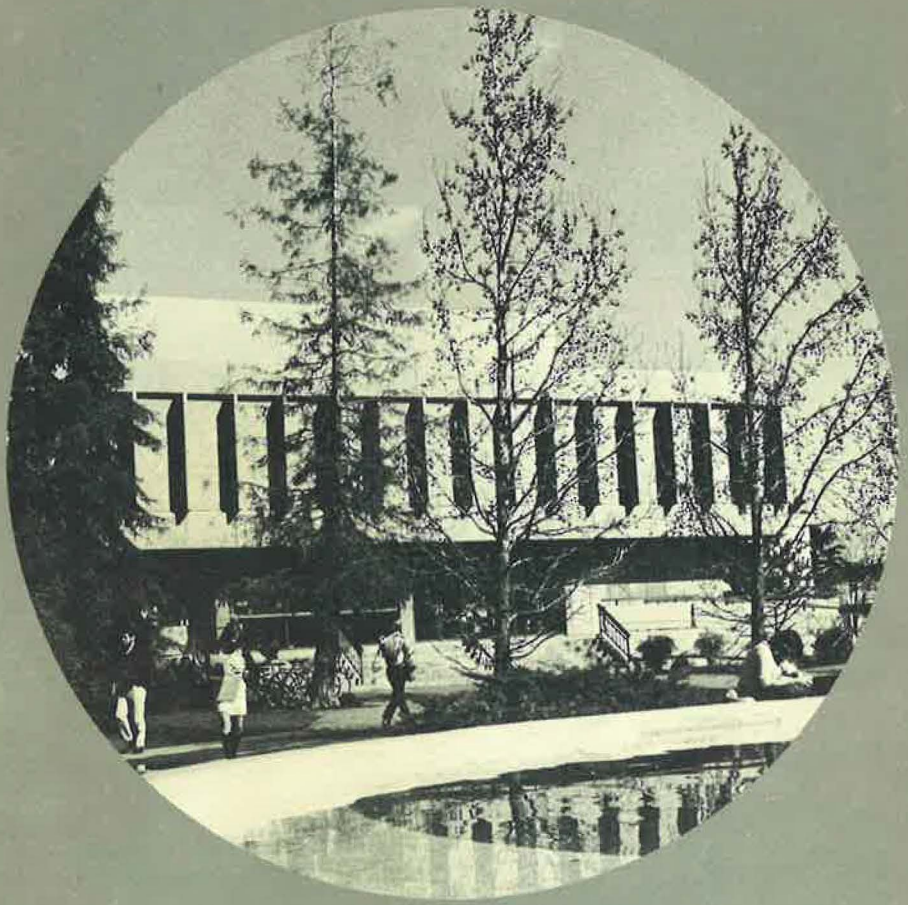


THE CALIFORNIA STATE UNIVERSITY AND COLLEGES

CSU FRESNO

CALIFORNIA STATE UNIVERSITY, FRESNO



BULLETIN

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1979–1980

PREFACE

The CSUF *Bulletin* is designed to provide information to prospective students and currently enrolled students with an overview of California State University, Fresno, as an institution within the CSUC system. The administrative organization, general services and facilities, counseling and enrollment procedures, degrees and credentials offered, and aids to program preparation and enrichment are described as an assist to the student in pursuing his educational goals.

Since the preparation cycle of the catalog occurs well ahead of the academic year which it covers, some adjustments in regulations, policies and curricula do occur. The student is referred to the *Schedule of Courses* as a more current authority regarding courses offered, class instructors, and changes in requirements.

Preparation of the *Bulletin* is under the direction of D. E. Clark, Associate Vice President for Academic Affairs. Production staff consists of Ruth Thornton, Editor; Gail Smith, Secretary; Gerald Berryhill, Graphic Artist; Juanita Arldt, and Diana Baldrica, student photographers.

CHANGES IN RULES AND POLICIES

Although every effort has been made to assure the accuracy of the information in this catalog, students and others who use this catalog should note that laws, rules, and policies change from time to time and that these changes may alter the information contained in this publication. Changes may come in the form of statutes enacted by the Legislature, rules and policies adopted by the Board of Trustees of The California State University and Colleges, by the Chancellor or designee of The California State University and Colleges, or by the President or designee of the institution. Further, it is not possible in a publication of this size to include all of the rules, policies and other information which pertain to the student, the institution, and The California State University and Colleges. More current or complete information may be obtained from the appropriate department, school, or administrative office.

Nothing in this catalog shall be construed, operate as, or have the effect of an abridgement or a limitation of any rights, powers, or privileges of the Board of Trustees of The California State University and Colleges, the Chancellor of The California State University and Colleges, or the President of the campus. The Trustees, the Chancellor, and the President are authorized by law to adopt, amend, or repeal rules and policies which apply to students. This catalog does not constitute a contract or the terms and conditions of a contract between the student and the institution or The California State University and Colleges. The relationship of the student to the institution is one governed by statute, rules, and policy adopted by the Legislature, the Trustees, the Chancellor, the President and their duly authorized designees.

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Classes

Holidays

ACADEMIC CALENDAR CSUF 1979–80
(Calendar dates subject to change)

Pre-Session, 1979 ..... May 29–June 15, inclusive
Regular Session, 1979 ..... June 18–July 27, inclusive
Post-Session, 1979 ..... July 30–August 17, inclusive

APRIL 1979

23 Monday ..... Advising, Orientation and Computer-Assisted Registration for Fall 1979 semester begins.
25 Wednesday ..... Advising Day. No classes before 5:00 p.m.; faculty available for Fall 1979 semester advising.

JUNE 1979

22 Friday ..... Last day to submit changes and clearances (incomplete grades, approved petitions, departmental approvals, transfer transcripts) required for graduation at the end of the Spring 1979 semester.

JULY 1979

17 Tuesday ..... Last day to pay fees for Computer-Assisted Registration for Fall 1979 semester.

AUGUST 1979

21 Tuesday ..... SEMESTER BEGINS, Academic Assembly meets.
23 Thursday ..... PRIORITY ADD DAY FOR CAR REGISTRATION. POST-CAR REGISTRATION.
24 Friday ..... Regular add and drop period starts.
27 Monday ..... INSTRUCTION BEGINS. LATE REGISTRATION BEGINS ($5.00 late fee). Auditors may register. Final application period for a degree or credential to be granted in December 1979 (Aug. 27–Sept. 10).

SEPTEMBER 1979

3 Monday ..... Labor Day. No classes. All offices closed.
10 Monday ..... LATE REGISTRATION ENDS. END OF REGULAR ADD PERIOD. Last day to register for Credit by Examination. End of regular filing period for applications for degrees and credentials to be granted in December 1979. Last day for refunds by resident students. Nonresidents see fee schedule (15 calendar days).
24 Monday ..... LAST DAY TO DROP A CLASS without notation on the permanent record. Last day to obtain approval for credit/no-credit grading. Last day to change from audit registration to credit registration or credit registration to audit registration. Last day to take examination for Credit by Examination.
24–Oct. 5 ..... Early filing period for applications for degrees to be granted in May 1980. Filing period for applications for Spring 1980 student teaching—elementary and secondary.

OCTOBER 1979

8 Monday ..... Last day for faculty to submit Credit by Examination grade.
19 Friday ..... Last day for late filing period for applications for degrees and credentials to be granted December 1979. Late fee required September 11 to October 19.

NOVEMBER 1979

5 Monday ..... Last day to file semi-final draft of Master's Thesis for December 1979 graduation.
9 Friday ..... Last day to file for financial aid for Spring 1980.
12 Monday ..... Veterans' Day. No classes. All offices closed.
19 Monday ..... Advising, Orientation and Computer-Assisted Registration for Spring 1980 semester begins.
21 Wednesday ..... LAST DAY TO WITHDRAW FROM A COURSE EXCEPT BY COMPLETE WITHDRAWAL FROM THE UNIVERSITY.
22–23 ..... Thanksgiving Recess. All offices closed.
28 Wednesday ..... Advising Day. No classes before 5:00 p.m. Faculty available for Spring 1980 semester advising.

DECEMBER 1979

3 Monday ..... Last day to pay fees for Computer-Assisted Registration for Spring 1980 semester.

5 Wednesday.....Last day to file final copy of Master's Thesis for December 1980 graduation.
12 Wednesday.....LAST DAY OF INSTRUCTION. LAST DAY TO WITHDRAW FROM A COMPLETE PROGRAM.
13–19.....SEMESTER EXAMINATIONS
21 Friday .....FALL SEMESTER ENDS. Last day to file all approved copies of Master's Theses for December 1979 graduation.
22–Jan. 14.....Winter Recess
24 Monday.....Grades due from faculty (noon).

JANUARY 1980

15 Tuesday.....SEMESTER BEGINS
17 Thursday.....PRIORITY ADD DAY FOR CAR REGISTRATION. POST-CAR REGISTRATION
18 Friday .....Regular add and drop period starts.
21 Monday.....INSTRUCTION BEGINS. LATE REGISTRATION BEGINS ($5.00 late fee). Auditors may register. Final application period for degrees to be granted in May 1980 (Jan. 21–Feb. 1).
25 Friday .....Last day to submit changes and clearances (incomplete grades, approved petitions, departmental approvals, transfer transcripts) required for graduation at the end of the Fall 1979 semester.

FEBRUARY 1980

1 Friday .....LATE REGISTRATION ENDS. END OF REGULAR ADD PERIOD. Last day to register for Credit by Examination. End of regular filing period for applications for degrees and credentials to be granted in May 1980.
4 Monday.....Last day to file for refund by resident students. Nonresidents see fee schedule (15 calendar days).
15 Friday .....LAST DAY TO DROP A CLASS without notation on the permanent record. Last day to obtain approval for credit/no-credit grading. Last day to change from Audit registration to Credit registration or Credit registration to Audit registration. Last day to take examination for Credit by Examination.
18 Monday.....Presidents' Day. No classes. All offices closed.
19–29.....Early filing period for applications for degrees to be granted December 1980. File applications for Fall 1980 student teaching—elementary and secondary.

MARCH 1980

3 Monday.....Last day for faculty to submit Credit by Examination grade. Priority application date for 1980–81 financial aids. Late applications subject to delays and reduced funding.
14 Friday .....Last day for late filing period for applications for degrees and credentials to be granted in May 1980. Late fee required February 4 to March 14.
29–April 6.....Spring Recess.

APRIL 1980

4 Friday .....Last day to file semi-final draft of Master's Thesis for May 1980 graduation.
18 Friday .....LAST DAY TO WITHDRAW FROM A COURSE EXCEPT BY COMPLETE WITHDRAWAL FROM THE UNIVERSITY.
21 Monday.....Advising, Orientation and Computer-Assisted Registration for Fall 1980 begins.
23 Wednesday.....Advising Day. No classes before 5:00 p.m. Faculty available for Fall 1980 semester advising.
24–27.....Vintage Days.

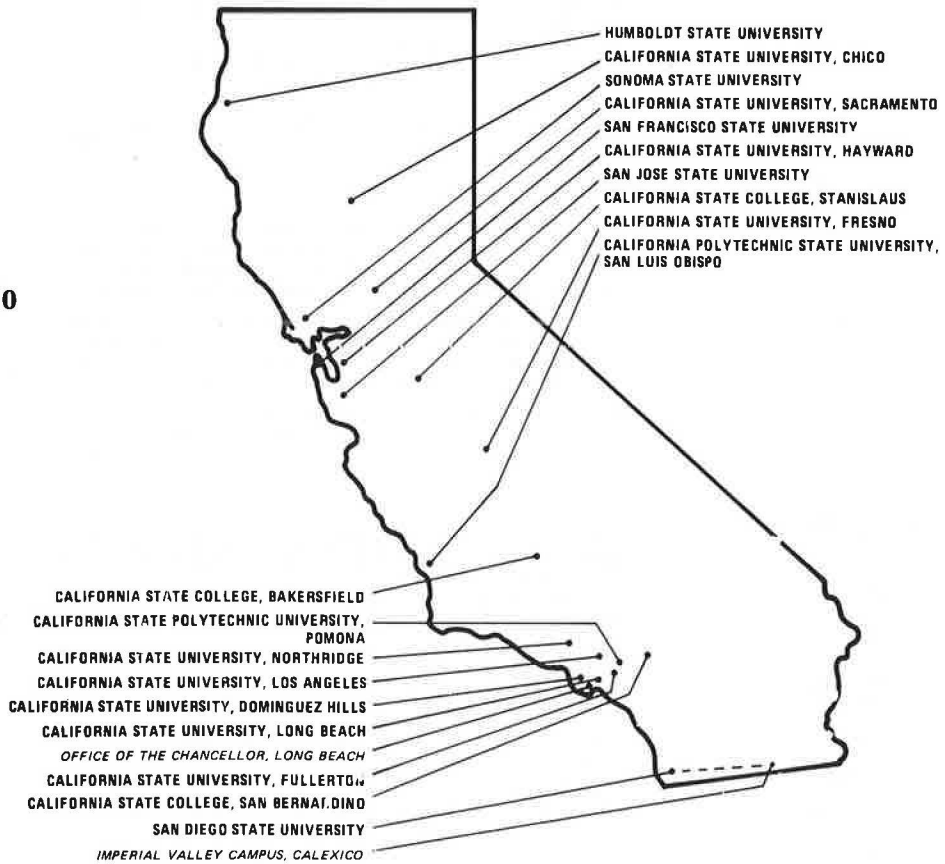
MAY 1980

5 Monday.....Last day to file final copy of Master's Thesis for May 1980 graduation.
9 Friday .....LAST DAY OF INSTRUCTION. LAST DAY TO WITHDRAW FROM A COMPLETE PROGRAM.
12–16.....SEMESTER EXAMINATIONS.
14 Wednesday.....69th Annual Commencement.
20 Tuesday.....SPRING SEMESTER ENDS. Last day to file all approved copies of Master's Theses for May 1980 graduation.
21 Wednesday.....Grades due from faculty.

JUNE 1980

20 Friday .....Last day to submit changes and clearances (incomplete grades, approved petitions, departmental approvals, transfer transcripts) required for graduation at the end of the Spring 1980 semester.

THE CALIFORNIA STATE UNIVERSITY AND COLLEGES



THE CALIFORNIA STATE UNIVERSITY AND COLLEGES

The individual California State Colleges were brought together as a system by the Donahoe Higher Education Act of 1960. In 1972 the system became The California State University and Colleges. Today, 16 of the 19 campuses have the title "University."

The oldest campus—San Jose State University—was founded in 1857 and became the first institution of public higher education in California. The newest campus—California State College, Bakersfield—began instruction in 1970.

Responsibility for The California State University and Colleges is vested in the Board of Trustees, whose members are appointed by the Governor. The Trustees appoint the Chancellor, who is the chief executive officer of the system, and the Presidents, who are the chief executive officers on the respective campuses.

The Trustees, the Chancellor, and the Presidents develop systemwide policy, with actual implementation at the campus level taking place through broadly based consultative procedures. The Academic Senate of The California State University and Colleges, made up of elected representatives of the faculty from each campus, recommends academic policy to the Board of Trustees through the Chancellor.

Academic excellence has been achieved by The California State University and Colleges through a distinguished faculty, whose primary responsibility is superior teaching. While each campus in the system has its own unique geographic and curricular character, all campuses, as multipurpose institutions, offer undergraduate and graduate instruction for professional and occupational goals as well as broad liberal education. All of the campuses require for graduation a basic program of "General Education-Breadth Requirements" regardless of the type of bachelor's degree or major field selected by the student. A limited number of doctoral degrees are offered jointly with the University of California and with private universities in California.

Presently, under the system's "New Approach to Higher Education," the campuses are implementing a wide variety of innovative programs to meet the changing needs of students and society. Among pilot programs under way are instructional television projects, self-paced learning plans, minicourses, and credit-by-examination alternatives. *The Consortium of The California State University and Colleges* fosters and sponsors local, regional, and statewide external degree and certificate programs to meet the needs of individuals who find it difficult or impossible to attend classes on a campus.

Enrollments in fall 1978 totaled approximately 300,000 students, who were taught by a faculty of 17,500. Last year the system awarded over 53 percent of the bachelor's degrees and 33 percent of the master's degrees granted in California. Almost 700,000 persons have been graduated from the 19 campuses since 1960.

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The Honorable Wilson C. Riles *State Superintendent of Public Instruction*	721 Capitol Mall Sacramento 95814
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San Luis Obispo, California 93407
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Rohnert Park, California 94928
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(707) 664-2880

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800 Monte Vista Avenue, Turlock,
California 95380
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(209) 633-2122

CALIFORNIA STATE UNIVERSITY, FRESNO

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* As of March 1979

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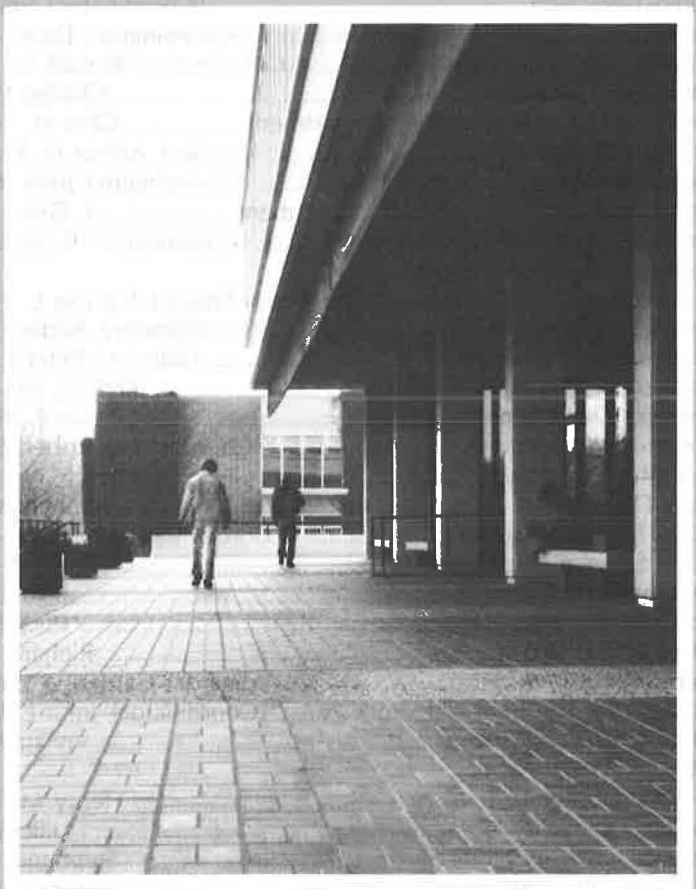
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Agricultural Industry and Education Department ..... Howard J. Martin
Animal Science Department ..... (Acting) Edwin J. Rousek
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Accounting and Quantitative Studies Department .... Clayton R. Tidyman
Finance and Industry Department ..... Paul M. Lange
Management and Marketing Department ..... (Acting) Richard D. Tellier
Office Administration Department ..... Berle Haggblade
School of Education ..... (Interim) Carl R. Stutzman
Liberal Studies ..... (Coordinator) Ivan H. Rowe
Multiple Subjects (Elementary Education) (Coordinator) David Haimbach
Single Subject (Secondary Education) ..... (Coordinator) Lester Roth
Administration ..... (Coordinator) Richard K. Sparks
Bilingual/Cross-Cultural Education ..... (Coordinator) Cecilio Orozco
Early Childhood Education ..... (Coordinator) Joyce M. Huggins
Pupil Personnel Services ..... (Coordinator) Ray E. Brewer
Reading ..... (Coordinator) Beatrice E. Bradley
Special Education ..... (Coordinator) Gordon F. Johnson
Graduate Studies ..... (Coordinator) Bruce M. Wilkin
School of Engineering ..... James D. Matheny
Civil Engineering Program ..... (Coordinator) Jankie N. Supersad
Electrical Engineering Program ..... (Coordinator) Irvin H. Kral
Industrial Engineering Program ..... (Coordinator) Charles Haynes
Mechanical Engineering Program ..... (Coordinator) Charles Haynes
Division of Health Professions ..... (Director) C. Dean Mitchell
Communicative Disorders Department ..... Steven D. Wadsworth
Health Science Department ..... (Assistant Director) Sanford M. Brown
Nursing Department ..... (Assistant Director) Helen J. Sprengel
Physical Therapy Program ..... (Coordinator) E. Joan Turnquist
Rehabilitation Counseling Program ..... (Coordinator) Ted R. Hilliard
School of Humanities ..... Joseph Satin
Art Department ..... Edward O. Lund
English Department ..... Kenneth Seib
Foreign Language Department ..... Jose A. Elgorriaga
Linguistics Department ..... P. J. Mistry
Philosophy Department ..... James M. Smith
School of Natural Sciences ..... Brandt Kehoe
Biology Department ..... Jerrome Mangan
Chemistry Department ..... Helen Gigliotti
Geology Department ..... Robert D. Merrill
Mathematics Department ..... Noal C. Harbertson

* As of March 1979

Physics Department ..... Floyd L. Judd
Psychology Department ..... Merry W. Salehi
School of Professional Studies ..... John H. Martin
Aerospace Studies Department ..... Lt. Col. Robert G. Stuart
Communication Arts and Sciences Department ..... Ronald D. Johnson
Radio-Television ..... (Coordinator) Philip Lane
Speech ..... (Coordinator) David Quadro
Theatre Arts ..... (Coordinator) Ronald D. Johnson
Criminology Department ..... Charles W. Dean
Industrial Arts and Technology Department ..... Glen H. Blomgren
Journalism Department ..... (Interim) Arthur H. Margosian
Music Department ..... (Coordinator) John R. Heard
Physical Education—Recreation Department ..... J. Gene Bourdet
Physical Education Program—Men ..... (Coordinator) R. Jack Wilcox
Physical Education Program —Women ..... (Coordinator) Patricia L. Thomson
Recreation Program ..... (Coordinator) Audrey Fagnani
School of Social Sciences ..... (Interim) Peter J. Klassen
Anthropology Department ..... Dirk H. van der Elst
Economics Department ..... Louis F. Pisciottoli
Ethnic Studies Program ..... (Coordinator) Robert S. Mikell
Geography Department ..... Stanley F. Norsworthy
History Department ..... Stephen A. Benko
La Raza Studies Program ..... (Coordinator) Lea Ybarra-Soriano
Political Science Department ..... David H. Provost
Sociology Department ..... Joel G. Best
Urban and Regional Planning Department ..... Russell C. Fey
School of Social Work ..... Richard D. Ford
Social Welfare Program ..... (Coordinator) Catherine Woodcock
Graduate Program in Social Work ..... (Coordinator) John E. Lindberg
School of Graduate Studies ..... Vivian A. Vidoli

LIBRARY

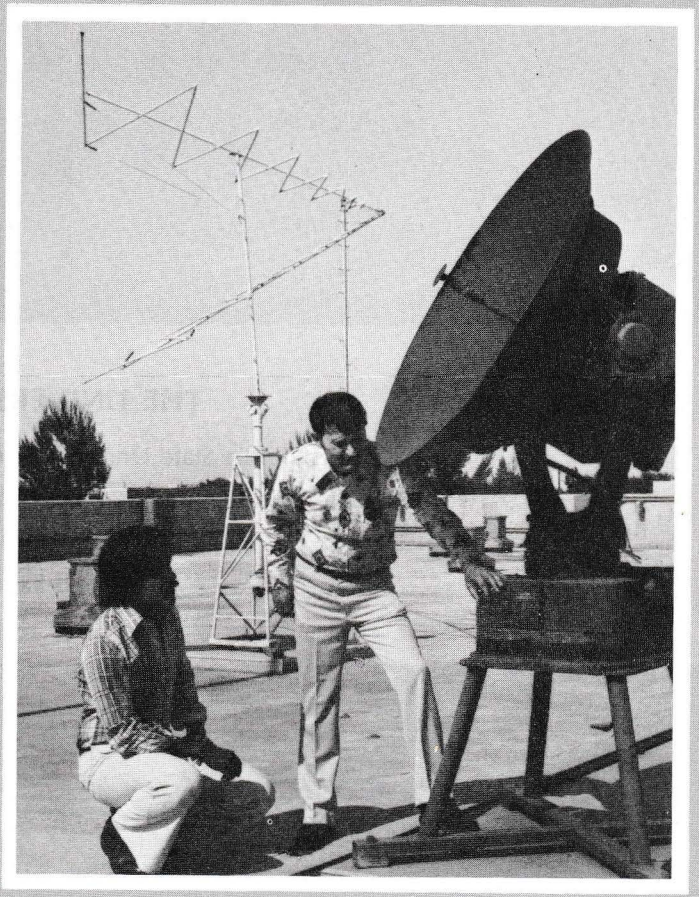
University Librarian ..... Henry M. Madden
Associate University Librarian ..... Lillie S. Parker
Assistant University Librarian ..... Stephanie Hillman
Acquisitions Department ..... Sandra L. Cowling
Catalogue Department ..... Vincent J. Smith, Jr.
Circulation Department ..... A. Zane Clark
Curriculum Library ..... S. Louise Stull
Government Publications Department ..... Erland L. Jacobsen
Music Library ..... Ronald J. Harlan
Periodicals Department ..... A. Gerald Gothe
Reference Department ..... William F. Heinlen
Department of Special Collections ..... Ronald J. Mahoney



College Union which houses lounge areas, a coffee shop, a barber shop, art display areas, conference rooms, student government and committee offices, auxiliary organization offices, and bowling and recreation areas.

THE UNIVERSITY

California State University, Fresno
Continuing Education and Summer Sessions
Student Affairs
Fees and Expenses



Instructor demonstrating the use of a radar antenna on the roof top facility of the engineering building.

CALIFORNIA STATE UNIVERSITY, FRESNO

The California State University, Fresno, is dedicated to academic excellence, integrity, and freedom. It is committed to developing competent students, citizens, and leaders and to serving the Fresno and Valley communities. The university offers programs of instruction through the master's degree in the liberal arts and sciences, in the professions, in applied fields, and in special and interdisciplinary areas. Innovative departmental programs provide unusual and interesting opportunities for enrichment of the university experience. Further educational opportunities are also offered to individuals, public agencies, school systems, private business, and agriculture through continuing education, in-service education, and research programs.

HISTORY

CSU, Fresno is the sixth oldest in The California State University and Colleges system. It began with the establishment of the first junior college in California in 1910 and a state normal school in 1911 which, under a single administration, offered two-year programs in general and vocational training and in teacher preparation. Between 1911 and 1921 a campus was built on University Avenue, then the northern border of Fresno. In 1921 the combined schools became Fresno State Teachers College, authorized to offer a four-year program and grant the bachelor of arts degree in teaching. In 1935, by act of the Legislature, the official designation became Fresno State College. A variety of degree programs in addition to those related to the teaching credential were authorized at that time. Following World War II, expansion was accelerated, both academically and physically. The first master's degree was offered in 1949; today it is offered in 37 fields of study.

Between 1953 and 1958 the college was moved from the old campus site, by then surrounded by the City of Fresno, to a 1,410-acre site six miles to the northeast. In 1961, under the newly created California State College system, the administration and control of the state colleges was transferred from the State Board of Education to an independent board, the Trustees of the California State Colleges. By legislative action in 1972 the state college system became the California State University and Colleges. Between 1965 and 1968 an approximation of university oganization was accomplished on the Fresno campus and the transition to official university status in the state system became effective on June 1, 1972. The university now comprises the Schools of Agriculture and Home Economics, Business and Administrative Sciences, Education, Engineering, Humanities, Natural Sciences, Professional Studies, Social Sciences, and Social Work and the Division of Health Professions.

Fresno State College in 1911 had an enrollment of 150 students, most of whom were women. By 1940 the enrollment had increased to 2,000 students, by 1964, to 7,500. In the fall of 1978 more than 15,000 students registered.

The Presidents, in order of tenure are: Charles L. McLane (1911–1927), Frank W. Thomas (1927–1948), Arnold E. Joyal (1948–1964), Frederic W. Ness (1964–1969), Karl L. Falk (Acting) (1969–1970), and Norman A. Baxter, who has served since 1970.

ACCREDITATION

The California State University, Fresno is accredited by
The California State Board of Education,
The Western Association of Schools and Colleges,
The National Council for Accreditation of Teacher Education.
The university is a member of
The Western Association of Graduate Schools,
The Council of Graduate Schools in the United States,
The American Association of Colleges for Teacher Education.

Departmental and area accreditations, certificated memberships, and accrediting organizations include

Business ..... American Association of Collegiate Schools of Business
Communicative Disorders:
Education of the Deaf ..... Council on Education of the Deaf
Language, Hearing, and Speech Clinic (Accredited for Professional Services) ..... American Speech and Hearing Association
Chemistry ..... American Chemical Society
Engineering (Civil, Electrical, Mechanical) ..... Engineering Council for Professional Development
Environmental Health Program ..... National Environmental Health Association
Health Professions Program ..... Member of the American Society of Allied Health Professions
Health Science (Sanitarian) ..... State Department of Public Health
Home Economics ..... American Home Economics Association
Home Economics (Dietetics) ..... Approved for admission to internship program of the American Dietetic Association
Journalism (News-Editorial) ..... American Council of Education for Journalism
Music ..... National Association of Schools of Music
Nursing ..... National League for Nursing
Physical Therapist Program ..... AMA Council on Medical Education/American Physical Therapy Association
Rehabilitation Counselor Education ..... Council on Rehabilitation Education, Inc.
Social Work ..... Accreditation by the Council on Social Work Education; and undergraduate and graduate membership in the Council
Urban and Regional Planning, MCRP ..... American Institute of Planners

FACILITIES

The University is located at Cedar and Shaw Avenues in the northeast section of the City of Fresno. Its 1,410 acres provide for the possible expansion of facilities when necessitated by increasing enrollment. When the Shaw Avenue location was first occupied, during the 1953–54 academic year, there were only four completed buildings on what was then an 880-acre site. Ten years later, in 1963–64, major buildings on campus included administration, agricultural classroom, agricultural mechanics, home economics, bookstore, business, cafeteria, education-psychology, engineering, home management cottage, industrial arts, library, gymnasiums for men and women, music science, social science, speech arts, student health service and the first residence halls. Subsequent to 1964, student administration, residence hall commons, classroom, office buildings, a three-story college union, bookstore, art building of contemporary design, new student health center, new

residence dining facility, another engineering building, industrial arts building addition, and another science building were constructed. There are now more than 45 buildings in service. A $5,000,000 addition to the library is under construction. A 30,000 seat stadium is projected for construction in 1979.

The buildings are in a setting of colorful trees, shrubbery, flowers, and lawns. A tree-lined amphitheater accommodates commencements, convocations, and other large assemblages and provides an outdoor setting for numerous programs and gatherings during the year. A centrally located memorial court, benches, and fountain are favorite spots for relaxation. The adjacent free speech area and college union are centers of student life and activity.

A farm operated by the School of Agriculture and Home Economics includes more than 34 structures and is considered one of the most modern and best equipped agricultural plants in the west.

CENTER FOR INFORMATION PROCESSING

The Center is organized to serve all information processing and computation needs of the university including instruction, research, and administration. It provides a variety of direct and indirect free services to students. Consultants are available in the Instructional Laboratories to give assistance in the use of facilities and computer programming. The laboratories provide timesharing terminals, keypunches, and sorters. Approximately 25 percent of the students now make substantial use of the facilities. Use of the computers in the instructional program is increasing at a rapid rate. The Center is located in the west wing of the School of Business Building with offices in San Ramon 4. The principal hardware, a CDC 3150, supports most of the major computer languages and, via teleprocessing, has access to other larger computers. A DEC PDP 11/45 Timesharing Computer provides substantial local support to instructional programs, as does a state-wide interactive time-sharing network supported by a Cyber 174 located in Los Angeles.

LIBRARY

The Library is housed in a building completed in 1965. Its resources include 575,000 catalogued volumes, 220,000 government publications, 23,000 pamphlets, 80,000 maps, 26,000 pictures and prints, and over 3,700 periodicals are received on subscription. Special collections include the Roy J. Woodward Memorial Library of Californiana and the University Archives. The Music Library has 36,000 phonodiscs and tapes. All students have free access to the resources of the Library. Professional librarians are available to assist students in their use of library materials. The Library is open eighty-three hours a week, during hours posted at the entrance to the building.

