: I.A. 163. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

264g *Furniture Construction.* Principles and techniques involved in the construction of furniture through use of both hand and power tools; wood turning, inlaying, carving, finishes, and special processes involved in the design of jigs for production work in school and shops and industry. Prerequisite: I.A. 121. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

268 *Advanced Route Surveying.* Advanced office work and the laying out of routes with special emphasis on spiral and parabolic curves. Prerequisite: I.A. 145. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

276 *Patternmaking*. Use and operation of woodworking machinery. Study of drafts, shrinkage, finish, warp and shakes. Making patterns, molds and castings. One hour lecture, 6 hours laboratory. Fee, \$6.00. Credit, 3 hours.

I.A. 277g *Beaux Arts Atelier*. Problems in design of homes and industrial and commercial buildings involving sketching, drafting, details, working drawings, perspective, color, and shades and shadows, especially suited for teachers of drawing in the secondary schools and draftsmen. Prerequisite: I. A. 106. Fee, \$3.00. One lecture, 4 hours laboratory. Credit, 2 hours.

278g *Beaux Arts Atelier*. Continuation of I.A. 277. Fee, \$3.00. One lecture, 4 hours laboratory. Credit, 2 hours.

280 *Advanced Surveying*. Topographical surveying, including introduction to plane table, solar observations, etc. Prerequisite: I.A. 145. One lecture, 6 hours laboratory. Fee, \$6.00. Credit, 3 hours.

283g *Practical Application of Building Materials* Practice in the application of industrially accepted mixes of Portland cement, white cement, plasters, lime mortar and stucco, together with instruction and experience in the reinforcing, curing, coloring and finishing of these materials. Prerequisites: I.A. 103, 105. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

284g *Home Building*. Factors involved in the building of a contemporary home including: functions of owner, architect, and contractor, selection of site, design, working drawings, specifications, materials and equipment, contracts and legal procedures, financing, construction and supervision, landscaping and maintenance. For teachers, draftsmen, contractors and prospective homeowners. Fee, \$5.00. Three lectures. Credit, 3 hours.

285g *Estimating and Contracting*. Continuation of I.A. 224 with emphasis on commercial, industrial and public buildings. Contracts, specifications, mechanics' liens, titles, and obligations of contractors and architects. Prerequisite: I.A. 224g. Fee, \$3.00. Credit, 3 hours.

286g *Structural Design*. Designed for builders, contractors, and teachers of the industrial arts who need a knowledge of elementary design suitable for small structures and buildings. Fee, \$3.00. Three lectures. Credit, 3 hours.

289g *Period Furniture*. This is a course designated to supply adequate information on furniture sold today which is composed of reproductions of 18th Century inspiration. 18th Century furniture embraces all the styles of the Georgian period, including Chippendale, Hepplewhite, Adam, Sheraton, and lesser known designers. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

291g *Building Design*. Construction layout for beams, trusses, straps, plates and joints generally used in building design. Prerequisite: I.A. 161. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

292g *Advanced Building Design.* Problems in lighting, sanitation and air conditioning. Design of reinforced concrete structures including bending moments, stresses, T-beams, slabs, columns, walls and foundations. Prerequisite: I.A. 291. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

294g *Advanced Use of Building Materials.* Practical use of journeyman procedures in the application of industrially accepted mortar mixes, setting up of various kinds of stone, laying of various accepted brick bonds, together with the design and construction of lintels and arches, and the forms for the same. The course will also take up stone cutting and brick making and a discussion of the use of these materials in architecture. Prerequisites: I.A. 103, 105, and 283. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

Drafting

I.A. 103 *Mechanical Drawing.* Elements of orthographic projection. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

110 *Blue Print Reading* Study of blue prints and symbols used in the building and construction trades. For teachers, contractors, estimators, architects, and home planners. Fee, \$2.00. Credit, 2 hours.

113 *Engineering Drawing.* Orthographic projections, lettering, tracing, and blue printing. Prerequisite: One year high school drawing, or I.A. 103. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

114 *Blue Print Reading.* Blue prints and symbols used in machine shop practices, welding, electronics, sheet metal, auto ignition, and aircraft. Fee, \$3.00. One lecture, 3 hours laboratory. Credit, 2 hours.

124 *Descriptive Geometry.* Problems in warped surfaces and intersections of solids. Prerequisite: I.A. 113. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

125 *Descriptive Geometry.* Continuation of I.A. 124 with emphasis on shades and shadows. Prerequisites: I.A. 105, 106, and 124. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

155 *Mechanisms.* Study and design of linkages, gears, cams, screws, and other machine elements with the relative motions of machine parts. Prerequisite: I.A. 113. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

156 *Machine Drafting.* A course placing emphasis upon techniques in the making of detailed drawings and assembly drawings in accordance with standard drafting room practice. Problems are assigned individually. This course is designed to meet the needs of instructors in drafting in secondary schools. Prerequisite: I.A. 103. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

202 *Industrial Drafting.* Problems suited to individual needs in nomographics, lofting, aircraft drafting, statistical drafting, sheet metal pattern drafting, topographics, electrical and machine drafting, including technical data, standards, dimensioning and analysis of

shop processes. Technical sketching, calculations, and hand-books. Prerequisites: I.A. 109 and 113 or equivalent. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

246g *Advanced Industrial Drafting*. A continuation of I.A. 202. Prerequisite: I.A. 202 or equivalent. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

254 *Elementary Machine Design*. Design and layout of machine parts. Prerequisites: I.A. 155, 161. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

266g *Structural Drafting*. Consists of drawing, all types of welded, bolted and riveted assemblies which use standard structural shapes for supports and frames used in industry. Elements of design and materials studied and applied from handbooks and catalogs. Prerequisites: I.A. 113, 161. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

267g *Steel Fabrication Design*. Drafting and calculations as applied to tanks and pressure vessels. Use of national safety codes. Prerequisites: I.A. 113, 161. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

Electricity and Electronics

I.A. 100 *Elementary Electricity*. Theory and practical application of direct and alternating current circuits. Prerequisite for all electrical and radio courses. Fee, \$6.00. Credit, 3 hours.

108 *Intermediate Electronics*. Lectures, films, and use of tests on all phases of basic electronics to give the student a background and preparation for the complexities of electronic and fundamental radio circuits. Fee, \$3.00. Three lectures. Credit, 3 hours.

115 *Fundamentals of Radio*. Basic theory and practical application of radio, including tubes, power supplies, oscillators, detectors. Prerequisite: I.A. 100. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

116 *Transmitter and Receiver Theory*. A study of oscillators, amplifiers, modulators, receivers, transmission lines, antennae, and propagation. Prerequisites: I.A. 100, 115. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

119 *Industrial Electronics*. The theory and application of electronics to the industrial field. Prerequisite: I.A. 100. Fee, \$6.00. One lecture, 3 hours laboratory. Credit, 2 hours.

120 *Principles of Vacuum Tubes*. Principles, construction and operation of various types of tubes, and application in electronic circuits. Prerequisite: I.A. 100. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

127 *Aircraft Radio*. A study of radio used in commercial and private planes and ground installations, including questions and answers for the third class radio telephone license. Prerequisite: I.A. 100, 115. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

- 140 *Electronic Measurements.* Design, construction, and study of measuring techniques and measuring equipment in use in the laboratory and field of electronics. Prerequisite: I.A. 120. Fee, \$3.00. Two lectures, 3 hours laboratory. Credit, 3 hours.
- 154 *House Wiring.* Installation of lighting circuits, underwriters' regulations, conduit work, and estimation of cost. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.
- 203 *Direct Current Electricity.* Direct current circuits, machinery, measurement, magnetism, and allied subjects. Emphasis on installation, operation, and maintenance of equipment. Prerequisite: I.A. 100. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.
- 205 *Radio Code.* Sending and receiving international Morse Code. Practice on receiving by tape and commercial receivers. Speed required at close of course is thirteen words a minute. Student is required to obtain his novice license during the course. Fee, \$4.00. Credit, 2 hours.
- 215g *Micro-Wave Techniques.* A study of micro-wave generating and receiving systems, measurements, theory, installation, operation, and maintenance of typical radar equipment. Prerequisite: I.A. 116. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.
- 216g *Radio-Frequency Tests and Measurements.* Design, construction and operation of advanced types of testing equipment with application to laboratory and field work. Prerequisite: I.A. 116. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.
- 219 *Elementary Television.* Basic principles of television, image reproducing tubes, kinescopes, horizontal and vertical sweep circuits, video amplifiers, receiving, transmitters, and television antenna design. Industrial techniques used in repair, maintenance and construction of television receivers. Prerequisite: I.A. 116. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.
- 249g *Advanced Principles of Television.* Theory of picture reproduction, mixing and distribution circuits, synchronizing generators, count down circuits, methods of modulating video and AM circuits, film reproduction and shading thereof, microwave links for remote transmission, transmission, transmission lines and antenna design. Prerequisite: I.A. 219. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.
- 251 *Alternating Current Electricity.* Alternating currents and voltages, impedance, power, polyphase voltages, alternating current machines. Fee, \$6.00. Two lectures, 4 hours laboratory. Prerequisite: I.A. 100. Credit, 3 hours.
- 256g *Broadcast Radio.* A study of the Federal Communications Commission laws and problems included in the first-class radio-telephone operator's license examination, control board and control room operation and technique, and transmitter operation and maintenance. Laboratory held in campus studio and local broadcast stations. Prerequisite: I.A. 115 or advanced class amateur license. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

259 *Communications Circuit Analysis*. Circuit analysis of four-terminal networks and application of network theorems; filter theory and design of high-pass, low-pass, and band-pass filters; study of telephone, telegraph, and teletype circuits; study of telephone repeater and carrier circuits; advanced study of equivalent circuits applied to amplifiers and oscillators. Prerequisites: I.A. 115, 116. Fee, \$3.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

265g *Advanced Broadcast Techniques*. Advanced technical problems involved in remote broadcasts, local studio broadcasts, and network broadcasts, theory and techniques of disc and tape recordings for broadcasting; study of relations which exist between technicians and production and programming; advanced control room and studio techniques; and technical problems involved in studio design. Prerequisite: I.A. 256g. Fee, \$1.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

272 *Advanced Alternating Current Electricity*. Electrical circuits and machinery. Emphasis on polyphase types of machinery and applications to residential and industrial power. For teachers and for those preparing for industrial and commercial occupations. Two lectures, 4 hours laboratory. Prerequisite: I.A. 251. Fee, \$6.00. Credit, 3 hours.

273g *Advanced Communication Circuit Analysis*. Advanced analysis of multi-terminal networks, theory and design of filters and attenuators, advanced analysis of equivalent circuits for amplifiers, oscillators, etc. Advanced analysis of communication transmission line circuits. Prerequisite: I.A. 259; Math. 122 or equivalent. Fee, \$3.00. Three lectures. Credit, 3 hours.

279g *Pulse Techniques*. Nomenclature and characteristics of pulses, transient response of linear networks, design of pulse networks, linear pulse amplifiers, pulse shaping and clamping circuits, pulse measurements and instruments, and pulse communication systems. Prerequisite: I.A. 259. Three lectures. Credit, 3 hours.

281 *Direct Current Machinery*. Theory, design and construction of direct current machinery, involving field and armature windings. Prerequisite: I.A. 203. Fee, \$6.00. Two lectures, 4 hours laboratory.

282 *Alternating Current Machinery*. Theory, design and construction of polyphase equipment including training in the winding of fields and armatures. Prerequisite: I.A. 251. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

Mechanics

I.A. 101 *Auto Ignition*. Prepares for commercial shop practice, and includes storage batteries, ignition coils, distributors, lighting systems, etc. Machine shop practice. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

104 *Auto Mechanics*. General repair of automobiles; complete overhaul of gasoline engines. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

- 111 *Machine Shop*. Filing, drilling, turning, and polishing with hand tools, and general use of machines. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.
- 112 *Machine Shop*. Making of projects using the complete machine equipment of the department. Fee, \$6.00. Prerequisite: I.A. 111. Two lectures, 4 hours laboratory. Credit, 3 hours.
- 157 *Jigs and Fixtures*. Design and construction of various devices that facilitate shop production in quantities. Fee, \$6.00. Credit, 3 hours.
- 160 *Sheet Metal Work*. Laying out and cutting of sheet metal; sold ring, riveting; projects including utensils and toys. Prerequisite: I.A. 113. Fee, \$6.00. One lecture, 6 hours laboratory. Credit 3 hours.
- 179 *Welding*. Oxygen-acetylene welding. Various types of welds, laying, use of fluxes. Fee, \$10.00. Credit, 3 hours.
- 201 *Operation, Repair, and Maintenance of Diesel Engines*. A course in the accepted industrial procedures used in the operation, maintenance and repair of diesel engines, including a study of compression and fuel ratios, methods of fuel injection, problems in pressure lubrication, and heating problems, together with a practical study of fuels and oils. Prerequisites: I.A. 111, 112 or equivalent. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.
- 213g *Sheet Metal*. Problems in roofing, cornice work, practical inter sections, and use of sheet metal machines. Fee, \$6.00. One lecture, 6 hours laboratory. Prerequisite: I.A. 160. Credit, 3 hours.
- 223g *Shop Maintenance Problems*. Course designed especially for teachers of the Industrial Arts and those interested in the problems involved in setting up equipment, grinding, and filing of various cutting tools, together with the care involved in the maintenance and repair of both wood and metal machines and tools. Fee, \$3.00. Credit, 3 hours.
- 227g *Auto Mechanics*. Cylinder boring, honing, and dual ignition systems. Prerequisite: I.A. 104. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.
- 228g *Auto Ignition and Repairs*. Repairing, adjusting, and testing generators, starting motors, magnetos, and other electrical equipment in an automobile. Prerequisite: I.A. 101. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.
- 229g *General Metals*. A course in metal spinning, forming, polishing, soldering and finishing; making sand molds; casting metal; heat treatments for annealing and hardening. Offers opportunity for exploratory work in unusual metal work. Prerequisites: I.A. 111, 115, and 151. Fee, \$6.00. One hour lecture, 5 hours laboratory. Credit, 3 hours.
- 231g *Machine Shop*. Care and use of milling machines, the cutting of spur, worm and bevel gears. Plain and direct indexing. Cutters and

their upkeep. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

232g *Machine Shop*. Planers, their care, methods of holding work, uses of fixtures, gauges, and tools. Adjustment of belting for speed and power. Prerequisite: I.A. 231. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

233 *Electric Arc Welding*. Making satisfactory butt welds, lap welds, ridge welds, T-welds. Prerequisite: I.A. 179. Fee, \$10.00. One lecture, 6 hours laboratory. Credit, 3 hours.

241g *Auto Body and Fender Repair*. Welding and straightening, use of body solder and putty, sanding, priming, and painting; interior refinishing and upholstery. Prerequisites: I.A. 136, 104 or equivalent. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

275g *Advanced Welding*. Designed to provide experience and content for students and teachers interested in becoming more specialized in the field of Oxy acetylene welding-cutting and electric arc welding. Includes specific problems, lectures, and field trips, and the study and performance of new material in the field of welding. Prerequisites: I.A. 179, 233. Fee, \$10.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

288g *Design and Construction of Corrective Equipment*. This course is planned to provide the training and experience necessary to enable the student to design, construct, and operate corrective equipment needed in Manual Arts Therapy. Includes field trips and a study of contemporary factory equipment. Prerequisites: I.A. 100, 111, 113, 179 or equivalent. Fee, \$6.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

Industrial Arts Education

I.A. 109 *Calculations*. Fundamental arithmetical processes applied to shop and engineering problems. Use of slide rule. Credit, 3 hours.

211 *Job Analysis*. Various steps in jobs and their relationship. Fee, \$4.00. One lecture, 3 hours laboratory. Credit, 2 hours.

212 *Curriculum Making*. Trade and technical material, tool processes, occupational information, and job analysis. Prerequisite: I.A. 211. Fee, \$4.00. One lecture, 3 hours laboratory. Credit, 2 hours.

257g *Supervision and Administration of Industrial Arts*. Shop organization and principles of supervision applied to shop classes. Classifications of tools, tool operations, and projects. Purchasing supplies and equipment. Prerequisite: I.A. 212. Fee, \$3.00. Credit, 3 hours.

299g *History of Industrial Arts Education*. Traces the history of the instruction and hand work in European countries and the United States. Attention is given to the various trends in the development of this instruction leading to contemporary practices in teaching of industrial arts subjects and vocational education. Fee, \$3.00. Three lectures. Credit, 3 hours.

310 *Seminar in Industrial Arts Education.* Problems in industrial arts education; architectural and orthographic projection drafting, aeronautics, mechanics, electricity and electronics, building and construction, and general industrial arts courses for the elementary, junior high schools and secondary schools. Fee, \$3.00. One lecture, 6 hours laboratory. Credit, 3 hours.

312 *General Industrial Arts Procedures.* Discussions on plant or ganization, shop planning, safety factors, and curriculum for the industrial arts in junior and senior high schools. Fee, \$3.00. Three lectures. Credit, 3 hours.

Architecture

Arch. 100 *Introduction to Architecture.* A survey of architecture as human environment through consideration of contemporary building types. A survey of architecture as a profession, aims of architectural education and registration, relation of the architect to contemporary social and economic life. Fee, \$1.00. Credit, 2 hours.

110 *Descriptive Geometrj, Shades, Shadows, Perspective.* Elements of architectural drafting, orthographic projection, sections, shades and shadows, theories of perspective. Fee, \$1.00. Six hours laboratory a week. Credit, 3 hours.

112 *Strength of Materials.* Basic materials of architectural construction are studied to develop theory of structural analysis through lectures and laboratory tests. Prerequisite: Math. 170. Fee, \$2.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

120 *Introduction to Design.* Fundamentals of architectural design and planning studied through a sequence of exercises in three dimensional form. Prerequisites: Arch. 100, 110. Fee, \$2.00. Six hours criticized work in studio. Credit, 3 hours.

121 *Architectural Design.* Planning and design of simple buildings with emphasis on structure, utility, and organization of space. Prerequisite: Arch. 120. Fee, \$2.00. Six hours criticized work in studio. Credit, 3 hours.

130 *Landscape Design.* A study of plant materials, especially those native to the Southwest and their composition with architectural forms. Fee, \$1.00. Four hours criticized work in studio. Credit, 2 hours.

140 *History of Architecture.* A study of the historic styles through Romanesque with emphasis on the effect of physical and sociological conditions in each period. Prerequisite: Arch. 100. Fee, \$1.00. Three lectures. Credit, 3 hours.

141 *History of Architecture.* Continuation of Arch. 140. Covering Gothic through 19th Century Architecture. Prerequisite: Arch. 140. Fee, \$1.00. Three lectures. Credit, 3 hours.

150 *Sketching and Rendering* Techniques for design studies and presentation drawings in black and white. Prerequisite: Arch. 110. Fee, \$2.00. Six hours criticized work in studio. Credit, 3 hours.

160 *Architectural Working Drawings*. Fundamentals of lettering, line work and conventions followed by a series of drawings of simple architectural details. Emphasis on neatness, clarity and organization. Prerequisite: Arch. 110. Fee, \$1.00. Four hours laboratory a week. Credit, 2 hours.

161 *Architectural Working Drawings*. Drafting technique and drafting room practices stressed in drawing of architectural details of increasing complexity. Materials and methods of architectural construction studied concurrently through lectures and films. Prerequisite: Arch. 160. Fee, \$3.00. Four hours laboratory a week. Credit, 2 hours.

190 *Specifications and Estimating*. Preparation and interpretation of architectural specifications, quantity surveys and cost estimates. Prerequisite: Arch. 160. Fee, \$2.00. Credit, 2 hours.

220 *Architectural Design*. Problems involving a more detailed study of the fundamental relations of materials, equipment, and construction in architectural design. Prerequisite: Arch. 121. Fee, \$5.00. Twelve hours criticized work in studio. Credit, 5 hours.

221 *Architectural Design*. Continuation of Arch. 220. Prerequisite: Arch. 220. Fee, \$5.00. Twelve hours criticized work in studio. Credit, 5 hours.

222 *Advanced Architectural Design*. Problems in advanced architectural design including community planning. Prerequisite: Arch. 221. Fee, \$3.00. Six hours criticized work in studio. Credit, 3 hours.

223 *Advanced Architectural Design*. Continuation of Arch. 222. Prerequisite: Arch. 222. Fee, \$3.00. Six hours criticized work in studio. Credit, 3 hours.

240 *Theory of Architecture*. A study of the various building type in contemporary architecture, their histories and significance. Prerequisite: Arch. 141. Fee, \$2.00. Credit, 2 hours.

241 *Theory of Architecture*. A continuation of Arch. 240. Prerequisite: Arch. 240. Fee, \$2.00. Credit, 2 hours.

250 *Architectural Sketching and Rendering*. Techniques for design studies and presentation drawings in color. Prerequisite: Arch. 150. Fee, \$4.00. Six hours laboratory a week. Credit, 3 hours.

260 *Architectural Working Drawings*. Continuation of Arch. 161. Examinations of plans and specifications of work already executed and inspection of buildings under construction. Prerequisite: Arch. 161. Fee, \$3.00. Four hours criticized work in studio. Credit, 2 hours.

261 *Architectural Working Drawings*. Continuation of Arch. 260. Preparation of complete architectural working drawings for a simple building. Prerequisite: Arch. 260. Fee, \$3.00. Four hours criticized work in studio. Credit, 2 hours.

270 *Design and Planning in Wood*. Application of the principles of structural analysis studied in prerequisite courses to the design of

structural members of buildings in wood. Prerequisites: Math. 17, Arch. 112. Fee, \$2.00. Two lectures, 4 hours laboratory. Credit, 5 hours.

271 *Design and Planning in Steel.* Application of the principles of structural analysis studied in prerequisite courses to the design of structural members of buildings in steel. Prerequisite: Arch. 270. Fee, \$2.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

272 *Design and Planning in Concrete.* Application of the principles of structural analysis studied in prerequisite courses to the design of structural members of building in concrete. Prerequisite: Arch. 271. Fee, \$2.00. Two lectures, 4 hours laboratory. Credit, 3 hours.

Library Science

BACHELOR (Head of Department), MOFFIT.

Library Science

L.S. 201 *Libraries and Society.* A history of libraries, library agencies and services, with particular emphasis on the school library in the modern world and librarianship as a profession. Credit, 3 hours.

202 *Books and Publishing.* A survey of the materials and methods of writing and of publishers and publishing from early times to the present. Credit, 3 hours.

203 *Book Organization.* The principles and practices of the Dewey Decimal classification, cataloging techniques, subject headings, alphabetizing and filing. Fee, \$1.00. Nine hours laboratory. Credit, 3 hours.

204 *Book Services.* Principles and practices of the loan, reference and reading guidance services suitable for the public and school library. Fee, \$1.00. Credit, 3 hours.

205 *Library Book Selection.* Techniques and problems of selecting books for the school and public library. Attention given guides and aids, reading interests, publishers, dealers, etc. Fee, \$1.00. Credit, 2 hours.

206 *School Library Administration.* Organization and administration of the school library, its backgrounds, activities, functions, personnel, materials and equipment. Credit, 3 hours.

215g *Library Science Workshop.* An intensive study of selected school library problems, directed by the regular staff, and/or visiting specialists. Recommended for in service school librarians. Prerequisites: L.S. 203, 204, 205, 206, or a minor in Library Science. Credit, 3 hours.

223g *Advanced Book Organization.* Emphasis on problems in acquisition, recording and organizing of library materials in high school and community libraries. Prerequisite: L.S. 203. Fee, \$1.00. Two lectures 4 hours laboratory. Credit, 2 hours.

224g *Advanced Reference Service.* Emphasis on special high school and adult reference materials and techniques, bibliography, and government publications for curricular and extra-curricular enrichment. Prerequisite: L.S. 204. Fee, \$1.00. Credit, 2 hours.

225g *Reading and Communication.* Modern communication and its social and psychological effects through various media, considered in relation to the school library collections and services for youth. Prerequisite: L.S. 205. Fee, \$1.00. Credit, 2 hours.

226g *Current Library Problems.* Reading in professional library literature on unsolved problems and current issues of librarianship as related particularly to the school library. Prerequisite: L.S. 206. Credit, 2 hours.

251g *Library Materials for Children.* Introduction to the use of books and related materials available for children. Develops ability to select and integrate vital books and materials into the school curriculum and a free reading library program. Prerequisite: L.S. minor or instructor's approval. Fee, \$2.00. Credit, 3 hours.

252g *Library Materials for Adolescents.* Introduction to the use of books and related materials in youth libraries and in the secondary school program. Develops ability to select and integrate vital books and materials into the school curriculum and a free reading library program. Prerequisite: L.S. minor or instructor's approval. Fee, \$2.00. Credit, 3 hours.

Mathematics

WEAVER (Head of Department), FOUCH, LAON, OLENE ZACHER.*

Mathematics

Math. 105. *Basic Mathematics.* A survey of some of the fundamental concepts and simple applications of mathematics. Designed for students who do not intend to take more than one course in mathematics. Does not presuppose high school algebra or geometry. Each semester. Credit, 3 hours.

106 *Intermediate Algebra.* A first course in algebra for students with little or no recent high school mathematics. Credit, 3 hours.

107 *College Algebra.* Intensive review. Study of progressions, permutations and combinations, probability, determinants, theory of equations as time permits. Credit, 3 hours.

118 *Trigonometry.* Identities and equations, logarithms, solution of triangles. Credit, 3 hours.

119 *Algebra and Trigonometry.* Subject matter equivalent to both Math. 107, 118 in one semester. Capable students should take this course in place of Math. 106, 107, 118, if they intend to go on in mathematics. Credit, 4 hours.

120 *Analytic Geometry.* Coordinate systems, conic sections, general methods. Courses 119, 120 should be taken in the freshman year;

*Special Faculty

otherwise, elementary calculus is delayed until the junior year. Prerequisite: Math. 118 or 119. Credit, 4 hours.

122 *Calculus*. Differential and integral calculus, and more analytic geometry. Applications to physics. Prerequisite: Math. 120. Credit, 4 hours.

123 *Calculus*. Continuation, Math. 122. Prerequisite: Math. 122. Credit, 4 hours.

170 *Analytical Mechanics — Statics*. Study of vectors; forces in equilibrium. Prerequisites: Math. 107, 118 or equivalent. Credit, 3 hours.

205 *Arithmetic in the Elementary School*. Proficiency in arithmetic; study of teaching methods. Credit, 3 hours.

219 *Probability*. Algebra of choice, elementary theorems of probability, compound probabilities, probability distribution functions, expected values, law of large numbers. Prerequisite: Math. 123. Credit, 3 hours.

221 *Advanced Calculus*. Multiple integrals, partial differentiation and applications; line integrals; other topics as time allows. Prerequisite: Math 123. Credit, 4 hours.

222g *Advanced Calculus*. Continuation, Math. 221. Improper definite integrals; differential equations; complex variables; other topics as time allows. Prerequisite: Math 221. Credit, 4 hours.