CONTINUING EDUCATION AND SUMMER SESSIONS

Note: Students enrolling in summer session or extension are not required to be officially admitted to the university. Graduate students see also School of Graduate Studies.

EXTENSION CLASSES

The university offers a wide variety of extension courses to assist in meeting the educational needs of the four-county service area. Courses are arranged in an area when the student demand is adequate to finance the instruction. Matriculation is not required for enrollment.

Unit Restrictions

Baccalaureate degree: Extension and correspondence credit limited to 24 units. Up to 24 semester units of extension credit may be transferred from accredited institutions, provided the credit would have been acceptable toward a baccalaureate degree had it been earned as residence credit, and provided it would be acceptable toward a degree offered by the institution where it was earned.

Master's degree: Transfer credit is limited to a maximum of 9 units of the 30 units required for the degree, provided the credit would have been acceptable toward a master's degree had it been earned as residence credit, and provided it would be acceptable toward a degree offered by the institution where it was earned. (Consult the Graduate Office for information concerning the use of specific courses.)

Credit derived from 300-level extension courses may not be used to meet the requirements of a master's degree.

The university permanent records will show extension work only at the request of the matriculated student. For information regarding courses, course fees, and instructional costs, write to the Dean of Continuing Education and Summer Sessions, California State University, Fresno.

CONCURRENT ENROLLMENT—Extension

Extension students may enroll in regular session classes. Such concurrent enrollment is limited to upper division and graduate courses and to lower division courses not readily available at nearby community colleges, and it requires the approval of the instructor and the department; enrollment in a graduate course also requires the approval of the Graduate Dean. An extension student is expected to meet all course prerequisites, to participate fully in the class, to meet all class requirements and to pay the appropriate extension fee. The grade received is entered on the student's extension record. Concurrent enrollment does not constitute admission to CSUF.

For further information contact the Office of the Dean of Continuing Education.

SUMMER SESSIONS

Summer sessions are conducted at CSUF and at the College of the Sequoias, Visalia, beginning shortly after the close of the spring semester. Classes may be scheduled at any time during the summer at various other valley locations. Completion of a maximum of 12 weeks is possible in a single summer.

Students attending a combination of pre-session, regular session and post session may earn a total of 16 units of credit during the summer. Students with proper justification and approval may earn units in excess of the allowable

number with all units earned applicable to a degree or credential program.

The courses offered are planned to meet the requirements of baccalaureate and master's degree program, credential programs, the needs of in-service professional people, and to provide for intensive practical work in areas such as music, drama, and fields of education.

A Summer Session Bulletin is published each March. For information, write to the Dean of Continuing Education and Summer Sessions, California State University, Fresno.

STUDENT AFFAIRS

Student Affairs provides an organized administration of educational services designed to support the instructional program. These services include student activities, counseling, advising, testing, the Educational Opportunity Program, financial aids, foreign student assistance, veterans, handicapped, health, career planning, and placement services. The program also provides students with nonclassroom experiences which are primarily of an educational nature, such as general orientation to the university, cultural enrichment, and tutorial projects. The program and individual services are described in more detail in the following sections of this catalog. Administrative responsibility for these functions rests with the Dean of Student Affairs.

NONDISCRIMINATION ON THE BASIS OF SEX

The California State University and Colleges does not discriminate on the basis of sex in the educational programs or activities it conducts. *Title IX* of the *Education Amendments of 1972,* as amended, and the administrative regulations adopted thereunder prohibit discrimination on the basis of sex in education programs and activities operated by California State University, Fresno. Such programs and activities include admission of students and employment. Inquiries concerning the application of *Title IX* to programs and activities of California State University, Fresno may be referred to the Affirmative Action Coordinator (employment matters) or the Assistant Dean of Student Affairs (student matters), the campus officers assigned the administrative responsibility of reviewing such matters, or to the Regional Director of the Office of Civil Rights, Region 9, 760 Market Street, Room 700, San Francisco, California 94102.

NONDISCRIMINATION ON THE BASIS OF HANDICAP

The California State University and Colleges does not discriminate on the basis of handicap in violation of Section 504 of the *Rehabilitation Act of 1973,* as amended, and the regulations adopted thereunder. More specifically, The California State University and Colleges does not discriminate in admission or access to, or treatment or employment in, its programs and activities. The Director of Institutional Research has been designated to coordinate the efforts of California State University, Fresno, to comply with the Act and its implementing regulations. Inquiries concerning compliance may be addressed to this person at Thomas Administration Building, Room 120, phone 487-1106.

STUDENT LIFE

A committee on student affairs, composed of faculty and students, evaluates the student life program and makes recommendations on policy and procedure. Regulations as to satisfactory scholarship, disqualification for unsatisfactory work and related questions bearing upon academic requirements are administered by appropriate bodies in accordance with university policies. A student court has authority to deal with cases involving interpretation of Associated Students bylaws. University students are expected to assume responsibility for their personal conduct, wide freedom

is therefore granted by the university to students as individuals and as organized groups.

STUDENT LEADERSHIP

Membership and active participation in a reasonable number of student organizations are strongly recommended. Groups of this type are an excellent means of obtaining experience in leadership, group action and social competence. Participation in student government is also encouraged, and many opportunities exist for participation in student affairs through election to student body offices, appointment to student government committees, and attendance at meetings of the Student Senate. Students are also offered an opportunity to serve on committees of the Academic Senate and on committees and boards of the California State University, Fresno Association, Inc. These groups play an active part in developing and recommending university policies and in conducting the affairs of the auxiliary organizations.

STUDENT ORGANIZATIONS

Over 100 student organizations representing various fields of social, academic, vocational, and professional interests have been granted recognition. Eight national social fraternities and five national social sororities exist on the campus and most operate group-living units. Religious interests are served by religious centers adjacent to the campus. The many and varied types of recognized organizations not only offer an opportunity for social life but also make a positive contribution to the development of student leadership. Information regarding recognized organizations or the formation of new ones may be obtained from the Student Activities Office.

Recognition Societies

In addition to high standards of scholarship expected of all students, special recognition is given to superior scholarship. The honor society of Phi Kappa Phi, a national scholarship organization, was established at CSU, Fresno in 1953. Most departments of the university sponsor honor societies, many of them national in scope, in which membership is based upon superior scholarship. The Blue Key National Honor Fraternity offers membership to students who have good scholarship, are prominent in university activities, and who have demonstrated leadership in student affairs.

STUDENT CONDUCT

Students are expected to observe university regulations and are held responsible for their personal behavior on the campus and in university-related activities. Sections 41301–41302 in Article 1, Subchapter 3, Chapter 1, Part V of *Title 5* of the *California Administrative Code* and Section 22505 of the *California Education Code,* which appear later in this section, delineate the types of conduct that are unacceptable. In addition, local rules and policies have been developed to cover certain situations such as the residence halls. The faculty have developed policies with regard to academic sanctions for cases of cheating and plagiarism. University, Trustee, and State regulations governing student conduct are described in the *Handbook for Student Organizations,* and the *Student Rights and Responsibilities Manual.* Copies of these, as well as faculty policy statements relating to cheating and plagiarism, are available in the Student Activities Office or the Office of the

Dean of Student Affairs.

STUDENT DISCIPLINE

Article 1.1, Title 5, *California Administrative Code*

41301. Expulsion, Suspension and Probation of Students. Following procedures consonant with due process established pursuant to Section 41304, any student of a campus may be expelled, suspended, placed on probation or given a lesser sanction for one or more of the following causes which must be campus related:

(a) Cheating or plagiarsim in connection with an academic program at a campus.

(b) Forgery alteration or misuse of campus documents, records, or identification of knowingly furnishing false information to a campus.

(c) Misrepresentation of oneself or of an organization to be an agent of a campus.

(d) Obstruction or disruption, on or off campus property, of the campus educational process, administrative process, or other campus function.

(e) Physical abuse on or off campus property of the person or property of any member of the campus community or of members of his or her family or the threat of such physical abuse.

(f) Theft, of, or non-accidental damage to, campus property, or property in the possession of, or owned by, a member of the campus community.

(g) Unauthorized entry into, unauthorized use of, or misuse of campus property.

(h) On campus property, the sale or knowing possession of dangerous drugs, restricted dangerous drugs, or narcotics as those terms are used in California statutes, except when lawfully prescribed pursuant to medical or dental care, or when lawfully permitted for the purpose of research, instruction or analysis.

(i) Knowing possession or use of explosives, dangerous chemicals or deadly weapons on campus property or at a campus function without prior authorization of the campus president.

(j) Engaging in lewd, indecent, or obscene behavior on campus property or at a campus function.

(k) Abusive behavior directed toward, or hazing of, a member of the campus community.

(l) Violation of any order of a campus president, notice of which had been given prior to such violation and during the academic term in which the violation occurs, either by publication in the campus newspaper, or by posting on an official bulletin board designated for this purpose, and which order is not inconsistent with any of the other provisions of this Section.

(m) Soliciting or assisting another to do any act which would subject a student to expulsion, suspension or probation pursuant to this Section.

(n) For purposes of this Article, the following terms are defined:

(1) The term "member of the campus community" is defined as meaning California State University and Colleges Trustees, academic, non-academic and administrative personnel, students, and other persons while such other persons are on campus property or at a campus function.

(2) The term "campus property" includes:

(A) real or personal property in the possession of, or under the control of, the Board of Trustees of the California State University and Colleges, and

(B) all campus feeding, retail, or residence facilities whether operated by a campus or by a campus auxiliary organization.

(3) The term "deadly weapons" includes any instrument or weapon of the kind commonly known as a blackjack, sling shot, billy, sandclub, sandbag, metal knuckles, any dirk, dagger, switchblade knife, pistol, revolver, or any other firearm, any knife having a blade longer than five inches, any razor with an unguarded blade, and any metal pipe or bar used or intended to be used as a club.

(4) The term "behavior" includes conduct and expression.

(5) The term "hazing" means any method of initiation into a student organization or any pastime or amusement engaged in with regard to such an organization which causes, or is likely to cause, bodily danger, or physical or emotional harm, to any member of the campus community; but the term "hazing" does not include customary athletic events or other similar contests or competitions.

(o) This Section is not adopted pursuant to Education Code Section 89031. 31

(p) Notwithstanding any amendment or repeal pursuant to the resolution by which any provision of this Article is amended, all acts and omissions occurring prior to that effective date shall be subject to the provisions of this Article as in effect immediately prior to such effective date.

41302. Expulsion, Suspension or Probation of Students; Fees and Notification. The President of the campus may place on probation, suspend, or expel a student for one or more of the causes enumerated in Section 41301. No fees or tuition paid by or for such student for the semester, quarter, or summer session in which he or she is suspended or expelled shall be refunded. If the student is readmitted before the close of the semester, quarter, or summer session in which he or she is suspended, no additional tuition or fees shall be required of the student on account of the suspension. In the event that a student who has not reached his or her eighteenth birthday and who is a dependent of his or her parent(s) as defined in Section 152 of the Internal Revenue Code of 1954 is suspended or expelled, the President shall notify his or her parent or guardian of the action by registered mail to the last known address, return receipt requested.

During periods of campus emergency, as determined by the President of the individual campus, the President may, after consultation with the Chancellor, place into immediate effect any emergency regulations, procedures, and other measures deemed necessary or appropriate to meet the emergency, safeguard persons and property, and maintain educational activities.

The President may immediately impose an interim suspension in all cases in which there is reasonable cause to believe that such an immediate suspension is required in order to protect lives or property and to insure the maintenance of order. A student so placed on interim suspension shall be given prompt notice of charges and the opportunity for a hearing within 10 days of the imposition of interim suspension. During the period of interim suspension, the student shall not, without prior written permission of the

President or designated representative, enter any campus of the California State University and Colleges other than to attend the hearing. Violation of any condition of interim suspension shall be grounds for expulsion.

STUDENT ABSENCES

Students are expected to maintain regular attendance at classes. Extended absences (more than one week) due to illness, death in the immediate family, or other extraordinary emergencies, may be reported to the Counseling Service which will notify the faculty concerned. When any absence occurs, however, the student should contact the instructors involved concerning the possibility of making up the work missed.

ADVISING SERVICES

The Office of Advising Services provides a variety of services designed to aid the student in his or her academic pursuits—new student orientation, coordination of faculty advising, tutorials, Student Advisement Center, academic petitions, general education advising, undeclared major advising, change of major and academic problems of a general nature.

Academic Advising. Each student is assigned to a faculty adviser who is a member of the academic department of the student's chosen field. Those students who have not arrived at a choice of an academic major are assigned to a counselor in the Office of Advising Services until a definite goal is chosen. In addition, students wishing assistance with general education requirements should consult their faculty adviser or the Office of Advising Services. A faculty adviser assists a student in planning a program of classes and in planning for the achievement of long-range educational goals. The student, however, is expected to assume final responsibility for meeting all specific degree and/or credential requirements.

Orientation. Professional staff and trained student volunteers are jointly involved in orienting new students to the University. The latter serve in the Student Advisement Center (SAC), a service designed to aid new students in making a smooth transition to University life. Staff are available on a daily basis throughout the year to answer questions about the Computer Assisted Registration (CAR) process and other concerns of new and continuing students. A special summer program is also offered to aid new students and their parents in understanding the workings of the University and how it relates to the community at large.

Tutoring. Tutoring is generally available in all courses. All students currently enrolled at California State University, Fresno, are eligible for tutoring at no cost. (Veterans are entitled to tutorial funds from the Veterans Administration.) Tutors are upper division and graduate students recommended by professors in the respective departments. The Advising Services office also provides assistance in improving study skills and time management.

Academic Petitions. The Student Academic Petitions Committee is chaired by the Coordinator of Advising Services. Students seeking an alteration in their academic requirements or records must use the petition process. Petitions and procedural information are available in the Office of Advising Services.

Change of Major. A student wishing to change his or her major must personally initiate the procedure in the Office of Advising Services.

Transfer/Drop Out Advising. A student planning on transferring or otherwise departing the university at the semester's end should check with Advising Services to ensure proper handling of academic records and receive other assistance, as appropriate, which may facilitate the process of leaving.

Admissions Advising. The Admissions Office provides counseling to assist students in making application, in understanding admission requirements, and in utilizing the services of the University during the admissions process. Problems concerning evaluation of previous academic records should be directed to the Director of Admissions and Records.

Special Major. A student wishing to create a special major initiates the process by obtaining an application form in the Office of Advising Services and discussing the program with a counselor. (See catalog section on Special Major for further details.)

CAREER PLANNING AND PLACEMENT SERVICES

The university maintains a centralized service which is closely integrated with the various schools, divisions, and departments of the university. Services include a career development center staffed by a career information specialist and professional assistance to students and graduates seeking part-time, temporary and summer positions, and career positions upon graduation.

Every effort is made to seek efficient utilization of manpower by assisting students and graduates in obtaining positions which will best use their education, training, experience, and abilities. The placement service not only serves the needs of the university and its students but is vitally concerned with and directs its service toward the needs of the community, business, industry, government, the public school system, and the state generally.

The specific functions of the office are: to assist students in their career development, to collect and make available to prospective employers personal data and letters of reference on registrants, to maintain a current record of employment opportunities, to recommend candidates for positions at the request of employers, to arrange interviews between candidates and employers, to provide guidance to candidates seeking positions, and to bring the needs of the employer to those who design and implement educational programs.

Each student and qualified alumnus is encouraged to participate in accordance with established policies. Participation by employers require that they be engaged in a legal operation, have bona fide employment opportunities, adhere to the standards of ethical conduct, and be in compliance with the guidelines for *Titles VII* and *IX* of the *Civil Rights Act,* Federal Handicapped Regulations of the *Rehabilitation Act of 1973,* and the *California Fair Employment Practices Act.*

There is no charge to students or employers for this service. Alumni will be charged an annual fee for service rendered. Every effort is made to assist those who seek the service; however, placement cannot be guaranteed. The university reserves the right to recommend for placement only those applicants who are adequately qualified for positions they seek.

EDUCATIONAL PLACEMENT

Graduates are eligible for educational placement if they complete a degree and credential program at California State University, Fresno; if they complete a degree at CSUF and a credential program at another institution of higher learning; or if they complete a degree at another institution and a credential program at CSUF, including a minimum of 24 semester units of work.

BUSINESS, INDUSTRIAL, AND GOVERNMENTAL PLACEMENT

Participation in this program is open to all graduating seniors and alumni who desire full-time positions in agriculture, business, industry, governmental agencies and other related fields, provided a minimum of 24 semester units have been completed at CSU, Fresno. Seniors are urged to complete and file a personal data sheet with the Placement Center early during the year in which they expect to graduate. Close cooperation is maintained with the various schools and departments in the placement of candidates in these fields.

STUDENT PLACEMENT

Participation in this program is open to any enrolled student. Many students earn part of their university expenses. Entering freshmen, however, should be prepared to finance their first semester without working; all students should keep their outside employment to a minimum in order to avoid endangering either health or academic achievement.

Various types of employment are available including a number of hourly jobs in various work areas on campus for candidates with specific abilities. Other positions of a temporary nature are also available. Active immunization against tetanus (available through the Student Health Service) is required for any student employed on the University Farm. Off-campus positions range from short-term positions to those with scheduled hours for the full year. Students desiring work on or off campus should consult the Student Placement Center. Employed students are expected to reflect credit on the University. (See also *Work-Study Program* and *Graduate Assistantships.*)

CAREER PLACEMENT INFORMATION

The campus may furnish, upon request, information concerning the subsequent employment of students who graduate from programs or courses of study which have the purpose of preparing students for a particular career field. This information includes data concerning average starting salary and the percentage of previously enrolled students who obtained employment. The information may include data collected from either graduates of the campus or graduates of all campuses in the California State University and Colleges. Interested prospective students may request copies of the published information from the Office of the Dean of Student Affairs.

THE COLLEGE UNION

The College Union building was designed to serve the entire campus community. This structure was planned by students and is financed by student funds through the California State University, Fresno Association, Inc. The College Union is the campus community center for students, faculty, staff, and guests. It sponsors a wide variety of social, recreational and entertainment

activities throughout the year. The building includes conference and meeting rooms, lounge areas, a coffee shop, a barber shop, art display areas, student government and committee offices, auxiliary organization offices, bowling and recreation areas, and numerous service facilities. The offices of the Director of Student Activities and Student Activities Advisers are located in the College Union.

COUNSELING SERVICES

The Student Counseling Service is staffed by full-time professional counselors and psychologists whose services are available, without charge, to all students desiring assistance. Matters discussed by the student and counselor are held in strict confidence.

Educational Counseling. The Counseling Service assists students who are having academic difficulties, those who are uncertain regarding their educational goals, and those who need information about educational requirements and programs.

Vocational Counseling. The Counseling Service assists students in self-appraisal of their unique interests and aptitudes and determining their vocational goals. Psychological and vocational tests are used as needed. A career information resource center is available; also, each academic department provides vocational advising pertinent to its field.

Personal Counseling. Counselors and psychologists help students who are concerned about personal matters. The emphasis is upon the student's personal growth and development.

Group Counseling. The Student Counseling Service provides opportunities to enter groups of from 8 to 12 students sharing the desire to grow and develop in self-awareness and sensitivity to other people's needs and feelings, and to find meaning and relevance for themselves in their relationship to others.

Study Abroad Counseling. International Student Counseling Office—In addition to coordinating counseling services for foreign students, this office assists American students seeking to study and travel overseas. A library of information is available and applicants for California State University and Colleges International Programs and for Fulbright Grants apply through the International Student Counseling Office.

EDUCATIONAL OPPORTUNITY PROGRAM

The Educational Opportunity Program is designed to recruit, admit, and retain students from minority and low income backgrounds who have the potential to perform satisfactorily at the university level, but who have not been able to realize that potential because of economic, cultural, educational, or environmental backgrounds; or who meet regular admission requirements but in the opinion of appropriate campus authority require the full assistance of the program in order to succeed. Criteria for evaluating applicants include motivation, school, and community involvement rather than past academic achievement alone. Supportive services include a readiness program for first semester students, tutorial services, academic and personal guidance, assistance in obtaining housing, job placement, graduate studies and career

guidance. In addition to other financial aid assistance, EOP students are eligible for a state EOP grant based on need established by the Financial Aids Office. (See *Financial Aids.*)

FINANCIAL AIDS

Institutional and Financial Assistance Information

The following information concerning student financial assistance may be obtained from the Director of Financial Aids, Joyal 286, phone 487-2182:

1. Student financial assistance programs available to students who enroll at CSUF;
2. The method by which such assistance is distributed among student recipients who enroll at CSUF;
3. The means, including forms, by which application for student financial assistance is made; the requirement for accurately preparing such applications; and the review standards employed to make awards for student financial assistance; and
4. The rights and responsibilities of students receiving financial assistance.

The following information concerning the cost of attending CSUF is available from the Director of Financial Aids, Joyal 286, phone 487-2182. This information includes:

1. Tuition fees;
2. Estimated costs of books and supplies;
3. Estimates of typical student room and board costs or typical community costs; and
4. Any additional costs of the program in which the student is enrolled or expresses a specific interest.

Information concerning the refund policy of CSUF for the return of unearned tuition and fees or other refundable portions of costs is available from the Accounting Office, Joyal 152, phone 487-2764.

Information concerning the academic programs of CSUF may be obtained from the Office of the Associate Vice President for Academic Affairs, Thomas 110, phone 487-2724. This information may include:

1. The current degree programs and other educational and training programs;
2. The instructional, laboratory, and other physical plant facilities which relate to the academic program;
3. The faculty and other instructional personnel; and
4. Data regarding student retention at CSUF and, if available, the number and percentage of students completing the program in which the student is enrolled or expresses interest.

SCHOLARSHIPS AND GRANTS

About 350 scholarships and grants totaling approximately $90,000 will be available for this academic year. About half of these scholarships, ranging from $50 to $1,000, are open to new students. The average scholarship is for $250 for the year and covers the cost of material and service fees, student body fees, and a partial cost of books. Generally, upper division and specialized scholarships are in larger amounts. The scholarship program is designed to provide deserving students with educational opportunities not

otherwise possible. Scholarships are awarded on a competitive basis, consideration being given to scholastic attainment, academic potential, financial need, and character; some are available on the basis of outstanding accomplishment in specialized fields. Scholarship applications must be submitted by March 1.

Scholarship awards are announced in May or June of each year. Students, both entering and enrolled, must file applications with the Director of Financial Aids prior to March 1st. One application is sufficient for all available scholarships.

WAIVERS OF NONRESIDENT FEES

Upon written waiver by the Executive Vice President or the Director of Admissions and Records, children or spouses of California State University and Colleges full-time employees, who are not yet legal residents of California, may be exempted from the nonresident fee.

With verification by the Dean of the School of Education, *certificated California school district employees* who are not yet legal residents of California, may be exempted from the nonresident fee if they are provisionally credentialed and working toward regular credentials, completing postponed requirements, or completing the fifth year required under the *Teacher Preparation and Licensing Law of 1970 (Ryan Act).*

UNIVERSITY ASSOCIATION AND FOUNDATION LOAN FUNDS

The University operates an Emergency Loan Fund to assist students who need up to $200 for emergency expenses that are educationally related. These loans have to be repaid within 90 days or at the end of the semester, whichever comes first. Loans are granted on the basis of the students' need, educational program, and ability to repay. There are also available limited funds for loans up to $500 repayable after graduation. These funds, however, are restricted to "worthy upper division and graduate students majoring in education and working for a teacher's credential at CSUF". The funds for these programs have been provided by gifts to the University.

Applications for loans are processed through the Coordinator of Student Loans, Joyal Administration Building, Room 276, California State University, Fresno, Fresno, California 93740.

NATIONAL DIRECT STUDENT LOAN PROGRAM

CSU, Fresno participates in the federal loan program which is provided for in Title IV, Part E, of the Higher Education Act of 1965. Under this program needy undergraduate students in any field of study may borrow up to a maximum of $5,000, and needy graduate students may borrow up to a combined maximum of $10,000. Students carrying at least a one-half academic workload are eligible to receive loans. Students entering the university for the first time as well as continuing students are eligible to apply for this type of loan.

No interest is charged until nine months after the borrower ceases to be at least a one-half time student. Interest at the rate of 3% of the remaining balance begins at the end of the nine-month grace period and the first payment is due one month later. Payments may extend for a period of not more than ten years, but will be at a rate of not less than $30 per month.

A borrower who becomes a teacher in a public or other nonprofit

elementary or secondary school in which there is a high concentration of low income families as designated by the Commissioner or who becomes a teacher in special education (hard of hearing, mentally retarded, cerebral palsy, etc., classes) may have 15 percent of the loan cancelled for the first and second year of such service, 20 percent for the third and fourth year, and 30 percent for the fifth year. A borrower shall receive cancellation for service after June 30, 1972, as a member of the United States Armed Forces, at the rate of 12½ percent per year for each complete year of service in an area of hostilities for a total of 4 years.

Inquiries should be directed to the Student Loans Office, California State University, Fresno, Fresno, California 93740.

LAW ENFORCEMENT ASSISTANCE GRANTS

Grants in the amount of the cost of registration and books may be made to assist full-time or part-time students in a graduate or undergraduate program who are full-time employees of any publicly funded law enforcement or corrections agency and who are in college for professional improvement. The recipient of a grant is obligated to remain in the employment of the agency which has certified his full-time employment for a period of two years after completion of the course or courses. Applications should be made to the Financial Aids Office.

NURSING STUDENT LOANS AND SCHOLARSHIPS

Under this program, a student who can show that a loan is needed to enter or continue in the nursing program may borrow up to $2,500 an academic year or its equivalent, with an aggregate maximum of $10,000. Preference will be given to licensed practical nurses in selecting loan recipients. No interest is charged while the borrower pursues at least a half-time course of study in a collegiate school of nursing leading to an associate degree in nursing, a baccalaureate degree in nursing or an equivalent degree, or a graduate degree in nursing, or for a period of 9 months after leaving school. Interest then starts at 3% simple interest and the loan is repaid at not less than $15 per month. A borrower who enters full-time professional nursing in a public or nonprofit hospital is entitled to cancellation of a percentage of the loan for each full year worked. Interest and payments are deferred for a period of time while the borrower is a member of the uniformed service or is a volunteer under the Peace Corps Act. Applications for these loans should be made by March 1st for the following year.

FEDERALLY INSURED STUDENT LOAN PROGRAM

The federally insured student loan program is authorized by the higher education act, and enables students to borrow from participating lending institutions (banks, credit unions, savings and loan associations, etc.) to help pay their educational costs. Under this program the loan maximum is $2,500 per year. The total outstanding principal balance for undergraduates may not exceed $7,500 at any time and $10,000 for graduates. Simple interest at the rate of 7% per annum is charged on the outstanding balance. Under certain circumstances the federal government will pay this interest until the student borrower enters the loan repayment period. Determination of whether or not a borrower is eligible for these interest benefits is made by the Financial Aids Office on the basis of the student loan application and other supporting

information as may be required.

WORK-STUDY PROGRAM

CSU, Fresno participates in the federal Work-Study Program under the Higher Education Amendments of 1972. Students who qualify may be offered employment on or off campus. The student would normally work between ten to twenty hours per week. A standard financial aids application is required prior to March 1 of each year.

SUPPLEMENTAL EDUCATIONAL OPPORTUNITY GRANTS

CSU, Fresno participates in the Supplemental Educational Opportunity Grant Program as provided by the Higher Education Amendment of 1972. These grants must be equally matched with other institutional aid. Undergraduate students who qualify will receive grants ranging from $200 to $1000. Applications for grants may be obtained from the Financial Aids Office, California State University, Fresno. The application deadline is March 1.

AIR FORCE RESERVE OFFICER TRAINING CORPS (AFROTC) FINANCIAL AID AND SCHOLARSHIPS

Scholarships are available which provide full tuition, allowances for books, laboratory fees, and incidental fees.

The AFROTC program at CSUF offers both a four-year and a two-year AFROTC program. High school seniors should apply for a four-year scholarship during the fall of the senior year. Any students enrolled in the four-year program may also apply for 3½, 3, 2½, and 2-year awards. Applicants to the two-year program may apply for scholarships to a maximum of four semesters.

Students enrolled in the two-year AFROTC program receive $100 per month non-taxable financial assistance up to a maximum of $2,000.

Two-year applicants attend a six-week field training prior to enrolling in AFROTC and are paid approximately $483 plus travel pay to and from the field training location, and are provided meals and housing while in attendance.

Applicants with prior military service and four-year program students who have successfully completed the first two years of the program, and are accepted into the Professional Officer Course, attend a four-week field training for which they receive approximately $322 plus travel, meals, and housing.

Applications should be submitted to the Professor of Aerospace Studies during the fall semester one year prior to anticipated enrollment in AFROTC. Detailed information concerning AFROTC can be obtained by calling the Department of Aerospace Studies (487-2593) or by visiting the Air Science Wing of the Men's Gym, Room 158.

GRADUATE ASSISTANTSHIPS

A number of graduate assistantships and teaching assistantships are available to students who are enrolled in the master's degree program and whose previous records show outstanding achievement in academic work, outstanding subject matter competence in the major field, and the special qualities necessary to the duties assigned. A beginning graduate assistant may

receive a stipend of $3,642 for twenty hours per week of work during the academic year. Some assistantships may be for reduced time and carry prorated stipends. For information write to the Dean, School of Graduate Studies, specifying field of graduate study and any special abilities that might justify assignment as a graduate assistant.

RESIDENT ADVISERS

The university employs a number of students as advisers in its residence hall program. These positions are available to upper division students whose interest and background indicate competence in this type of work. The stipends vary, depending upon the work assignment. Generally they cover the cost of residence hall room and board. Applications and further information are available at the beginning of the spring semester from the Director of Housing.

BASIC EDUCATION OPPORTUNITY GRANT

The Basic Education Opportunity Grant Program, more commonly known as Basic Grants, is a new program of student financial aid which was authorized by Title IV, Part A, of the Education Amendments of 1972. This

program provides for grants of $1,800 less the expected family contribution for all eligible students to assist them in meeting educational costs. To be eligible for the Basic Education Opportunity Grant, the following criteria must be met: (1) an undergraduate student for the period for which application is made; (2) attendance on at least a half-time basis (6 or more credit hours per term); (3) United States citizenship or residence in the United States, for other than a temporary basis, and intention to become a resident. Program regulations change from year to year. Check with the Financial Aids Office for the regulations now in effect. Students may apply by filling out the Student Aid Application for California and checking #83, #84. Forms are available at high schools, community colleges and CSUF Financial Aids Office.

BUREAU OF INDIAN AFFAIRS (BIA) GRANTS

If you are at least one-fourth American Indian, Eskimo, or Aleut, as recognized by a tribal group served by the Bureau of Indian Affairs, you may apply for a BIA grant. The amount is based on financial need and availability of funds from your area agency. You must first submit an application for financial aid and supportive documents by the deadlines, then make an appointment with a Financial Aids counselor to complete the BIA application.

CALIFORNIA STATE EDUCATIONAL OPPORTUNITY GRANT PROGRAM (State EOP)

Educational Opportunity Program Grants are provided by the State of California for students admitted to one of the California State Universities and Colleges under the Educational Opportunity Program. Eligibility for this grant is determined by the same criteria as federal financial aid programs. Admission to the University through the EOP does not automatically mean that the student will be awarded a State EOP Grant.

Grants provide aid to undergraduate students who, for lack of such assistance, would be unable to enter or remain in an institution of higher education. Funds are limited and are awarded to EOP students who come from low income families and demonstrate financial aid eligibility. EOP grants range from $200 to $1,000 for the academic year.

ALAN PATTEE SCHOLARSHIPS

Children of deceased public law enforcement or fire suppression employees, who were California residents and who were killed in the course of law enforcement or fire suppression duties, are not charged fees or tuition of any kind at any California State University or College, according to the Alan Pattee Scholarship Act, Education Code Section 68121. Students qualifying for these benefits are known as Alan Pattee scholars. For further information contact the Admissions/Registrar's Office, which determines eligibility.

VETERANS/HANDICAPPED STUDENT SERVICES

This office provides services to all veterans and disabled students at California State University, Fresno. Liaison is maintained with the Veterans Administration and the State Department of Veterans Affairs for veterans, and with the local and State Office of Vocational Rehabilitation and other related agencies for the disabled student population of the campus.