223g *Symbolic Logic*. Main features of a logic adequate to modern mathematics and science. The basis in language. Notions which play a part in all systematic thinking. Prerequisite: Math., 8 hours, or Phil. 200, or Eng. 252. Credit, 3 hours.

226g *Statistics*. An introduction to the mathematical theory of statistics. Prerequisite: Math. 123. Credit, 3 hours.

241g *Theory of Functions*. Concepts of limits, continuity, derivatives, epsilon proofs. Introduction to the theory of functions of a complex variable. Prerequisite: Math. 222g. Credit, 3 hours.

242g *Theory of Functions*. Continuation, Math. 241g. Prerequisite: Math. 241g. Credit, 3 hours.

243g *Analytical Mechanics*. Vectors, forces in equilibrium, dynamics. Prerequisite: Math. 122. Credit, 3 hours.

244g *Analytical Mechanics*. Continuation, Math. 243g. Prerequisite: Math. 243g. Credit, 3 hours.

246g *Mathematics for the Secondary School Teacher*. Choice of topics from higher algebra, trigonometry, and geometry. Prerequisite: Ed. 228m. Credit, 3 hours.

255g *Theory of Numbers*. The properties of whole numbers. Prerequisite: Math. 107 or 119. Credit, 3 hours.

256g *Projective Geometry*. Analytic study of the projective properties of figures. Prerequisite: Math. 120. Credit, 3 hours.

257g *Introduction to Modern Algebra*. Study of the concepts of Modern Algebra, such as rings, fields, ideals, isomorphism, etc. Credit, 3 hours.

258g *Differential Geometry*. Curves and surfaces and their properties. Prerequisite: Math. 221. Credit, 3 hours.

310 *Seminar in Mathematics Education*. Curriculum studies in secondary school mathematics; topics and methods of instruction in "general mathematics," analytical geometry and calculus. Seven and one half hours of laboratory. Credit, 3 hours.

*Special Faculty.

Military Science and Tactics

LANGHAM (Head of Department), BERGERSON, GRIFFITHS, HERM, HITCHCOCK, KLOPPMANN, THOMSEN, WEBB, WESTBROOKE.

Military Science

MS. 101 *Basic Military Science (First Year)*. Organization of the Army, American military history, and school of the soldier. Two lectures, 2 drills per week. Credit, 1.5 hours.

102 *Basic Military Science (First Year)*. Individual weapons and marksmanship and school of the soldier. Two lectures, 2 drills per week. Credit, 1.5 hours.

103 *Basic Military Science (Second Year)*. Crew-served weapons and gunnery, and school of the soldier. Prerequisites: M.S. 101 and M.S. 102. Two lectures, 2 drills per week. Credit, 1.5 hours.

104 *Basic Military Science (Second Year)*. Map reading and school of the soldier. Prerequisites: M.S. 101 and M.S. 102. Two lectures, 2 drills per week. Credit, 1.5 hours.

201 *Advanced Military Science*. Small unit tactics and communications, and exercise of command. Prerequisite: Two year basic course or equivalent. Four lectures, 2 drills per week. Credit, 3 hours.

202 *Advanced Military Science*. Organization, function, and mission of the arms and services; military teaching methods; leadership; and exercise of command. Prerequisite: Two year basic course or equivalent. Four lectures, 2 drills per week. Credit, 3 hours.

203 *Advanced Military Science*. Logistics, operations, and exercise of command. Prerequisites: M.S. 201 and M.S. 202. Four lectures, 2 drills per week. Credit, 3 hours.

204 *Advanced Military Science*. Training management, military administration and personnel management, service orientation, and exercise of command. Prerequisites: M.S. 201 and M.S. 202. Four lectures, 2 drills per week. Credit, 3 hours.

Music

HARELSON (Head of the Department), AUTENRIETH, BARKLEY, BOWERS,
 BULLOCK, MILES DRESSKELL, NADINE DRESSKELL,
 HINES, HODGE, KEATING, QUAID, RICKEL, RIDER,
 SCOLAR, SCRAFFORD, SIMMONS,
 MARION SMITH.

Music

Mus 101, 102, 103, 104 *Major Band Instruments Private Instruction*. Prerequisites: courses taken in order listed. One or 2 lessons a week. Credit, 1 or 2 hours each.

101, 102, 103, 104 *Minor Band Instruments — Private Instruction*. Prerequisites: courses taken in order listed. One or 2 lessons a week. Credit, 1 or 2 hours each.

101, 102, 103, 104 *Piano Private Instruction*. Courses arranged to meet the needs of students. Public performance provided through afternoon recitals. Prerequisites: courses taken in order listed. One or 2 lessons a week. Credit, 1 or 2 hours each.

101, 102, 103, 104 *Organ Private Instruction*. Courses arranged to meet the needs of the students. Prerequisite: Piano 104 or equivalent. One or 2 lessons a week. Credit, 1 or 2 hours.

101, 102, 103, 104 *Violin — Private Instruction*. Work arranged to fit the needs of students. Prerequisites: courses taken in order listed. One or 2 lessons a week. Credit, 1 or 2 hours.

101, 102, 103, 104 *Violoncello Private Instruction*. Study of cello technique and of works of classical and modern composers to fit individual needs. Opportunity for public performance and for orchestra and ensemble playing. Prerequisites: courses taken in order listed. One or 2 lessons a week. Credit, 1 or 2 hours each.

101, 102, 103, 104 *Voice Private Instruction*. Development in technique of voice production in singing. Prerequisites: courses taken in order listed. One or 2 lessons a week. Credit, 1 or 2 hours each.

111 *Fundamentals of Music*. Elements of music with emphasis on notation, rhythm, major and minor scales, sight singing, and melodic writing. Credit, 2 hours.

112 *Sight Singing and Ear Training*. Music reading with attention to aural recognition and writing. Prerequisite: Mus. 111. Credit, 2 hours.

113 *Sight Singing*. Study of advanced materials in sight singing and ear training. Prerequisite: Mus. 112. Credit, 2 hours

115 *Harmony I*. Four part harmonic writing, root position and inversions. Prerequisite: Mus. 112. Credit, 2 hours.

116 *Harmony II*. Melody writing and simple composition. Prerequisite: Mus. 115. Credit, 2 hours.

- 117 *Music Appreciation*. To develop judgment and discrimination in listening to music. Phonographic recordings used. Open to music majors only, except by special permission of the instructor. Credit, 2 hours.
- 118 *Music Appreciation*. Continuation of Mus. 117. Prerequisite: Mus. 117. Open to music majors only, except by special permission of the instructor. Credit, 2 hours.
- 119 *Keyboard Harmony*. Melodic, harmonic, and rhythmic elements of music. Includes scales, intervals, triads, cadences, notation and dictation. Prerequisites: Mus. 101, 102 (piano), 111, 112. Credit, 2 hours.
- 120 *Keyboard Harmony*. Seventh chords, key relationship, modulation, and dictation. Prerequisite: Mus. 119. Credit, 2 hours.
- 121 *Class Piano*. For kindergarten-primary majors. Elements of keyboard technique and sight-reading of folk song material. Two lessons a week. Credit, 1 hour.
- 122 *Class Piano*. Sight-reading, improvisation, and kindergarten-primary rhythms. Prerequisite, Mus. 121. Two lessons a week. Credit, 1 hour.
- 123 *Class Piano*. For kindergarten-primary majors. Melody writing, improvisation, and chord accompaniments. Second year, first semester. Prerequisite: Mus. 122. Two lessons a week. Credit, 1 hour.
- 124 *Class Piano*. Songs, rhythms, and techniques necessary to fluency in performance. Prerequisite: Mus. 123. Credit, 1 hour.
- 125 *Music Fundamentals for Kindergarten and Elementary Teachers*. The first of three classes planned for students following the kindergarten-primary or the elementary curriculum. These three courses, Mus. 125, 126, and 227 or 229, should prepare students to teach music in their classrooms. Previous musical training not required. Credit, 2 hours.
- 126 *Music Fundamentals for Kindergarten and Elementary Teachers*. Continuation of Mus. 125. Prerequisite: Mus. 125. Credit, 2 hours.
- 127 *Class Voice*. The systematic development of the principles of good singing. Twice a week. Credit, 1 hour.
- 128 *Class Voice*. Continuation of Mus. 127. Prerequisite: Mus. 127. Credit, 1 hour.
- 130 *Introduction to Music*. The correlation of music with literature, science and art. Not required of those specializing in music. Credit, 2 hours.
- 131, 132, 133, 134 *Vocal Ensemble*. Includes madrigal group, quartets and trios. Prerequisites: courses taken in order listed. Twice a week. Credit, 1 hour each.
- 137 *Class Instrumental Instruction*. Strings, brass, reed and percussion instruments. Instrumental rental \$2.50 a semester. Five days a week. Credit, 1 hour.

138 *Class Instrumental Instruction*. Continuation of Mus. 137. Prerequisite: Mus. 137. Credit, 1 hour.

141, 142, 143, 144 *Instrumental Ensemble*. String, brass and woodwind, and piano ensembles. Prerequisite: courses taken in order listed. Twice a week. Credit, 1 hour each.

151, 152, 153, 154 *Choral Union*. Open to students with reasonable vocal ability. Superior singers selected from the Choral Union form the Concert Choir. Prerequisite: courses taken in order listed. Five days a week. Credit, 1 hour each.

161, 162, 163, 164 *Orchestra*. Study and performance of symphonic literature. Membership selective. Prerequisite: courses taken in order listed. Twice a week. Credit, 1 hour each.

171, 172, 173, 174 *Symphonic and Marching Band*. Staging of formations and drills for football games and other events. Emphasis on symphonic works written for bands. Membership selective. Prerequisites: courses taken in order listed. Three times a week. Credit, 1 hour each.

201, 202, 203, 204 *Major Band Instruments—Private Instruction*. Participation in public recitals required. Prerequisites: Mus. 104, and 201-204 in order listed. Two lessons a week. Credit, 2 hours each.

201, 202, 203, 204 *Piano—Private Instruction*. Participation in formal public recitals required. Prerequisites: Mus. 104, and 201-204 taken in order. One or 2 lessons a week. Credit, 1 or 2 hours each.

201, 202, 203, 204 *Organ—Private Instruction*. Participation in formal public recitals required. Prerequisites: Mus. 104 and 201-204 in order listed. One or 2 lessons a week. Credit, 1 or 2 hours.

201, 202, 203, 204 *Violin—Private Instruction*. Participation in formal public recitals required. Prerequisites: Mus. 104, and 201-204 taken in order. One or 2 lessons a week. Credit, 1 or 2 hours each.

201, 202, 203, 204 *Violoncello—Private Instruction*. Participation in formal public recitals required. Prerequisites: Mus. 104, and 201-204 taken in order listed. One or 2 lessons a week. Credit, 1 or 2 hours each.

201, 202, 203, 204 *Voice—Private Instruction*. Participation in formal public recitals required. Prerequisites: Mus. 104, and 201-204 taken in order. One or 2 lessons a week. Credit, 1 or 2 hours each.

215 *Harmony III*. Altered chords, modulation, form, and creative writing. Prerequisites: Mus. 115, 116. Credit, 2 hours.

216g *Modern Harmony*. The structure, analysis, and composition of the contemporary tonal systems including tone rows, polytonality, pandiatonicism, quartal harmony, and synthetic scales. Prerequisite: Mus. 215. Credit, 2 hours.

217 *Choral Conducting*. Elements of choral technique and interpretation. Required of vocal majors. Three times a week. Credit, 2 hours.

- 219 *Instrumentation and Conducting*. Required of instrumental majors. Credit, 2 hours.
- 225 *History of Music*. Survey of music from Grecian sources to the twentieth century. Prerequisite: Mus. 117, 118. Open to music majors only, except by special permission of the instructor. Credit, 2 hours.
- 226g *History of Music*. Continuation of Mus. 225. Prerequisite. Mus. 225. Open to music majors only, except by special permission of the instructor. Credit, 2 hours.
- 227 *Music in the Kindergarten and Primary Grades*. Materials and teaching methods for music in the kindergarten and first three grades. Prerequisites: Mus. 125 and 126 or their equivalent. Credit, 2 hours.
- 229 *Music in the Elementary School*. Materials and teaching methods for music in the first six grades. Prerequisites: Mus. 125 and 126 or their equivalent. Credit, 2 hours.
- 231, 232, 233, 234 *Vocal Ensemble*. Continuation of Mus. 131-134. Prerequisites: Mus. 134, and 231-234, taken in order. Twice a week. Credit, 1 hour each.
- 235 *Music Education*. For music majors. Surveys the entire field of music education on the national, state, and local scale. Includes philosophy, curriculum, materials, and teaching methods. Credit, 3 hours.
- 241, 242, 243, 244 *Instrumental Ensemble*. Continuation of Mus. 141-144. Prerequisites: Mus. 144, and 241-244 taken in order. Twice a week. Credit, 1 hour each.
- 245g *Band and Orchestra Methods*. Survey of wind, string, and percussion methods and materials used in the development of junior and senior high school bands and orchestras. Credit, 2 hours.
- 251, 252, 253, 254 *Concert Choir*. Continuation of Mus. 151-154. Public appearances include church, school, radio, and an annual spring tour. Five days a week. Credit, 1 hour each.
- 255g *Organization and Administration of High School Bands and Orchestras*. Organization problems, procedures and materials. Credit, 2 hours.
- 261, 262, 263, 264. *Orchestra*. Continuation of Mus. 161-164. Prerequisites: Mus. 164, and 261-264 taken in order. Twice a week. Credit, 1 hour each.
- 271, 272, 273, 274 *Symphonic Band*. Continuation of Mus. 171-174. Prerequisites: Mus. 174, and 271-274 taken in order. Three times a week. Credit, 1 hour each.
- 284g *Counterpoint*. Strict counterpoint in all species in two, three, and four or more parts. Creative writing on original cantata-fermi. Prerequisite: Mus. 215. Credit, 2 hours.
- 285g *Counterpoint*. A continuation of Mus. 284g. Combined forms; double and triple with free parts. Original compositions in the style

for organ or piano. Trios for piano and strings, woodwinds, or string quartet. Prerequisite: Mus. 284g. Credit, 2 hours.

287g *Choral Procedures and Techniques.* An analysis of choral-vocal problems chiefly at the secondary school level and a study of materials for the small choral ensembles and the large chorus. Prerequisite: Mus. 217 and senior standing in music. Credit, 2 hours.

288g *Composition.* Creative writing in the smaller forms including harmonic textures and use of contrapuntal devices. Prerequisites: Mus. 215, 284g. Credit, 2 hours.

289g *Composition.* A continuation of Mus. 288g. Concentrated creative writing for voice and instrumental works. To include solo and ensemble compositions. Prerequisite: Mus. 288g. Credit, 2 hours.

290g *Instrumentation.* The theoretical and practical study of orchestra and band instruments. Combining instruments for tonal effects, balance, color, etc. Scoring of suitable material for orchestra and band. Prerequisite: Mus. 215. Credit, 2 hours.

291g *Instrumentation.* A continuation of Mus. 290g. Advanced study and practice of scoring for symphony orchestra and concert band. Scores to be played by college orchestra and band. Class criticism of scores. Prerequisite: Mus. 290g. Credit, 2 hours.

292g *Form and Analysis.* Harmonic and structural analysis of musical forms. The study of simpler forms to and including the Sonata Allegro form. Prerequisite: Mus. 215. Credit, 2 hours.

293g *Form and Analysis.* A continuation of Mus. 292g. Includes the larger forms, such as symphonic and tone poems with free adaptations and combinations of all forms. Prerequisite: Mus. 292g. Credit, 2 hours.

294g *Advanced Composition.* Continued creative writing in the larger forms for chorus, orchestra, and band. Prerequisite: Mus. 289g. Credit, 2 hours.

295g *Advanced Composition.* A continuation of Mus. 294g. Concentrated writing in the larger forms, vocal and instrumental, making use of modern harmonic devices. Prerequisite: Mus. 294g. Credit, 2 hours.

303 *Modern Music.* An approach, through recorded music and discussion, to the works of composers of the twentieth century, beginning with Debussy, Strauss and Stravinsky, on through Schonberg and the French Six to the post World War I years of atonalism. Italian moderns, Ravel and French music of the periods between wars, American Music from Daniel Gregory Mason to Leonard Bernstein, modern Russian works, post War II French music, and the music of modern Mexico and South America. Prerequisite: Mus. 226g. Credit, 2 hours.

310 *Seminar in Music Education.* Discussion of specific teaching problems: assigned readings and reports. Study and performance of new materials in the field. Five lectures and 10 hours laboratory. Credit, 2 hours.

319 *Advanced Conducting*. The study and practice of advanced baton technique for band and orchestra. Score reading, mechanics of conducting, individual criticisms of style. Prerequisite: major in Music or Music Education. Credit, 2 hours.

321, 322, 323, 324 *Applied Music—Private Instruction*. For the student who has had the equivalent of four years training in his major performing field, voice or instruments. Prerequisite: Mus. 204 or equivalent. One or 2 lessons a week. Credit, 1 or 2 hours.

Physical Sciences

BATEMAN (Head of Department), DUANE BROWN, BURGOYNE, FUCHS, MILLER, MORTENSEN, RAWLS, RENNER, WAGER, YALE.

General Science

G.S. 100 *Introduction to the Physical Sciences*. Principles and facts in fields of physics, chemistry, meteorology, geology, and astronomy. Does not meet science requirements in pre-professional curriculums. Fee, \$1.00. Credit, 4 hours.

231 *Science for the Elementary School*. Development of an integrated science program in each grade of the elementary school. Lectures, library reports, class discussion, field observation and a three-day camping trip. Prerequisites: G.S. 100; 110. Fee, \$3.00. Credit, 3 hours.

310 *Seminar in Science Education*. Review and survey of current publications. Consideration and solution of problems dealing with the field. Credit, 2 hours.

Chemistry

Chem. 110.* *Introductory Chemistry*. The principles of general chemistry. Primarily for students in agriculture, home economics, nursing, biology and other non-chemistry majors. Students may take Chem. 180; or, with permission of instructor, Chem. 112 during the next semester. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

111* *General Chemistry*. Fundamental principles of chemistry. Prerequisite: high school algebra or algebra concurrently. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

112 *General Chemistry and Qualitative Analysis*. Continuation of Chem. 111. Qualitative separation and identification of common cations and anions. Prerequisite: Chem. 111 or equivalent. Fee, \$5.00. Three lectures, 2 recitations, 4 hours laboratory. Credit, 5 hours.

131 *Qualitative Analysis*. Principles and methods of separation of the common cations and anions. Prerequisite: Chem. 112. Fee, \$5.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

* In each of the following groups credit is allowed for one course only: Chem. 110, 111; Chem. 180, 211; Chem. 231, 251.

141 *Quantitative Analysis*. Fundamental principles of volumetric and gravimetric analysis. Prerequisites: Chem. 112 and algebra. Fee, \$6.00. Two lectures, 6 hours laboratory. Credit, 4 hours.

Chem. 142 *Quantitative Analysis*. Continuation of Chem. 141. Prerequisite: Chem. 141. Fee, \$6.00. Credit, 4 hours.

150 *Glass Blowing*. Laboratory techniques in glass blowing. Limited to science majors. Fee, \$3.00. Four hours laboratory. Credit, 1 hour.

180* *Elementary Organic Chemistry*. Survey of the compounds of carbon, including representative groups of aliphatic and aromatic series. For students of home economics, agriculture and biology. Prerequisite: Chem. 110 or 111. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

211* *General Organic Chemistry*. Chemistry of organic compounds. Prerequisite: Chem. 141. Fee, \$5.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

212 *General Organic Chemistry*. Continuation of Chem. 211. Prerequisite: Chem. 211. Fee, \$6.00. Credit, 4 hours.

215g *Qualitative Organic Analysis*. Systematic identification of organic compounds. Prerequisite: Chem. 212. Fee, \$6.00. One lecture, 6 hours laboratory. Credit, 3 hours.

231* *Elementary Physical Chemistry*. Properties of solids, liquids, gases, solution, equilibrium, colloidal state. For premedical, biology, agriculture, etc. students. Prerequisites: Chem. 141, 180 or 212. Fee, \$5.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

251g* *General Physical Chemistry*. Includes gases, liquids, solids, solutions, equilibrium, phase rule, electrochemistry, thermo-dynamics, atomic structure, radioactivity, and colloids. Prerequisites: Chem. 142, Phys. 112, Math. 123. Fee, \$5.00. Three lectures, 1 three-hour laboratory period. Credit, 4 hours.

252g *General Physical Chemistry*. Continuation of Chem. 251. Prerequisite: Chem. 251. Fee, \$5.00. Credit, 4 hours.

260g *Applied Chemistry*. Applications of chemistry to agriculture, mining, water, sanitation, and fuels. Prerequisites: Chem. 180 or 212. Credit, 3 hours.

271g *Instrumental Analysis*. Advanced analysis utilizing instruments in qualitative and quantitative determinations. Prerequisites: Chem. 142 and 212, Phys. 112. Fee, \$6.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

272g *Advanced Inorganic Chemistry*. Periodic relationships, preparation and applications of common elements and compounds. Prerequisite: Chem. 142. Credit, 3 hours.

* In each of the following groups credit is allowed for one course only: Chem. 110, 111; Chem. 180, 211; Chem. 231, 251.

273g *Advanced Inorganic Chemistry Laboratory*. Preparation of the less easily produced inorganic compounds. Prerequisite: Registration or credit in Chem. 272g. Fee, \$5.00. One lecture, 3 hours laboratory. Credit, 1-2 hours.

280g *Biochemistry*. Chemistry of animal and plant life including biological compounds, tissues, foods and digestion, enzymes, etc. Prerequisites: Zool. 172; Chem. 180 or 212. Three lectures. Credit, 3 hours.

281g *Biochemistry Laboratory*. Qualitative and quantitative chemistry of carbohydrates, fats, proteins, enzymes; milk, blood and urine analysis. Prerequisite: consent of instructor. Fee, \$6.00. Three to six hours laboratory. Credit, 1 2 hours.

Physics

Phys. 105 *Descriptive Astronomy*. A study of the solar system, planets, and stars from the observational and descriptive viewpoint. Fee, \$1.00. Credit, 2 hours.

110 *Introduction to Physics*. Survey of the fundamental principles of physics, presented with a minimum of mathematics, to give the student an understanding of the concepts of physics as applied to everyday life. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

111* *General Physics*. The fundamental principles of mechanics, heat, and sound presented with an emphasis on applications to medicine, dentistry, and other professional fields, except engineering. Prerequisites: Math. 106 or 107 and Math. 118. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

112 *General Physics*. The fundamental principles of magnetism, electricity, and light. Prerequisite: Phys. 111. Fee, \$4.00. Three lectures, 3 hours laboratory. Credit, 4 hours.

113 *Introductory Modern Physics*. Fundamental principles of spectroscopy, X rays, nuclear theory, cosmic rays, photoelectricity. Prerequisites: Phys. 112. Algebra and trigonometry. Credit, 3 hours.

121* *Engineering Physics*. The principles of mechanics, heat, and sound, presented from the engineering viewpoint. Prerequisite or corequisite: Math. 122. Fee, \$5.00. Four lectures, 3 hours laboratory. Credit, 5 hours.

122 *Engineering Physics*. The principles of electricity, magnetism, light, and modern developments presented from the engineering viewpoint. Prerequisite or corequisite: Phys. 121 and Math. 123. Fee, \$5.00. Four lectures, 3 hours laboratory. Credit, 5 hours.

200 *General Astronomy*. A study of the solar system, motions of the planets, eclipses, stars, galaxies, and an introduction to naviga-

* Credit is allowed for one course only in the following groups:
Phys. 111, 121.

tion and astrophysics. Prerequisite: Phys. 112. Fee, \$1.00. Credit, 3 hours.

210 *Photography*. A study of the principles and applications of photography from the viewpoint of physics and chemistry. Prerequisites: Phys. 112 and Chem. 110 or 111. Fee, \$5.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

215 *Electronics*. A study of the principles of electronics with applications to vacuum tube circuits. Prerequisites: Phys. 112; Math. 122. Credit, 3 hours.

219 *Advanced Mechanics*. A study of mechanics from the viewpoint of the Calculus. Prerequisites: Math. 123 and Phys. 112, or equivalent. Credit, 3 hours.

220 *Advanced Heat*. A study of the principles of heat energy with an introduction to thermodynamics. Prerequisites: Math. 123 and Phys. 112, or equivalent. Credit, 3 hours.

221 *Advanced Electricity and Magnetism—D.C.* A study of electrostatics, magnetostatics, and direct current electrical phenomena. Prerequisites: Math. 123 and Phys. 112, or equivalent. Credit, 3 hours.

222g *Advanced Electricity and Magnetism A.C.* Study of alternating current theory with an introduction to wave propagation. Prerequisite: Phys. 221. Credit, 3 hours.

231g *Advanced Light and Optics*. A study of geometrical and physical optics with an introduction to spectroscopy. Prerequisites: Math. 123 and Phys. 112, or equivalent. Credit, 3 hours.

232g *Kinetic Theory of Gases*. A study of the classical theories of Maxwell-Boltzmann with an introduction to the recent theories of Fermi-Dirac and Bose-Einstein. Prerequisites: Math. 123 and Phys. 112, or equivalent. Credit, 3 hours.

241g *Atomic Physics*. A study of extra-nuclear phenomena from an advanced viewpoint. Prerequisites: Math. 123 and Phys. 112, or equivalent. Credit, 3 hours.

242g *Nuclear Physics*. Study of intra-nuclear phenomena from an advanced viewpoint. Prerequisites: Math. 123 and Phys. 113 or 241. Credit, 3 hours.

251g *Advanced Physical Measurements*. Advanced experimental measurements in the fields of classical and modern physics. Prerequisites: Phys. 112 or equivalent, and consent of instructor. Fee, \$5.00, per credit hour. Three to 9 hours laboratory. Credit, 1 to 3 hours. (Course may be repeated for credit.)

Geology

Geol. 151 *Physical Geology*. Earth changes due to temperature, wind, water, ice, volcanoes, earthquakes, etc. Fee, \$2.00. Three lectures, 3 hours laboratory a week, a minimum of 18 hours field work a semester. Credit, 4 hours.

152 *Historical Geology*. Origin and chronological succession of events that have developed our earth and its life. Fee, \$2.00. Three lectures, 3 hours laboratory a week, a minimum of 18 hours field work a semester. Credit, 4 hours.

211 *Mineralogy*. Mineral structure and identification based on crystal forms, physical properties and chemical composition. Prerequisites: Chem. 112 or 114; Geol. 152. Fee, \$3.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

212 *Mineralogy*. Continuation of Geol. 211. Prerequisite: Geol. 211. Fee, \$3.00. Credit, 3 hours.

215 *Economic Geology*. Distribution, origin, occurrence, production and utilization of metallic and nonmetallic minerals. Fee, \$2.00. Credit, 3 hours.