Veterans transferring to California State University, Fresno from other institutions are strongly urged to contact the office and file a request for a Change of Place of Training (VA 22-1995) at least two months prior to the start of the semester. New applicants (never used G.I. Bill) should also apply through the office at least eight weeks in advance. Such lead time is necessary as we must certify all enrollments to the Veterans Administration before any benefit checks will be issued.

Veterans are not the only people eligible for G.I. benefits. Certain dependents of deceased veterans, disabled veterans, and certain dependents of California veterans may qualify for benefits. All such students should contact the office well in advance of the start of their planned study at California State University, Fresno.

Disabled students planning to attend California State University, Fresno should contact the office at their earliest opportunity. Services include orientation for new handicapped students to the campus; recruiting and orienting personal attendants for students in need; locating readers, note takers, and transcribers for blind students; identifying interpreters for the deaf; priority registration for all handicapped students; special handicapped parking permits; specially equipped disabled students study room in the library; and mobility assistance as needed in regard to physical barriers.

The office serves as an information center for all veterans and handicapped students. Counselors are available to assist students with answers to their questions or referral to the office or agency that can best serve the student's needs.

INTERNATIONAL (FOREIGN) STUDENTS

California State University, Fresno, regularly enrolls a significant number of students from abroad. The International Student Counseling Office staff, under the direction of the Student Counseling Service, assists foreign students with academic and personal problems, and housing (see *Student Housing*), as well as governmental and legal aspects of their stay. A special orientation program is planned and required of all foreign students prior to registration each semester. Students should notify the International Student Counseling

Office of their arrival plans and contact the office immediately upon arrival on campus for verification of enrollment, orientation, and assistance (See *General Information—Admission to the University*).

International students must have sufficient understanding and proficiency in use of the English language to be successful in their course work at the university (see *Entrance Examinations*). A special program of English language and American studies courses is available to assist students whose previous instruction has been in a language other than English. (See *International Studies—Campus Program*). Except for the few who are employed as graduate assistants, students must have sufficient funds so that they will not need employment. They should plan to register for the minimum legal number of courses each semester, which for undergraduate students on "F" or "J" type visas is 12 units and for graduate students is 8 units. These are the minimum-unit loads foreign students must carry in order to keep their student visas valid. **They are also required to have adequate health insurance coverage at the time of registration.**

The International Student Counseling Office also coordinates campus and community activities for foreign students. These activities are designed to enhance their educational experiences in the United States. Students should consult the International Student Counseling Office for information pertaining to these activities. Foreign graduate students should refer to the *School of Graduate Studies* section of the catalog.

DEAN OF STUDENT AFFAIRS OFFICE

In addition to providing guidance to the various units within Student Affairs, the Office of the Dean of Student Affairs is responsible for administering the Student Grievance Procedure, student discipline, and for maintaining liaison with other administrative and academic areas of the university. A legal advisement program is also administered through the office.

STUDENT HOUSING

RESIDENCE HALLS

The university can accommodate 1,268 students in the residence halls on campus. Two types of rooms are available: single and double. Rooms are attractively furnished and provide pleasant study and living facilities. The halls also have special lounge areas, recreation rooms, study rooms, and laundry facilities. Food service is provided by the residence hall dining facility. A choice of board plans is available, allowing the resident to choose the one which meets his or her needs and budget. The hall governments sponsor an extremely active and varied program of activities. In addition to the conveniences of location and services offered by the residence halls, the group living situation affords a unique opportunity for students to make new friends and to become involved in university and hall activities.

Residents must agree to live in the halls for the entire academic year. For information on residence hall costs, see *Fees and Expenses.* Further information and applications for reservations may be obtained by writing to the Housing Office. Application forms are available after April 1. Students who are applying for accommodations in the halls must also file an

application for admission to CSUF unless already enrolled.

OFF-CAMPUS HOUSING

Students are advised to make arrangements for housing as early as possible before registration. The Housing Office maintains a file of available off-campus living accommodations. A large number of apartments are available in the area adjacent to the campus. Accommodations are also provided by private homes in the area, with a limited number offering room and board. The Housing Office also receives a few listings on houses, duplexes, trailers, and other accommodations for rent, lease, or sale. Most of the nationally affiliated fraternity and sorority chapters at the university provide housing and meals for members at the chapter houses near the campus.

Some information on apartment rentals may be sent through the mail. Most listings and information available in the Housing Office are kept in loose-leaf binders because of rapid turnover; students must visit the office in person to consult these files. Students are also advised to inspect the premises in person before signing a lease. The university does not inspect or supervise any off-campus housing.

HOUSING FOR MARRIED STUDENTS

The university does not maintain housing facilities for married students and their families. The Housing Office does maintain a file of privately owned rentals, some of which are near the campus. These private rentals range from $85 to $300 per month depending on size, furnishings, and location.

STUDENT HEALTH SERVICE

The objective of the Student Health Service is to keep the student in a state of optimum health, both physically and mentally, so that the student may realize to the fullest the opportunities afforded by the university. The health services are supported by a portion of the Student Services Fee paid by each student. These funds finance the provision of basic health care to students wishing to avail themselves of these services. In addition, each student may *voluntarily* pay an additional health fee which supports certain services and treatments not funded through the Student Services Fee. The Student Health Service publishes a brochure which describes in further detail the basic health care and those additional services available through payment of the voluntary health fee or on a fee-for-service basis. The brochure is available at the Student Health Service.

The Student Health Service is housed in its own building, with well-equipped doctors' offices and examination rooms, laboratory and X-ray facilities, pharmacy, physical therapy, nurses' treatment rooms, business office, and waiting rooms. It is open each school day during hours posted at the entrance to the building. At these times registered nurses are on duty and physicians are available for consultation. Various medical specialties are represented among the part-time and full-time physicians, affording a high standard of medical care.

In addition to the Student Health Services, students may purchase an insurance protection plan for emergency illness and accidental injury during hours that the Center is closed. This insurance program provides substantial

coverage for hospital benefits, medical, surgical and related services for any one illness or accident. The program covers the student both on and off campus on a twenty-four-hour-a-day basis and includes periods of interim vacation and absences.

LANGUAGE, HEARING, AND SPEECH CLINIC

The Language, Hearing, and Speech Clinic is part of the program of communicative disorders within the Communicative Disorders Department. Any regular student needing diagnostic or therapeutic assistance with language, hearing, or speech problems may arrange to secure the service of the clinic without charge.

TESTING SERVICES

The Office of Testing Services is staffed by a Coordinator and a Psychometrist, both having special educational backgrounds emphasizing tests and measurement, research, and computer applications. They work closely with other offices, Counseling Center staff, and faculty. Services include the following:

Psychological Testing. A variety of psychological tests designed to measure educational abilities, personality, and vocational/career interests are available. Usually such tests are administered at the request of a counselor or a member of the Office of Advising Services staff. In most cases, a student must see a counselor prior to the administration of psychological tests.

Research Services. Within the limits of staff time, the office assists students, faculty, or departments in designing and implementing research problems. The Office of Testing Services is often a link between the researcher and the campus Computer Center.

Entrance Examinations. Three times during the academic year special institutional administrations of the Scholastic Aptitude Test (SAT) are scheduled for students applying for admission to CSUF who, for whatever reason, were unable to take the test at one of the regularly scheduled national administrations. Specific information is available in the Office of Testing Services.

CSUC English Placement Test (EPT). Information and applications for this required examination may be obtained in the Test Office. Students having special needs, such as visual or hearing limitations, may contact the Test Office or the Office of Veterans and Handicapped Student Services for assistance.

Ryan Act Competency Examinations (Reading and Writing). Information regarding current test dates and registration forms are available for students planning to complete requirements for teaching credentials.

National Testing Programs. The Office of Testing Services coordinates administration of several nationally administered testing programs, including the Admissions Testing Program (SAT), the Graduate Record Examination (GRE), the Graduate Management Admissions Test (GMAT), the National Teacher Examination (NTE), the Medical College Admission Test (MCAT), and the Test of English as a Foreign Language (TOEFL). A variety of certification examinations are also administered by this office. Applications and particulars are available upon request.

College Level Examination Program (CLEP). The Office of Testing Services is an "open" test center for this nation-wide program. Tests may be administered on Tuesdays and Thursdays of the third week of each month. Registration materials are available in the office.

Classroom Examination Scoring. The Office of Testing Services has the capability to machine score objective classroom examinations. Questionnaires, surveys, and student evaluations of faculty instruction may also be processed. Interested faculty members are encouraged to check with the coordinator in advance regarding type and availability of answer sheets.

CALIFORNIA STATE UNIVERSITY, FRESNO ASSOCIATION, INC.

The California State University, Fresno Association, Inc. is a non-profit corporation chartered by the State of California to operate the campus bookstore, the campus food services, the college union, and to otherwise promote and assist the educational services of the university.The Board of Directors, composed of faculty, administrators, laymen and students, exerts budgetary control and determines management policies.

ASSOCIATED STUDENTS OF CALIFORNIA STATE UNIVERSITY, FRESNO

All students enrolled at California State University, Fresno are members of the Associated Students of California State University, Fresno. The A. S. is a non-profit association chartered by the Trustees of The California State University and Colleges to operate a student government and its sponsored activities. The membership fee, which is mandatory and paid at the time of registration, is $10 per semester. The fee supports athletic activities, publications, music, drama and other cultural programs, a child care center, forensics and a variety of other student services. A non-transferable membership card permits participation in activities, elections and admission to all A. S. programs without charge or at a reduced fee. The A. S. executive branch and the Student Senate exert budgetary control and determine management policy for all operations, services and activities sponsored by the Associated Students.

STUDENT PUBLICATIONS

Membership in the Associated Students entitles the holder to copies of publications financed by the Associated Students fee. *The Daily Collegian* is the Associated Students news publication. The student literary magazine, *Backwash,* is available to students at a nominal charge.

ALUMNI ASSOCIATION

The Alumni Association seeks to advance the welfare of the university, to promote common interests of its students and alumni, and to serve as a liaison with the university, alumni, and the community. The self-directed group sponsors numerous activities during the year, provides scholarship assistance to students, and supports the development of the university. Membership is open to graduates and to any student who has attended one or more

semesters at CSU, Fresno. Annual dues are $10; life memberships are $150.

The University Alumni Trust Council is a charitable organization which receives contributions from alumni and friends of the college. Funds received by the Trust Council are used to support scholarships and programs of the Association, and to promote the welfare of the university.

FEES AND EXPENSES

Note: Fees are subject to change without advance notice by the Trustees of The California State University and Colleges. Tuition is not charged to legal residents of California. No fees of any kind shall be required of or collected from those individuals who qualify for such exemption under the provisions of the Alan Pattee Scholarship Act. Auditors pay the same fees as students registered for credit. See Financial Aids—Waiver of Fees for exceptions *to the fees listed below.*

Application fee (nonrefundable. Payable by check or money order at time of applying)	$20.00
Student services fee,* per semester:	
0 to 6.0 units	57.00
6.1 and more units	72.00
Facilities fee, all students, per semester	3.00
Nonresident ** tuition fee (foreign and domestic), per semester *in addition to other fees:*	
Each nonresident student enrolled for 15 units or more	900.00
(Per academic year)	1,710.00
Each nonresident student enrolled for fewer than 15 units, per unit or fraction	60.00
Foreign visa student tuition fee—same as nonresident.	
Extension, per unit:	
Lecture or discussion course	33.00
Activity course	43.00
Science laboratory course	66.00
Summer session courses, per unit	37.00
Other fees:	
Identification card fee	1.00
Graduation fee	10.00
Diploma replacement, duplicate/reissue	6.50
Transcript of record	1.00
Thesis binding fee (not a state fee), per copy (includes 35¢ sales tax)	6.50
Credential fee *(collected for State Department of Education, each credential)*	20.00
Health Service fee (not a state fee), optional, per semester	6.00
Associated Student Body fee, all students *** (not a state fee), per semester	10.00

* The Student Services Fee was established by the Board of Trustees of The California State University and Colleges in January
1) Social and Cultural Development Activities: provides for the coordination of various student activities, student organizations, student government and cultural programs.
2) Counseling: includes the cost of counselor's salaries and clerical support plus operating expenses and equipment.
3) Testing: covers the cost of test officers, psychometrists, clerical support, operating expenses and equipment.
4) Placement: provides career information to students and faculty for academic program planning and employment information to graduates and students.
5) Financial Aids Administration: includes the cost of the counseling and business services provided in connection with the financial aid programs.
6) Health Services: provides health services to students and covers the cost of salaries of medical officers and nurses plus related clerical and technical personnel as well as operating expenses and equipment.
7) Housing: includes the cost of personnel providing student housing information and monitoring housing services.
8) Student Services Administration: covers 50% of the cost of the Dean of Students Office which has responsibility for the overall administration of student services.

** A nonresident student is any person who has not been a bona fide resident of the State of California for more than one year immediately preceding enrollment. The exact determination date may be ascertained by contacting the Admissions/Records Office.

*** The law governing The California State University and Colleges provides that a student body fee, not to exceed $20 per academic year may be established by student referendum with the approval of ⅔ of those students voting. The Student Body Fee was established at CSUF by student referendum on May 12, 1959. The same fee can be abolished by a similar ⅔ approval of students voting on a referendum called for by a petition signed by 20% of the regularly enrolled students. (*Education Code,* Section 89300) The level of the fee is set by the Chancellor upon recommendation by the campus. Student body fees support a variety of cultural and recreational programs, child care centers, and special student support programs. In certain instances students may work on campus to earn back the amount of this fee. Application for the work must be made to the Financial Aids Office at least two weeks prior to scheduled registration dates.

Student Body Center fee, all students (not a state fee),	
per semester, 7 or more units	12.00
6 or less units	10.00
Instructionally Related Activities Fee, per semester	5.00
Penalties:	
Check returned for any cause	5.00
Late registration (in addition to student services fee)	5.00
Failure to meet administratively required appointment or time limit	2.00
Late filing of student programs	2.00
Late filing of application for degree or credential	2.00
Lost or broken items	cost or $1.00 if cost is less than $1.00
Lost library items	replacement cost plus $5.85 service charge
Damaged library items	50¢ up to replacement cost, plus $5.85 service charge
Residence Hall rates:	
Room and board, per semester each student	763–898
Parking fees: decal (subject to change):	
Fall and spring, per semester	18.00
First summer session	7.00
Post session	6.00

REFUND OF FEES

Fees may be refunded only as authorized by Sections 41802, 41803, and 41913 of *Title 5, California Administrative Code.* Whether a fee may be refunded and the circumstances under which a fee or any part of a fee may be refunded, vary depending on the particular fee involved. Requirements governing refund may include such matters as the reason for seeking a refund (for example, death, disability, compulsory military service), the number of days of instruction which have elapsed before application for refund is made, and the degree to which the campus has provided the services for which the fee has been charged.

The student must file a written application for refund of fees stating the reason for the refund request with the university accounting office. The application should be filed at the earliest possible date since the refund will be denied if submitted beyond certain time limits. For example, requests for refund of student services fees, student body organization fees, and student body center fees must be made no later than 14 days following the commencement of instruction and requests for refund of extension course tuition fees must be made prior to the fourth meeting of the class.

Details concerning the fees which may be refunded, the circumstances under which fees may be refunded, and the appropriate procedure to be followed in seeking a refund may be obtained from the university accounting office.

REGISTRATION FEES

After a student makes a formal withdrawal from the university through the Student Records Office, a refund of a portion of the *student services fee* may be made if a written application for refund is filed not later than fourteen calendar days after the first day of instruction. A student shall make the application personally; if in the opinion of the administration, he or she is unable to do so, the parents or guardian of the student who is a minor, or the legal representative of the student may make the application. (See *California Administrative Code, Title 5, Section 41802*)

The amount of the refund will be determined by the Business Office by

deducting $5 for registration costs. A full refund may be made to a student who is unable to continue a course, because of a university regulation, compulsory military service, death or disability, at any time prior to the date the student receives any academic credit for any course or courses for which he or she is registered. The *late registration fee* is not refundable. *There is a refund for a reduction in the student's unit load, if unit load is reduced to a lower fee category not later than 14 days following the day of the term when instruction begins.*

The same withdrawal and application for refund procedure applies for the *nonresident tuition fee* except that the time limit is different. There may be a refund for reduction in unit load. Within the first week of the session, a full refund may be made for units dropped. For each additional week, the refund diminishes as follows: 90 percent of the fee, the second week; 70 percent the third week; 50 percent, the fourth week; 30 percent, the fifth week; 20 percent, the sixth week; no refund, after the sixth week.

PARKING FEES

A student is entitled to a refund of parking fees in the amount shown in the following schedule if on any one calendar day within the applicable period the student files with the Business Office a written application for refund and returns all documents issued to him or her by the university which evidence their right to use the parking facility including any parking permit, stickers, and decal so issued. If the decal is attached to a vehicle and the vehicle is presented to the university for removal of the attached item by or under the direction of the State, such presentation and removal shall constitute return of the attached item.

Beginning with the first day of instruction, 75 percent of the parking space fee is refunded if application is made as indicated above within 1–30 calendar days; 50 percent, within 31–60 calendar days; 25 percent, within 61–90 calendar days; no refund, 91 days to end of semester.

(For refund of fees during summer sessions consult the Business Office.)

OTHER FEES

The schedule of refunds for *the health service fee, the Associated Student Body fee, the Student Body Center fee, and the facilities fee* is set annually. Refunds are dependent upon the length of time between the opening of the semester and application for refund. Application must be made and the student body and student identification cards must be turned in to the Student Records Office.

CREDIT CARDS

In the event a student desires to pay any fees by use of BankAmericard, VISA, or Master Charge, he or she should contact the Business Office. If the student's bank does not have a check service program through the campus, the student may obtain a cash advance at a local bank.

ESTIMATE OF EXPENSES

The basic expenses for attendance at CSUF for a year (two semesters) for full-time students who live away from home will range from approximately $1,700 to $2,200. These figures are exclusive of nonresident tuition fee, but include an estimate of such personal items as clothes, laundry, and incidental

expenditures. Students who live at home or share apartments with other students and commute to the campus are able to reduce their expenses considerably below the estimated figure. The cost of board and room may also be reduced by cooperative living arrangements or part-time work in exchange for room and board.

Room and board	from $1,600–$1,900
Student services fee	144
Associated Student Body and health service fee	32
Facilities fee	6
Student Body Center fee	24
Books and supplies	100 to 150

AVERAGE ANNUAL COSTS AND SOURCES OF FUNDS PER FULL-TIME EQUIVALENT STUDENT

The 19 campuses and the Chancellor's Office of The California State University and Colleges are financed primarily through funding provided by the taxpayers of California. Including capital outlay, the CSUC 1978/79 budget totals $840 million. Approximately $815 million of the $840 million total has been budgeted to provide support for a projected 237,080 full-time equivalent (FTE *) students. Excluding capital outlay, the average cost per FTE student is $3,441 per year. Of this amount, the average student pays $312. Included in this average student payment calculation is the amount paid by non-resident students. The remaining $3,129 in costs is funded by state and federal taxes.

Averages do not fit all students alike or even any specific student. To arrive at an average figure that is meaningful, the costs outlined above exclude "user fees" for living expenses, housing, and parking as well as costs for extension and summer session work. Computations are based on full-time equivalent students, not individuals, and costs are prorated by system totals, not by campus. The average costs for a full-time equivalent student in the system are depicted in the following chart:

TOTAL 1978/79 CSUC BUDGET (PROJECTED ENROLLMENT: 237,080 FTE)

Funding Source	*Amount*	*Average Cost Per Student (FTE) **	*Percentage*
State Approp. (Support)	$695,340,533[a]	$2,933	85.2%
Student Charges	73,970,331	312**	9.1%
Federal (Financial Aids)	46,458,850	196	5.7%
State Funding (Capital Outlay)	23,873,000	***	***
Total	$839,642,714	$3,441	100.0%

DEBTS OWED TO THE INSTITUTION

Should a student or former student fail to pay a debt owed to the institution, the institution may "withhold permission to register, to use facilities for which a fee is authorized to be charged, to receive services, materials, food or merchandise or any combination of the above from any person owing a debt" until the debt is paid (see Title 5, *California Administrative Code,* Sections 42380 and 42381). For example, the institution may withhold such a service as furnishing copies of a student's transcript. If a student believes that he or she does not owe all or part of an unpaid obligation, the student should contact the campus business office. The business office, or another office on campus to which the student may be referred by the business office, will review the pertinent information, including information the student may wish to present, and will advise the student of its conclusions with respect to the debt.

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[a] This amount will be reduced by the CSUC share of the statewide budget reductions required by Budget Act Section 27.1 (a statewide reduction of $42,400,000 in Operating Expense and Equipment) and Section 27.2 (a statewide reduction of $54,000,000 in personal services pursuant to the hiring freeze).

* For budgetary purposes, full-time equivalent (FTE) translates total head count into total academic student load. The term assumes that a full-time student in The California State University and Colleges is enrolled for 15 units of academic credit. Some students enroll for more than 15 units; some students enroll for fewer than 15 units.

** The average costs paid by a student include the student services fee, health facilities fee, college union fee, student body fee, and the non-resident tuition. This amount is derived by taking the total of all student fees and dividing by the total full-time equivalent student enrollment. Individual students may pay more or less than $312 depending on whether they are part-time, full-time, resident or non-resident students.

*** Not included in the Average Cost Per Student (FTE), and Percentage columns. The estimated replacement cost of all the system's permanent facilities and equipment on the 19 campuses is currently valued at $2.6 billion, excluding the cost of land.

ADMISSION PROCEDURES AND POLICIES

Requirements for admission to California State University, Fresno, are in accordance with *Title 5,* Chapter 1, Subchapter 3 of the *California Administrative Code.* Prospective applicants who are unsure of their status under these requirements are encouraged to consult a high school or college counselor or the Admissions Office. Applications may be obtained from the Admissions Office at any of the campuses of The California State University and Colleges or at any California high school or community college.

In compliance with *Title VI of the Civil Rights Act of 1964* and Executive Order 11246 as amended, California State University, Fresno, is open to all persons regardless of race, color, religion, sex, or national origin who are otherwise eligible for admission as students. Furthermore, in compliance with Section 504 of the *Rehabilitation Act of 1973,* no otherwise qualified handicaped persons shall, solely by reason of handicap, be excluded from admission as students.

Applicants are required to include their social security number in designated places on applications for admission pursuant to the authority contained in Title 5, *California Adminstrative Code,* Section 41201. The social security number will be used as a means of identifying records pertaining to the student as well as identifying the student for purposes of financial aid eligibility and disbursement and the repayment of financial aid and other debts payable to the institution.

UNDERGRADUATE APPLICATION PROCEDURES

Prospective undergraduates, whether applying for part-time or full-time programs of study, in day or evening classes, must file a complete application including all of the required forms and fees as described in the application booklet. The $20 nonrefundable application fee should be in the form of a check or money order payable to The California State University and Colleges. Undergraduate applicants may file only at their first choice campus. An alternative choice campus and major may be indicated on the application, but *applicants should list as alternate campus only that campus of The California State University and Colleges that they will attend if the first choice campus cannot accommodate them.* Generally, an alternate degree major will be considered at the first choice campus before an application is redirected to an alternate choice campus. Applicants will be considered automatically at the alternate choice campus if the first choice campus cannot accommodate them. *Transcripts and other supporting documents should not be submitted until requested by the campus.*

For undergraduate admission to CSUF a student must:

1. Submit a current application with the nonrefundable $20.00 application fee to the Admissions Office.
2. Upon receipt of a space reservation, request institutions formerly attended to forward directly to the Admissions Office transcripts of credits from high school and colleges. College transcripts are required in duplicate. Failure to include all colleges attended may result in cancellation of the student's registration. All transcripts submitted by matriculated students are retained by CSUF.

3. Take the SAT or ACT and request official scores be sent to CSUF, if a lower division applicant. TOEFL required of all foreign applicants and applicants whose native language is not English.
4. Take any additional proficiency or placement tests required.

In addition to the other documents required a veteran should file a photostatic copy of his or her *Notice of Separation* (DD 214) from the armed services with the Office of Admissions. Academic credit for service time and service schools completed as recommended by *A Guide to the Evaluation of Educational Experiences in the Armed Services.* Veterans may also be given consideration for special admission under conditions outlined under *Undergraduate Admission Requirements.*

Applications will not be accepted after admissions categories have closed. Eligibility for admission cannot be determined until *all* required documents have been received. Due to staff limitations, an evaluation of transfer credit will generally not be available until at least a month after admission.

Degree credit may be granted for work completed satisfactorily in another accredited institution of collegiate grade subject to the restrictions imposed on work taken at this institution. Questions concerning acceptability of a course from another institution should be addressed to the Evaluations Office.

A maximum of 70 semester units of credit is allowed toward the bachelor's degree for work completed in a community college. No upper division credit is given; however, community college credit in excess of 70 units may be used to satisfy subject requirements.

A maximum of twelve (12) semester units will be allowed for Agricultural Projects, Work Experience, and/or Internship courses. No more than six (6) semester units taken prior to Junior standing will be accepted toward the degree.

Remedial English courses in excess of 4 units are not accepted for degree credit.

For limitations on extension and correspondence credit, see *Extension Classes.*

Students desiring university housing or financial aid should file special applications with the appropriate offices concerned as soon as possible.

LOCALLY AND SYSTEMWIDE IMPACTED PROGRAMS

Most undergraduate applications are accepted for consideration at the first choice campus in the first choice major. However, quotas have become necessary in a few impacted programs. Impacted programs are those in which applications received in the first month of the filing period exceed the total spaces available, either locally (at an individual campus) or systemwide. You must make application for an impacted program during the first month of the filing period and may file more than one application and fee. Nonresidents, foreign or domestic, usually are not considered for admission to impacted programs.

High school and community college counselors are advised prior to the opening of the fall filing period which programs will be impacted. Supplementary admission criteria are used by the campuses to determine which applicants will be allocated space in impacted programs.

Applicants to impacted programs, both students currently enrolled at California State University, Fresno, and those enrolling at the university for the

first time, must submit supplementary applications in order to be considered for admission to an impacted program. Each applicant to an impacted program must meet supplementary application deadlines and must meet supplementary admission requirements in effect for the semester he or she wishes to enter the program regardless of the date he or she entered the university.

LOCALLY IMPACTED PROGRAMS

(CSUF has no locally impacted programs. Campuses where there are locally impacted programs adhere to the following procedures.)

In selecting first-time freshmen and lower division transfers with fewer than 12 transferable semester units, at least one-half of the available space will be reserved for the most highly qualified applicants based on previous academic performance as measured by the Eligibility Index. High school grade point averages based on all grades earned in the final three years of high school exclusive of physical education and military science as reported by applicants on the application, and test scores received by the campus no later than the end of the first month of the filing period will be used to compute the eligibility index. You should take the ACT or SAT test at the earliest date, although the inability of fall 1979 applicants to supply test scores by December 1, 1978, will not jeopardize admission priority. Remaining space may be allocated on the basis of self-declared grade point average or other criteria, details of which will be given applicants by the campuses. Applicants who cannot be accommodated will be considered at the same campus in an alternative major or redirected to an alternative campus where the program is not impacted.

SYSTEMWIDE IMPACTED PROGRAMS

These are programs where applications received throughout the system exceed the total available spaces in the system. The supplementary admission criteria used by the individual campuses to screen applicants to systemwide impacted programs appear periodically in the *Counselors' Digest* and are sent to all applicants under consideration. Unlike unaccommodated applicants to locally impacted programs who may be redirected to another campus in the same major, unaccommodated applicants to systemwide impacted programs may not be redirected in the same major but may choose an alternate major either at the first choice campus or another campus.

POST-BACCALAUREATE APPLICATION PROCEDURES

All applicants for any type of post-baccalaureate status (e.g., master's degree applicants, those seeking credentials, and those interested in taking courses for professional growth, etc.) must file a complete application within the appropriate filing period. *Second baccalaureate degree candidates should apply as undergraduate degree applicants.* A complete application for post-baccalaureate status includes all of the materials required for undergraduate applicants plus the supplementary graduate admissions application. Post-baccalaureate applicants who completed undergraduate degree requirements and graduated the preceding term are also required to complete and submit an application and the $20.00 nonrefundable application fee. Since applicants for post-baccalaureate programs may be limited to the choice of a single campus on each application, redirection to

alternative campuses or later changes of campus choice will be minimal. In the event that a post-baccalaureate applicant wishes to be assured of initial consideration by more than one campus, it will be necessary to submit a separate application (including fee) to each. Applications may be obtained from the Graduate Studies Office of any California State University or College campus in addition to the sources noted for undergraduate applicants. For additional information, see the *School of Graduate Studies.*

APPLICATION FILING PERIODS

Terms in 1979–80	Applications First Accepted	Filing Period Duration	Student Notification Begins
Summer Qtr. 1979	Feb. 1, 1979	Each campus accepts applications until capacities are reached. Most campuses accept applications up to a month prior to the opening day of the term. Some campuses will close individual programs as they reach capacity.	March 1979
Fall Sem. or Qtr. 1979	Nov. 1, 1978		Dec. 1978
Winter Qtr. 1980	June 1, 1979		July 1979
Spring Sem. or Qtr. 1980	Aug. 1, 1979		Sept. 1979

All applications postmarked or received during the initial filing period will be given equal consideration within established enrollment categories and quotas. There is no advantage in filing before the initial filing period. Applications received before the initial filing period may be returned, causing a delay in processing. With the exception of the impacted undergraduate program areas most campuses will be accepting applications well into the extended filing periods until quotas are filled.

SPACE RESERVATION NOTICES

Most applicants will receive some form of space reservation notice from their first choice campus within two months of filing the application. A notice that space has been reserved is also a request for records necessary to make the final admission decision. It is an assurance of admission *only* if evaluation of the applicant's previous academic record indicates that admission requirements have been met. Such a notice is not transferable to another term or to another campus.

HARDSHIP PETITIONS

There are established procedures for consideration of qualified applicants who would be faced with extreme hardship if not admitted. Prospective hardship petitioners should write the Admissions Office regarding specific policies governing hardship admission.

UNDERGRADUATE ADMISSION REQUIREMENTS

First-time freshman eligibility is governed by an eligibility index. The index is computed using the high school grade-point average on all course work completed in the last three years of high school, exclusive of physical education and military science; and the ACT composite, or the SAT total score. The table of grade-point averages, with corresponding test scores and the equation by which the index is computed, is reproduced on page 56.

Registration forms and test dates for either test may be obtained from school or college counselors, from the addresses below, or from the campus testing offices. For either test, submit the registration form and fee at least one month prior to the test date.

ACT Address	SAT Address
American College Testing Program, Inc. Registration Unit, P.O. Box 168 Iowa City, Iowa 52240	College Entrance Examination Board P.O. Box 592 Princeton, New Jersey 08540

First-Time Freshmen (California high school graduates and residents)

Applicants who are graduates of a California high school or legal residents for tuition purposes must have an eligibility index which places them among the upper one-third of California high school graduates. The minimum index is 741 (ACT) or 3072 (SAT). The following table illustrates grade point averages and test scores needed to qualify for admission.

EXCERPTS FROM ADMISSIONS ELIGIBILITY TABLE FOR CALIFORNIA HIGH SCHOOL GRADUATES

G.P.A.	2.00 *	2.20	2.40	2.60	2.80	3.00	3.20 †
A.C.T. Score	35	31	27	23	19	15	11
S.A.T. Score	1472	1312	1142	992	832	672	515

* Below 2.00 not eligible.

† Above 3.20 eligible with any score.

First-Time Freshman Applicants (Non-resident)

The admission requirements for non-resident applicants are higher than those for California residents. Applicants who are neither residents for tuition purposes nor graduates of a California high school must have an eligiblity index which places them in the upper one-sixth of California high school graduates. The minimum index for such students is 826 (ACT) or 3402 (SAT).

An applicant who is a graduate of a secondary school in a foreign country or who has equivalent preparation in a foreign country, may be admitted as a first-time freshman if his or her preparation and ability are such that in the judgment of the appropriate campus authority, the probability of his or her academic success at the campus is equivalent to that of eligible California high school graduates. (See *International Students.*)

First-Time Freshmen (high school non-graduates)

An applicant who is over 18 years of age, but who has not graduated from high school will be considered for admission only when preparation in all other ways is such that the campus believes promise of academic success is equivalent to that of eligible California high school graduates.

Undergraduate Transfers (resident and non-resident)

Transfer admission eligibility is based on TRANSFERABLE college units attempted, rather than on all college units attempted. California Community College transfers should consult their counselors for information on transferability of courses. Applicants in good standing at the last institution attended may be admitted as undergraduate transfers if they meet either of the following requirements:

1. Eligible for admission in freshman standing (see freshman requirements) with a GPA of "C" (2.0 on a scale where A = 4.0) or better in all transferable college units attempted.
2. Completed at least 56 transferable semester units or 84 transferable quarter units with a grade point average of "C" (2.0 on a scale where A = 4.0) or better if a California resident; non-residents must have a grade point average of 2.4 or better.

High School Students

Students still enrolled in high school will be considered for enrollment in certain special programs if recommended by the principal and if preparation is equivalent to that required of eligible California high school graduates. Such admission is only for a given program and does not constitute the right to continued enrollment.

International (foreign) Students

At CSUF admissions decisions are made on the basis of complete academic records from all secondary and college level schools, demonstrated English proficiency based on the results of the Test of English as a Foreign Language (TOEFL) and a certification of financial support.

Information on TOEFL testing dates and centers may be obtained by writing, TOEFL, Educational Testing Service, Princeton, New Jersey 08540 or from the CSU, Fresno, Testing Center.

Applicants should take TOEFL at least six months before the beginning of the semester to which they are seeking admission to allow time for evaluation and receipt of test scores.

To qualify for admission an international student must present a score of 500 or better on the TOEFL. A student who scores between 450 and 500 on the TOEFL may be granted "Special Admission", but will be required to enroll in International Studies Courses (ISC) as a condition of his admission. See page 111. As a result of post-admission testing, a student who presents a score above 500 may be required to enroll in certain ISC courses also. A student with a score below 450 will not be admitted to the University. The TOEFL score requirement for graduate admission to specific programs may be different from the undergraduate requirement. Graduate students should check these TOEFL requirements in the departmental listings.

A student whose academic qualifications are acceptable, but who has not achieved an acceptable TOEFL score may be granted a conditional admission. Such a student must obtain an 1-20 Form (Certificate of Eligibility) from an English language school and attend an English as a Second Language (ESL) Program. In order to transfer from a language school to CSU, Fresno a conditionally admitted student must present an acceptable score on the TOEFL.

Returning Students

Applicants who seek readmission after an absence of one semester or more must file an application for admission. Applicants absent one semester only are exempt from the $20.00 application fee *providing* no academic work was taken in the interim at any other institution. Students absent on an approved planned educational leave are not required to file an application for admission and are exempt from the $20.00 application fee. See Planned Educational Leave.

Veterans

Veterans who are California residents may be exempt from the above admission requirements. Special admission may be granted if applicant is judged likely to succeed academically. Standard admission procedures should be followed.

GRADUATE ADMISSION REQUIREMENTS

See *School of Graduate Studies.*

DETERMINATION OF RESIDENCE FOR NONRESIDENT TUITION PURPOSES

New and returning students of The California State University and Colleges are classified for the purpose of determining the residence of each student for nonresident tuition purposes. The Residence Questionnaire and, if necessary, other evidence furnished by the student is used in making these determinations. A student may not register and enroll in classes until his Residence Questionnaire has been received by the Admissions Office.

The following statement of the rules regarding residency determination for nonresident tuition purposes is not a complete discussion of the law, but a summary of the principal rules and their exceptions. The law governing residence determination for tuition purposes by The California State University and Colleges is found in *Education Code* Sections 68000–68090, 90403, 89705–89707.5 and 68122, 68124 and 68121 and in Title 5 of the *California Administrative Code,* Article 4 (commencing with Section 41900) of Subchapter 5 of Chapter 1, Part V. A copy of the statutes and regulations is available for inspection at the campus Admissions Office.

Legal residence may be established by an adult who is physically present in the state while, at the same time, intending to make California his permanent home. Steps must be taken at least one year prior to residence determination date to evidence the intent to make California the permanent home with concurrent relinquishment of the prior legal residence. Some of the relevant indicia of an intention to establish and maintain California residence are registering to vote and voting in elections in California; satisfying resident California state income tax obligations on total income; ownership of residential property or continuous occupancy or letting of an apartment on a lease basis where one's permanent belongings are kept; maintaining active resident memberships in California professional or social organizations; maintaining California vehicle plates and operator's license; maintaining active savings and checking accounts in California banks; maintaining permanent military address and home of record in California if one is in the military service, etc.

The student who is within the state for educational purposes only does not gain the status of resident regardless of the length of his or her stay in California.

In general, the unmarried minor (a person under 18 years of age) derives legal residence from his or her parents, or, in the case of permanent separation of the parents, from the parent with whom the minor maintains his or her place of abode. The residence of a minor cannot be changed by act of the minor or that of the minor's guardian, so long as the minor's parents are living.

A man or a woman may establish his or her residence; marriage is not a governing factor.

The general rule is that a student must have been a California resident for at least one year immediately preceding the residence determination date in order to qualify as a "resident student" for tuition purposes. A residence

determination date is set for each academic term and is the date from which residence is determined for that term. The residence determination dates for the 1979–1980 academic year are:

Quarter Term Campuses		Semester Term Campuses	
Fall	September 20	Fall	September 20
Winter	January 5	Winter (Stanislaus only)	January 5
Spring	April 1	Spring	January 25
Summer	July 1		

If you have any questions respecting the applicable date, the campus Admissions Office can give you the residence determination date for the term for which you are registering.

There are several exceptions from nonresident tuition. Some of the exceptions provide for:

1. Persons below the age of 19 whose parents were residents of California but who left the state while the student who remained was still a minor. When the minor reaches age 18, the exception continues for one year to enable the student to qualify as a resident student.
2. Persons below the age of 19 who have been present in California for more than a year before the residence determination date, and entirely self-supporting for that period of time.
3. Persons below the age of 19 who have lived with and been under the continuous direct care and control of an adult, not a parent, for the two years immediately preceding the residence determination date. Such adult must have been a California resident for the most recent year.
4. Dependent children and spouses of persons in active military service stationed in California on the residence determination date. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for the year. The exception, once attained, is not affected by transfer of the military person directly to a post outside the 50 states and District of Columbia.
5. Military personnel in active service stationed in California on the residence determination date for purposes other than education at state-supported institutions of higher education. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.
6. A student who is an adult alien is entitled to residence classification if the student has been lawfully admitted to the United States for permanent residence in accordance with all applicable provisions of the laws of the United States; provided, however, that the student has had residence in California for more than one year after such admission prior to the residence determination date. A student who is a minor alien shall be entitled to residence classification if both the student and the parent from whom residence is derived have been lawfully admitted to the United States for permanent residence in accordance with all applicable laws of the United States, provided that the parent has had residence in California for more than one year after acquiring such permanent residence prior to the residence determination date of the term for which the student proposes to attend the University.

7. Certain refugees. Certain alien graduates of California public high schools.
8. Certain credentialed, full-time employees of school districts.
9. Full-time State University and Colleges employees and their children and spouses. This exception applies only for the minimum time required for the student to obtain California residence and maintain that residence for a year.
10. Certain exchange students.
11. Children of deceased public law enforcement or fire suppression employees, who were California residents, and who were killed in the course of law enforcement or fire suppression duties.
12. A person in continuous full-time attendance at an institution who had resident classification on May 1, 1973, shall not lose such classification as a result of adoption of the uniform student residency law on which this statement is based, until the attainment of the degree for which currently enrolled.

Any student, following a final decision on campus on his residence classification only, may make written appeal to:

The California State University and Colleges
Office of General Counsel
400 Golden Shore Drive
Long Beach, California 90802

within 120 calendar days of notification of the final decision on campus of the student's classification. The Office of General Counsel may make a decision on the issue, or it may send the matter back to the campus for a further review. Students classified incorrectly as residents or incorrectly granted an exception from nonresident tuition are subject to reclassification as nonresidents and payment of nonresident tuition in arrears. If incorrect classification results from false or concealed facts, the student is subject to discipline pursuant to Section 41301 of Title 5 of the *California Administrative Code*. Resident students who become nonresidents, and nonresident students qualifying for exceptions whose basis for so qualifying changes, must immediately notify the Admissions Office. Applications for a change in classification with respect to a previous term are not accepted.

The student is cautioned that this summation of rules regarding residency determination is by no means a complete explanation of their meaning. The student should also note that changes may have been made in the rate of nonresident tuition, in the statutes, and in the regulations between the time this catalog is published and the relevant residence determination date.

PROGRAM PLANNING AND REGISTRATION

Freshman students should plan their programs as early as possible beginning, when practical, with the selection of a major. Degree requirements in each major are listed under the appropriate department. For general information see *Degrees and Credentials.*

Students will be assisted in planning their programs by academic advisers, but the primary responsibility for meeting requirements is the student's. Academic advisers will be assigned to each student by the major department. Undeclared majors will be advised by the Office of Advising Services. The current *Schedule of Courses* must be followed when planning a particular semester's program.

RECOMMENDED PREPARATION

Freshman Students

Overall excellence of performance in high school subjects and evidence of academic potential provide the basis for admission at CSUF. While no high school course pattern is required, the applicant is strongly encouraged to include the following subjects as minimal.

College preparatory English.
Foreign language.
College preparatory mathematics.
College preparatory laboratory science.
College preparatory history and/or social science.
Study in speech, music, art, and other subjects contributing to general academic background.

Since certain academic majors require high school preparation in definite subjects, the student should consult the requirements indicated in the field of his choice.

In university majors such as engineering, natural science, mathematics, social science, and humanities a maximum number of high school credits should be obtained in appropriate subjects in English, mathematics, science, and foreign languages.

Transfer Students

Students intending to transfer to CSUF should plan their programs while attending other colleges to meet CSUF curriculum requirements. The general education and major requirements should be studied to determine the appropriate sequences of courses necessary for the degree.

Students transferring from a California community college should complete the general education requirements of that college for state university and college transfers and request that their general education program be certified to CSUF.

After admission to CSUF, the students will receive a copy of their advanced standing evaluation indicating how previous college credits have been applied toward requirements at CSUF.

Each student should maintain a personal folder in which are kept copies of transcripts, grade reports, advanced standing evaluation, departmental check sheets, and other information pertaining to his progress toward meeting various requirements for a degree or credential. *Faculty advisers are available*

for assistance; it is the responsibility of the student, however, to be sure that all requirements have been met.

REGISTRATION

Registration is open to new and returning students who have been formally admitted and to continuing students in good standing. Former CSUF students returning after an absence of one semester or more must apply for readmission, subject to university enrollment limitations and filing deadlines. Students who are returning after an absence of two semesters or more, and those who have been absent one semester and who have attended another institution since last registered at CSUF will be required to pay the $20 application fee when applying. The *Academic Calendar* lists dates of registration. Students who register during the Late Registration period (first 10 days of instruction) are assessed a $5 late fee. No registrations will be allowed after the end of late registration. *Registration is complete only when all required forms are completed and filed and all fees are paid.* See the *Academic Calendar* for all deadline dates.

Registration priority for all students, new and returning, is determined by the number of academic units completed with limited exceptions. After a priority group, determined by the faculty-student Registration Committee, graduating seniors register, then first-time freshmen, followed by students with the highest number of completed units.

SCHEDULE OF COURSES

An official *Schedule of Courses* is published each semester listing registration procedures, courses offered, class hours and locations and other important deadlines. The schedule is available prior to registration and may be purchased at the Bookstore for a nominal cost.

CONCURRENT REGISTRATION AT ANOTHER COLLEGE OR UNIVERSITY

Approval of the Registrar must be obtained in advance of registration before transfer credit may be earned at another college concurrently with registration at CSUF. Normally permission for concurrent registration will not be granted for a class which is offered at CSUF. Concurrent registration at another CSUC campus may be accomplished by completing forms available in the Office of the Registrar.

FULL-TIME/PART-TIME STUDENTS

Students taking at least 75% of the normal academic load are considered full-time students. Since the normal academic load is 15 semester hours, students carrying 12 or more semester hours are full-time students. Graduate level courses are weighted for graduate students. Each graduate unit attempted by a graduate student is considered as 1.5 units.

Full-time	12 or more units
Three-quarter time	9 to 11½
Half-time	6 to 8½

PROGRAM RESTRICTIONS

Students are cautioned against registering for more than 18 units without consulting an adviser, since more than 18 units is generally considered to be an academic overload. See the *Schedule of Courses* for details.

To register for 19 units, a student must have an overall grade-point average of 2.50; for 20 to 22 units, a student must have an overall grade-point average of 3.00. Exceptions to these limits must be approved by the chairman of the student's major department. An absolute limit of 22 units (excluding credit by examination units) is enforced which may be waived only with the approval of the Dean of the School of the student's major.

Enrollment in upper division courses is restricted to students with junior, senior or graduate standing, or who have the necessary prerequisites. Exceptions are subject to the approval of the instructor and department chairman. Upper division credit may not be granted until students have completed a minimum of 45 semester units. Only students who have been fully approved for admission to credential programs may enroll in certain education courses and qualify for a school service credential on the basis of the university's recommendation.

Credit in any course is also subject to all restrictions which may appear in the *General Catalog*. For restrictions on graduate study, see *School of Graduate Studies—Master's Degrees*.

CHANGE OF MAJOR

Each undergraduate student who wishes to change his or her major must report to the Office of Advising Services to initiate the procedure; graduate students should report to the Graduate Office. The Office of Advising Services will instruct the students on how to notify their old and new major departments. Advising Services will see to it that the new major change is recorded on the data base.

WITHDRAWAL FROM COURSES

A student is held responsible for the program of courses in which he or she is officially registered. After registration no changes will be made or recorded until appropriate add or drop forms have been completed and filed at the Admissions-Records Office by the student. A student is urged to consult an adviser before making a program change. If the class is dropped before the end of the fourth week of classes, the course will not be recorded on the permanent record. The end of the fourth week is defined as the end of the twentieth instructional day of the semester.

After the fourth week, a student may drop a course only for serious and compelling reasons which must be stated in writing with the drop form. Serious and compelling reasons include illness, accident, a change in work hours or a significant increase in work hours and responsibilities which make it impossible for a student to continue with his or her program of record. Such circumstances may be verified with the attending physician or employer. Personal dislike or dissatisfaction with the subject matter, class or instructor, failure to perform satisfactorily and the threat of a poor evaluation are not serious and compelling reasons within the university policy. If the drop is approved, a W grade will be assigned (see current *Schedule of Courses*).

Withdrawals are not permitted during the final three weeks of instruction except in cases such as accident or serious illness where the cause of withdrawal is due to circumstances beyond the student's control. If the student has completed a significant portion of the required course work, "Incomplete" grades are often assigned in such cases. Normally, withdrawal

from courses during the final three weeks of instruction involves a total withdrawal from the university. Withdrawal from the university is not permitted during the final examination period.

PREPROFESSIONAL PREPARATION

Preprofessional programs are available for students who plan to transfer to other institutions for the completion of professional curricula in such fields as chiropractic, osteopathic and podiatric medicine, dentistry, forestry, law, librarianship, medicine, optometry, pharmacy, theology, and veterinary medicine. Certain of these programs are described below. Students planning to complete a preprofessional program and degree at CSUF must complete a major offered at this university. They should include their preprofessional area plus their university major on all registration forms; for example, premedical-chemistry, premedical-biology, prelaw-history, prelaw-political science. They should consult an adviser and the catalog of the school of their choice. A current list of the CSUF preprofessional advisors is available in the Office of Advising Services.

PREDENTAL

The minimum training for dentistry is a six-year course—the first two years (predental training) in a liberal arts college and the remaining four years (dental training) at a school of dentistry.

The minimum predental program required by accredited dental schools is one year each of English, inorganic chemistry, physics, and zoology; one semester of organic chemistry; and additional courses (usually elective in general education, but specified by some dental schools) for a total of 60 units. Each science course must include laboratory. The present trend among dental schools is to require more than two years of predental training including a broad liberal arts background. Since 1971, three years have been required by the University of California, San Francisco, and some other dental schools. Additional organic chemistry, quantitative chemical analysis, elementary physical chemistry, other zoology courses, and in some cases a foreign language are recommended or required. Several schools require a bachelor's degree for entrance. The American Dental Association aptitude test and evidence of physical fitness and good moral character are usually required. Many dental schools also require a personal interview and some administer additional tests. For other information, see the predental adviser and dental school catalogs.

PRELEGAL

Most fully accredited law schools require a bachelor's degree for admission. Since a prelegal program providing a broad cultural background is recommended by the law schools, any baccalaureate major, depending on the student's interest, may be chosen from the university offerings (See *Degree Majors and Minors*). Law schools suggest courses, but not necessarily a major, in the following: written and oral English, American and English constitutional history, world history, accounting, business administration, elementary logic, mathematics, economics, political science, philosophy, science, and foreign language. For further information consult an adviser and law school catalogs.

PRELIBRARIANSHIP

Accredited graduate schools of librarianship require a bachelor's degree for admission. A major in any subject is acceptable. A reading knowledge of at least one modern foreign language is a requirement for admission to most graduate schools of librarianship; this requirement is normally satisfied by the successful completion of two college years of the language. Students considering librarianship as a career should consult the prelibrary program adviser in the Library.

PREMEDICAL

A student interested in preparing for medical school should declare his or her intent at the time he or she applies for admission to CSUF. To do this, it is necessary that the student use a term such as premedical-sociology, premedical-zoology, premedical-chemistry or premedical-general on all application, admittance and registration papers. In case premedical-general is chosen, a specific subject major should be selected as soon as possible and not later than the sophomore year from the list of approved CSUF majors in the catalog. This part of the premedical program also constitutes the major that is required for a bachelor's degree. (See *Degree Programs, Majors, and Minors.*)

Requirements for admission to medical school vary considerably from one medical school to another and change from time to time, but a well-balanced liberal education is usually specified. Some aptitude and university training in science and English are essential in medicine. The minimum requirements in these subjects specified by most medical schools can be satisfied by the following: biology, 13 units; chemistry, 19 units; physics, 8 units; and English, 6 units. Calculus is now required by some medical schools and a reading knowledge of a modern foreign language is required by a few. Because of competition for admission to medical schools, a grade average of above 3.5 grade points is highly desirable. The Medical College Aptitude Test (MCAT) is required before a student can be accepted into medical school. It is recommended that the MCAT be taken and application for medical school be made at the end of the Junior year.

Freshman, transfer, and all other students who are entering the program are advised to attend the premedical student orientation meeting scheduled prior to registration. (See the new-student orientation calendars.) Each student will be assigned to a member of the premedical advisory committee who will assist him or her in planning a program of courses and will advise him or her concerning preparatory procedures for application to medical school.

PREOPTOMETRY

California State University, Fresno provides courses for the completion of the first two years of a six-year optometry program. Most professional schools require that these two years include one year of biology, chemistry, mathematics, physics, English, and psychology or one semester of statistics with above average scholarship. Calculus and microbiology are also required by many professional schools. Consult optometry school catalogs and the preoptometry adviser, Department of Physics, for further information.

The Optometry College Admission Test is required before application can be made to optometry school. Application should be made one year in

advance of enrollment.

PREPHARMACY

The first two years (prepharmacy) of a six-year pharmacy program may be completed at CSUF. All new and transfer students should indicate on application, admittance and registration papers an interest in prepharmacy-biology. Most professional schools require a C average or better for a minimum of 60 semester units, including one year each of inorganic chemistry, physics, calculus, zoology, English composition, and literature; one semester of organic chemistry or quantitative analysis; and additional elective courses which are specified in certain areas by some schools. Students may elect to complete more than 60 semester units before applying to pharmacy school. A personal interview may be required of applicants by some schools. For other information see pharmacy school catalogs and consult the prepharmacy adviser in the Department of Biology.

PREVETERINARY

Students preparing for the veterinary profession can satisfy their preveterinary curriculum requirements at CSUF. Preveterinary students should plan to complete a BS Degree prior to application to a school of veterinary medicine. Recommended preveterinary courses are Animal Science 10, 120, and 125; Botany 10; Chemistry 1A, 1B, 8, 109 and 150; Physiology 140; Physics 1A and 1B; Microbiology 20; Zoology 1 and 160. The School of Agriculture and Home Economics is equipped to provide valuable experience with large animals through the student project program. Students desiring further information regarding the preveterinary curriculum should consult the Chairman of the Animal Science Department.

ACADEMIC PLACEMENT

CLASSIFICATION OF STUDENTS

Student class levels are determined as follows:

Freshmen—Students who have earned a total of fewer than 30 semester units.

Sophomores—Students who have earned a total of 30 to 59 semester units inclusive.

Juniors—Students who have earned a total of 60 to 89 semester units inclusive.

Seniors—Students who have earned 90 semester units or more.

Graduates—Students who have at least a bachelor's degree from an accredited institution.

ADVANCED PLACEMENT

The Advanced Placement Program of the College Entrance Examination Board permits able high school students to take college-equivalent courses in the senior year of high school and, based upon comprehensive qualifying examinations, receive advanced placement and credit at participating universities and colleges. CSUF grants credit toward its undergraduate degrees for successful completion of examinations of the Advanced Placement Program of the College Entrance Examination Board. Students who present scores of three or better will be granted six semester units of college credit for each examination. A score of "two" may receive credit, only if recommended by the department. A score of "one" will receive neither credit nor advanced placement.

ENGLISH PLACEMENT TEST AND GRADUATION REQUIREMENTS

All students subject to degree requirements of 1977–78 and subsequent general catalogs must demonstrate competency in writing skills as a requirement for graduation. In addition, all lower division students (those who enter with fewer than 56 transferable semester units) are required to take the CSUC English Placement Test (EPT) so that information can be available to help in the selection of appropriate course work in writing skills and to prepare for meeting the graduation requirement. Failure to take the English Placement Test at the earliest opportunity after admission may lead to administrative probation which, according to Section 41300.1 of Title 5, *California Administrative Code,* and CSUC Executive Order 186, may lead to disqualification from further attendance. *The results of the EPT will not affect admissions eligibility.*

Information bulletins and registration materials for the EPT will be mailed to all students subject to these requirements. Alternatively, the materials may be obtained from the Office of Admissions and Records. Information on currently available ways to meet the EPT or the graduation requirement may be obtained from the Office of Admissions and Records.

CREDIT BY EXAMINATION

Credit by examination is designed to encourage a regularly enrolled student to seek college credit in courses in which the student has competence but for which credit has not been earned by the usual academic processes, thereby permitting the student to accelerate his or her progress and provide an opportunity for wider selection of course work. The following procedures should be followed:

1. A student may apply for credit by examination in any course in the current CSUF catalog for which he or she appears to be reasonably qualified by training or experience and for which college credit has not been previously allowed. Credit by examination will not be awarded if credit has been granted for previous course work more advanced than the level represented by the examination in question. Credit by examination will not be allowed in a course in which the student has been permitted to register as an auditor during the same semester, in which the student has received a failing grade, or in which he or she has unsuccessfully sought credit by examination.
2. The student will enroll for credit by examination at any time during the first two weeks of classes. The student must be regularly enrolled in other courses before he or she will be granted permission to earn credit by examination. Units of credit by examination are counted as part of the total units registered for a given semester or term. Applications for credit by examination should be completed by the student and approved by the department.
3. The examination must be administered by the end of the fourth week of instruction and the instructor must report the grade prior to the close of the sixth week.
4. The course in which the student requests credit by examination will be so designated on his or her record. If passed, the student will receive a credit (CR) grade. If he is unsuccessful, no grade will be reported. Units earned will count toward all appropriate requirements but will not be used in computing his grade-point average.
5. The number of units earned by credit by examination in any semester or term may not exceed the number of units completed in regular enrollment. A maximum of 30 units earned by examination may be counted toward a bachelor's degree.

For further information consult the department concerned. See also *Advanced Placement.*

INDEPENDENT STUDY

Independent study is offered to give the student experience in planning and outlining a course of study on the student's own initiative under departmental supervision. Independent study should deal with a special interest not covered in a regular course or with the exploration in greater depth of a subject presented in a regular course. Each department has an independent study upper division course (190), and some departments have a graduate level course (290). In some departments a 190 or 290 course may be desirable preparation for the thesis or other advanced study.

To be eligible for independent study, a student should have an overall

grade-point average of 3.0 or higher; this requirement may be waived in exceptional cases, when approved by the chairman of the department. Maximum credit of six units is allowed toward the bachelor's degree in 190 courses, and maximum credit of six units is allowed in 190 and 290 courses toward the master's degree. Credit is limited to a maximum of three units per semester. Under extraordinary circumstances more than three units per semester may be allowed on petition to the department chairman.

An eligible student desiring to register for a 190 or a 290 course must first obtain the consent of an instructor who will guide the project and the chairman of the department in which the course is given. The student must register for 190 and 290 courses during the regular registration period in the same manner as he registers for any other course at the time of registration.

An independent study course normally includes an oral examination by a committee set up by the supervising instructor, a formal report which is filed in the department office, and an abstract of the study which is filed with the department chairman. Approval forms and copies of the current regulations may be obtained at department or school offices. The entry on the permanent record will show the discipline and course number only; the title will not appear.

Certain special regulations concerning enrollment in 190 and 290 courses during a summer session will be found in the *Summer Session Bulletin.*

CREDIT FOR MILITARY SERVICE COURSE WORK

Six semester units of lower division elective credit is given if the student was on active military duty for at least one year. An applicant for credit must submit a copy of *Notice of Separation* (DD214).

College courses given by the United States Armed Forces Institute (USAFI) that are comparable with CSUF courses will be given degree credit, provided they are satisfactorily completed with an end-of-course examination.

USAFI correspondence credit is combined with other extension or correspondence course work to a maximum of 24 semester units.

Additional credit is granted for military courses and experiences as recommended in *A Guide to the Evaluation of Educational Experiences in the Armed Services,* Miller & Sullivan, 1974. The applicant for such credit must submit official documents giving all details such as location, length.

COLLEGE LEVEL EXAMINATION PROGRAM

The College Level Examination Program (CLEP) is designed to be a means through which recognition, academic credit, and placement may be given for less conventional forms of educational experience. Those who may have reached a college level of education through home or correspondence study, on-the-job training, television courses or by other means may take the CLEP examinations which are offered by the College Entrance Examination Board.

Within the restrictions of systemwide policy, CSUF will award credit for successfully completed CLEP examinations. Such credit will be applied to the total units required for the baccalaureate degree, but it will not be applied to the General Education requirement.

Not all CLEP examinations are acceptable under system policy. Subject examinations may require the recommendation of the appropriate

department before credit is awarded. Course equivalency is also determined by the department concerned.

For additional information, contact the Office of Testing Services.

ENGLISH EQUIVALENCY EXAMINATION

The English Equivalency Examination is an examination offered by the CSUC system. It is administered each spring on the various campuses to prospective freshmen. Students passing both the objective and essay portions of the examination will be granted six units of freshman English credit. For information contact the Coordinator of Relations with Schools, California State University, Fresno.

GRADES, SCHOLARSHIP, RECORDS

UNITS

A credit or semester unit represents one hour of class work per week for one semester. It is assumed that two hours of preparation are required for each hour in class. Three hours of laboratory per week are the equivalent of one unit. In a limited number of courses two hours of laboratory per week are the equivalent of one unit.

GRADES

A—Exceptionally good.
B—Above average.
C—Average.
D—Below average.
F—Failure.
U—Failure—Unauthorized Incomplete.
CR—Credit for units completed, work of **A**, **B**, or **C** quality in undergraduate courses and **A** or **B** quality in 200-level courses. Not included in grade-point average.
NC—No credit for units attempted, work of **D** or **F** quality in undergraduate courses and **C**, **D**, or **F** quality in 200-level courses. Replaces **I** grade in courses where CR-NC grading is used if required work is not completed within required time. Not included in grade-point average.
W—Withdrawal after the fourth week of instruction.
AU—Audit.

I—Semester requirements less than one-third incomplete, work of passing grade.
RD—Report delayed.
SP—Continuing work in progress, satisfactory progress.

UNAUTHORIZED INCOMPLETE (U)

The Symbol **"U"** indicates that an enrolled student did not withdraw from the course but failed to complete course requirements. It is used when, in the opinion of the instructor, completed assignments or course activities or both were insufficient to make normal evaluation of academic performance possible. For purposes of grade-point average and progress point computation this symbol is equivalent to an "F".

CREDIT (CR)

The **CR** grade may be assigned in connection with any credit-no credit enrollment (See regulations and procedures for *Credit-No-Credit Grading*).

WITHDRAWAL (W)

The **W** grade indicates that the student was permitted to drop the course after the fourth week of instruction for serious and compelling reasons with the approval of the instructor and appropriate campus officials. It carries no connotation of quality of student performance and is not used in calculating grade-point average or progress points.

AUDIT STATUS (AU)

Persons wishing to attend classes without matriculating or receiving college credit may register as auditors. Auditors must register during the late registration period. Students enrolled in audit status only may not transfer to credit status without completing admission procedures. This must be done within the first two weeks of instruction.

Matriculated students may audit courses in addition to those in which they are registered for credit.

Enrollment as an auditor is subject to permission of the instructor; provided that enrollment in a course as an auditor shall be permitted only after students otherwise eligible to enroll on a credit basis have had an opportunity to do so. Auditors are subject to the same fee structure as credit students and regular class attendance is expected. Once enrolled as an auditor, a student may not change to credit status unless such a change is requested prior to the last day to add classes. A student who is enrolled for credit may not change to audit after the fourth week of instruction.

Credit for courses audited will not subsequently be granted on the basis of the audit. (See current *Schedule of Courses.*)

INCOMPLETE (I)

The symbol **"I"** (Incomplete Authorized) indicates that a portion of required course work has not been completed and evaluated in the prescribed time period due to unforeseen, but fully justified, reasons and that there is still a possibility of earning credit. It is the responsibility of the student to bring pertinent information to the attention of the instructor and to determine from the instructor the remaining course requirements which must be satisfied to remove the Incomplete. A final grade is assigned when the work agreed upon has been completed and evaluated. Reregistration in the course is *not* used to remove an "I" grade.

Normally it is expected that the student will make up an "I" grade during the next semester; however, it must be made up within one calendar year immediately following the end of the term during which it was assigned. This limitation prevails whether or not the student maintains continuous enrollment.

Failure to complete the assigned work will result in the "I" being counted as a failing grade for grade point average and progress point computation. An "I" grade not made up within one calendar year after the grade has been recorded will be changed on the transcript to an "F" (or an NC if CR-NC grading was approved).

Incomplete grades must be cleared before a degree is awarded. In the absence of the instructor who has assigned the Incomplete, a student seeking to make up this grade should consult the department chairman. A student may not be required to repeat a course in which an "I" grade was received unless he or she wishes to receive credit and the time for making up the grade has passed.

SATISFACTORY PROGRESS (SP)

The **SP** symbol is used in connection with courses that extend beyond one academic term. It indicates that work is in progress and has been evaluated and found to be satisfactory to date, but that assignment of a final grade must

await completion of additional work. It may be used only in courses designated on the approved **SP** grade course list published by the Office of the Vice President for Academic Affairs. Cumulative enrollment in units attempted may not exceed the total number applicable to the student's educational objective. Work is to be completed within a stipulated time period, which may not exceed one year except for graduate degree theses for which the time may be up to two years, but may not exceed the overall time limit for completion of all Master's degree requirements. Any extension of time limit must receive prior authorization by the Office of the Vice President for Academic Affairs.

CREDIT-NO CREDIT GRADING (CR-NC)

The credit no-credit (CR-NC) grading policy at CSUF is designed to encourage academic exploration outside the major field of study. The policy also recognizes that in certain types of courses, student performance is best evaluated in terms of (CR-NC) grading rather than through the traditional letter grades.