220 *Structural Geology*. Study of rock structures, the principles and mechanics of their formation, and their relation to surface features and mineral deposits. Prerequisites: Geol. 151 and 152. Fee, \$1.00. Credit, 3 hours.

225 *Sedimentary Stratigraphy*. Origin of sedimentary rocks and their significance in determining geologic history. Prerequisites: Geol. 151 and 152. Fee, \$1.00. Credit, 2 hours.

Geography

Geog. 100 *Elements of Geography*. Climate, relief, drainage, soils, plant and animal life; their inter relationship and influence upon man. Fee, 50 cents. Credit, 3 hours.

101 *Economic Geography*. Production, distribution, and consumption of various types of commodities of the world and relationships to the activities of man. Fee, 50 cents. Credit, 3 hours.

105 *Meteorology*. Weather elements, meteorological instruments, weather maps, forecasting and their relation to activities of man. Prerequisite: Geog. 100. Fee, \$1.00. Credit, 3 hours.

120 *Map Making and Interpretation*. Develops skill in map making and interpretation. Fee, \$1.00. One lecture, 3 hours laboratory. Credit, 2 hours.

125 *Geomorphology*. Development and interpretation of the relief features of the earth. Prerequisite: Geog. 100 or 101. Fee, \$1.00. Credit, 2 hours.

200 *Geography of North America*. Physiographic provinces of the continent with their respective climates, products, and major activities of man. Prerequisite: Geog. 100 or 101. Fee, \$1.00. Credit, 3 hours.

206 *Geography of Arizona*. Landscape features, climate, soils, minerals, water resources, plant and animal life, and industries and influence on man's activities. Prerequisite: Geog. 100 or 101. Fee, \$1.00. Credit, 2 hours.

209 *Geography of South America*. Physiographic regions, their climates, products, and human activities. Prerequisites: Geog. 100 or 101. Fee, \$1.00. Credit, 3 hours.

- 210 *Geography of the Caribbean America.* A topical and regional study of the lands bordering the Caribbean, with a view to creating a basis for an understanding of the problems of the people as they are related to their own environment, to the rest of the world, and particularly to the United States. Prerequisite: Geog. 100 or 101. Fee, \$1.00. Credit, 2 hours.
- 211 *Geography of Europe.* Natural regions of Europe, their climates, relief features, drainage, soils, plants, and animals and their influence upon man's activities. Prerequisite: Geog. 100 or 101. Fee, \$1.00. Credit, 3 hours.
- 215 *Geography of Asia.* Physical and cultural landscapes of the continent. Emphasis on U. S. S. R., its industries, resources and world relationships. Prerequisite: Geog. 100 or 101. Fee, \$1.00. Credit, 3 hours.
- 221 *Geography of Africa, Australia, and Oceania.* Climates, vegetation, surface features, resources, and peoples, and their role in the modern world. Short discussion of Antarctica included. Prerequisite: Geog. 100 or 101. Fee, \$1.00. Credit, 3 hours.
- 230 *Climatology.* Principles of climate; attention to climatic regions and climate cycles. Prerequisites: Geog. 100, 105. Fee, \$1.00. Credit, 3 hours.
- 250 *Conservation of Natural Resources.* Distribution, conservation, and most efficient use of natural resources of the United States, including soil, water, minerals, wild life, and recreational facilities. Prerequisites: Geog. 100 or 101. Fee, \$1.00. Credit, 3 hours.
- 254g *Geography of Trade and Transportation.* Geographic analysis of the world's trade routes by land, sea and air. Prerequisites: Geog. 100, 101. Fee, \$1.00. Credit, 3 hours.
- 270g *World Geography.* Evolution or modification of cultures and economics influenced by natural environment. Prerequisites: Geog. 100 or 101. Fee, \$1.00. Credit, 3 hours.
- 275g *Political Geography.* Geographic factors influencing the development and growth of national states and their relationships with each other. Prerequisites: Geog. 100 or 101, or Hist. 101 and 102, or P.S. 101. Fee, \$1.00. Credit, 3 hours.
- 289g *Geography of World Problems.* The study of world problems as a product of their geographic setting and the effects of man in changing his environment. Prerequisite: Geog. 100 or 101. Fee, \$1.00. Credit, 3 hours.

Medical Technology

The following courses are offered in the laboratories at St Joseph's, Good Samaritan, and Memorial Hospitals in Phoenix and are open only to seniors taking the Medical Technology curriculum. See page 110.

- Med. Tech. 225 *Pathogenic Bacteriology*. Disease-producing bacteria studied by special stains, culturing and animal inoculation. Credit, 4 hours.
- 240 *Biological Laboratory Technique*. Examinations of stained smears for identification of bacteria, sputum examinations, etc. Credit, 4 hours.
- 250 *Histology*. Structure of tissues and organs. Preparation of stained sections. Credit, 4 hours.
- 265 *Serology*. Serological and immunological procedures. Complement fixation and precipitation tests for diagnosis of syphilis. Credit, 2 hours.
- 271 *Parasitology*. Parasites of intestines and blood. Recognition of ova, the life cycle of parasites and mode of transmission. Credit, 2 hours.
- 273 *Hematology*. Normal and abnormal blood cells, and alteration of the formed elements, etc. Credit, 4 hours.
- 282 *Biochemistry*. Chemistry of animal life, biological compounds, etc. Credit, 4 hours.
- 284 *Blood Chemistry*. Examination for pathological compounds, abnormal chemical changes, abnormal substances, etc. Credit, 4 hours.
- 286 *Chemical Examination of the Urine*. Changes in chemical composition of the urine and abnormal values of usual constituents. Credit, 2 hours.
- 288 *Chemistry of Digestion*. Chemical examinations of the gastric and duodenal contents, bile, and feces. Credit, 2 hours.

Psychology

SKINNER (Head of the Department), BALL, BOLLING, FRED CRAWFORD, GRIMES, GURNEE, SYDNEY SMITH, YOUNG.

Psychology

- Psych. 100 *Elementary Psychology*. Considers basic principles of psychology and such activities as emotions, motives, thinking, observing, learning, and intelligence. Fee, 50 cents. Credit, 3 hours.
- 101 *Survey of Psychological Fields*. A course to acquaint the students with the chief characteristics of several fields of psychology, such as social psychology, clinical psychology, child psychology, animal psychology, etc. Attention is given to the experimental findings in the various subject fields and to the psychologist's role in shaping modern thinking. Prerequisite: Psych. 100. Credit, 3 hours.
- 114 *Applied Psychology*. Application of psychological principles in business, industry, medicine, law and personnel. Prerequisite: Psych. 100. Credit, 3 hours.
- 140 *Human Growth and Development*. Hereditary and prenatal factors in development. Physical, language, motor, and mental development of the child from birth to adulthood. Observation and exper-

ience with children required. Designed especially for the needs of the teacher or others who work with children. Prerequisites: Soc. 120; Psych. 100. Fee, 50 cents. Credit, 2 hours.

141 *Human Growth and Development.* Continuation of Psych. 140. Emotional and social development, play, home and school adjustment of the child from birth to adulthood. Observation and experience with children required. Prerequisites: Soc. 120; Psych. 100, 140. Fee, 50 cents. Credit, 2 hours.

200g *Educational Measurements.* Evaluation and measurement of the individual in school and other experiences. Analysis and construction of tests; meanings of scores; diagnosis of individual strengths and weaknesses; remedies suggested for the individual having difficulty. An appreciation of the need for adequate measurement before evaluation. Prerequisite: Psych. 213. Fee, 50 cents. Credit, 3 hours.

211g *Statistical Methods.* Interpretation and application of statistics as employed in education and psychology. Assembling and analysis of data. Measures of central tendency, variability, reliability, and simple correlation. Prerequisite: 12 hours in psychology. Credit, 3 hours.

213 *Educational Psychology.* An analysis and application of psychological facts and laws particularly relevant to the problems of education. Prerequisite: Psych. 100. Credit, 3 hours.

214 *Business Psychology.* A review of the principles of employment testing and personnel selection; analysis of the psychological problems relating to advertising, selling, and business practices. Prerequisite: Psych. 100. Credit, 3 hours.

215 *Mental Hygiene.* Factors necessary for good mental health; basic needs of the individual; prevention of mental disorders and correction of personality disorders in their early stages. Prerequisite: Psych. 100. Credit, 2 hours.

220g *Individual Mental Testing.* A study of the Stanford-Binet and other scales, and of performance tests. Practice in giving these tests. Prerequisites: Psych. 100, 200, 213, 224. Fee, \$1.00. Two lectures, 2 hours laboratory. Credit, 3 hours.

224 *Clinical Psychology.* Survey of clinical work on diagnosis and adjustment of problem children. Educational and other adjustment problems are diagnosed and remedial measures suggested. Prerequisite: Psych. 141. Credit, 3 hours.

225 *Social Psychology.* The behavior of man in his social relations. Problems of crowd behavior, social control, propaganda, suggestion, imitation, competition, cooperation, and leadership. Prerequisites: Psych. 100 and Soc. 120. Credit, 3 hours.

226g *Behavior Problems and Juvenile Delinquency.* A review of investigations on behavior problems and delinquency; factors contributing to delinquency; prevention and correction; case studies. Prerequisite: 3 courses in psychology. Credit, 2 hours.

227 *Adjustments in Marriage.* Techniques for happy marriage; compatibility factors; understanding the opposite sex; reconciling common maladjustments; divorce problems; understanding the child; making marriage work. Prerequisites: Psych. 100 or Soc. 120. Fee, \$.50. Credit, 3 hours

228g *Psychology of Reading.* A survey of the recent psychological literature in reading. Special emphasis on psychological problems in reading, therapy, diagnosis and reading readiness at all levels. Prerequisites: Psych. 100, 140, 141, 213. Fee, \$1.00. Credit, 2 hours.

230g *Abnormal Psychology.* Prevention, symptoms and treatment of mental deficiency and insanity. Prerequisites: twelve hours in psychology. Credit, 3 hours.

231 *Psychology of Adolescence.* Methods and findings of recent studies of the development, growth and problems of the adolescent, with implications for education. Prerequisites: Psych. 141 or 213. Credit, 2 hours.

234 *Child Psychology.* Development, growth and psychological activities of the child. Problems of adjustment and child training. Survey of experimental and observational studies. Prerequisite: Psych. 100. Credit, 3 hours.

236g *Directed Experiences with Infants and Young People.* A study of the methods in evaluating the development of infants and young children, directed experiences, and special studies adapted to the needs of the student. Prerequisites: Psych. 140-141, or 234, 220. Credit, 3 hours.

237g *Experimental Psychology.* A survey of typical experiments in psychology including reaction time, perception, learning and problem solving. Emphasis on methods of experimentation. Demonstrations. Prerequisite: 16 hours in psychology or equivalent. Fee, \$1.00. Credit, 3 hours.

239g *Psychology of Motivation and Emotions.* An analysis of underlying motives and emotions functioning in human development. Emphasis is placed on applications to educational and clinical psychology. Prerequisite: Psych. 224. Credit, 2 hours.

240 *Psychology of Personality.* The elements of personality, and the conditions which determine the pattern and the direction of its growth. Methods of judging personality and character. Prerequisite: at least 3 courses in psychology. Credit, 3 hours.

242g *Recent Problems in Psychology.* Seminar based on readings and discussions of contemporary problems in psychology. Prerequisite: 12 hours in psychology. Credit, 2 hours.

244 *History of Psychology.* Major problems and trends of modern psychology traced from their beginnings to the present including the development of the modern scientific approach. Prerequisite: 12 hours in psychology. Credit, 3 hours.

- 245g *Psychology of Religion*. Problems and experiences in the field of religion. Methods and techniques for gathering and evaluating data. Prerequisites: at least 3 courses in psychology. Credit, 3 hours.
- 250g *Clinical Techniques*. Principles and techniques of clinical diagnosis including therapy, counseling, interviewing, projective techniques, and diagnostic tests. Prerequisite: Psych. 224. Credit, 3 hours.
- 260g *Directed Observation and Experience*. Supervised observation and experience in work of a psychological nature; observation and experience in either a school, State or County institution according to the interests, needs, and abilities of the student. Prerequisites: A major in Psychology and the completion of 80 semester hours, or a graduate student. (Enrollment by permission only.) Credit, 3 hours.
- 261g *Directed Observation and Experience*. Continuation of Psych. 260g (Enrollment by permission only). Credit, 3 hours.
- 280g *Advanced Psychological Clinic*. Laboratory practice in psychological testing and diagnosis. Intelligence, personality, interest and vocational testing and advisement. Prerequisites: Psych. 220, 224. Fee, \$1.00. Credit, 2 hours.
- 282g *Reading Clinic*. Laboratory practice in administration, interpretation and application of diagnostic tests and remedial procedures in reading on elementary and secondary school levels. Prerequisites: Psych. 200, 213, 224 or permission. Fee, \$1.00. Credit, 2 hours.
- 308 *Advanced Educational Psychology*. Review of scientific publications on the facts, laws, and theories of learning, with reference to problems of education. Prerequisites: Psych. 200, 213. Credit, 2 hours.
- 313 *Recent Studies in Educational Psychology*. Survey of the latest experimental reports relevant to current problems of teaching. Prerequisites: Psych. 200, 213. Credit, 2 hours.
- 314 *Learning and Problem Solving*. A survey of facts, principles, and theories of learning with emphasis on recent findings. Various practical applications will be discussed. Credit, 3 hours.
- 315 *Theory and Function of Test Construction*. Extensive treatment of the theory and functions of measurement in education and psychology and techniques of test construction. Prerequisites: Psych. 200, 211g, 213. Credit, 3 hours.
- 320 *Individual Differences*. The nature and extent of psychological differences among individuals and groups, and their significance for curriculums and educational methods. Prerequisites: Psych. 200, 213. Credit, 2 hours.
- 322 *Psychology and Education of Exceptional Children*. Psychological principles essential for the understanding and education of exceptional children. Credit, 2 hours.
- 333 *Personnel Techniques and Problems*. Application of psychological principles to student, business and industrial personnel problems. Prerequisite: at least eight hours in psychology. Credit, 2 hours.