Neither the CR nor NC grade is included in the calculation of the grade point average. However, in the determination of academic eligibility, the CR grade in an undergraduate course will count two progress points per unit and in a 200-level course three progress points per unit, and the NC grade will not count for any progress points. Thus, the NC grade is a penalty grade as applied to the progress point computation, and it may cause a student to be placed on Progress Point Probation or Disqualification (see Scholarship Status).

The grade of CR will be assigned if the student's work is judged to be equivalent to an A, B, or C grade as applicable to regular enrollment in an undergraduate course or equivalent to an A or B grade in a 200-level course. The NC grade will be assigned if the student's work is not equivalent to these standards.

Other conditions and limitations pertaining to CR-NC grading are as follows:

1. Some courses will not be available for CR-NC grading and others will be designated as available for CR-NC grading only. Subject to the limitations below, a student may elect to enroll for CR-NC grading in any other course.
2. Aside from credit earned in CR-NC only courses, no CR-NC graded credit will be applicable to the major requirements nor to courses which are applied to the formal graduate program or to courses which are prerequisites to the master's program (or classified standing).*
3. A student may not elect more than six units of CR-NC graded coursework per semester.
4. A maximum of 24 units of CR-NC evaluated credit, including all coursework taken CR-NC only, may be applied to the baccalaureate degree. A maximum of 6 units of CR-NC evaluated credit may be applied to a 30-unit master's degree program and a maximum of 12 units of CR-NC credit may be applied to a 60-unit program.

The decision to enroll for CR-NC grading must be made prior to the end

* Up to 12 units of lower division coursework elected by the student may be applied to the Liberal Studies major.

of the fourth week of instruction and the decision must be recorded by the student at the Student Records Office.

See the current *Schedule of Courses* for further information.

GRADE POINTS

For each unit of credit the student receives grade points as follows:

A—Four grade points and four progress points per unit of credit.
B—Three grade points and three progress points per unit of credit.
C—Two grade points and two progress points per unit of credit.
D—One grade point and one progress point per unit of credit.
F—No grade points; units counted. No progress points.
U—No grade points; units counted. No progress points.
CR—No grade points; units counted. Two progress points for an undergraduate course, three progress points for a graduate course.
NC—No grade points; no units counted. No progress points.
W—No units allowed. Not included in progress point computation.
AU—No grade points or units allowed. Not included in progress point computation.

I—Not included in computations until grade is assigned.
RD—Not included in computation until grade assigned.
SP—No units allowed and not included in progress point computation until grade is assigned.

REPEATING COURSES

An undergraduate student may repeat a course in which a grade of "D", "F", "U" or "I" was received. (Graduate/post-baccalaureate students are not eligible for this policy even though the class is an undergraduate course.) All units attempted will be used to determine the student's grade point average and graduation eligibility unless the student repeats the course and requests the new grade be substituted for the original grade. To substitute a grade by repetition the student must file a petition with the Registrar before the end of the Late Registration Period of the semester during which the course is being repeated.

If the student receives the same grade or a higher grade than was received for a previous attempt, the units attempted, units completed (if any) and grade points for the previous attempt will not be used to compute grade point averages or graduation requirements. If the student receives a lower grade no deletions will be made. In all cases, all work will remain legible on the record ensuring a true and complete history.

A course completed at another institution may be repeated by enrolling in a regular CSUF course determined by the Evaluations Office to be essentially equivalent. In the case of a course repeated at another college the policy of the college where the course was repeated shall be followed. If it is not possible to determine that policy, the CSUF policy will be followed.

Although not recommended, a student may repeat a course in which he earns a "C" or higher grade. Such repetition is recorded on the transcript but is not used to compute unit or grade-point totals.

PROPER SEQUENCING OF PREREQUISITE COURSES

A course which is listed as a prerequisite for another course cannot be taken for credit or repeated for grade substitution subsequent to successful completion of the higher sequence course.

ACADEMIC RENEWAL

Under certain circumstances, the university may disregard up to two semesters (three quarters) of previous undergraduate course work taken at CSU, Fresno or at any other college from all considerations associated with requirements for the baccalaureate degree. When such action is approved the student's permanent academic record will be marked to indicate that *no* work taken during the disregarded term(s), even if satisfactory, may apply toward baccalaureate requirements. However, all work must remain legible on the record ensuring a true and complete academic history.

In order to qualify for renewal the following conditions must be met:

1. It must be evident that the poor level of work represented by the term(s) under consideration is not representative (see #4) of the student's usual academic performance and was due to extenuating circumstances.
2. It must be evident that it would be necessary for the student to complete one or more additional terms in order to qualify for the baccalaureate degree if the request were not approved.
3. Five years must have elapsed since the most recent work to be disregarded was completed.
4. Since the most recent work to be disregarded, the student must have completed in residence at CSU, Fresno 15 semester units with at least a 3.0 GPA, or 30 semester units with at least a 2.5 GPA, or 45 semester units with at least a 2.0 GPA. Work completed at another institution cannot be used to satisfy this requirement.

PLANNED EDUCATIONAL LEAVE OF ABSENCE

A planned educational leave of absence is defined as a planned interruption or pause in a student's regular education during which the student temporarily ceases his or her formal studies at California State University, Fresno, while pursuing other activities that may assist in clarifying the student's educational goals, provide job opportunities and practical experiences away from the campus, allow time for the solution of personal problems, and enhance the prospect of successful completion of the student's academic program. The intent of the policy is to make it possible for a student to suspend his or her academic work, leave the campus without jeopardizing the rights and privileges normally associated with continuous attendance, and later resume his or her studies with a minimum of procedural difficulty. A student who is approved for a planned leave will be considered as maintaining his or her status as a continuing CSUF student. A student may, therefore, enroll for classes at the end of an approved leave without reapplying for admission and may continue at CSUF without change in graduation requirements.

Planned eduational leaves may be granted for a variety of reasons or projects, but certain characteristics must be contained in any request for a leave:

1. The student must have a definite objective, which in the judgment of the Admissions Committee, will contribute to his educational goals and objectives.

2. The request must be for a specific period of time which shall not exceed one academic year.
3. The student must plan to return to CSUF at the conclusion of his or her leave.

The following regulations will apply to the planned educational leave:

1. A student who has been admitted to a fully matriculated session may be considered for a planned educational leave.
2. A student may be granted only one leave as an undergraduate and one leave as a graduate student.
3. Planned educational leaves will be granted for up to one academic year.
4. Leaves must be recommended by a faculty member or by a member of the counseling staff. Graduate students must be recommended by the Dean of Graduate Studies; international students by the Coordinator of International Student Counseling.
5. Petitions for planned educational leaves must be filed (with the appropriate recommendation) at the Admissions Office before the first day of classes for the semester during which the leave is to begin.
6. Leaves will not be approved for students in disqualified status or on contract to remove academic deficiencies.
7. It is expected that a student will devote his or her leave primarily to nonclassroom activities. While on leave, however, a student may enroll at another educational institution if the course work the student seeks is not available at CSUF. Any academic credit earned while on a planned educational leave will be accredited by CSUF only if permission is granted for that credit in advance by the Admissions Officer.
8. Students who do not return to the university at the conclusion of their planned educational leave and those who enroll elsewhere without permission of the Admissions Officer will be considered to have withdrawn from the university at the end of their last semester of regular enrollment at CSUF.

Students wishing to apply for a planned educational leave should follow these procedures:

1. Obtain a petition for a planned educational leave from the Admissions Office.
2. Complete the petition and obtain the appropriate recommendations and return them to the Admissions Office.
3. The student will be notified of the decision by the Admissions Officer.

SCHOLARSHIP STATUS

SATISFACTORY SCHOLARSHIP

Satisfactory scholarship means at least a **C** average (2.0 grade-point average or twice as many grade points as units attempted) and satisfactory progress toward a degree (twice as many progress points as units attempted).

PROBATION

A student will be placed on probation if either his or her grade-point average based on total units attempted at all colleges is below a 2.0 (**C** average) or his or her grade-point average based on all units attempted at

CSUF is below a **2.0** average or if the student fails to earn at least twice as many progress points as all units attempted during that semester. A student will be continued on probation until both his or her overall and CSUF grade-point average are 2.0 or better, or until the student is disqualified under one of the provisions of the disqualification regulations.

A student may be placed on Administrative-Academic probation for withdrawal from a substantial portion of a program in two successive terms or in any three terms; for repeated failure to progress toward a degree; or for failure to comply with an academic requirement or regulation which is routine for all students or for a defined group of students.

DISQUALIFICATION

A student will be disqualified under the following provisions: (a) if he or she fails to earn at least twice as many progress points as all units attempted during a semester while on probation; (b) if he or she is admitted on probation and fails to meet the conditions established at the time of his admission; (c) if he or she has a cumulative deficiency on either his overall or CSUF record equal to or greater than that indicated below.

Freshmen, Sophomores (0-59 units completed):	15 grade-point deficiency
Juniors (60-89 units completed):	9 grade-point deficiency
Seniors (90 or more units completed):	6 grade-point deficiency
Graduates (all students):	6 grade-point deficiency on post-baccalaureate units

A student who has been placed on Administrative-Academic probation may be disqualified if he or she fails to meet the conditions for removal of the probation; becomes subject to academic probation while on Administrative-Academic probation; or again becomes subject to Administrative-Academic probation for the same or similar reasons.

See also *School of Graduate Studies.*

READMISSION OF DISQUALIFIED STUDENTS

A student placed in disqualified status at the end of a Fall Semester may be permitted to re-enroll on probation for the following Spring Semester. A student disqualified from CSUF at the end of a Spring Semester or Summer Session may be readmitted for a regular semester only by special action and if the facts in the case seem in the opinion of the appropriate university authorities to warrant such action. A disqualified student may enroll for summer session or extension classes without readmission.

Disqualified students wishing readmission must submit a Readmission Petition. Upper division students must also schedule an interview with their departmental adviser and request that an "Upper Division Student Readmission Recommendation" form be forwarded to the Admissions Office.

Former CSUF students returning to the campus must submit an application for readmission in addition to the appropriate petitions and recommendations.

A disqualified student should schedule his or her readmission interview with the Admissions Officer or his academic department no later than two weeks before registration for the semester the student wishes to return to CSUF.

TRANSCRIPTS AND REPORTS

Transcript of Record. Students may request transcripts of their academic records at CSUF with the payment in advance of a $1.00 fee. CSUF Extension transcripts must be requested separately. Because of the large number of transcripts requested at the end of each semester and summer session, three weeks should be allowed for requests to be filled during those periods. After the Admissions/Records Office has been notified of overdue student accounts, transcripts will not be provided without clearance from the Business Office. Transcripts of record from other institutions submitted to this institution will not be returned to the student.

Reports to Students. An enrollment report is made available to the students by the Admissions/Records Office and at the end of the semester final grade reports are mailed to the students at the address submitted to the Admissions/Records Office.

PRIVACY RIGHTS OF STUDENTS IN EDUCATION RECORDS

The Federal Family Educational Rights and Privacy Act of 1974 (20 U.S.C. 1232g) and regulations adopted thereunder (45 C.F.R. 99) and California Education Code Section 67100 et seq., set out requirements designed to protect the privacy of parents and students concerning education records maintained by the institution. Specifically, the statute and regulations govern (1) access to student records maintained by the campus, and (2) the release of such records. In brief, the law provides that the campus must provide students access to official records directly related to the student and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading or otherwise inappropriate; the right to a hearing under the law does not include any right to challenge the appropriateness of a grade as determined by the instructor. The law generally requires that written consent of the student be received before releasing personally identifiable data about the student from records to other than a specified list of exceptions. The institution has adopted a set of policies and procedures concerning implementation of the statutes and the regulations on the campus. Copies of these policies and procedures may be obtained at the Office of the Dean of Student Affairs. Among the types of information included in the campus statement of policies and procedures is: 1) the types of student records and the information contained therein; 2) the official responsible for the maintenance of each type of record; 3) the location of access lists which indicate persons requesting or receiving information from the record; 4) policies for reviewing and expunging records; 5) the access rights of students; 6) the procedures for challenging the content of student records; 7) the cost which will be charged for reproducing copies of records; and 8) the right of the student to file a complaint with the Department of Health, Education and Welfare. An office and review board have been established by the Department to investigate and adjudicate violations and complaints. The office designated for this purpose is: The Family Educational Rights and Privacy Act Office (FERPA), Department of Health, Education and Welfare, 300 Independence Avenue, S. W., Washington, D. C. 20201.

The campus is authorized under the Act to release public directory information concerning students. Directory information includes the student's

name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, the most recent previous educational agency or institution attended by the student and any other information authorized in writing by the student. The above designated information is subject to release by the campus at any time unless the campus has received a prior written objection from the student specifying information which the student requests not be released. Written objections should be sent to the Office of the Dean of Student Affairs.

Applicants are required to include their Social Security account number in designated places on applications for admission pursuant to the authority contained in Title 5, *California Administrative Code,* Section 41201. The Social Security account number is used as a means of identifying records pertaining to the student as well as identifying the student for purposes of financial aid eligibility and disbursement and the repayment of financial aid and other debts payable to the institution.

USE OF SOCIAL SECURITY NUMBER

The campus is authorized to provide access to student records to campus officials and employees who have legitimate educational interests in such access. These persons are those who have responsibilities in connection with the campus academic, administrative or service functions and who have reason for using student records connected with their campus or other related academic responsibilities.

STUDENT ACADEMIC PETITIONS

The Student Academic Petition Committee has the authority to recommend the waiver or modification of certain university policies and regulations when such policies and regulations create a significant handicap or hardship for a student.

The Committee will take action only upon the submission by the student of a formal petition which sets forth the facts and circumstances that may warrant special consideration. For further information contact the Office of Advising Services.

RESEARCH ON HUMAN SUBJECTS

California State University, Fresno, has adopted provisions for the conduct of research which employs or influences humans. All research at the university must comply with these provisions. Students must familiarize themselves with the provisions by inquiring in the departmental offices or the office of the dean of their school.

DEGREES AND CREDENTIALS

California State University, Fresno is authorized to grant the bachelor of arts, bachelor of science, bachelor of vocational education, master of arts, master of science, master of business administration, master of city and regional planning, and master of social work degrees. See *School of Education* for public school credentials for which the university is authorized to recommend candidates.

THE BACCALAUREATE DEGREE

The bachelor of arts degree requires 124 semester units of which at least 40 must be upper division. Upper division courses taken before the student has earned 45 units may not be applied on this 40-unit requirement.

The bachelor of science degree requires from 124 to 132 semester units depending upon the major field.

Special course requirements, general education requirements and one major must be satisfactorily completed to qualify for the baccalaureate degree. Electives may be used to fulfill the requirements for a credential or for one or more minors or they may be free electives selected with the help of an adviser.

A minor is not required for graduation, but one or more minors may be used to complement a program of study. Units used to satisfy the degree major requirements may not be applied to a minor. A graduating senior may request that a completed minor be recorded on his or her transcript.

An undergraduate student may desire to complete the requirements for a second major at the time he completes his baccalaureate degree. Upon request, and upon completion of at least 24 units (12 of which must be upper division) exclusive of units necessary to meet requirements of the first major and of general education, one additional major may be recorded on the transcript. When the student applies for graduation he must designate which major is to be the degree major for purposes of graduation.

The bachelor of vocational education degree is a special degree limited to vocational teachers who qualify for a Swan Bill evaluation through the State Board of Vocational Examiners. The qualifications required for such an evaluation are outlined in the *State Education Code*. Among these qualifications is the stipulation that the candidate shall have had a minimum of 1,620 hours of teaching experience in an approved vocational class or 1,000 hours teaching experience in an approved trade extension class. Additional information regarding this degree program may be obtained from the Chairman of the Department of Industrial Arts and Technology.

It is contrary to university policy to grant to a student two bachelor's degrees or to grant a second bachelor's degree after the student has earned a comparable degree from an accredited institution. However, a student may petition for an exception to this regulation. If granted permission for a second degree, the student must complete a minimum of 30 units in residence, beyond the first degree, all special course requirements, for the baccalaureate, including English 1, general education, and the requirements for a degree major.

A post-baccalaureate student may complete additional course work in a

second undergraduate major. The transcript will indicate the courses completed, but it will not designate the second major. Such course work, if required as a prerequisite for admission to a master's degree program, may not be used to satisfy requirements for the master's degree.

TRANSCRIPT EVALUATION

Transfer students are provided with an advanced standing evaluation as part of the admissions process. Upon completion of approximately 90 semester units, each student should request a 90 unit degree evaluation from the Evaluations Office which will show all requirements completed and any remaining degree requirements. Only one degree evaluation can be made for each student. Each student should keep his or her personal copy current.

After evaluation, all transcripts become the property of the Records Office and are not returnable, even on loan. It is suggested that the students obtain duplicate copies of their records from former schools for their personal file.

ELECTION OF REGULATIONS

A student by remaining in continuous attendance in regular sessions and continuing in the same curriculum in any state university or college campus, in any of the California community colleges or in any combination of California community and state university or college campus, may, for purposes of meeting graduation requirements, elect to meet the graduation requirements of such campus from which the student will graduate in effect either at the time of his or her entering a curriculum or at the time of graduation therefrom except that substitutions for discontinued courses may be authorized or required by the proper campus authorities. Any break in attendance (failure to register for a regular semester) will break a student's status as a continuing student. The *General Catalog* lists the official graduation requirements for each year.

Active military duty will maintain a student's continuous attendance status providing he enters the military from CSUF and returns at the first registration for a regular session following his release. The dates of military service must account for all of the time not in attendance at CSUF.

An approved planned educational leave will maintain a student's continuous attendance status.

RESIDENCE REQUIREMENTS

For the bachelor of arts, bachelor of science, and bachelor of vocational education degrees a minimum of 30 semester units must be earned in residence at CSUF; at least 24 of these units must be earned in upper division courses and 12 of the units must be in the major. Extension credit or credit by evaluation may not be used to fulfill this requirement. Summer session credit and credit earned in the California State University and Colleges International Programs may be applied toward meeting this requirement on a unit for unit basis.

For special residence requirements see *Public School Credentials* and *School of Graduate Studies*. For interpretation and definitions see *Admissions—Determination of Residence*.

SCHOLARSHIP REQUIREMENTS

To qualify for any bachelor's degree a student must have at least a **C** average (2.0 on a four grade-point system) on his or her total college record, must have maintained at least a **C** average at CSUF, and must have at least a **C** average in his or her approved major.

See also *School of Education—Application for Admission to Credential Programs, School of Graduate Studies,* and *Scholarship Status* in the preceding section of this catalog.

SPECIAL COURSE REQUIREMENTS

Entering undergraduate students should note the following specific requirements:

United States Constitution and American History. In accordance with *Title 5* of the *Administrative Code,* Section 40404, a student, in order to graduate, must demonstrate his or her competence with respect to the Constitution of the United States, American History, and in the principles of state and local government of California. This may be done by passing examinations or by completing appropriate courses. (See *History Department—American History Requirement* and *Political Science Department—United States Constitution Requirement.*)

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ENGLISH REQUIREMENT

English 1, Composition, or its equivalent is an all-university graduation requirement. This requirement must be completed before the end of the fourth semester of university attendance. The requirement may be met by the successful challenge of *English 1* through *Credit by Examination,* or through satisfactory performance on the *Advanced Placement Examination in English,* or the *English Equivalency Examination.* The English Placement Test does not substitute for the English 1 requirement.

Also see: *"English Placement Test and Graduation Requirement".*

WRITING SKILLS REQUIREMENT

All students enrolled in the CSUC system must demonstrate their competence with regard to writing skills as a requirement for graduation. Students may meet this requirement in any one of three ways.

1. Passing a university examination composed of both an essay component and an objective component. The successful completion of this examination will earn one unit of credit.
2. Demonstrating successful performance in an approved upper division course in the English Department with approval of the major adviser and the English Department.
3. Demonstrating successful performance in an approved department or school upper division course which has a significant component of writing.

For further information on the university examination or for a list of upper division courses which meet this requirement, see the English Department or faculty adviser.

CREDIT FOR REMEDIAL COURSES

Up to four semester units of credit earned in courses designated by the university as being remedial may be applied to the total unit graduation requirement.

FOREIGN LANGUAGE REQUIREMENT

Foreign language is not a general college requirement for admission to or graduation from CSUF. However, some schools and departments require the study of a foreign language as part of the preparation for specified undergraduate and graduate programs. In general, upper division and graduate courses in these fields require the use of foreign language. See school and department statements of majors for details and suggestions for appropriate languages.

Students following majors which require the study of a foreign language ordinarily meet the requirement in one of the following ways:

1. Students who have no foreign language credit from high school complete two years of satisfactory collegiate study in one foreign language.
2. Students who have high school credit or other experience in a foreign language and who wish to continue in the same language should see an adviser in the Foreign Language Department. Normally students beginning a new language will enroll in the 1A course. College credit may be earned in the class in which the student is placed. (See *Credit Allowance in Foreign Language.*)
3. Students who do not have the prescribed high school or college credit may elect to meet the foreign language requirement by passing a competence examination. Usually only lower division courses in foreign language may be passed by examination. Credit by examination will be granted in foreign language only prior to the completion of the first upper division course in the same foreign language and may be obtained only in languages taught at the university. See the chairman of the Foreign Language Department.
4. Students seeking a second bachelor's degree major or a master's degree will be held for any foreign language requirement in the field.
5. Unless the major specifies the language to be used, a foreign student may offer English to meet the requirement, provided his or her native language is not English and provided the student has come to this country primarily to pursue academic work and expects to return to his or her home after completing a course of study.

GENERAL EDUCATION

Through its general education program, CSUF attempts to ensure to each student an opportunity to enlarge awareness of areas which the student may be unable to explore in depth but which are likely to enhance his or her appreciation of life experiences and his or her contributions to society. The program has been developed to meet the requirements of the *California Administrative Code, Title 5.*

Transfer Students

Title 5 provides that general education-breadth requirements completed at an accredited college by a student who transfers to CSUF shall be accepted to the extent stated in the certification provided by that college. Transfer students who change their majors after being admitted to the university are advised that general education courses in addition to those certified as being complete may be required for graduation due to the fact that major requirements and general education requirements are exclusive of each other.

Selection of Courses

The student is expected to exercise responsibility in the selection of general education courses which will complement his or her major, be compatible with his or her educational objectives, and provide an introduction to other areas and disciplines. These courses should be completed before the student becomes deeply involved in a major program. The student is urged to consult his or her adviser in constructing a program of study.

General education requirements are *in addition* to specified unit requirements of the major. *No units used to satisfy requirements of the degree major may also be used to satisfy any part of the 40 units of general education-breadth requirement.* However, appropriate general education courses may be used toward completion of a minor or toward any "additional requirements" for the degree major. However, students completing the 84-unit Liberal Studies major will also be deemed to have completed the university general education requirement. *Courses used to satisfy state U. S. History and government requirements may not also be used for general education.* (See *Special Course Requirements.*)

REQUIREMENTS

A minimum total of 32 units must be selected from Areas I, II, III, and IV with at least 6 units and 2 courses being selected from each of the four areas. Additional units to meet the minimum state requirement of 40 units may be taken from the four areas or from the general education electives, providing the units taken from any one area do not exceed a total of 12. No more than 8 units from any one department or program listed in the left hand column may be counted toward the general education requirement. All courses listed below offered by a department or program count towards the limit of 8 units regardless of prefix.

Engineering students are allowed to count up to 16 units in Area I, Natural Sciences (up to 8 in chemistry and 8 in physics) for their general education requirements.

Area I. NATURAL SCIENCES

Anthropology	Anth 1
Biology	Biol 10, 15*
	Bot 1 or 10
	Phy 33
	Zool 1 or 10
Chemistry	Chem 1, 1A-B, 2A-B, 2C, 8
Geography	Geog 5, 7
Geology	Geol 1, 2, 15*, 151, 189
Physics	P Sci 20, 21 or 22
	Phys 1A-B, 2A-B, 5A-B
Psychology	Psych 10, 36

Area II. SOCIAL SCIENCES

Agricultural Economics	Ag Ec 31
Anthropology	Anth 2, 3, 4, 15*
Criminology	Crim 1, 132
Economics	Econ 1A-B, 101
Ethnic Studies	As Am 15
	Bl S 27 or 38, 135
	NAS 103
Finance and Industry	B A 8, 10
Geography	Geog 3, 4
History	Hist 4, 5
Home Economics	H Ec 39
La Raza Studies	La R 3, 5
Management and Marketing	Mgt 110, 110A-B
Political Science	Pl Si 1, 4, 5, 6
Psychology	Psych 134, 136
Social Welfare	S Wel 20
Sociology	Soc 1, 2, 3
Speech Communication	Spch 7, 8
Urban and Regional Planning	U R P 100
Women's Studies	WS 10

Area III. HUMANITIES

Art	Art 1, 20
	Art H10, 20
English	Engl 30, 76
Ethnic Studies	Bl S 25
History	Hist 1, 2
La Raza Studies	La R 7, 9
Linguistics	Ling 10, 134, 135
Music	Music 9, 73, 74, 75
Philosophy	Phil 1, 10, 120
Physical Education—Recreation	Dance 116
Radio-Television	R-TV 127, 128
Theatre Arts	Drama 1, 15, 22, 62
Women's Studies	W S 145, 168T

* This course is a part of the "Man and His Natural Environment" cluster.

GENERAL EDUCATION

Area IV. BASIC SUBJECT

Accounting and Quantitative Studies	Q M 60
Communicative Disorders	C D 101
English**	Engl 20
Foreign Language	***
Mathematics	Math 4, 5, 11, 11L, 41, 51, 52, 70, 71, 72, 75, 76, 77
Philosophy	Phil 25
Speech Communication	Spch 3, 4

GENERAL EDUCATION ELECTIVES

Agricultural Industry and Education	F Sci 1
Animal Science	A Sci 10
Biology	Biol 20, 105, 107
Communicative Disorders	C D 100
Criminology	Crim 120
Finance and Industry	Fin 34, B A 101
Health Science	H S 90, 110, 113, 124
Home Economics	H Ec 10, 54, 131
Humanities	HUM 10, 11
Industrial Arts	Ind A 101, 133, 162, 178
Journalism	Jour 1, 2
Linguistics	ISC 93
Natural Science	N Sci 15*
Office Administration	O Ad 105
Physical Education—Recreation	PE-AC 103, 111A, 130A, 139, 154A, 171A Rec 80
Plant Science	Plant 10
Radio-Television	R-TV 40, 140

* This course is a part of the "Man and His Natural Environment" cluster.

** English 1, Composition, may be applied to the 40-unit general education requirement but it may not be applied to any of the Areas 1 through IV.

*** Up to two semesters of basic course work in any one foreign language (not to exceed eight units) may be applied to Area IV of the General Education requirements. See the Foreign Language and Linguistics Departments for specific courses.

POST-BACCALAUREATE CREDIT

Upper division units earned at CSUF in the semester or summer session in which the bachelor's degree is granted, provided they are not needed for such a degree and provided the student is in good academic standing at the beginning of the final semester and remains continuously in good academic standing, will be listed on the student's record as *post-baccalaureate credit.* Only credit for courses in which grades **A**, **B**, **C**, or **CR** are earned may be counted. No course may have its credit divided between the baccalaureate and post-baccalaureate programs. Use of such credit for graduate degrees at CSUF requires special approval (consult Office of the School of Graduate Studies). Use of such credit for other purposes is to be determined by the appropriate authority.

GRADUATION AND COMMENCEMENT

Commencement is held annually at the end of the spring semester.Students who have completed degree requirements in the summer or in the fall semester immediately preceding commencement are eligible to participate with those who complete their work in the spring semester. Students looking forward to meeting degree requirements should complete the following steps:

1. Obtain and file a completed application for a degree (with the $10.00 graduation fee) in the Evaluations Office when 90 semester units have been completed. See *Academic Calendar* for filing dates and deadlines ($2.00 fine for late filing). See also *Election of Regulations.* Failure to apply before the final deadline will delay the granting of the degree.
2. Request the Records Office to transfer any work completed or to be completed in Extension to the permanent record.

The Evaluations Office, considering his prior and current work, will check the student's application for a bachelor's degree against requirements and will report to the student regarding his or her eligibility for the degree. In the case of graduate degrees, this clearance is given by the Graduate Office.

A degree cannot be awarded to a student with an **I** grade remaining on his or her record. A student receiving an **I** grade during the final year which has not been completed (or changed to an F grade) within two calendar weeks of the end of the student's final semester or summer session will not be considered for graduation that semester and must reapply for the degree.

In order to be eligible for graduation and participate in Commencement exercises, the student must (1) submit an application for the degree and pay the graduation fee, (2) have been approved for graduation by the faculty, (3) have met all financial obligations to the university, and (4) have completed with appropriate scholastic standing all courses required for the degree. Graduates will receive their official diplomas by mail.

It is the responsibility of the student to be sure that all requirements have been met and that documentation has been filed with the Evaluations Office by the appropriate deadlines.

No additions, deletions or changes to a student's record are permitted after the degree has been recorded.

HONORS AT GRADUATION

Honors at the time of graduation from CSUF will be awarded to students with an overall grade point average of 3.50 on all work attempted. The student must also have completed at least 45 units at CSUF with the following GPA on all CSUF work:

Summa Cum Laude (highest honors)	3.90 to 4.00
Magna Cum Laude (high honors)	3.70 to 3.89
Cum Laude (honors)	3.50 to 3.69

DEGREES AND CREDENTIALS

DEGREE PROGRAMS, MAJORS AND MINORS

The California State University, Fresno, offers majors for the baccalaureate degrees, minors, and master's degree programs as indicated below. Options are indented under the programs. Requirements for approved undergraduate majors and minors are listed in the appropriate school and department sections of the catalog. For master's degree program requirements, see School of Graduate Studies.

	Baccalaureate Degrees				*Master's Degrees*		
	BA	*BS*	*Other*	*Minor*	*MA*	*MS*	*Other*
Aerospace Studies	—	—	—	x	—	—	—
Agricultural Business	—	x	—	—	—	—	—
Agricultural Education	—	x	—	—	—	—	—
Agricultural Science	—	x	—	x	—	—	—
Options I and II							
Agriculture	—	—	—	—	—	x	—
(MS) Agricultural Chemistry							
Anthropology	x	—	—	x	—	—	—
Armenian	—	—	—	x	—	—	—
Art	x	—	—	—	x	—	—
Asian Studies	—	—	—	x	—	—	—
Asian-American Studies	—	—	—	x	—	—	—
Biology	x	—	—	x	x	—	—
Biological Science, Botany, Environmental Biology, Functional Biology, Microbiology, Zoology							
Black Studies	—	—	—	x	—	—	—
Business	—	—	—	x	—	x	—
Business Administration	—	x	—	—	—	—	MBA
(BS) Accounting, Agribusiness, Business Economics, Computer Applications & Systems, Finance, General Administration, Health Care Management, Insurance, Legal Environment of Business, Marketing, Office Administration, Personnel and Industrial Relations, Quantititative Analysis, Real Estate and Urban Land Economics, Transportation and Physical Distribution Management							
Chemistry	x	x	—	x	—	x	—
Child Development	—	x	—	—	—	—	—
City and Regional Planning	—	—	—	—	—	—	MCRP
Classical Studies	—	—	—	x	—	—	—
Communicative Disorders	x	—	—	x	x	—	—
Counseling	—	—	—	—	x	—	—
Criminology	—	x	—	—	—	x	—
(BS) Corrections, Law Enforcement							
Economics	x	—	—	x	x	—	—
Education	—	—	—	—	x	—	—
Engineering	—	—	—	—	—	x	—
(MS Civil)							
Engineering, Civil	—	x	—	—	—	—	—
Engineering, Electrical	—	x	—	—	—	—	—
Engineering, Industrial	—	x	—	—	—	—	—
Engineering, Mechanical	—	x	—	—	—	—	—
English	x	—	—	—	x	—	—
(MA) Creative Writing							
Ethnic Studies	—	—	—	x	—	—	—
French	x	—	—	x	—	—	—
Geography	x	—	—	x	x	—	—
Geology	x	—	—	x	x	—	—
German	x	—	—	x	—	—	—
Gerontology	—	—	—	x	—	—	—

	Baccalaureate Degrees				Master's Degrees		
	BA	*BS*	*Other*	*Minor*	*MA*	*MS*	*Other*
Health Science (BS) School and Community Health, Environmental Health Science, Occupational Safety and Health	—	x	—	x	—	x	—
History	x	—	—	x	x	—	—
Home Economics (BA) Dietetics and Food Administration	x	—	—	x	—	x	—
Industrial Arts	x	—	—	x	x	—	—
Industrial Technology (BS) Manufacturing Industries, Construction	—	x	—	—	—	—	—
Journalism Advertising, News-Editorial, Photocommunication (see Mass Communication MA), Public Relations, R-TV News Communication	x	—	—	x	—	—	—
La Raza Studies	—	—	—	x	—	—	—
Latin	—	—	—	x	—	—	—
Latin American Studies	x	—	—	x	—	—	—
Liberal Studies Credential, Non-Credential	x	—	—	—	—	—	—
Linguistics (MA) Bilingual Studies, French, German	x	—	—	x	x	—	—
Mass Communication Print Media, Electronic Media	—	—	—	—	x	—	—
Mathematics	x	—	—	x	x	x	—
Microbiology	—	x	—	—	x	—	—
Music (BA) Options I, II	x	—	—	x	x	—	—
Nursing	—	x	—	—	—	x	—
Office Administration	—	—	—	x	—	—	—
Performing Arts, Administration of	—	—	—	x	—	—	—
Philosophy (BA) Religious Studies	x	—	—	x	—	—	—
Physical Education (BA) General, Dance	x	—	—	—	x	—	—
Physical Science	—	—	—	x	—	—	—
Physical Therapy	—	x	—	—	—	—	—
Physics	x	x	—	x	x	x	—
Political Science	x	—	—	x	x	—	—
Psychology	x	—	—	x	x	x	—
Public Administration (see Political Science MA)	x	—	—	x	—	—	—
Radio-Television Broadcasting (see Mass Communication MA degrees)	x	—	—	x	—	—	—
Recreation Administration (MA) Option under Physical Education (BS) General, Therapeutic	—	x	—	x	—	—	—
Rehabilitation Counseling	—	—	—	—	x	—	—
Russian	x	—	—	x	—	—	—
Social Science	x	—	—	—	—	—	—
Social Welfare	x	—	—	—	—	—	—
Social Work	—	—	—	—	—	—	MSW
Sociology	x	—	—	x	—	—	—
Spanish	x	—	—	x	x	—	—
Special	x	—	—	—	x	—	—
Special Education	—	—	—	—	x	—	—
Speech	—	—	—	—	x	—	—
Speech Communication	x	—	—	x	—	—	—
Surveying and Photogrammetry	—	x	—	—	—	—	—
Theatre Arts (see Speech MA)	x	—	—	x	—	—	—
Vocational Education	—	—	BVEd	—	—	—	—
Women's Studies	—	—	—	x	—	—	—

SPECIAL MAJOR FOR THE BACHELOR OF ARTS DEGREE

The special major for a bachelor of arts degree provides an opportunity for students to engage in an individualized course of study leading to a degree when legitimate academic and professional goals are not accommodated by standard degree majors. The special major consists of correlated studies in two or more fields. It is not intended as a means of bypassing normal graduation requirements or a means by which students may graduate who fail to complete the degree major in which they are enrolled.

The special major must be approved in the office of the Vice President for Academic Affairs, with approval based upon a case-by-case justification. The candidate must have one full year of academic work (at least 30 units) still to be completed to meet minimum degree requirements. The minimum requirement for the special major is an approved program of 30 units at least 24 units of which must be upper division work. Units applied to satisfy general education requirements may not be counted.

A student requesting a special major must obtain application forms from the Office of Advising Services. On these forms the student must: 1) Prepare a statement giving his or her reasons for desiring a special major in terms of his academic and professional goals and why the student cannot meet these goals through a standard major; 2) Develop a specific list of courses which would, in his or her opinion, lead to the academic and professional goals stated above; 3) Secure the signed approval from the special major advisor and the department chairmen in the areas from which the special major courses are drawn. The student must submit the foregoing material to the Office of the Vice President for Academic Affairs for final approval.

PUBLIC SCHOOL CREDENTIALS

California State University, Fresno, is authorized by the Commission for Teacher Preparation and Licensing to recommend candidates for the following credentials. See School of Education for program requirements.

Basic Teaching Credentials

Multiple subjects (Elementary)
Multiple subjects, with emphasis in Early Childhood Education
Multiple subjects, with emphasis in Bilingual/Cross-Cultural Education (Spanish)

Specialist Teaching Credentials

Agricultural
Bilingual/Cross-Cultural
Early Childhood
Reading
Special Education

Services Credentials

Administrative
Clinical-Rehabilitative
Health (School Nurse)
Pupil Personnel, including School Psychologist

Basic Teaching Credentials

Single Subject (Secondary)
- Agriculture
- Art
- Business
- English, with separate concentrations in Drama and Speech
- Foreign Languages
- Home Economics
- Industrial Arts
- Life Science (Biology)
- Mathematics
- Music
- Physical Education, Men
- Physical Education, Women
- Physical Science
- Social Science

COURSES OF INSTRUCTION

Courses of instruction are offered in the areas indicated below; titles, designations, descriptions, and unit values appear in the school and department sections of the Catalog. For innovative course groupings *see Special and Interdisciplinary Programs.*

School of Agriculture and Home Economics
- Agricultural Economics Department (Ag Ec)
- Agricultural Industry and Education Department
  - Agricultural Education (Ag Ed)
  - Agriculture (Agri)
  - Dairy Industry (D Ind)
  - Enology (Enol)
  - Food Science (F Sci)
  - Mechanized Agriculture (Ag Me)
- Animal Science Department (A Sci)
- Plant Science Department (Plant)
- Home Economics Department (H Ec)

School of Business and Administrative Sciences (Bus)
- Accounting and Quantitative Studies Department (Acct, Q M)
- Finance and Industry Department (B A, Fin)
- Management and Marketing Department (Ind R, Mgt, Mktg)
- Office Administration Department (O Ad)

School of Education
- Elementary Education Department (E Ed)
- Secondary Education Department (S Ed)
- Advanced Studies Department (A S)

School of Engineering (Engr)
(C E, E E, I E, M E)

School of Graduate Studies
(See departmental graduate areas)

Division of Health Professions
- Communicative Disorders Department (C D)
- Health Science Department (H S)
- Nursing Department (Nurs)
- Physical Therapy Program (Ph Th)
- Rehabilitation Counseling Program (R C)

School of Humanities
- Art Department (Art)
  - Art History (Art H)
- English (Engl)
- Foreign Language Department (FL)
  - Armenian (Arm)
  - French (Fren)
  - German (Germ)
  - Greek (Grk)
  - Italian (Ital)
  - Latin (Latin)
  - Portuguese (Port)
  - Russian (Russ)
  - Spanish (Span)
- Linguistics Department (Ling)
  - Chinese (Chin)
  - Hebrew (Hebr)
  - Japanese (Japn)
  - Sanskrit (Skt)
- Philosophy Department (Phil)

School of Natural Sciences (N Sci)
- Biology Department
  - Biology (Biol)
  - Botany (Bot)
  - Entomology (Ent)
  - Microbiology (Micro)
  - Physiology (Phy)
  - Zoology (Zool)
- Chemistry Department (Chem)
- Geology Department (Geol)
- Mathematics Department (Math)
- Physical Science (P Sci)
- Physics Department (Phys)
- Psychology Department (Psych)

School of Professional Studies
- Aerospace Studies Department (A Sp)
- Communication Arts and Sciences Department
  - Radio-Television (R-TV)
  - Speech Communication (Spch)
  - Theatre Arts (Drama)
- Criminology Department (Crim)
- Industrial Arts and Technology Department (Ind A)
- Journalism Department (Jour)
- Music Department (Music)
- Physical Education—Recreation Department
  - Physical Education (Dance, PE, PE-AC, PE-IC)
  - Recreation (Rec)

School of Social Sciences
- Anthropology Department (Anth)

Asian-American Studies (As Am)
Economics Department (Econ)
Ethnic Studies Program (Eth S)
Black Studies (Bl S)
Native American Studies (N A S)
Geography Department (Geog)
History Department (Hist)
La Raza Studies Program (La R)
Political Science Department (Pl Si)
Sociology Department (Soc)
Urban and Regional Planning Department (U R P)

School of Social Work
Social Welfare Program (S Wel)
Graduate Program in Social Work (S Wrk)

Special and Interdisciplinary Programs
Basic Written English (BWE)
Computer Sciences (C S C)
Experimental College (EXP)
Graduate Studies (GS)
International Studies—Campus (I S C)
International Studies—Abroad (I S A)
Latin American Studies (L A S)
Mass Communication (M Com)
Moss Landing Marine Laboratories (M Sci)
NEXA Courses
Women's Studies (W S)

See following section, *Special and Interdisciplinary Programs,* for innovative course groupings of traditional courses.

COURSE NUMBERING SYSTEM

DEFINITIONS AND ELIGIBILITY

Numbers

1–99 *Lower division* (ld) courses designed for first- and second-year students, but open to others.

100–199 *Upper division* (ud) courses designed for third-, fourth-, and fifth-year students; enrollment permitted by second-semester sophomores with adequate preparation who have completed a minimum of 45 units. Counted as graduate work for students with graduate status; permitted for use on a master's degree program only with departmental approval.

190 Independent study, undergraduate.

100G–199G For *graduate* students only; designed for use in the first year of two-year master's degree programs; intensive combination of material normally offered at the undergraduate level.

200–299 *Graduate courses* open to holders of baccalaureate degrees and, with prior approval of the instructor, to second-semester seniors with superior preparation and ability; designed for use on master's degree programs; when taught by extension, count as upper division in master's degree programs.

290 Independent study, graduate.

299 Master's degree thesis or project.

300–399 Designed to meet professional needs which cannot be served by regular established course offerings. *These courses are offered only through extension and summer sessions.* They assume completion of the bachelor's degree and/or appropriate professional service and are focused upon the problems that enrolled students encounter in their professional service. Although these courses are designed primarily for purposes other than the partial fulfillment of degree and credential requirements, they may, with approval by the department, be applied toward the major. They may be used as part of the forty-unit upper division requirement for the BA degree and as electives in the fulfillment of the total requirements for a baccalaureate degree and/or credential. They may not be used to meet the requirements of a master's degree.

Symbols

A-B Two-semester course normally taken in sequence.

A,B Listed as separate courses, may be taken independently.

F Field course.

L Laboratory associated with another course.

T Topics course, varied area subject matter, repeatable for credit.

Courses are listed by number, title, units and maximum total credit. Each unit generally represents one hour per week in class and two hours of preparation; courses involving laboratory, activity, or other application normally require additional hours of class attendance. Lecture-laboratory hours indicate deviation from the usual one class hour per week for one unit of credit. Prerequisites are listed at the beginning of the course description. Course offerings are listed each semester in the *Schedule of Courses.*

Course Prerequisites

Course prerequisites are designed to protect the student by ensuring that he or she has the necessary background and preparation for success in the course. Transfer courses with equivalent content will be accepted in lieu of stated prerequisites. Students should check the prerequisites carefully before registering in a course to be sure that they have been met. The instructor can deny admission to a course to a student who has not met the prerequisites.

However, the instructor also has the authority to waive the stated prerequisites for a course if it is in the interests of the student to do so and if in the instructor's judgment, the student has a background sufficiently adequate to permit satisfactory performance in the course. Credit for the prerequisite course will not be awarded subsequently.

SPECIAL AND INTERDISCIPLINARY PROGRAMS

Armenian Studies
Asian Studies
Basic Written English
Child Development
Classical Studies
Computer Science
Experimental College
Gerontology
Graduate Studies
International Programs
Latin American Studies
Liberal Studies
Mass Communication (Graduate Program)
Moss Landing Marine Laboratories
Off-Campus Credit Toward Degree
Russian Area Studies
Special Major (Graduate Program)
Women's Studies

SPECIAL AND INTERDISCIPLINARY PROGRAMS

The university has certain programs and course groupings whose organization or administration does not fall within a single department. These programs and courses are described or referred to in this section. Successful completion of courses in these programs, with minor exceptions, will lead to credit which may be applicable to certain departmental or university requirements. Interested students should consult the appropriate advisers.

ARMENIAN STUDIES

California State University, Fresno, offers courses in Armenian Studies, including Armenian language, literature, history, and art, as well as courses in other disciplines which are related to Armenian Studies. Although the university does not offer a bachelor's degree program in Armenian Studies, by careful selection of electives and of requirements in various majors, a student can secure a useful background for the understanding of Armenian language, history, and culture. However, a minor in Armenian is offered in the Foreign Language Department. This background can prepare a student for teaching in Armenian schools in the United States, or for graduate work in Armenian Studies in such institutions as Near Eastern Center at UCLA, the Center for Middle Eastern Studies at Harvard, and the Department of Middle Eastern Languages and Culture at Columbia University.

The following list includes the Armenian courses currently offered and related subjects in other fields. For further information consult the Coordinator of Armenian Studies, Professor Dickran Kouymjian.

ART (Art H)

109T Topic: Armenian Miniature Painting (600–1400) (3)
109T Topic: History and Development of Armenian Architecture (3)
109T Topic: Islamic Art and Its Relation to Armenian Art (3)
109T Topic: Late Antique and Byzantine Art and Their Relation to Armenian Art (3)
109T Topic: Survey of Middle Eastern Art, I and II (3–3)
190 Independent Study (1–3; max see reference)
290 Independent Study (1–3; max see reference)

ENGLISH (Engl)

50T William Saroyan (4)
169T Armenian Literature (1–4)

FOREIGN LANGUAGE (Arm)

1A-B Elementary Armenian (4–4)
2A-B Intermediate Armenian (4–4)
111 Composition and Conversation (3)
112 Advanced Composition and Conversation (3)
190 Independent Study (1–3; max see reference)

HISTORY (Hist)

106 Islam to 1500 (3)
108 Armenian History (3)
109T Topics: Armenian Culture (1–3; max total 6 if no topic repeated)

120 Byzantine History (3)
124T Topic: Armenia and the Ottoman Empire (1)
190 Independent Study (1–3; max see reference)
290 Independent Study (1–3)

Political Science (Pl Si)

144T Area Studies in Africa and Middle East (1–3)

ASIAN STUDIES

CSUF offers courses in many disciplines which are concerned with South, Southeast, and East Asia. Although there is no degree program in Asian Studies at this time, an interdisciplinary undergraduate minor is available for students who desire a knowledge of Asia as a complement to their chosen academic discipline or profession. For further information and for aid in planning such a course of study, consult the Coordinator of Asian Studies, Dr. Shien-min Jen, Department of Anthropology.

MINOR

100 A minor in Asian Studies consists of 21 units, including a minimum of nine upper division units. Specific Requirements: (1) 6–9 units in one of the areas subsumed under Section I or II below; (2) a total of four courses, two (at least 6 units) from Section I and two (at least 6 units) from Section II, but none in the area chosen in Requirement (1); (3) up to three units of electives from Sections I, II, or III. Independent Study (190) courses in any department may be applied toward the minor as long as they cover some aspect of Asian Studies and are approved by the Coordinator. Unspecified topics courses and seminar courses listed below must cover some aspect of Asia to be counted toward the minor.

COURSES

Section I. Humanities

Art H 109TTopics in Art History (1–3; max 3 per area)
140 India and South East Asia (4)
142 China and Japan (4)
Language
Chinese 1A–1B Elementary Chinese (4-4)
2A–2B Intermediate Chinese (4-4)
Japanese 1A–1B Elementary Japanese (4-4)
2A–2B Intermediate Japanese (4-4)
Sanskrit 10A-B Sanskrit (3-3)
Philosophy and Religion
Philosophy 136 Buddhism (3)
137 Hinduism (3)
138 Chinese Thought (3)
172T Seminar in Religious Issues (4; maximum total 12, if no topic repeated)

Section II. Social Sciences

Anthropology 123 Peoples and Cultures of Southeast Asia (3)
124 Peoples and Cultures of East Asia (3)
129T Topics in Ethnology (1–4; max total 8)
159T Topics in Cultural Anthropology (1–4; max total 8)
Economics 114 Economics of Underdeveloped Areas (3)
188T Special Topics (1–3; maximum total 6)
Geography 177T Asian Regions (3; maximum total 9, if no area repeated)
History 6 East Asian Civilization (3)
191 History of China (3)
192 Recent China (3)
193 Japan and Korea (3)
194 Southeast Asia and the Modern World (3)
199T Studies in Far Eastern History (1–3; max total 6, if no topic repeated))
Political Science 183 Comparative Administration (3)

Section III. Courses Partially Related to Asia

Agriculture 161 International Agriculture (3)
170 Seminar in International Agriculture (3)
Home Economics 165 Cultural Foods (3)
Marketing 176 International Marketing (3)
Radio-Television 188T Topics in Broadcasting: International Broadcasting (3)

BASIC WRITTEN ENGLISH

The minicourses described below are designed to help students improve their writing skills. Each course offers intensive work in a specific area. Students may take one or all or any combination of these one-unit courses. These courses may be taken prior to or concurrently with English 1 or A. Classes are taught by members of the English and Linguistics Departments.

BASIC WRITTEN ENGLISH (BWE)

4A. Spelling and Word Formation (1) (Former EXP 64A)

Developing awareness of the systematic nature of English spelling in relation to the sound system and rules for word formation in the language. Mastery of the system rather than word memorization will be emphasized.

4B. Vocabulary Building (1) (Former EXP 64B)

Acquiring greater sensitivity to the literal and implied meanings of words, developing an awareness of the processes of word formation in English, and expanding the active vocabulary.

4C. Sentence Structure (1) (Former EXP 64C)

Developing skill in writing clear, mature sentences. The focus of the course is on structure—that is, on the alternative ways of phrasing the same idea and the consequences of choosing one alternative and not another. Sentence and phrase expansion, reduction, combination and rearrangement are emphasized, not traditional grammar.

4D. Punctuation (1) (Former EXP 64C)

Learning to use punctuation marks so that readers readily understand the writer's ideas. Particular attention to the use of commas, semicolons, apostrophes, and dashes. A minimum number of unvarying rules will be emphasized.

4E. Paragraph and Essay Organization (1) (Former EXP 64D, 64E)

Developing skills in identifying the sub-topics which make up the central idea of a paragraph or essay, in expanding and supporting ideas, and in arranging them so that the author's purpose is carried out as effectively as possible.

CHILD DEVELOPMENT

The university offers an interdisciplinary major leading to the Bachelor of Science Degree in Child Development. The major is appropriate for students interested in vocational opportunities based on children. It may lead to employment in the areas of preschool, child center, private nursery, special programs for disadvantaged children, and other child-related vocations.

The program includes a behavioral science base from psychology, sociology, home economics and courses in communicative disorders, and speech communications.

The major consists of a core of 10 courses listed below, plus approved electives. Note: H Ec 39, Psych 10 and Soc 1 are prerequisites to some of these courses. Please consult catalog.

	Units
Psych 101	3
H Ec 131 or Soc 165	3
Psych 178 or H Ec 134	3
H Ec 139	3
Psych 136	3
Spch 162	3
A S 174	3
H Ec 132T (Planning & Adm of Programs for Children)	3
A S 172	3
C D 100	3
Required	30
Additional requirements: 15 units of approved electives. (See adviser for approved course listings.) Electives	15
Total	45

Under the restrictions of the major, students may make approved adaptations in their programs to fulfill specific needs and career objectives.

Students interested in this interdisciplinary major should consult the Chairman of the Home Economics Department in the School of Agriculture and Home Economics for assistance in program planning and assignment of advisers. (See brochure on *Child Development,* Home Economics Department, for additional information.)

CLASSICAL STUDIES

Although the university does not offer a bachelor's degree program in classical studies, many courses in several disciplines are concerned with this subject. By appropriate selection from these courses as electives or within the requirements of various majors, a student can secure a useful background of study as preparation either for graduate study or for his or her vocation.

MINOR

The Classical Studies minor is designed for students who are interested in classical civilization and for those who wish to have a chance to teach classical languages and culture or who wish to enter a graduate school where such a minor would give a sound foundation for further work in any of the areas mentioned above.

The minor in Classical Studies consists of 20 units; the student's program of study is arranged from the courses listed below with the approval of the Coordinator of Classical Studies.

Requirements are as follows:

Required courses:	History 111 Ancient Greece	3 units
	History 112 Ancient Rome	3 units
	Latin 1, A & B	6 units
	or	
	Greek 1, A & B	6 units
	or	
	Latin 1A & Greek 1A	6 units
	Total required	12 units
Electives:	Total required	8 units
	Total	20 units

HISTORY MAJOR (Classical Studies)

The History Major requirements can be fulfilled by taking a substantial number of courses directly related to the classics. For details consult the chairman of the Department of History or the Coordinator of Classical Studies.

The following list includes the courses most directly concerned. For further information consult the Coordinator of Classical Studies, Dr. Stephen Benko, Department of History.

Art H 10 The Ancient and Primitive World (3)
109T Topics in Art History (1–3; max 3 per area)
Drama 185. History of the Theatre and Drama I (3)
English 112. World Literature: Ancient (4)
113. World Literature: Medieval and Renaissance (4)
115. Literature of the New Testament (3) (See Phil 133)

116. Literature of the Old Testament (3) (See Phil 134)
169T. Forms of Literature, (4): Comedy, Mythology
191T. Supervised Independent Reading (1–4): World Literature, Ancient-Medieval

Foreign Language
Greek 1A-B. Elementary Greek (3–3)
148. Greek Literature in English Translation (3)
Latin 1A-B. Elementary Latin (3–3)
2A-B. Intermediate Latin (3–3)
131T. Classical, Medieval, Renaissance Latin (3; max total 9 if no topic repeated)
132. Classical Mythology (3)
148. Roman Literature in English Translation (3)
190. Independent Study (1–3)
History 1. Western Heritage I (3)
103A. History of Early Christianity (3)
103B. History of Medieval Christianity (3)
108. Armenian History (3)
110. Ancient Near East (3)
111. Ancient Greece (3)
112. Ancient Rome (3)
114. The Ancient Mediterranean (3)
115. Ancient Israel (3)
119T. Studies in Ancient History (1–3; max total 6 if no topic repeated)
120. Byzantine History (3)
190. Independent Study (1–3)
201. Reading Seminar (3)
210. Seminar in Ancient and Medieval History (3)
Linguistics
Hebrew 1A-B. Basic Hebrew (3–3)
Philosophy 101. Ancient Philosophy (3)
116. History of Ethics (3)
133. Literature of the New Testament (3) (Same as Engl 115)
134. Literature of the Old Testament (3) (Same as Engl 116)
170T. Seminar in History of Philosophy (4; max total 12)
190. Independent Study (1–3)
Physical Science 106. History and Philosophy of Physical Science (3)
Political Science 110. Seminar in History of Political Thought to Macchiavelli (3)

COMPUTER SCIENCE

Until the university inaugurates a formal Computer Science major, students interested in Computer Science can fill their needs by taking the computer-related courses that are offered by several departments of the university. A list of such courses is presented below. See the appropriate department for non-CSC course descriptions.

COMPUTER SCIENCE (C S C)

180T. Programming in Specialized Computer Languages (2–3)

Prerequisite: permission of instructor. Programming and usage of an application oriented language selected from the areas of string and list processing, simulation, CAI, formal algebraic manipulation, query, text editing and processing (e.g. GPSS, SNOBOL, LISP, CSMP).

RELATED COURSES

Business

Q M 60. Computer Concepts (3)
63. Automation and Computer Language—FORTRAN (3)
64. Automation and Computer Language—COBOL (3)
162. Advanced Computer Programming (3)
163. Business Models and Simulation (3)
165. File Organization and Data Base Systems (3)
166. Applied Computer Systems (3)
168. Data Processing Management (3)
169. Machine Language Programming (3)
173. Computer Configurations (3)
Bus 209. Computers and Programming (3)
262. Seminar in Programming (3)
266. Data Processing Management and Computer Selection (3)

Engineering

C E 4. Machine Computing and Computer Programming (3)
E E 85. Mini/Microcomputers as System Components (2)
106. Introduction to Switching Theory (3)
107. Digital Data Handling (3)
133. Digital Systems and Computer Organization (2)
175. Design of Digital Systems (3)
Engr 70. FORTRAN IV Programming (2)
173. Analog Computation (2)

Industrial Arts

Ind A 107. Industrial Computer Concepts and Applications (3)
151. Elements of Digital Computers (3)

Mathematics

Math 20. Introductory Computer Programming (2)
113. Theory of Computation (3)
114. Discrete Structures (3)
120. Structures of Programming Languages (3)
121. Numerical Analysis I (3)
122. Numerical Analysis II (3)
221. Advanced Numerical Analysis (3)

EXPERIMENTAL COLLEGE

Within the university the Experimental College is designed to facilitate educational experimentation. It encourages the development of kinds of learning which may involve departures from current methods of instruction and scheduling, discipline boundaries, and relations between students and instructors.

The Instructional Development Committee, which is composed of both students and faculty, recommends which courses will be included in the Experimental College. Courses instituted under it may not continue longer than three years. On the basis of an evaluation within that time, for which the committee and relevant departments are responsible, a course must either be accepted for catalog listing by regular procedures or be dropped.

Proposals for the program may be initiated by faculty members, by departments, by members of the administration, and by students. The committee gives priority to those proposals which appear to have the greatest merit as potential contributions to the total program of the college and which show some special need for immediate implementation or preliminary testing.

Experimental College courses count toward the unit requirement for graduation. Applicability to major and general education requirements is determined by the appropriate agency in each case.

Courses in the Experimental College appear in the *Schedule of Courses* with an EXP prefix. Normally, a special bulletin published each semester will provide course descriptions and other information concerning the program since they do not appear in the *CSUF Bulletin* until they are accepted as regular course offerings.

GERONTOLOGY

The interdisciplinary minor in gerontology (study of aging) is open to students in any major. It is especially designed to serve undergraduate majors in Communicative Disorders, Home Economics, Health Sciences, Nursing, Physical Therapy, Psychology, Recreation, Social Welfare and Sociology; graduate majors in various social science and health professions areas; those currently working for service agencies for the aging; and aging individuals who are interested in gaining greater insight into this period of their lives.

The minor consists of from 21 to 24 semester units of credit. The total to be determined by the student's major adviser and the Coordinator of Services to Older Adults.

The following list indicates the course requirements of the minor:

Units

A. Basic courses (required) 5
   Soc 105 Orientation to Gerontology (1; max total 2) (two semesters required)
   * Soc 166 Social Gerontology (3)

B. Core courses (three of the following six courses are required)..... 9
   Psych 103 Maturity and Old Age (3)
   S Wel 122T Social Services for Aging (3)
   ** H S 115 Health Problems of Aging (3)
   H Ec 117 Aspects of Aging (3)
   H Ec 167 Nutrition and Aging (3)
   ** Nurs 180T The Process of Growing Older (3)

C. Elective courses (any of the following courses required—or the course not completed in group B) 4

* Sociology 166 is a recommended prerequisite for all core courses.
** Students should plan to complete only one of these courses since both cover essentially the same area of aging.

Educ 180T Counseling the Older Adult (3)
Anthro 155 Medical Anthropology (3)
CD 100 Principles of Communicative Disorders (3)
La R 125T Aging and the Chicano (3)
Nurs 180T Death and Bereavement (3)
Ph Th 50 Introduction to Medical Terminology (1)
Rec 159 Volunteer Coordination (3)
Rec 165 Foundations of Therapeutic Recreation Service (3)
Rec 166 Methods in Therapeutic Recreation (3)
W S 10 Introduction to Changing Woman (3)

In addition classes on aging which are offered through Continuing Education, Summer Session, the Experimental College, and the Saturday School may be accepted for meeting elective credit requirements.

D. Intern or research course. Required field work or a research project relating to the aging, in the student's major field and supervised by an instructor in the student's major. The number of units required determined by the department concerned. Consideration will be given to previous work experience with the aging 3–6

21–24

The basic and core courses in the minor can be beneficial to any student in understanding the aging process and in correcting misconceptions about characteristics of aged individuals.

For further information, please call or write W. Donald Albright, Coordinator of Services to Older Adults.

GRADUATE STUDIES

It is the policy of the School of Graduate Studies that a graduate student who makes use of university resources while completing course work under an SP grade must be enrolled at the university. Two special courses, Graduate Studies 295 and 299, have been created to make this enrollment possible when the student is not registered in any regular course. GS 295 is to be used when the student is continuing work in any course besides a thesis (299) or is preparing for comprehensive examinations. GS 299 is to be used for thesis continuation only. The courses carry zero units and are to be used only to maintain enrollment at the university. The work must be completed within the stipulated time period. If a student must suspend work for more than one semester on the thesis or other courses in which the SP grade was given, application for an academic leave of absence should be filed. (*See: Grades, Scholarship, Records—SP Grade and Special Programs—Graduate Studies.*)

GRADUATE STUDIES (GS)

295. Graduate Work Continuation (0)

Prerequisite: prior registration in a departmental graduate course with an assigned grade of SP or certification by the major department that the student will be using university facilities to prepare for departmental comprehensive examinations for the completion of master's degree requirements.

299. Thesis or Project Continuation (0)

Prerequisite: prior registration in a departmental thesis 299 course with an assigned grade of SP. Registration is required in any semester in which the student expects to use the facilities and resources of the university after receiving the grade of SP in Course 299.

SPECIAL GRADUATE PROGRAMS

MASS COMMUNICATION

The master of arts degree in mass communication is an interdisciplinary degree program jointly offered by the journalism and radio-television-film faculties of the college. The program has been developed to prepare students for professional roles in the various mass communication industries, as teachers in the mass communication disciplines, or as candidates for advanced graduate study and research.

The School of Graduate Studies provides administrative coordination for graduate interdisciplinary programs and courses.

Supervised by a joint committee of representatives from the Communication Arts and Sciences Department and the Journalism Department, the program has options in print media and electronic media administered by the two respective departments.

MASTER OF ARTS DEGREE REQUIREMENTS

The master of arts degree program in mass communication assumes that the student has an undergraduate major in a directly related field, such as radio, television, film, journalism, etc.

(See also *Admission to Graduate Standing. Advancement to Candidacy, Program Requirements,* and *Thesis and Thesis Alternatives.*)

Under the direction of an advisory commitee, each student prepares and submits an individually designed course of study within the following framework:

	Units
Required core courses (see *Specific Requirements*)	10–12
Courses in selected major option (print or electronic media)	10–15
Approved electives in cognate areas (e.g., psychology, political science, sociology)	6–
Total (at least 15 units in 200-series)	30

Specific Requirements: MC 201, 202, 299 (minimum of 4 units).

COURSES

The following graduate courses in mass communication may be used on master's degree programs.

Mass Communication

201. Seminar in Theory and Research (3)

(Core) Theory of the mass media, its development and application; basic research methodologies applicable in the various areas of the mass media.

202. Seminar in Literature of Mass Communications (3)

(Core) Critical examination of the literature in the field of mass communication. Exploration of the concepts in various areas through a study of literary resources.

204T. Seminar in Journalism (3; max total 9)

Seminar in a print media topic: government information policy, news media and urban affairs, social responsibility in public relations, magazine influence in America.

205T. Seminar in Radio-Television-Film (3; max total 9)

Seminar in an electronic media topic: current regulatory issues, quantitative research, ETV/ITV problems, film as social comment.

230. Criticism of Broadcasting and Film (3)

Development of ethical, artistic, and critical standards for broadcast and motion picture evaluation. Principles of criticism are traced from an historical to a contemporary context. Research papers and reports required.

250. Comparative and International Broadcasting (3)

Formal study of national systems of broadcasting and the social, geographic, and political forces that have shaped national roles in international communications. Research papers required.

290. Independent Study (1–3; max total 6)

(See *Academic Placement-Independent Study.*)

299. Thesis (2–6)

(Core) Prerequisite: see *Master's Degrees-Thesis Requirement.* Preparation, completion, and submission of an acceptable thesis for the Master's degree.

SPECIAL MAJOR

The special major for the Master of Arts Degree provides an opportunity for a graduate student to engage in an individualized course of study leading to a master's degree when academic and professional goals are not accommodated by existing master's degree programs. The special master's degree major consists of correlated studies in two or more fields. It is not intended as a means of bypassing normal master's degree requirements.