334 *Psychology of Interviewing*. Survey of interviewing principles applied to counseling, therapy, informational interviewing, employment techniques, and public opinion surveys. Actual practice provided. Prerequisite: At least 5 hours in clinical sequence. Credit, 2 hours.

335 *Aptitudes and Aptitude Tests*. The theory of aptitudes, types of aptitude tests, and use of aptitude tests in the guidance program. Prerequisite: Psych. 200. Credit, 2 hours.

350 *Theory and Practice of Clinical Counseling*. A survey of the major theories and techniques underlying psychotherapy including psychoanalysis, directive therapy, non directive therapy, group therapy, play therapy, psychodrama, etc., together with their possible application to the school situation. Credit, 2 hours.

Philosophy

Phil. 150 *Logic*. Principles and methods of correct thinking. Examples of logical fallacies and ways of detecting them. Credit, 3 hours.

200 *Introduction to Philosophy*. Fundamental issues and contributions in philosophy. The development of philosophical thought from the late medieval to modern times. Open to upperclassmen *only*. Prerequisites: Psych. 100; Soc. 120. Credit, 3 hours.

202 *Principles of Ethics*. The meaning of right and wrong, the development of moral understanding, the ethical foundations of personal and social relations. Prerequisites: Psych. 100; Philos. 200. Credit, 3 hours.

203 *Readings in Ancient Philosophy*. Readings in the philosophical classics of ancient Greece and Rome with special emphasis upon the works of Plato and Aristotle. Prerequisite: Phil. 200. Credit, 2 hours.

204 *Recent and Contemporary Developments in Philosophy*. Emphasis upon the contributions of James, Dewey, Bergson, and Whitehead. Prerequisite: Phil. 200. Credit, 2 hours.

205g *Social Philosophy*. Consideration of important contributions to social thinking, with particular reference to the ideological conflicts of modern times. Prerequisites: Phil. 200 and Soc. 120. Credit, 3 hours.

Social Studies

WYLLYS (Head of the Department), BURKHARD, HUBBARD, KRENKEL, LINDSTROM, MOORE, ROSS RICE, STEWART, TILDEN, BERNADETE TURNER, VAN PETTEN.

General Social Studies

S. S. 100. *Introduction to the Social Studies*. Includes introductory material on history, economics, sociology, anthropology, political science. Not open to third and fourth year students. Five times a week. Credit, 5 hours.

History

- Hist. 101 *Survey of Western Civilization, I.* Origins of western civilization and its development through medieval times. Credit, 3 hours.
- 102 *Survey of Western Civilization, II.* Continuation of Hist. 101 through Renaissance and modern times. Credit, 3 hours.
- 103 *United States Through the Civil War.* From 1783 through Civil War. Credit, 3 hours.
- 104 *United States Since the Civil War.* Continuation of Hist. 103 to the present period. Emphasis on economic and cultural growth. Credit, 3 hours.
- 105 *History of England to 1603.* A survey of the political, economic, and social development of the British people from the earliest times to end of the Tudor period. Credit, 3 hours.
- 106 *History of England Since 1603.* Political, economic and social development of England and the British Empire from 1603 to the present. Credit, 3 hours.
- 107 *Ancient Orient and Greece.* Western ancient history through the Hellenistic period. Credit, 3 hours.
- 108 *History of Rome.* Roman period from the origin of Rome to the downfall of the Roman Empire. Credit, 3 hours.
- 109 *Economic History of the United States.* The development of American economic institutions, with attention given to their early background in Europe. Credit, 3 hours.
- 110 *The Growth of American Institutions.* This course is introductory to the subject of American History. Credit, 3 hours.
- 111 *The Southwest to 1865.* Survey of southwestern history before Civil War times. Credit, 3 hours.
- 112 *The Southwest Since 1865.* Development of southwestern states, people and economic life since Civil War. Credit, 3 hours.
- 114 *Colonization of North America.* Colonial era of American history, both Spanish and English, with some consideration of French and other colonial peoples to 1783. Credit, 3 hours.
- 115 *Colonial Hispanic America.* Period of exploration, conquest and colony development among Latin American peoples to 1830. Credit, 3 hours.
- 116 *Independent Hispanic America.* Nationalistic growth of the peoples of Latin America since the winning of independence. Credit, 3 hours.
- 200 *The Middle Ages.* The development of Western Europe from the fall of Rome to the Renaissance with particular emphasis on the social and cultural development. Prerequisites: Hist. 101-102 or equivalent. Credit, 2 hours.

- 201g *History of the British Empire*. The growth and development of the British Empire with particular stress on the commercial, economic, and governmental aspects of the empire. Prerequisites: Hist. 101 102 or Hist. 105-106. Credit, 2 hours.
- 202g *The Far East*. Early and modern history of China, Central Asia, Japan, Malaysia and India. Prerequisites: Hist. 101, 102. Credit, 2 hours.
- 203g *American Foreign Relations*. The machinery of American diplomacy and development of American foreign policy. Prerequisites: Hist. 103, 104. Credit, 3 hours.
- 204 *American Frontier*. Territorial expansion and settlement of the American people since colonial times. Prerequisites: Hist. 103, 104. Credit, 2 hours.
- 205g *French Revolution and Napoleon*. Period of world revolution and imperialist wars, 1763-1815. Prerequisites: Hist. 101, 102. Credit, 2 hours.
- 206g *Contemporary Europe*. European history since the First World War. Prerequisites: Hist. 101, 102. Credit, 2 hours.
- 207g *History of Mexico*. The formation, culture and social life of the Mexican people since colonial times. A knowledge of Spanish is desirable but not essential. Prerequisites: Hist. 103, 104. Credit, 3 hours.
- 208g *American Cultural History*. The development to 1860 of American ideas, ideals, literary expressions and social standards. Prerequisites: Hist. 103, 104. Credit, 2 hours.
- 209g *American Cultural History Since 1860*. A continuation of Hist. 208g, dealing with American culture since the middle nineteenth century. Prerequisites: Hist. 103, 104. Credit, 2 hours.
- 210g *Renaissance and Reformation*. Antecedents and development of the Renaissance in Italy, its spread into the rest of Europe, and the resultant revolution in religious and political thought. Prerequisites: Hist. 101, 102. Credit, 2 hours.
- 211g *Nineteenth-Century Europe*. Growth of nationalism in nineteenth-century Europe, with emphasis upon economic, political and social trends. Prerequisites: Hist. 101, 102. Credit, 2 hours.
- 212g *The Pacific Area*. History of the countries surrounding and controlling the Pacific. Emphasis upon cultural backgrounds. Prerequisites: Hist. 101, 102. Credit, 2 hours.
- 214g *History of Russia and Eastern Europe*. A general survey of Eastern European and Russian history from ancient times to the present day. Prerequisites: Hist. 101, 102 or equivalent. Credit, 2 hours.
- 215g *Great Personalities in American History*. Considers the contributions of noted Americans in the scientific, cultural, philosophical, economic, and political development of the United States. Prerequisites: Hist. 103, 104. Credit, 3 hours.

216g *American Biography Since 1860*. Considers the contributions of noted Americans in the scientific, cultural, philosophical, economic, and political development of the United States since 1860. Prerequisites: Hist. 103, 104. Credit, 3 hours.

217g *Constitutional History of the United States*. The origin and development of the Constitution of the United States with special emphasis on how it has been interpreted by the courts. Prerequisites: Hist. 103, 104. Credit, 3 hours.

219 *Recent American History*. Covers the important developments in American history since the First World War. Prerequisite: Hist. 104. Credit, 2 hours.

220 *Historical Literature*. Deals comparatively with the works and ideas of leading historians. Open to seniors only. Prerequisites: Previous completion of at least six hours in upper division courses in history. Required of all majors in history. Credit, 2 hours.

223g *British Constitutional History*. Traces the historical development of the constitutional system of Great Britain from the Middle Ages to the present with particular emphasis on the growth of democracy. Prerequisites: Hist. 101, 102 or Hist. 105, 106. Credit, 2 hours.

300 *Seminar in History*. Individual research work covering any field of history. Offered when demand is sufficient. Credit, 2 hours.

301 *Contemporary United States*. American political, social and economic history since 1900. Offered when demand is sufficient. Credit, 2 hours.

302 *Historiography and Historical Philosophy*. Studies in historical method and theories of history. Offered when demand is sufficient. Credit, 2 hours.

Political Science

P. S. 101 *Introduction to Political Science*. Principles of government and theories of law and the state. Credit, 3 hours.

102 *American Government: State and Local*. Workings of the typical American State government, its principles of administration and the conduct of country and local governments. Credit, 3 hours.

103 *Municipal Government*. Structure, methods and principles of American city governments and their administration. Credit, 3 hours.

104 *American Political Parties*. History of leading political parties and principles of famous party leaders. Credit, 3 hours.

105 *American Government: Federal*. Principles and practice of our federal government in its policy-making, administrative, and judicial aspects. Cannot be substituted for P.S. 200. Credit, 3 hours.

106 *History of Political Thought*. Political philosophers and their theories from Plato and Aristotle to modern times. Credit, 3 hours.

200 *Constitutional Government*. National and Arizona government. Meets requirements for certification. Credit, 3 hours.

201 *Comparative National Governments*. Background of present-day typical governments, with consideration of the principles underlying each. Prerequisite: P.S. 101. Credit, 2 hours.

203 *Public Administration*. Practices and principles of government administration, chiefly in the United States. Prerequisites: P.S. 101, 102. Credit, 3 hours.

204g *International Law and Relations*. Principles and practices of national governments under the laws and customs of war and peace. Prerequisite: P.S. 101. Credit, 2 hours.

206g *Contemporary Political Thought*. Political ideas and philosophy from the French Revolution to the present. Prerequisite: P.S. 101. Credit, 2 hours.

207 *Government and the American Economy*. Relationships of business and industry, agriculture, and labor to American government. Prerequisite: P.S. 105 or equivalent. Credit, 2 hours.

208g *Political Opinion and Propaganda*. Analysis of informal and organized influences and pressures upon our political institutions. Credit, 2 hours.

209g *Contemporary Political Leaders*. Consideration of the social status, techniques, and personality traits of selected world political figures of today. Credit, 2 hours.

300 *Seminar in Political Science*. Individual research work in any field of political science. Offered when demand is sufficient. Credit, 2 hours.

301 *Seminar in Public Administration*. Individual investigation of current problems in the activities of selected government agencies. Prerequisite: P.S. 107. Credit, 2 hours.

Sociology

Soc. 120 *Sociology*. Study of human relationships, human wants, and social institutions. Aims to discover foundations basic to a stable and progressive civilization. Credit, 3 hours.

203 *Marriage and the Family*. The family is interpreted as a basic social institution. The development of the family from an economic unit to a companionship is related to cultural factors. Emphasis is placed upon socialization of the individual and his adjustment to the social order as major functions of the family. Prerequisite: Soc. 120. Credit, 3 hours.

204 *Urban Sociology*. A study of contemporary city life and its effect on the individual personality and on the social organization. Rural-urban conflicts of culture. Prerequisite: Soc. 120. Credit, 3 hours.

205 *History of Social Welfare.* Methods of helping the poor from ancient times to the present. Systems of relief in Europe, England, and the United States. Credit, 3 hours.

212 *Introduction to Social Work.* Class discussion and field trips to help students with their relationships with others. Study of social agencies and their approach to human problems. Credit, 3 hours.

215 *Community Organization.* A study of the methods by which a coordinated social agency functions in the community and utilization of community resources. Credit, 3 hours.

220g *Principles of Criminology.* Causation of crime; juvenile delinquency; apprehending, convicting, and sentencing of criminals; probation and parole; penology. Prerequisite: Soc. 120. Credit, 3 hours.

225 *Modern Social Problems.* Current problems of race relations, poverty and unemployment, mental disease, mental deficiency, etc. Prerequisite: Soc. 120. Credit, 3 hours.

Anthropology

Anthro. 125 *Elementary Anthropology.* Primitive society, religion, material culture, the origin and antiquity of man and civilization, modern races, the linguistic phases of culture, and the principles of anthropology. Credit, 3 hours.

126 *Indians of the Southwest.* Culture of living Indian tribes—Navajo, Hopi, Pima, Papago, etc. Southwestern archaeology. Social problems of the Southwestern Indians. Credit, 3 hours.

127 *Indians of Mexico and Peru.* Archaeology and ethnology of the Mayas, Aztecs, Chibchas, Incas. Present day tribes of Middle America. Social problems of Mexican and Peruvian Indians. Prerequisite: Anthro. 125 or Soc. 120. Credit, 3 hours.

201 *Physical Anthropology.* Fossil men, race classification and distribution, racial history and race problems, man's place in the animal kingdom, human heredity. Prerequisite: Anthro. 125 or Soc. 120. Credit, 2 hours.

206g *Social Anthropology.* Social organization, social institutions, and cultural diffusion; acculturation, culture and personality, the community study, selected primitive cultures. Prerequisite: Soc. 120 or Anthro. 125. Credit, 3 hours.

207g *The American Indian.* Archaeology, ethnology, and linguistic relations of the Indians of North and South America. Current social and economic problems of the Indians. Prerequisite: Soc. 120. Credit, 3 hours.

208g *Archaeological Fields Methods.* The excavation of archaeological sites and the recording and interpretation of data. Includes field experience in this locality. Fee, \$3.00. Two lectures, 3 hours laboratory. Credit, 3 hours.

209g *American Minority Peoples.* Problems of racial, national and religious minorities in the United States. Prejudice, acculturation and assimilation. Prerequisite: Soc. 120. Credit, 3 hours.

Statistics

Summary of Registration 1952-53

COLLEGE

Resident Students — Regular Sessions

	Freshmen	Sophomores	Juniors	Seniors	Graduates	Unclass.	Total	
Men	1067	513	457	456	393	2	2888	
Women	622	298	264	204	246	1	1635	
	1689	811	721	660	639	3	4523	4523

Extension Division

Residence Center Students—Regular Session

Men	397
Women	585
Total	982

Correspondence

Men	53
Women	93
Total	146

Summer Session 1952

Men	1074
Women	884
Total	1958

Total Registration in College

Men	4412
Women	3197
Total	7609

Counted More Than Once

Men	729
Women	493
Total	1222

Net Enrollment

Men	3683
Women	2704
Total	6387

Training Schools

Boys	417
Girls	398
Total	815

GRAND TOTAL7202

Summary of Graduates 1952-53

Total Graduates Through May, 1952.....	9967
One, Two, and Three Year Diplomas: (Discontinued Commencement 1936).....	3522
Earned Degrees:	
Bachelors	
Bachelor of Arts	190
Bachelor of Science.....	1248
Bachelor of Arts in Education.....	4378
Total	5816
Masters	
Master of Arts in Education.....	626
Total	626
Total Through May, 1951.....	6442
Honorary Degrees:	
Master of Arts in Education.....	2
Doctor of Laws.....	1
Total	3
Total Degrees Granted Through May 20, 1952.....	6445
Earned Degrees Granted May 26, 1953	
Bachelors	
Bachelor of Arts.....	39
Bachelor of Science.....	303
Bachelor of Arts in Education.....	337
Total	679
Masters	
Master of Arts in Education.....	143
Total	143
Honorary Degrees	
Doctor of Laws.....	2
Total May, 1953.....	824
Total Graduates Through May, 1952.....	9967
One, Two, and Three Year Diplomas: (Discontinued Commencement 1936).....	3522
Earned Degrees:	
Bachelors	
Bachelor of Arts.....	229
Bachelor of Science.....	1551
Bachelor of Arts in Education.....	4715
Total	6495
Masters	
Master of Arts in Education.....	769
Total	769
Total Through May, 1952.....	7264
Honorary Degrees:	
Master of Arts in Education.....	2
Doctor of Laws.....	3
Total	5
Total Degrees Granted Through May 26, 1953.....	7269
Total Graduates Through May 26, 1953.....	10791

Gifts and Bequests

Public-spirited individuals in increasing numbers are making gifts of money or are bequeathing part or all of their estates to the educational institutions of their choice.

Arizona State College at Tempe is a growing, progressive institution, and the State of Arizona has not been able to care for some of its special needs. Individuals with money can make their influence felt with present and future generations of young people by making gifts or bequests to the College.

Some donors name the fund given for themselves, or for a wife, son, or daughter. An investment in growing personality is a long-time investment. Moreover, it pays large dividends, and these dividends continue long after the investor is gone.

The needs are many and urgent. The student loan fund is far too small. The College should have many more scholarships for worthy students. Funds for graduate fellowships, research and special projects are needed. Contributions are now being received for the construction of a Student Union Building from students, faculty, alumni, parents, and friends. Help is needed to complete this major project. There are many other needs.

It is suggested that those desiring to make such a gift or bequest go to an attorney and make out a form such as is given below.

I give, devise, and bequeath to the Board of Regents of the University and State Colleges of Arizona, for the use by the Arizona

State College at Tempe, Arizona, the sum of.....

.....

dollars. This is to be known as the.....

.....

Fund, and is to be used as indicated below:.....

.....

.....

.....

.....

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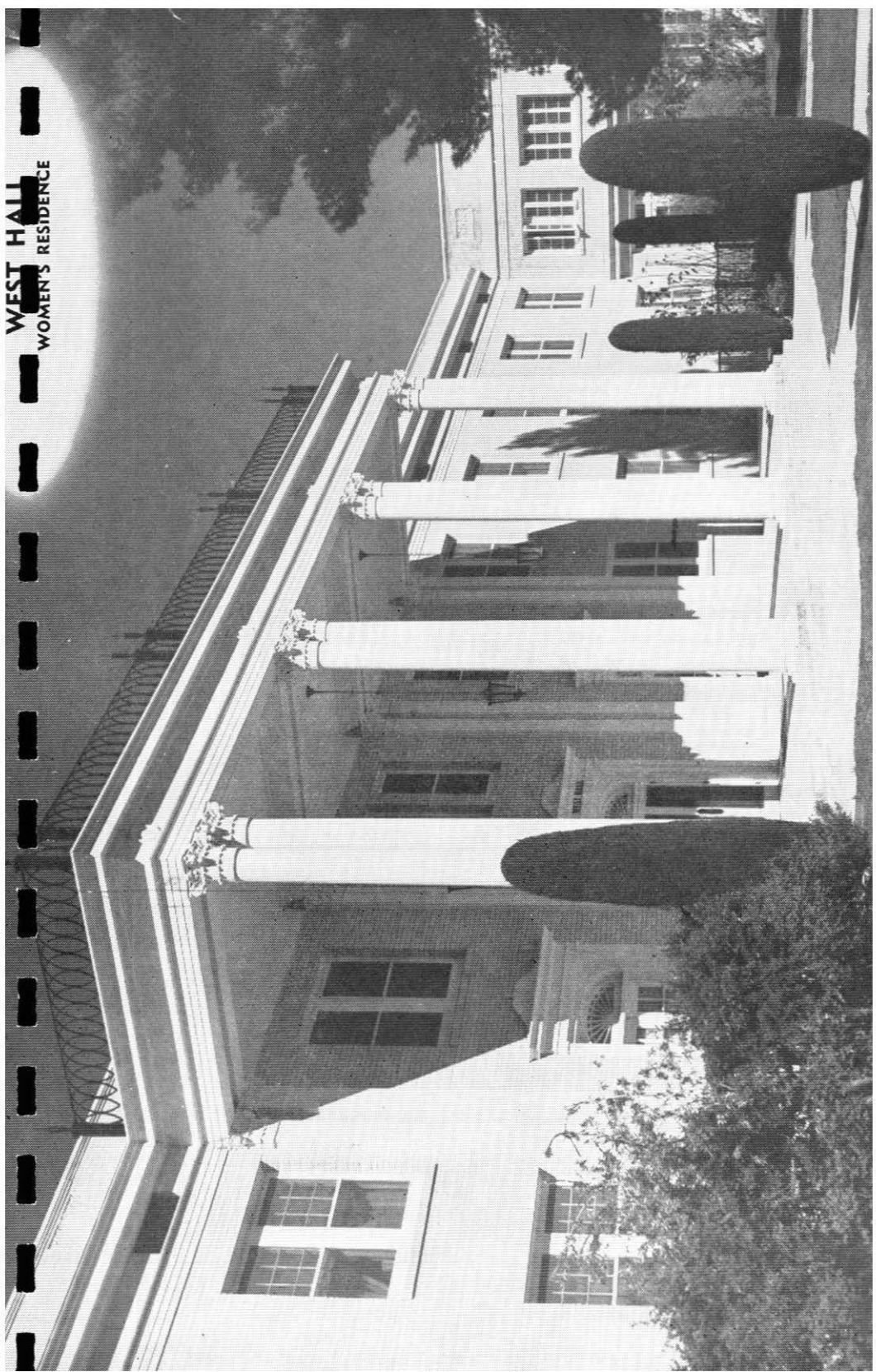
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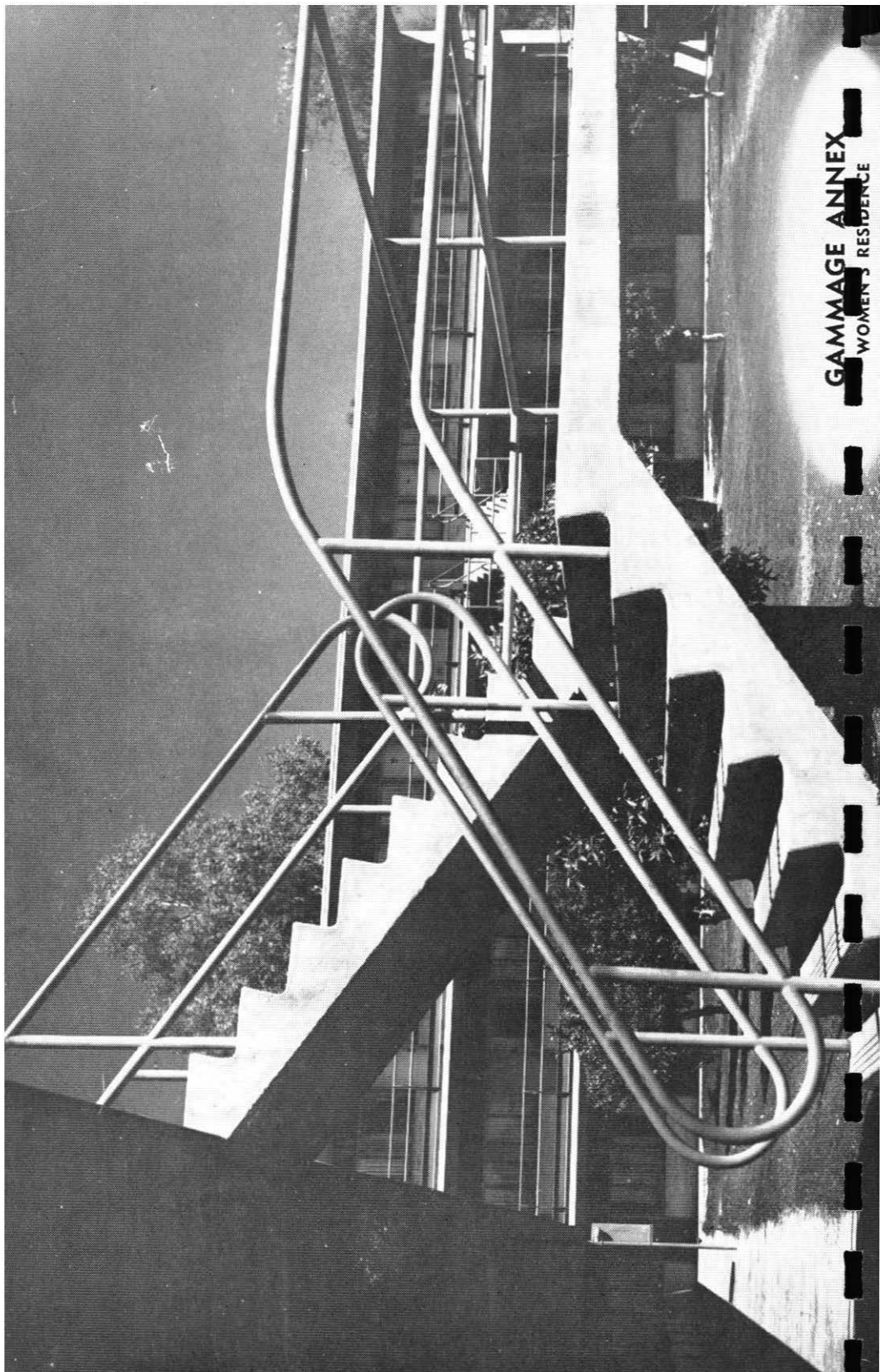
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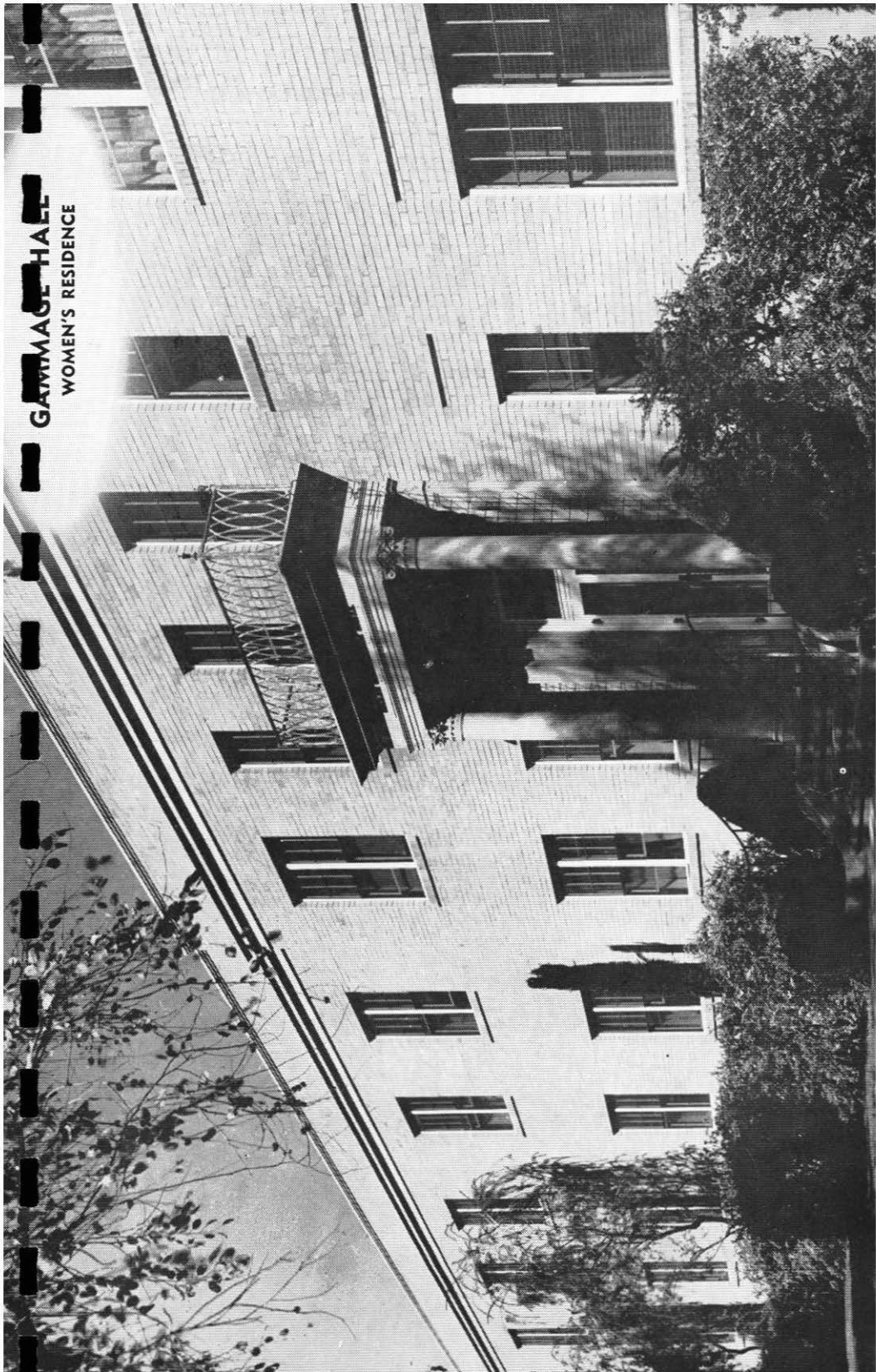
WEST HALL
WOMEN'S RESIDENCE