To embark on a special major master's degree the student must meet the criteria for at least conditionally classified standing in a master's degree program at California State University, Fresno, and must have the sanction of the Dean of the School of Graduate Studies. Permission to embark on a special major master's degree will be based on a case-by-case justification, including 1) a written statement of the reasons for desiring the special major, in terms of academic and professional goals and showing why these goals cannot be met within an existing master's degree program; 2) the discipline areas which, in the student's opinion, would lead to the specified academic and professional goals.

If the student is qualified and the request appears to be justified, the Dean of the Graduate School will authorize the student to apply formally for admission to the special major program. Applications may be obtained in the School of Graduate Studies. It is the responsibility of the student to consult with appropriate faculty members and/or department chairmen regarding the proposed program of study, eventually obtaining on the application form the signatures of the faculty members who will comprise the student's program committee. The final approval of the student's application by the Dean, School of Graduate Studies, constitutes the offical appointment of the program committee.

From this point on procedures are the same as in any other master's degree program, e.g., determination of classified standing, administration of the qualifying examination, advancement to candidacy, etc.

For more detailed information on the application process and the procedures to be followed, consult the Office of the School of Graduate Studies.

INTERNATIONAL PROGRAMS

110 The university offers two programs under this heading, a campus program, and an overseas program. The campus program of International Studies Courses (ISC) is designed for students whose native language is not English and for those whose education has been in a language other than English. All such students are required to participate in post-admission English language testing. As a result of such testing, any student may be required to register for certain International Studies Courses.

CAMPUS PROGRAM

The International Program (Campus) provides courses intended to help the foreign student gain adequate skill in the use of the English language and sufficient familiarity with American customs and tradition to obtain maximum benefit from his experience at an American college. The following program is required of all entering foreign students, unless excused from part or all of it by the Admissions Committee on the advice of the persons concerned with the instruction and administration of the program. This decision will be based on a consideration of test scores and other data supplied by the student with his application. (See *Admission to the College—Entrance Examinations*). After arrival on campus, examinations and an interview may lead to the student's being excused from certain courses.

First Semester Program: Most students will be required to enroll in I S C 10, 21, and 93 in the first semester of residence. In addition, students with less skill in English will be required to take I S C 1 and 2. With permission of his adviser, a student may enroll in other regular courses.

Other Undergraduate Courses: A course in English, I S C 110, will be taken during the second semester of residence unless the foreign student is advised that it is unnecessary for him.

Courses Taken in Graduate Standing: An entering graduate student whose previous education has been in a language other than English is held to the same standards of English proficiency as are undergraduate students and may be required to enroll in the above-listed undergraduate courses when considered necessary by his advisers. Graduate students will be required to enroll in I S C 293.

COURSES (I S C)

1. Oral English: Pronunciation (2)
The sound patterns of American English. Sound contrasts and stress, rhythm and intonation drills.

2. English Sentence Patterns (3)
Practice in the use of intermediate and advanced grammatical patterns. Reading comprehension and vocabulary building.

10. English Composition for Foreign Students (3)
Practice in writing paragraphs, short essays and other types of writing. Mechanics of term papers. Brief review of certain grammar problems and punctuation.

21. Advanced Oral Practice in American English (3)
Advanced drills in articulation, intonation, rhythm, and word and sentence stress. Speech composition including organization, delivery, and support.

93. Contemporary American Society (3)
Introduction to contemporary American society to familiarize the student with political and social issues and ideological conflicts.

110. Advanced Composition for Foreign Students (3)
Review of selected points of English usage. Conventions of writing formal research reports. Writing of short essays. Practice in paraphrasing and summarizing. Writing complex sentences in concise form. Stylistic variation and degree of formality.

GRADUATE COURSES (I S C)

293. Contemporary America (3)
Open only to students from abroad. Prerequisite: graduate standing and permission of instructor. Seminar including studies from areas of anthropology, economics, history, literature, political science, psychology, sociology, and related fields. (See *School of Graduate Studies.*)

INTERNATIONAL PROGRAM (OVERSEAS)

The California State University and Colleges (CSUC) offers opportunities for students to pursue their studies at a distinguished foreign university or special program center. Under the auspices of the CSUC Office of International Programs, participants in this program are concurrently enrolled at their home campus, where they earn academic credit and maintain campus residency, and at an overseas institution of higher education.

Cooperating universities abroad include the University of Provence, France; the Universities of Heidelberg and Tubingen, Hamburg University, Germany; Hebrew University of Jerusalem in Israel; the University of Florence, Italy; the Universidad Ibero-Americana, Mexico; The Universidad

Católica, Peru; the Universities of Granada and Madrid, Spain; the University of Uppsala, Sweden; Lincoln University College of Agriculture and Massey University, New Zealand; and Waseda University of Japan. In the United Kingdom, cooperating universities (which may vary from year to year) include, among others, Aberdeen, Dundee, Edinburgh, Bangor, Heriot-Watt, Leicester, London, Manchester, Nottingham, Oxford, Liverpool, Lampeter, Sheffield, and Strathclyde. In addition, CSUC students may attend a special program in Taiwan, Republic of China, or an architecture program in Copenhagen, Denmark.

Eligibility for application is limited to those students who will have upper division or graduate standing by September 1980 at a CSUC campus; who have demonstrated the ability to adapt to a new cultural environment; and, who, in the cases of France, Germany, Mexico, Peru, and Spain, will have completed at least two years of college-level study in the language of instruction at the host university, or possess equivalent knowledge of the language. At the time of application, students must have a minimum cumulative grade point average (GPA) for all college-level work of 2.75, except for the programs in Israel, New Zealand, Peru, and the United Kingdom where a minimum g.p.a. of 3.0 is required. Selection is competitive and is based on home campus recommendations and the applicant's academic record. Final selection decisions are made by a statewide committee of faculty members, except for the programs in New Zealand and the United Kingdom where final selections are made by the respective host universities.

The International Programs supports all tuition and other academic and administrative costs overseas for each of its participants to the same extent that such funds would be expended to support similar costs in California. Students assume costs for pre-departure orientation, insurance, transportation, housing, and meals. Home campus registration and other fees and personal incidental expenses or vacation travel costs while abroad are also paid by the student. Non-resident students are subject to non-resident fees. The Office of International Programs collects and administers funds for those items which the program must arrange or can negotiate more effectively, such as home campus fees, orientation costs, insurance, outbound transportation, and, in some centers, housing. International Programs participants may apply for any financial aid available at their home campuses, except for campus work-study.

Applications for the 1980–81 academic year must be submitted before February 9, 1980, except for New Zealand and the United Kingdom. Applications for the New Zealand program must be submitted by May 11, 1980, for participation during calendar year 1981. (The academic year in New Zealand begins in February and ends in October.) United Kingdom applications must be submitted by January 5, 1980.

Detailed information and application materials may be obtained from Maurice Gendron, Coordinator, International Programs (Overseas); further information may also be obtained by writing to The California State University and Colleges International Programs, 400 Golden Shore, Suite 300, Long Beach, California 90802.

COURSES (I S A)

California State University, Fresno students under The California State University and Colleges International Programs register concurrently on campus and at the host institution abroad, with credit assigned in terms of CSUF courses. Undergraduate students who find appropriate study opportunities at the host institution but no local counterpart course may use Independent Study (190), and International Study Abroad 92 or 192. Graduate students may use Independent Study (290), and International Study 292.

92. Projects in Study Abroad: (Subject) (Units variable; max total 18)

Open only to students in California State University and Colleges International Programs. Study undertaken in a university abroad under the auspices of the California State University and Colleges.

192. Projects in Study Abroad: (Subject) (Units variable; max total 18)

Open only to students in California State University and Colleges International Programs. Study undertaken in a university abroad under the auspices of the California State University and Colleges.

292. Projects in Study Abroad: (Subject) (Units variable; max total 18)

One- to three-unit registrations. Prerequisite: admission to master's degree program; written plan approved by the Fresno State instructor, department chairman, and the Dean of the School of Graduate Studies. May require one or more papers and oral or written examination on the student's return before the recording of the final grade.

LATIN AMERICAN STUDIES

The Latin American Studies major is designed to meet the needs of students interested in an interdisciplinary major, those who wish to broaden their studies in a given discipline with a background in the Latin American area. See *Social Science Major* for the single subject waiver program in Social Science for a teaching credential. Consult the Coordinator of the Latin American Studies Program, Dr. James S. Kus, Department of Geography, for further information and for names of faculty advisers for the program.

MAJOR

A major in Latin American Studies consists of 30 units of upper division courses in the area. The program must be approved by the Coordinator of Latin American Studies and Latin American Studies adviser in the area of major concentration. A maximum of 12 units must be taken from any one area listed below and the remaining 18 units from any four of the other areas. Students must demonstrate a proficiency in Spanish or Portuguese by taking two years of lower division in either language or by examination.

MINOR

The minor consists of 21 units of upper division courses in the area. The program must be approved by the Coordinator of Latin American Studies and a Latin American Studies adviser in the area of concentration. A maximum of 9 units must be taken in any one area listed below and the remaining 12 units from any three of the other areas. One year of lower division Spanish or Portuguese is recommended.

COURSES

AGRICULTURAL SCIENCES (Agri)

161. International Agriculture (3)
170. Seminar in International Agriculture (3)

ANTHROPOLOGY (Anth)

120. Peoples and Cultures of North America (3)
121. Peoples and Cultures of South America (3)
130. Archaeology of Meso-America (3)

ART HISTORY (Art H)

173. Pre-Columbian Mexico (4)
175. Pre-Columbian Andes (4)

BUSINESS—Business Administration (B A), Marketing (Mktg)

Bus 272. Seminar in International Finance (3)
275. Seminar in International Business (3)
Mktg 176. International Marketing (3)

ECONOMICS (Econ)

114. Economics of Underdeveloped Areas (3)
178. International Economics (3)
179. Global Corporations and the Third World: The World Economy (3)
188T. Political Economy Special Topics (1–3; max total 6)

FOREIGN LANGUAGE (Span)

126. Spanish-American Culture (3)
129. Mexican Culture (3)
143. Introduction to Spanish-American Literature (3)
145. Mexican Literature (3)
147. Twentieth Century Spanish-American Literature (3; max total 6 if no topic repeated)
148T. Major Figures in Hispanic Literature (3; max total 6 if no topic repeated)
240. Spanish-American Literature (3; max total 9 if no topic repeated)

GEOGRAPHY (Geog)

170T. Latin American Regions (3, max total 9 if no area repeated)
188T. Topics in Geography (1–3; max total 9)
195. Field Geography (1–6; max total 6)
295T. Advanced Field Studies in Selected Regions (1–3; max total 6)

HISTORY (Hist)

145. Spain and Portugal (3)
160. The Great American Civilizations: Maya, Aztec, Inca (3)
161. Caribbean America (3)
162. Eastern South America (3)
163. Western South America (3)
164. The Mexican Heritage (3)
165. Modern Mexico (3)
169T. Studies in Latin American History (1–3; max total 6 if no topic repeated)

183. The Hispanic Southwest (3)
260. Seminar in Latin America (3)

POLITICAL SCIENCE (Pl Si)

126. International Law and Organization (3)
128T. Topics in International Relations (1–4; max total 8 if no topic repeated)
146T. Area Studies in Latin America (1–4; max total 8 if no topic repeated)

Departmental Independent Studies (190 and 290) and Directed Readings (191, 192, and 292) may be applied to the major and minor requirements with adviser approval.

LIBERAL STUDIES

The Liberal Studies Major, which leads to the bachelor of arts degree, is an 84-unit program which utilizes courses from twenty-one departments of the university to provide an interdisciplinary course of study involving the areas of English; Humanities and the Fine Arts (including Foreign Language); Mathematics and the Physical or Life Sciences; and Social Science.

Each area has an A and B section. A minimum of 12 units is required from each A section (48), a minimum of 6 units is required from each B section (24), and 12 units may be selected from A or B for a total of 84 units. The major incorporates within its structure the general education requirements for the degree.

The major is designed to meet the needs of: (1) students wishing to qualify for a teaching credential authorizing multiple subject teaching, and (2) students desiring a liberal arts foundation for professional training in medicine, law, journalism, and various fields of public service.

Since the major utilizes 84 units of the 124 units required for the degree, careful planning by the student is essential if all requirements for the degree, or requirements for the degree and credential, are to be satisfied within a four-year time space.

Students in their first semester at CSUF are *required* to consult with the Coordinator, Liberal Studies Major, in the first two weeks of the semester. Appointments are to be made in Room 125 Education-Psychology building.

Students completing the Liberal Studies major toward a teaching credential should refer to the Department of Elementary Education.

LIBERAL STUDIES MAJOR (Noncredential)

Area I *English*
- A. Select 12 units from:
  1. Engl 1
  2. Engl 20
  3. Ling 10 or 134
  4. Spch 3 or 8
- B. Select 6–12 units in upper division courses in one of the following disciplines: English, Linguistics, Speech

Area II *Humanities and Fine Arts*
- A. Select 12 units in lower division courses from three of the following

disciplines: Art, Drama, Ethnic Studies, one Foreign Language, Music, Philosophy.

B. Select 6–12 units in upper division courses from one of the following disciplines: Art, Drama, one Foreign Language, La Raza, Music, Philosophy.

Area III *Mathematics and Sciences*

A. Select 6 units from: Math 4, 5, 11, 41, 51, 71, 72, 75, 76, 143.

B. Select 6 units from: Anth 1, Biol 10, 20; Bot 1, 10; Chem 1, 1A-B, 2A-B, 2C, 8; Geog 5, 7, 112, 120, 128; Geol 1, 2, 12, 189; P Sci 20, 21, 22, 23; Phys 1A-B, 2A-B, 55; Plant 108; Psych 36; Zool 1, 10.

C. Select 6–12 units in upper division courses from one of the following disciplines: Biology, Chemistry, Geology, Mathematics, Physical Geography (select from 111, 112, 114, 117, 118, 120, 121, 126, 128, 129), Physics.

Area IV *Social Sciences*

A. Select 12 units from: Eth S 1; Hist 1, 12; Geog 2, 4; Anth 2; Soc 1; Psych 10; Pl Si 1 or 3, 2; Econ 1A or 1B.

B. Select 6–12 units in upper division courses from one of the following disciplines: Anthropology, Economics, Geography (excluding 111, 112, 114, 117, 118, 120, 121, 126, 128, 129), History, La Raza, Political Science, Psychology, Sociology.

MOSS LANDING MARINE LABORATORIES

The California State University and Colleges began operation of the Moss Landing Marine Laboratories, Moss Landing, California, in the fall semester 1966. This facility functions as a seaside extension of the campuses of six cooperating state universities (Fresno, Hayward, Sacramento, San Francisco, San Jose, and Stanislaus). It offers full-time course work in marine biology, oceanography, and other marine sciences for majors in either the biological (botany, biology, zoology) or physical sciences whose objectives include further graduate study, teaching the sciences, or research in the marine sciences. Properly qualified upper division and graduate students may enroll on the CSU, Fresno campus for a term of instruction at Moss Landing and earn resident credit for such course work. See *Geology Department* for on-campus course work in general oceanography and geology courses related to marine science.

Space reservation is required for attending Moss Landing Marine Laboratories. Forms for this purpose are available from the Biology Department or Moss Landing Marine Laboratories, P.O. Box 223, Moss Landing, CA 95039. Priority is determined based upon the date space reservation form is received at Moss Landing Marine Laboratories. Since enrollment is limited, interested students should make early application.

COURSES (M Sci)

Note: The following courses are taught at the Monterey Bay location of the Moss Landing Marine Laboratories. For course descriptions see Biology Department.

101. General Oceanography (4)
102. Marine Science Techniques (4)
103. Marine Ecology (4)
104. Quantitative Marine Science (3)

105. Marine Science Diving (3)
106. Subtidal Ecology (4)
111. Zoology of Marine Vertebrates (4)
112. Marine Birds and Mammals (4)
113. Marine Ichthyology (4)
122. Marine Invertebrate Embryology (4)
123. Marine Invertebrate Physiology (4)
124. Marine Invertebrate Zoology I (4)
125. Marine Invertebrate Zoology II (3)
131. Marine Phycology (4)
132. Introduction to Marine Plankton (4)
141. Geological Oceanography (3)
142. Marine Biogenic Sedimentation (3)
143. Coastal Geomorphology (3)
151. Marine Meteorology (3)
161. Marine Fisheries (4)
171. Oceanographic Summer Cruise (4)
172. Marine Environmental Group Research (3)
175T. Topics in Marine Sciences (1-6)
177. Microscopic Techniques (3)
180. Independent Study (1–4)
201. Advanced Studies in the Marine Sciences (3)
202. Marine Instrumental Analysis (4)
203. Advanced Marine Ecology (3)
211. Behavior of Marine Animals (3)
212T. Topics in Marine Vertebrates (4; max total 8)
221T. Topics in Marine Invertebrates (4; max total 8)
222. Biology of the Mollusca (4)
231. Advanced Marine Phycology (4)
232. Advanced Marine Plankton (4)
241. Marine Microorganisms (3)
242. Plate Tectonics (3)
251. Marine Geochemistry (4)
252T. Topics in Marine Chemistry (4; max total 8)
261. Descriptive Physical Oceanography (4)
271. Population Biology of Marine Organisms (3)
273. Environmental Studies of Monterey Bay (3)
275T. Advanced Topics in Marine Sciences (1–6; max total 8)
277. Human Ecology of Monterey Bay (3)
282T. Seminar in the Marine Sciences (2)
285T. Seminar in Marine Biology (2; max total 4)
286T. Seminar in Marine Geology (2; max total 4)
287T. Seminar in Oceanography (2; max total 4)
298. Research in the Marine Sciences (1–4)
299. Thesis (1–4; max total 4)

NEXA (Nexa)

The following courses were developed with support from the Andrew W. Mellon Foundation through the Science-Humanities Convergence Program at San Francisco State University. The courses are team-taught interdisciplinary offerings exploring the interrelationships between concepts in the sciences and the humanities.

101. Space and Time (3)

An interdisciplinary study of the changing concepts of space and time that underlie our vision of the world and the ways in which these concepts are expressed, especially in Art, Astronomy, Literature, and Physics.

102. Understandings of Human Behavior (3)

A philosophical, psychological, and biological investigation of the main issues involved in understanding human behavior. Reading and discussion of literary and historical accounts of behavior, with emphasis on the development of scientific explanation. Ethical scientific consequences of the use of experimental methods.

OFF-CAMPUS CREDIT TOWARD DEGREE

Certain circumstances, such as full-time employment, travel or other personal commitments, may prevent a student from continuing with formal course work on the CSUF campus for one or two semesters. Even though regular attendance on campus is impossible, a capable and motivated student may earn credit through Independent Study and Directed Readings and thus continue to make progress toward a degree. The credit will be entered on the transcript as lower division elective credit and a maximum of six units for any combination of the courses will be counted toward degree requirements. It is necessary to have the approval of a faculty member willing to supervise the study and of the department through which the credit will be awarded prior to enrollment.

The student must enroll during the late registration period and pay the required fees if credit is to be received.

For further information, assistance and referral to a supervising faculty member, contact the Student Counseling Service.

90 IS. Independent Study (1–3)

Except in unusual circumstances, available only to students with an average of 3.0 or higher. See page 60 of this catalog for additional regulations governing Independent Study.

91 DR. Directed Reading (1–3)

Completion of a structured reading program dealing with a specific topic or area of study. Written reports as required by the supervising faculty.

RUSSIAN AREA STUDIES

CSUF offers courses in several disciplines that are concerned with Russia and the Soviet Union. Although the university does not offer a major or minor in Russian Area Studies, a student may, through the selection of elective courses, acquire a broad knowledge of the Russian and Soviet Area. Such courses may complement a number of academic majors. They may prepare

a student for graduate work in a major center of Soviet studies, or may prove helpful to students seeking employment with public or private organizations dealing extensively with the Soviet Union.

The following list suggests the principal subjects covered in Russian Studies on this campus, and presents the current courses most directly concerned with those subjects.

COURSES

Russian Language (Russ)

1A-B Elementary Russian (4–4)
2A-B Intermediate Russian (4–4)
101 Composition and Conversation (3; max total 9)
118A-B Twentieth Century Literature (3–3)

Russian Literature (Russ)

110 Landmarks in Russian Literature (3)
148A-B Russian Literature in Translation (3–3)

Russian and Soviet Culture (Russ)

103T Topics in Russian Culture (3; max total 9 if no topic repeated)
127T Soviet Russian Topics (3; max total 9 if no topic repeated)
144 Russian Culture (3)

Russian and Soviet History (Hist)

142 Russia (3)
143 The Soviet Union (3)

Soviet Geography (Geog)

176 Geography of the USSR (3)

Soviet Politics (Pl Si)

125 Soviet Foreign Policy (3)
143T Soviet Politics (1–4; max total 8 if no topic repeated)

WOMEN'S STUDIES

The Women's Studies Program is an interdisciplinary program offering courses in several disciplines. These are designed to develop awareness of the contributions of women throughout history and the roles in which they have been cast as well as to help women discover what is pertinent to themselves and their abilities.

MINOR

An interdisciplinary minor is available, the purpose of which is to give students interested in pursuing this area an opportunity to make a systematic study of women—their roles, their problems, and their contributions.

The minor in Women's Studies requires a minimum of 20 units, including W S 10 and W S 175. The other 14 units shall be selected from at least two of the following groups of courses:

Humanities: W S 50T, 124, 128, 145, 150T, 168T, 176T, 194T
Social Sciences: W S 101, 105, 119, 126, 131, 135, 137, 172, 179T
Electives: W S 108, 110, 112, 114, 127, 150T, 160 (Electives also may be chosen from special topics courses on women offered periodically by certain departments.)

COURSES (W S)

10. Introduction to Changing Women (3) (Former W S 100)
Introductory interdisciplinary course designed to provide a foundation for Women's Studies; focus on women in the areas of sociology, psychology, history, economics, and the arts.

42. Continuing Education for Women (3)
Introduction to and application of learning, communication, family relations, and aging theories as they apply to personal, social, and academic problems of older women returning to the university.

50T. Studies in Literature (4) (See Engl 50T section)
Women in Novels section.

55T. Topics in Women's Studies (1–4; max total 12)
Topics of current issues in the Women's Movement, covering a wide variety of interest. (See *Schedule of Courses* for specific topics.)

101. Women in History (3) (Former WS 118) (See Hist 101)

105. Education and Sex Role Stereotypes (3)
Designed to meet the needs of parents, teachers, counselors, administrators. How sex role stereotypes affect the educational system, pre-K through higher education.

108. Rape and Physical Abuse (1) (Former W S 150T)
An inquiry into the phenomenon of rape, myths about rape and rapists, treatment of rape victims, discussion of physical and physiological preparation for possibility of attack. Lecture, film, paper, speakers. An all day workshop held on two consecutive Saturdays.

110. Women in Sport (3) (See PE 110)

112. Assertive Training (1) (Former W S 150T)
Women's special needs in becoming assertive; blocks preventing assertion and methods of getting around them. An all day workshop held on two consecutive Saturdays.

114. Marriage and the Family in the 1970's (1) (Former W S 150T)
A re-examination of the concept of traditional marriage and the family, and emerging concepts of the 1970's. Contemporary complaints against traditional family roles, proposed alternatives, and their implications. Films, speakers. An all day workshop held on two consecutive Saturdays.

119. The Chicano Family (3) (See La R 118)

124. Feminist Art (3) (See Art 114)

126. Legal Rights of Women (3) (Former W S 121) (See Crim 126)

127. Female Sexuality (3) (See H S 126)

128. Feminist Theory (3) (See Phil 128)

131. Sociology of Sex Roles (3) (See Soc 131)

135. Women in Other Cultures (3)
Examines the religious, economic, and social roles of women in the world, including their current status in at least four of the following areas: China, Southeast Asia, India, Africa, Middle East, South America.

137. Black Women (3) (See Bl S 137)

145. Women in the Theatre (3) (See Drama 145)

150T. Topics in Women's Studies (1–4; max total 12)
Topics of current issues in the Women's Movement, covering a wide variety of interests. (See *Schedule of Courses* for specific topics.)

160. Feminist Issues in Counseling (3) (Former W S 150T—Counseling of Women)
Brief introduction to counseling theories, individual and group techniques, the relocation signs of serious maladjustment, referral techniques, feminine role crisis, re-entry crisis, feminist therapy, and location and use of counseling resources.

168T. Women and Literature (4) (Former Engl 169T section) (See Engl 168T)

172. Psychology of Women (3) (See Psych 172)

175. Seminar in Women's Studies (3)
Primarily for Women's Studies minors. Prerequisite: 15 units in Women's Studies (including W S 10). A synthesis of objective and subjective experience in Women's Studies. In depth research project required.

176T. Genre Film: Form and Function (1–4 max total 8) (See Engl 176T)

179T. Studies in United States History (3) (See Hist 179T)

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study*

194T. Seminar in Women and Literature (4; repeatable with different topics) (Former Engl 193T section) (See Engl 194T)



Graduate student being prepared for making temperature measurements in the Sierra Nevada as part of a geographical study.

SCHOOL OF GRADUATE STUDIES 123

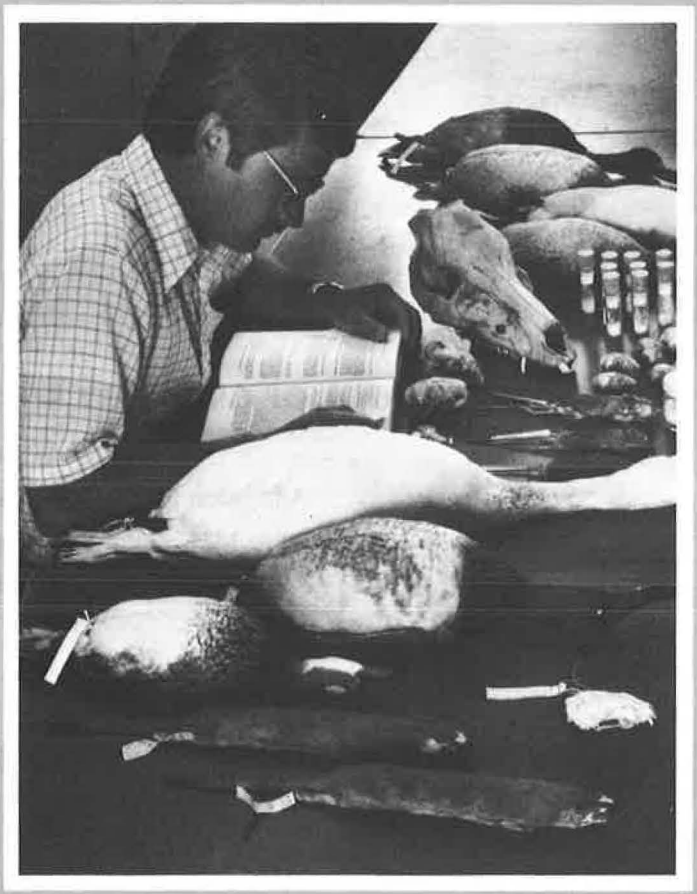
Master's Degrees

Admission to Graduate Standing

Admission to Master's Degree Programs

Advancement to Candidacy

Thesis



Identifying species and cataloging data of birds and mammals before placement in the biology department's vertebrate collection.

SCHOOL OF GRADUATE STUDIES

Vivian A. Vidoli, Dean

Assistant Dean..... Ronald C. Schultz

The School of Graduate Studies embraces all graduate programs and activities in the university, including programs leading to the master of arts degree in 24 fields, the master of science degree in 11 fields, the master of business administration, the master of city and regional planning, and the master of social work. Graduate degree curricula are designed both as the first graduate degree for students contemplating doctoral study and as terminal degrees for persons engaged in business administration, public school teaching including community college, social work, employment in government agencies, and other fields in which the master's degree is ordinarily the highest degree earned.

The master's degree program at CSUF is administered through the School of Graduate Studies and is under the general supervision of the Dean, School of Graduate Studies, who is guided by the policy recommendations of the Graduate Council. Each school or department offering curricula for the master's degree has a graduate committee whose function is to develop and recommend school or departmental graduate curricula and policy and to screen students for admission and for advancement to candidacy. As members of the Graduate Forum, the chairmen or other designated representatives of the school or departmental graduate committees maintain liaison with the Graduate Council, and School of Graduate Studies.

Agriculture, MS
Agricultural Chemistry, Animal Science, Plant Science

Art, MA

Biology, MA

Business, MBA, MS

Chemistry, MS

City and Regional Planning, MCRP

Communicative Disorders, MA
Audiology, Speech Pathology, Education of the Deaf

Counseling, MA

Criminology, MS
Corrections, Law Enforcement

Education, MA
Administration and Supervision, Educational Theory, Elementary, Secondary Education

Engineering, MS
Civil

English, MA
Creative Writing

Geography, MA

Geology, MA

Health Science, MS
Environmental Health, Administration and Supervision, Teaching

History, MA

Home Economics, MS
Dietetics and Nutrition, Teaching

Industrial Arts, MA

Linguistics, MA
Bilingual Studies, French, German

Mass Communication, MA
Electronic Media, Print Media

Mathematics, MA, MS

Microbiology, MA

Music, MA
Music Education, History and Literature, Theory and Composition, Performance

Nursing, MS
Administration-Supervision, Clinical, Teaching

Physical Education, MA
Recreation Administration

Physics, MA, MS

Political Science, MA
Government
Public Administration

Psychology, MA, MS

Rehabilitation Counseling, MA

Social Work, MSW

Spanish, MA

Special Education, MA

Special Major, MA

Speech, MA
Theatre Arts, Speech Communication

GRADUATE STUDIES

TYPES OF GRADUATE CURRICULA

Master of arts degree (M.A.) curricula are offered in art, biology, communicative disorders, counseling, education, English, geography, geology, history, industrial arts, linguistics, mass communications, mathematics, microbiology, music, physical education, physics, political science, psychology, Spanish, special education, special major, and speech. These curricula are designed to improve professional competence in educational service; to develop ability for continued formal or self-directed study in a field of specialization; and to afford an opportunity to broaden cultural background, develop personal and social responsibility, and prepare for community leadership.

Master of science degree (M.S.) curricula are offered in agriculture, business, chemistry, civil engineering, criminology, health science, home economics, mathematics, nursing, physics, and psychology. These curricula are designed to improve competence in occupational fields.

Professional master's degree curricula. The master of business administration, the master of arts in rehabilitation counseling, the master of social work, and the master of city and regional planning are professional two-year degrees designed to provide a high level of competence and preparation for leadership in their respective fields.

GRADUATE ASSISTANTSHIPS

A number of graduate assistantships are available to graduate students who are enrolled in the master's degree program and whose previous records show outstanding achievement in academic work, outstanding subject matter competence in the major field, and the special qualities necessary to the duties assigned. The graduate assistant, working under the direction of a regular staff member, assists in such functions as supervising laboratories or other small groups, evaluation of student work, preparation of course materials, or conduct of authorized research. A beginning graduate assistant devoting twenty hours a week in service to the university receives a stipend of $3,642 for the academic year. Some assistantships may be for reduced time and carry prorated stipends.

For information write to the Dean, School of Graduate Studies, specifying field of graduate study and any special abilities that might justify assignment as a graduate assistant.

DEFINITION OF FULL-TIME STUDENT

Depending on the use of the term, there are several definitions of full time. *For the purposes of reporting enrollments,* students taking 12 or more units are considered full-time and students taking less than 12 units are considered part-time. *For purposes of financial aid* (loans, veterans assistance, etc.), a full-time student takes 12 "equivalent units" wherein each graduate unit (200-level) attempted by a graduate student is considered as 1.5 units and each undergraduate unit (100-level or below) counts at face value. For example, a student enrolled for eight 200-level units would be considered a full-time student. Three-quarter time and half-time are defined to be 9 to 11½ and 6 to 8½ "equivalent units" respectively.