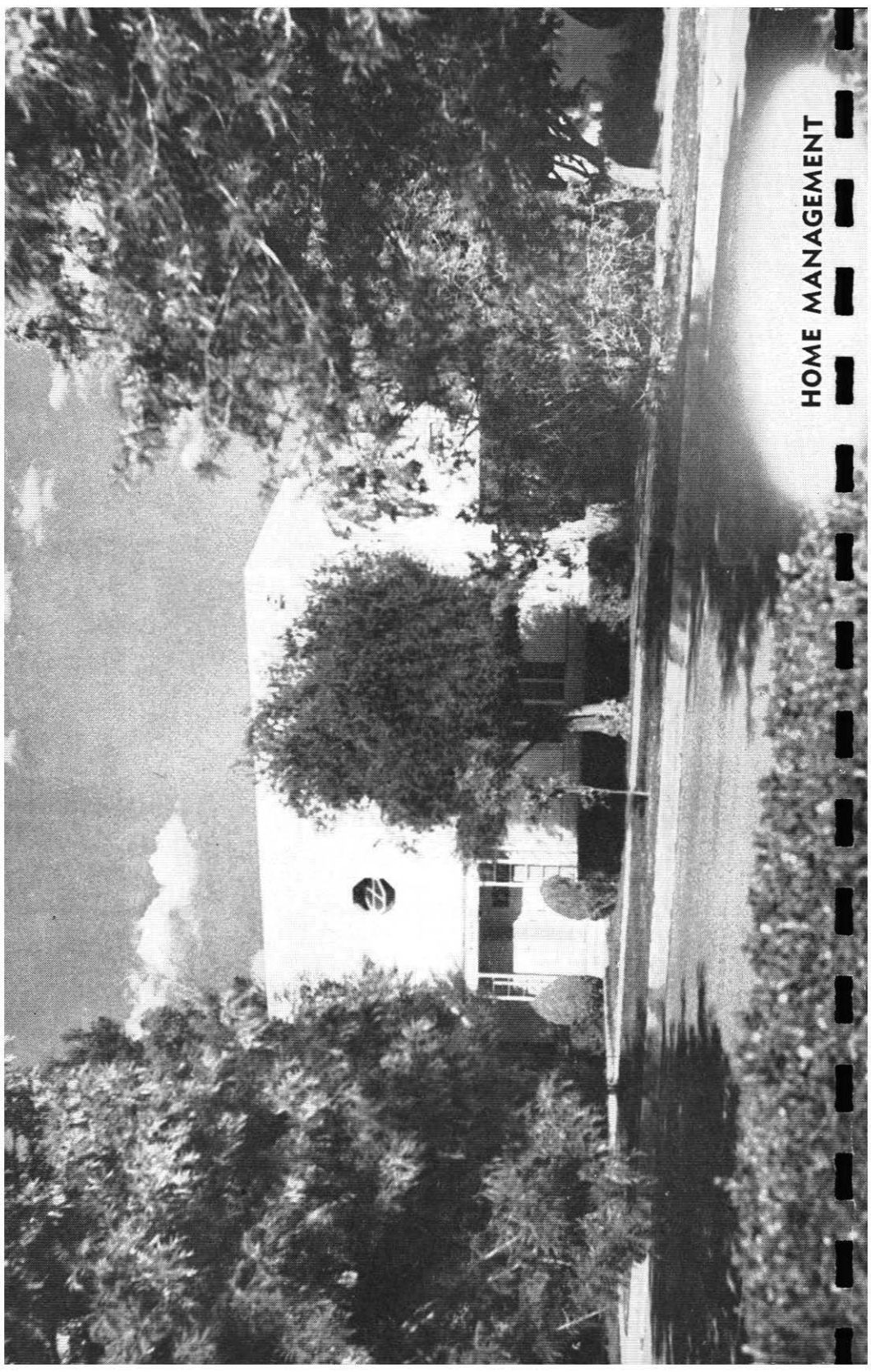




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WOMEN'S RESIDENCE

GAYMAGE HALL
WOMEN'S RESIDENCE

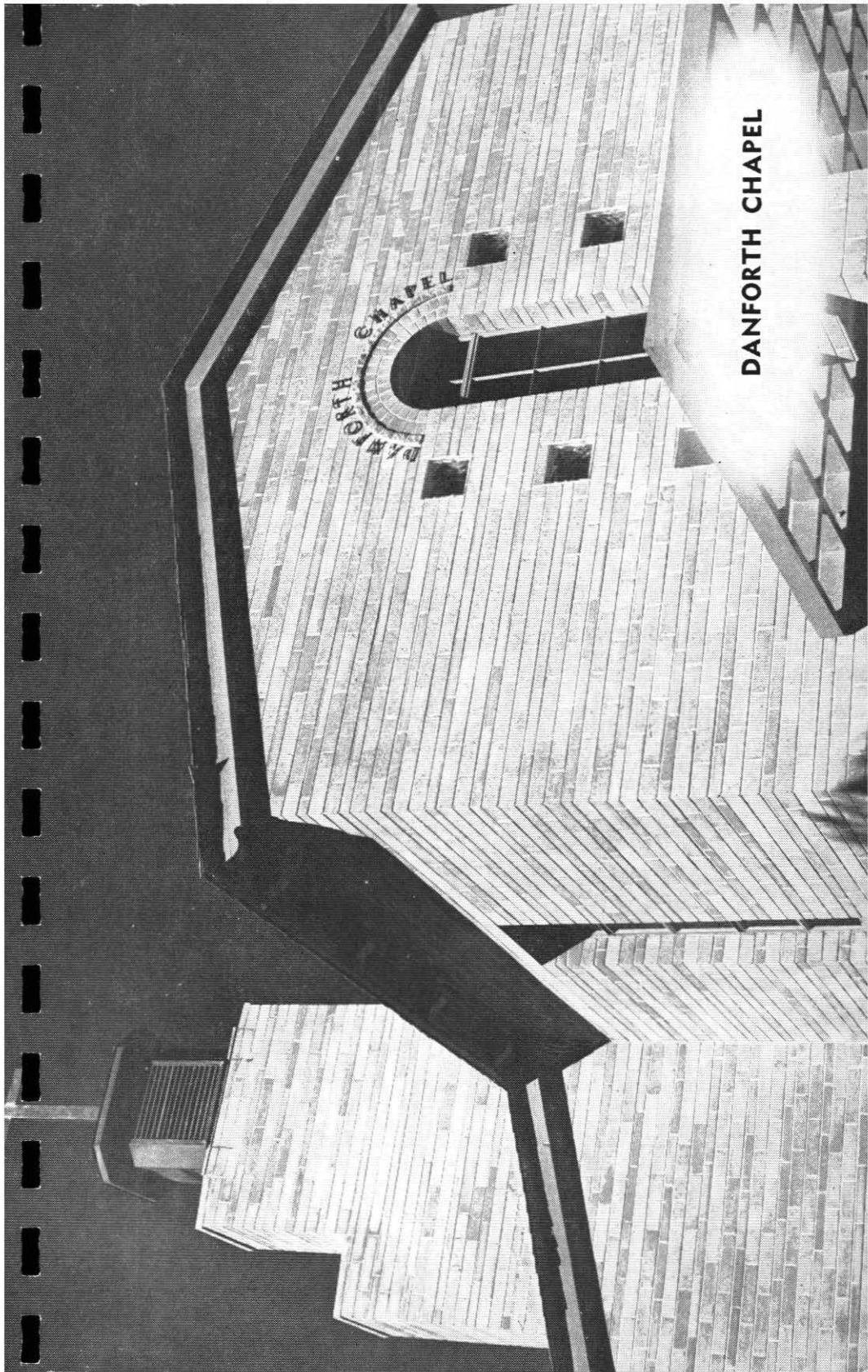




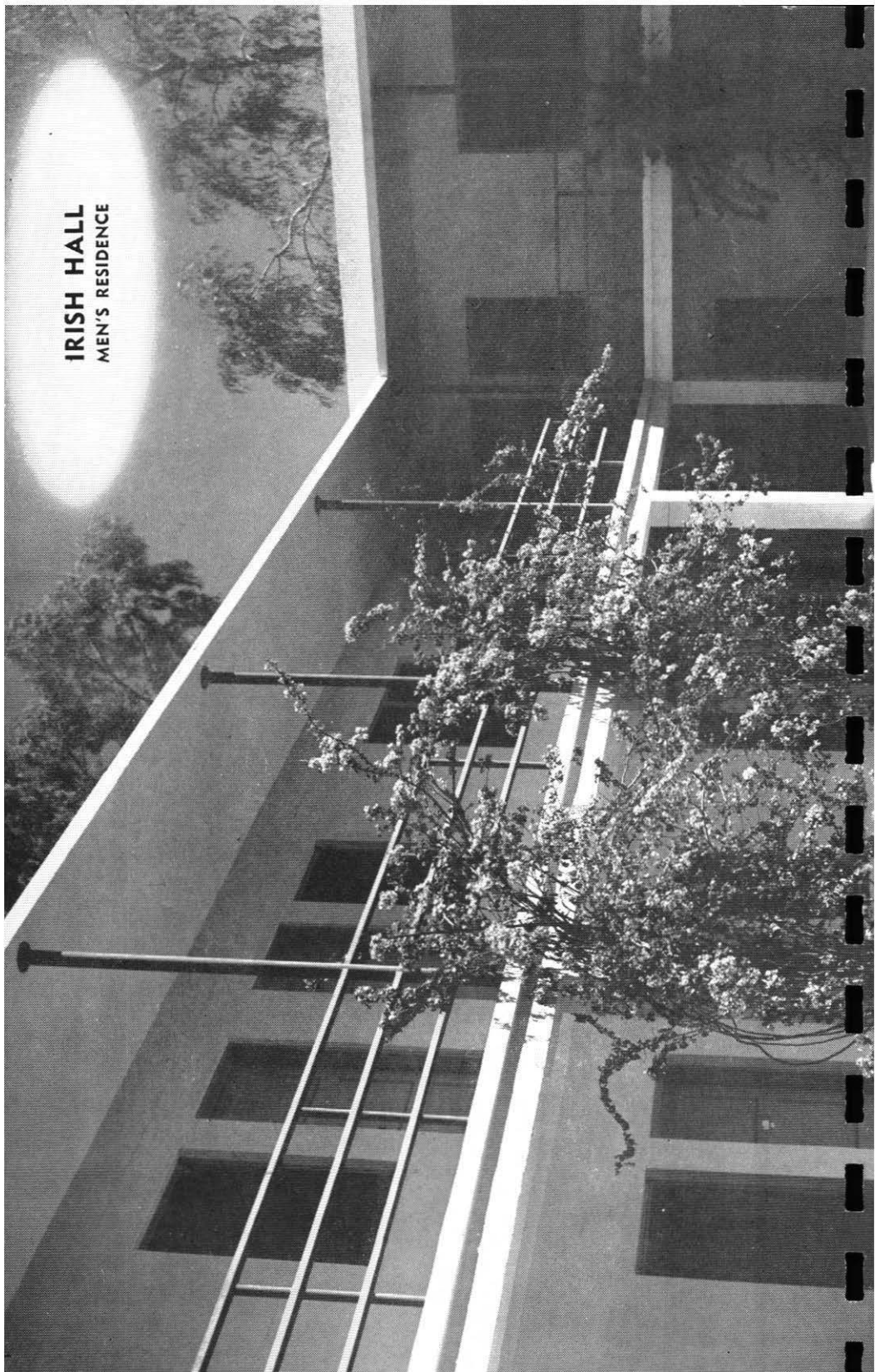
HOME MANAGEMENT

DANFORTH CHAPEL

DANFORTH CHAPEL



IRISH HALL
MEN'S RESIDENCE





HAYDEN HALL
MEN'S RESIDENCE