FOREIGN GRADUATE STUDENT PROGRAMS

The university's School of Graduate Studies accepts graduate students from abroad, with strong academic preparation. During the first semester at CSUF, foreign graduate students whose native language is not English and who are studying in this country for the first time, are expected to enroll in special courses in the International Study program designed to speed their adaptation to the new environment and to provide the greatest possibility of success in their graduate studies. For further information, see *Other Graduate Curricula and Special Programs—International Study.*

ADMISSION TO POST-BACCALAUREATE AND GRADUATE STANDING

Admission standards are stated in the *California Administrative Code,* Title 5, which provides uniform admission regulations for all California State University and Colleges. Two main admission categories are defined in terms of the student's educational objectives at the time of planned enrollment. These are *post-baccalaureate standing* and *graduate standing.*

It should be noted that a post-baccalaureate student who has been admitted to the university will receive notice of such admission in *unclassified standing* by the Office of Admissions, regardless of his or her application to pursue a credential or a master's degree program. Admission to classified standing involves the additional step of an evaluation of the student's record and other documents in accordance with the admission criteria of the program in question. Admission to classified standing is the responsibility of the Office of the School of Graduate Studies for master's degree programs, and in the case of a credential program the School of Education.

UNCLASSIFIED (Post-Baccalaureate Standing)

For admission to unclassified post-baccalaureate standing, a student must: (a) hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association or have completed equivalent academic preparation as determined by an appropriate campus authority (see *unvalidated standing,* below); (b) have attained a grade-point average of at least 2.5 (on a five-point scale) in the last 60 semester units attempted; and, (c) have been in good standing at the last college attended. Students in unclassified standing may pursue objectives such as course work for professional growth, the completion of the requirements for an additional major at the baccalaureate level, or completing undergraduate requirements.

Admission to a State University or College with post-baccalaureate unclassified standing does not constitute admission to graduate degree curricula.

It is contrary to university policy to grant a second bachelor's degree after the student has earned a comparable degree from an accredited institution (see *Degrees and Credentials*). However, in those few exceptional cases where this policy is waived for cause, the student completes the requirements for the second degree in unclassified post-baccalaureate standing. Waivers of the policy are granted by the Committee on Student Academic Petitions upon recommendation of the Dean, School of Graduate Studies, and only when there is clear indication that the student's professional goals cannot be

attained without the possession of a specified second bachelor's degree. An example would be when state licensing regulations for certain professions require the licensee to hold a certain type of bachelor's degree. For further information, consult the Dean, School of Graduate Studies.

A graduate of a nonaccredited college may be granted admission with *unvalidated unclassified post-baccalaureate standing,* upon the filing of the application and two copies of official transcripts of all college work. Such a student may be eligible for placement in regular post-baccalaureate or graduate standing when he or she has cleared all undergraduate deficiencies and has maintained, in residence at CSU, Fresno, a grade-point average of 3.0 on 12 units of approved upper division work or an average of 2.5 on 24 units of approved upper division work. (Prospective applicants to master's degree programs, see also *Master's Degrees—Grade Requirements.*) When a student with unvalidated post-baccalaureate standing has met the above requirements, it is his or her responsibility to request a new statement of standing from the Admissions Office.

CLASSIFIED (Graduate Standing)

A student who is eligible for admission to a State University or College in unclassified standing may be admitted to classified post-baccalaureate standing for the purpose of enrolling in a particular post-baccalaureate credential or certificate program; provided, that such additional professional, personal, scholastic, and other standards, including qualifying examinations, as may be prescribed for the particular program by the appropriate campus authority are satisfied. In addition to the application for admission to the university, an application for admission to the credential program must be filed with the School of Education. *(See School of Education—Application for Admission to Credential Programs.)*

FOREIGN GRADUATE STUDENT ADMISSION

Graduate students from abroad follow the same procedures as do other graduate students except that the Test of English as a Foreign Language (TOEFL) is required of all students whose native language is not English. Exception may be made for students transferring from American colleges and universities with grades that demonstrate full competency in English. The TOEFL scores, applications, and academic documents should reach the university Admissions Office at least six months before the semester for which admission is desired. The TOEFL is administered at various centers throughout the world. For further information about the TOEFL, write to the Test Office, California State University, Fresno.

Graduate students with a total score of less than 500 on the TOEFL will not ordinarily be admitted to graduate study at CSUF. The university may also request the student to arrange an interview with a representative of the Institute for International Education, which maintains offices in many parts of the world. Exception to the minimum TOEFL score requirement may be made for students who are otherwise admissible and who satisfactorily complete an approved intensive program in English as a foreign language at another institution. The university cannot, however, commit itself until the work has been completed and an acceptable score earned on a retake of the TOEFL.

Inquiries and requests for applications should be directed to the Dean,

School of Graduate Studies. Such letters should include the following information:

(1) Anticipated field of study.

(2) TOEFL score or date the TOEFL will be taken.

(3) Quality of undergraduate work (rank in class, grade average, etc.), the institution in which it was taken, and the highest degree held.

(4) The semester for which admission is requested.

(5) The extent to which full financial resources are available ($6000 a year).

The Office of the Dean will inform the appropriate department and refer to it inquiries about programs and assistantships. It will also arrange with the Office of Admissions to have application forms sent.

ADMISSION TO MASTER'S DEGREE PROGRAMS

Applicants to all master's degree programs gain admission in either classified or conditionally classified graduate standing under standard universitywide policies. Many programs impose additional requirements beyond the criteria stated here. To be eligible to receive the master's degree at CSU, Fresno, a student must be advanced to candidacy and complete all other requirements specified by the School of Graduate Studies and the specific program, thereby demonstrating a command of the field of specialization and a competence in independent investigation, analysis, and synthesis beyond the scope of individual courses. Students wishing to change their major must contact the School of Graduate Studies and apply for the change formally. Students are not admitted to master's degree programs unless they have received an admission notice from the School of Graduate Studies.

Graduate Standing-Conditionally Classified

A student eligible for admission to a California State University or College under unclassified postbaccalaureate standard above, but who has deficiencies in prerequisite preparation which in the opinion of the appropriate campus authority can be met by specified additional preparation, including qualifying examinations, may be admitted to an authorized graduate degree curriculum with conditionally classified standing.

Those students who indicate on the application for admission that he or she wishes to pursue a master's degree objective is considered for classified graduate standing. An applicant who does not meet all the specified criteria for admission to a master's degree program with full classified standing may be recommended for conditionally classified standing by the graduate committee of the program in question. Such a recommendation is accompanied by a statement of the additional requirements which must be met before full classified standing is granted. This information is communicated to the student by the Office of the School of Graduate Studies. It is the student's responsibility to request a change in classification status as soon as the specified conditions have been met. Forms for this purpose may be obtained in the Office of the School of Graduate Studies.

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Graduate Standing-Classified

Only those applicants who show promise of success and fitness will be admitted to master's degree curricula, and only those who continue to demonstrate a satisfactory level of scholastic competence and fitness shall be eligible to proceed in such curricula. (See also, *Grade Requirements.*)

Admission to classified graduate standing in a master's degree program at CSUF normally requires satisfactory scores on the Graduate Record Examination Aptitude Test, or for business students, the Graduate Management Admission Test (GMAT). These tests plus the Advanced Test are part of a nationally standardized group of examinations prepared and scored by the Educational Testing Service and are given several times a year in various parts of the world; students taking the test at any of the testing centers may request that their scores be sent to the CSUF Test Office. The Test Office administers the tests on the Fresno campus. Information about dates, fees, and application procedures may be obtained from the Test Office or the Office of the School of Graduate Studies.

GRE Aptitude Test or GMAT score reports should be on file in the CSUF Test Office in time for consideration along with the application for admission to graduate standing. Since classified standing is required in some programs in order to register for graduate courses, it is important that the appropriate test be taken well in advance of the first semester of graduate study. While the Aptitude Test is a general requirement, in the absence of satisfactory test scores, departments have the option of recommending other types of diagnostic tests or substituting other measures of aptitude for those students whose records otherwise indicate probable success in graduate study.

Not more than 10 units (including transfer and post-baccalaureate credit) completed before achieving full classified standing at CSU, Fresno, may be applied to the master's degree program. Work taken during the semester of classification is considered to be completed in classified standing. In 60-unit programs the above limitation applies only to the last 30 units.

ADVANCEMENT TO CANDIDACY

Classified graduate standing gives a student permission to work towards qualifying for candidacy. Advancement to candidacy gives a student permission to proceed toward qualifying for the degree. Requirements for advancement to candidacy include the following:

1. Classified graduate standing.
2. Completion of any additional prerequisites which the adviser specifies in writing.
3. Satisfactory completion of the Graduate Record Examination Advanced Test or departmental qualifying examination. The Graduate Record Examination Advanced Test in the major subject field is required of students working toward the master of arts degree in biology, counseling (Advanced Test in education), education, English, geology, history, political science (government), psychology, special education (Advanced Test in education); and the master of science degrees in mathematics and physics. A departmental qualifying examination is required in lieu of the Advanced Test in agriculture, art, business, chemistry, communicative disorders, criminology, geography, health science, home economics, industrial arts, linguistics, mass

communication, microbiology, music, nursing, physical education, political science (public administration), rehabilitation counseling, social work, Spanish, speech, and urban and regional planning.

4. A minimum grade point average of 3.0 (both overall and at CSU, Fresno) on all upper division and graduate course work from the date of embarking on the first course of the proposed master's degree program. (See also, *Grade Requirements,* below)
5. Satisfactory completion of the foreign language requirement for those programs having such a requirement. (See Foreign Language Requirement.)
6. Departmental recommendation for advancement to candidacy on a petition form available in the Office of the School of Graduate Studies. In making this recommendation, the department takes into account professional and personal standards as well as scholastic achievement as revealed by grades and performance on examinations. The student is responsible for ensuring that the adviser has sufficient information other than grades and scores on which to make this recommendation. On this petition form the student, in consultation with his adviser, lists the coherent set of courses which, when approved, will constitute his degree program.
7. Completion at CSU, Fresno, of at least 9 units of the proposed program with a 3.0 average on all completed work appearing on the program.
8. Submission to the Office of the Dean, School of Graduate Studies, of the properly signed petition for advancement to candidacy prior to the completion of the last 9 units of the proposed program.

FOREIGN LANGUAGE REQUIREMENT

Foreign language is not a general requirement for admission to or completion of the master's degree program at California State University, Fresno.

However, for advancement to candidacy, demonstration of competence, usually equivalent to that achieved through two years of collegiate study of one foreign language, is required in specified majors in which upper division and graduate courses demand such competence. See the master's degree adviser or the Chairman of the Foreign Language Department for information about placement tests.

Competence in the use of a foreign language is required for advancement to candidacy for the master of arts degree in English, geography (Plan A), music (voice and musicology), and political science (government emphasis); and for the master of science degree in chemistry. Ordinarily the requirement calls for demonstration of the ability to read materials of the major in one appropriate foreign language; chemistry, however, specifies scientific German (or a departmentally approved substitute) or certification by the American Chemical Society. Geology and history specify that a student doing a thesis involving a foreign country must have a reading knowledge of the language of that country. Curricula not specified above do not require a foreign language.

MAXIMUM STUDY LOAD

Graduate courses require substantially more concentrated study than do undergraduate courses. A normal load is from 9 to 12 units and the maximum allowable load is 16 units for full-time master's degree students when one or more courses in the 200 series are included. Students employed full time may take a maximum of 6 units. For maximum units for summer session see the *Summer Session Bulletin.*

PROGRAM REQUIREMENTS

The program requirements for the master of arts and master of science degrees assume substantial undergraduate preparation in the field. See school and department statements in this catalog for particulars. A student lacking this preparation will find it necessary to exceed the minimum requirements indicated below. (Consult departments for MBA, MSW, and MCRP minima.)

The approved degree program for the master's degree is a coherent pattern of (1) specific requirements for the program and (2) additional courses selected to meet the student's particular needs. It consists of at least 30 units completed after the bachelor's degree and within five years just preceding the granting of the master's degree. Only graduate courses (200 series) and such upper division courses (100 series) as are recommended by the schools or departments and approved by the Graduate Council are acceptable on the unit requirement. Other courses are counted in calculating the student's study load, but cannot be counted toward the unit requirement for the master's degree. The total approved program must include the following:

1. At least 21 units of the program must be CSU, Fresno, residence credit.
2. Transfer credit may be used toward a master's degree only if the institution offering the work would use it on a comparable master's degree program and if it is judged by appropriate university authorities to be particularly relevant to the individual student's program. Extension credit is not regularly used on master's degree programs. In the event that the extension course is offered under conditions similar to those for a course normally usable on a master's program, a student may request special permission to use such an extension course on his program. If approved, a maximum of 9 units may be used on a 30 unit program. Student teaching credit is not ordinarily used on master's degree programs. In unusual circumstances, if student teaching is demonstrably appropriate to a program, up to 3 units of such work may be approved by the Graduate Council. Credit by examination may be used to fulfill prerequisites, but may not apply toward the 30 units.
3. With approval of the departmental graduate adviser, post-baccalaureate credit allowed for work taken in the semester or summer in which the baccalaureate degree is granted may be applied toward a master's degree, if it meets master's degree criteria in all respects. See *Post-Baccalaureate Credit.*
4. At least 15 units must be in courses designed primarily for master's degrees (numbered in the 200 series). Most programs require more than 15 units of 200 series course work.
5. At least 9 units must be completed after advancement to candidacy. Work taken during the semester or summer of advancement may apply

on this requirement.

6. Appropriate course work from a field other than the major may be required at the discretion of the major department.
7. Appropriate provision must be made for a thesis, a project, or, when permitted, an alternative to the thesis, unless the department offers "Plan B" (nonthesis), in which case provisions must be made to conform to departmental requirements. Comprehensive examinations are required in all "Plan B" programs.
8. Students having a special interest that cannot be met within the stated requirements of a given master's degree program may, with written permission of appropriate university authorities, make further program adjustments to meet their needs. Consult the Dean, School of Graduate Studies.
9. In addition to the qualifying examinations required for advancement to candidacy for the master's degree, all departments reserve the right to require written or oral comprehensive examinations when circumstances demand. A few departments require final comprehensive examinations of all candidates, and most departments requiring a thesis also require an oral defense of the thesis. Graduate students are urged to consult the chairman of the department or school graduate committee or the School of Graduate Studies about examination requirements for specific master's degree programs. The programs which provide for course work in lieu of a thesis ("Plan B") require final oral and/or written comprehensive examinations.

It is the student's responsibility to complete the specific courses listed on his /her approved program and to assure that the Degree Clearance form has been forwarded to the Graduate School from the department. Once a program has been approved by the Graduate Council, it may be changed only on the written request of the student and his department or school adviser and with the approval of the Dean, School of Graduate Studies. Forms for requesting such program adjustment are available in the Office of the School of Graduate Studies.

THESIS, PROJECT, AND THESIS ALTERNATIVE

Most master's degree curricula at CSU, Fresno require the preparation of a thesis or a project. Some departments permit thesis alternatives.

DEFINITIONS

The university has adopted the following definitions of the terms "thesis," "project," and "thesis alternative":

1. A thesis is the systematic study of a significant problem. The problem, its major assumptions, its significance, the methods and sources for gathering data, the analysis of data, and the conclusions and recommendations are clearly stated.
2. A project may take either of the two following forms: The systematic development of a plan for, or the critical evaluation of, a significant undertaking, or

   A creative work such as a novel, a musical composition, or a group of paintings.

   In either type of project criteria employed in developing the plan, or in

making the evaluation of the task, the details of the plan or evaluation, the methods used, and the supporting data are clearly stated.

3. A thesis alternative is a specially designed or selected seminar designated by a department as acceptable in lieu of the thesis. It could also consist of a performance or exhibit plus specially selected compensating graduate course work such as in music and art. Some departments provide for non-thesis programs under a "Plan B" designation and require a comprehensive examination plus compensating course work.

CRITERIA

No academic distinction is made between a thesis and a project. Either one is equally acceptable as a means of fulfilling the requirements for the master's degree. Specific departmental instructions or requirements should, however, be ascertained by the candidate before enrollment in Course 299.

Whether a student is preparing a thesis or a project it should be noted that quality of work accomplished is a major consideration in judging acceptability. The finished project must evidence originality, appropriate organization, clarity of purpose, critical analysis, and accuracy and completeness of documentation where needed.

Critical thinking and independent thinking should characterize every project. Mere description, cataloging, compilation, or other superficial procedures are not adequate.

The quality of writing, format, and documentation must meet standards appropriate for publication in the scholarly journals of the field, or consistent with the dictates of an authorized stylebook.

1. To be eligible to enroll for thesis or project (299), a student must have
   (a) been advanced to candidacy for the master's degree.
   (b) maintained a B (3.0) average on his approved program.
   (c) completed at least six units of his approved program on the Fresno campus.
   (d) completed any course in research techniques required by his major department.
   (e) secured a thesis committee, consisting of a chairman and at least two other members.
   (f) secured approval of his thesis plan from the division or department graduate committee and filed in the Office of the School of Graduate Studies, an official thesis committee assignment.
   If it is impossible to meet one or more of these requirements before the semester or summer session of thesis registration, the student must submit to the Office of the School of Graduate Studies, prior to the close of late registration, a recommendation from the department that special permission to register for thesis be granted.
2. Registration for thesis may be processed during either the regular or late registration periods of any semester after the requirements listed in (a) through (f) above have been met or special permission for exceptions has been granted. If, however, a student fails to enroll within one semester (excluding summer sessions) after his official acceptance by a thesis committee, the committee chairman has the option of dissolving the committee, in which case a new committee must be appointed

before registration can be processed. A student planning to register for thesis after a break in regular session attendance must be readmitted to the university. (See *General Information—Registration.)*

3. A student whose thesis work is planned to extend over more than the semester in which he first enrolls may select one of the following options (with the approval of his graduate advisor): (a) he may register in 299 each term he is working on the thesis with the number of units for each registration reduced so that the total number of units accumulated in 299 does not exceed the limit set by the department; (b) he may register for the total number of units of 299 in one semester and complete his work in subsequent semesters under Graduate Studies 299, a zero-unit course required for enrollment purposes; (c) option (a) supplemented by GS 299 when the maximum number of units is attained with the thesis still incomplete. (See *Special Programs—Graduate Studies.*)
4. If work in 299 is not completed at the end of the term of registration, but is progressing satisfactorily, an SP (Satisfactory Progress) grade is recorded. Such a grade must be replaced within two years by a letter grade or a CR-NC grade. Exceptions to the two-year limit may be made by appropriate campus authorities only upon evidence of extenuating circumstances. Otherwise, a student must reregister for the course.
5. The student and his thesis chairman should set a deadline for the completion of the semifinal draft, no later than seven weeks before the last day of scheduled final examinations. This date should be early enough so that the chairman and the other members of the committee can clear the draft before the student must meet the deadline for clearance by the Dean of the School of Graduate Studies.
6. Before a thesis is officially accepted by the graduate school, it must meet Graduate School criteria on matters of format, documentation, and quality of writing. The semifinal draft, signed by the thesis committee members as acceptable and ready for final typing should be submitted to the Office of the School of Graduate Studies at least six weeks before the last day of scheduled final examinations. This deadline has been set as late as possible in the semester to accommodate the student; late manuscripts will be accepted, but the student runs the risk of a delay in the granting of the degree. Students are urged to follow meticulously Specifications and Instructions for the Master's Thesis or Project; copies are available in the Kennel Bookstore.
7. The final thesis (an original plus three photocopies) signed by the thesis committee and ready for binding, together with the school or departmental clearance and a receipt for the binding fee (payable in the California State University, Fresno Association office) must be submitted to the Office of the School of Graduate Studies, one week before the last day of scheduled final examinations. A student who wishes to retain more than one bound copy may arrange for the extra binding by paying an additional fee.
8. A student may arrange to have his thesis published in microfilm form, with an abstract of the thesis published in the quarterly periodical, *Masters Abstracts.* This form of publication is encouraged by the university. Further details of the microfilming and copyright procedure

may be obtained from the Thesis Consultant, Office of the School of Graduate Studies.

CONTINUOUS ENROLLMENT

It is the policy of the School of Graduate Studies that a graduate student who makes use of university resources while completing course work under an SP grade must be enrolled at the university. Two special courses, Graduate Studies 295 and 299, have been created to make this enrollment possible when the student is not registered in any regular course. GS 295 is to be used when the student is continuing work in any course besides a thesis (299) or is preparing for comprehensive examinations. GS 299 is to be used for thesis continuation only. The courses carry zero units and are to be used only to maintain enrollment at the university. A student who must suspend work for more than one semester on the thesis or other courses in which the SP grade was given should apply for a planned educational leave of absence. Summer sessions are exempt from the continuous enrollment policy. (See also *Other Graduate Curricula—Graduate Studies and Planned Educational Leave of Absence.*)

TIME LIMITATIONS

A period of five years is allowed for the completion of all requirements for the master's degree. A student whose program has been interrupted by military service should consult the Dean of the School of Graduate Studies about provisions for military extensions. Otherwise, time may be extended only by the substitution of recent courses for outdated ones or by validation of outdated course work, provided the student has been advanced to candidacy, such as through the passing of comprehensive examinations in the relevant courses or subject field.

The Dean, School of Graduate Studies, is authorized to grant extensions of time for the completion of work in graduate courses in which the assigned grade is SP (Satisfactory Progress). Petition forms for applying for an extension on an SP grade are available in the Office of the School of Graduate Studies. A student will normally be considered ineligible for an extension unless continuous enrollment has been maintained since the term of registration in the course. (See *Special Grades—Satisfactory Progress and Continuous Enrollment.*)

GRADE REQUIREMENTS

All graduate students will be held to the scholarship standards listed under *General Information. The following provisions also apply to master's degree programs.*

A student admitted to a master's degree program in conditional classified or classified standing is required to maintain a B average on all work taken subsequent to admission to the program.

No course with a grade below C may apply on a master's degree approved program.

To be eligible for advancement to candidacy, a student must have earned a B average (both overall and at CSU, Fresno) on all upper division and graduate course work completed after the date of embarking on the first course to be included in the master's degree program.

To be eligible for enrollment in the thesis or project or in an alternative to

the thesis, a student must have been advanced to candidacy and must have maintained a B average on his approved program.

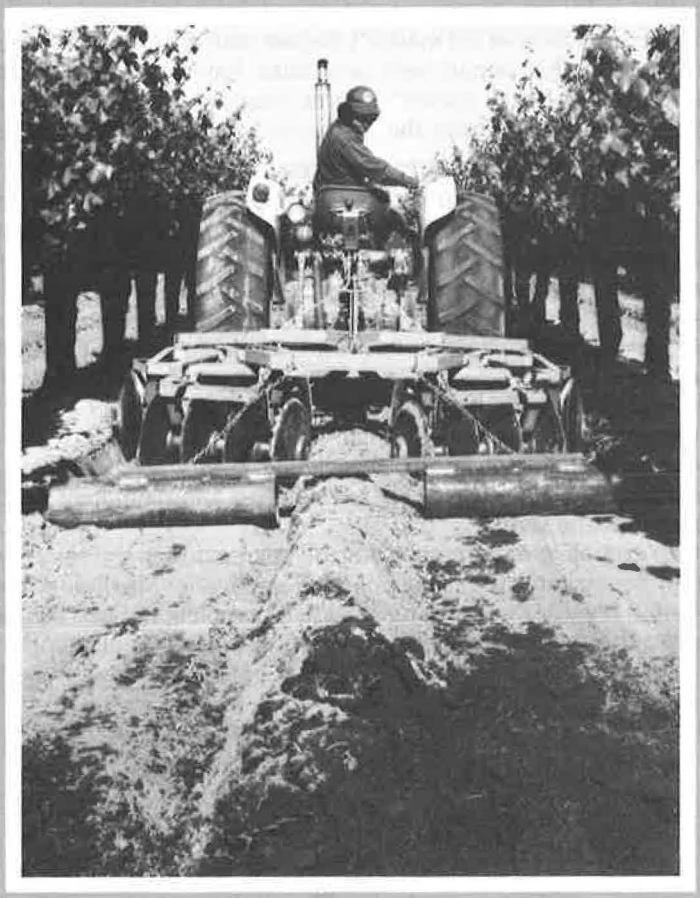
To be eligible for the granting of the degree, a student must have maintained a B average on his complete approved program. Any grade earned in a course on the approved program continues to figure in the grade-point average, even if that course is for any reason later dropped from the program.

To be eligible to receive the master's degree *with distinction* a student must be nominated by his department and must have earned at least a 3.9 grade-point average on the master's degree program. The G.P.A. is calculated on all course work taken from the first semester of the approved program.

REQUEST THAT MASTER'S DEGREE BE GRANTED

A request that the master's degree be granted (which includes the graduation fee payable in the Business Office) must be filed in the first two weeks of the semester in which the work is to be completed. During the summer sessions the request should be filed before the end of the first week of the second session. (See *Academic Calendar, Schedule of Courses, and Fees and Expenses.*) Application forms are available in the Student Records and Graduate Studies Offices. Prior to filing a request for the master's degree to be granted, the student should check with the Office of the School of Graduate Studies to ensure that all program requirements have been completed. Diplomas for those completing degree requirements during summer sessions and at midyear will be awarded approximately four months after the end of the term.

Failure to complete requirements for the degree during the semester of the application necessitates the filing of a new application, including a nominal re-application fee, for the semester of actual completion. Such reapplication is subject to the same time schedule as is the original application.



Students receive training in the use of mechanized techniques in soil cultivation.

SCHOOL OF AGRICULTURE AND HOME ECONOMICS 139

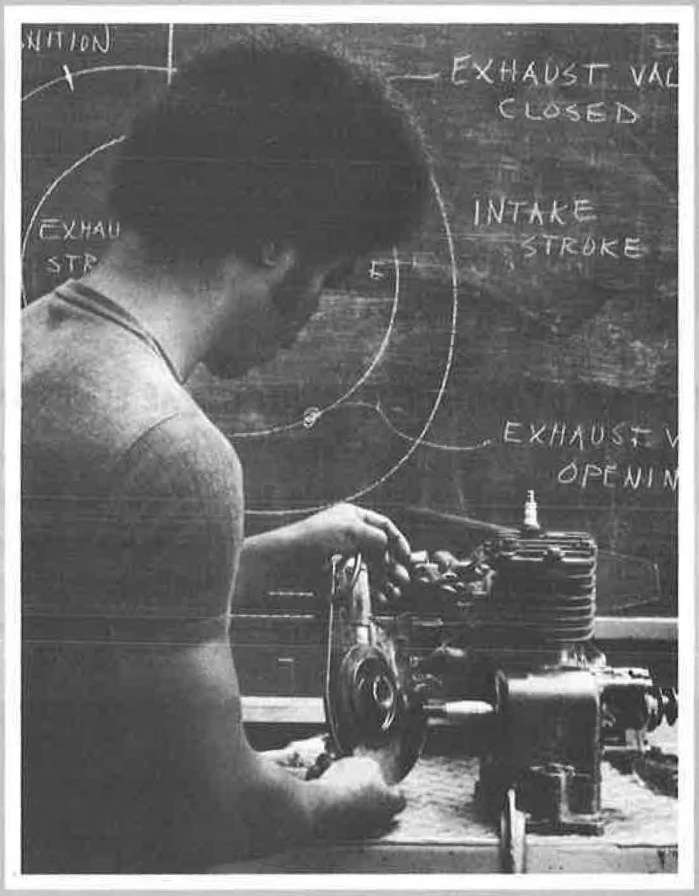
Agricultural Economics Department

Agricultural Industry and Education Department

Animal Science Department

Plant Science Department

Home Economics Department



Ag mechanics student learning to repair and rebuild a small gasoline internal combustion engine.

SCHOOL OF AGRICULTURE AND HOME ECONOMICS

Charles M. Smallwood, Dean

Department	*Chairman*
Agricultural Economics	Thomas I. Gunn
Agricultural Industry and Education	Howard J. Martin
Animal Science	(Acting) Edwin J. Rousek
Plant Science	Harry P. Karle
Home Economics	(Interim) Ratana S. Newsome

DEGREES OFFERED

BA (Home Economics), BS (Agricultural Business), BS (Agricultural Education), BS (Agricultural Sciences), Minor in Agricultural Sciences or Home Economics, MS (Agriculture), MS (Home Economics)

SCHOOL PROGRAMS

The School of Agriculture and Home Economics provides degree curricula preparatory to professions and occupations in home economics and agriculturally related industries. The university farm is organized and operated to provide experience and practical training. Eleven hundred and ninety acres serve as a laboratory and production unit where students carry on supervised farming programs in animal and plant science. In addition, livestock, vineyards, orchards, and crop land are maintained for laboratory use. For information on supervised projects see *Animal and Plant Science Departments.*

The school offers programs leading to the bachelor of arts degree in Home Economics and the bachelor of science degree in three specialized majors: Agricultural Business, Agricultural Education, and Agricultural Science; an agriculture or home economics minor; short courses for those not enrolled in the university program but engaged in farming or allied occupations and occupations related to home economics.

Students desiring to qualify for teaching credentials should consult the Dean of the School of Agriculture and Home Economics or credential advisers. For credential structure, see *School of Education.* The School has an approved major/waiver for certification of subject matter competency, as part of the requirement leading to a public school teaching credential. See credential adviser for details.

UNDERGRADUATE PROGRAM

The bachelor of science degree in agricultural sciences is granted upon completion of a four-year curriculum consisting of 128 semester units, *including 40 units upper division,* selected within the framework of one of the three major programs. The bachelor of arts degree in home economics is granted upon completion of 124 semester units selected from the various emphasis areas within the home economics discipline. An official *Program of Study* must be filed with the registrar to complete major requirements for the degree. No more than 15 upper division units from any combination of internships, independent study, and undergraduate research may be applied toward the degree. The general requirements for the bachelor of science or bachelor of arts degrees must be completed (see *Degrees and Credentials*).

CAREER PLANNING

Listed below are a few of the many fields of study in which a student may be interested. Students should consult the appropriate department to select an adviser for their field of interest. The assigned adviser will assist students in the preparation of programs of study for the bachelor of science (Agriculture) or bachelor of arts (Home Economics) degree. (See *Individual Counseling.*)

Field of Interest	*Department*
Farm Labor Agricultural economics Farm management Agribusiness Marketing and sales Agricultural Communications (public relations)	Agricultural Economics

Dairy industry, manufacturing Mechanized agriculture Enology, wine technology Food science, food processing Agricultural education International agriculture General agriculture, diversified farming	Agricultural Industry and Education
Animal husbandry Dairy husbandry Poultry husbandry Horse husbandry Animal nutrition Preveterinarian Meat technology, meat science Agriculture Communications (animal industry)	Animal Science
Agronomy, field crops Horticulture Ornamental Horticulture Natural resources Environmental sciences Agricultural chemistry Agricultural inspection and services Viticulture Floriculture Plant protection Soil science Irrigation Vegetable Crops Agricultural Communications (plant science industry)	Plant Science
Child Development Family Relations Clothing and textiles Food and nutrition Dietetics and food administration Consumer sciences and management Housing and interior design	Home Economics

INDIVIDUAL COUNSELING

The School of Agriculture and Home Economics offers, within the framework of one of the three major programs, an individually designed program of study to prepare the student for his or her specific career objective. Flexibility is an important characteristic of the programs. Advisers will assist the students in evaluating the alternatives this flexibility allows. They can and do play a significant role in planning the educational programs because of their close personal contact with students and with potential employers.

Departmental advisers are competent in guiding the selection of courses necessary to prepare a student for his or her individual career objective. Each student possesses specific and unique characteristics and objectives which will be taken into consideration in program planning.

Each student must consult his adviser at least once a semester. Prior to completion of 90 units, each student shall, in consultation with his adviser, develop an official *Program of Study*. This official program, when approved by the adviser, department chairman, and school dean, must be filed with the registrar upon completion of 90 units.

HIGH SCHOOL AND COMMUNITY COLLEGE PREPARATION

To assure the most rapid progress through a major program, high school and community college preparation should include the following:

Fundamental courses in agricultural sciences or home economics.
Biological sciences, such as botany and zoology or physiology.
Physical sciences, such as chemistry through organic chemistry.
American history and government.
Communication skills.
Mathematics through college algebra.

BACHELOR OF ARTS DEGREE (Home Economics) REQUIREMENTS
HOME ECONOMICS MAJOR FOR THE BA DEGREE

The bachelor of arts degree with a major in home economics consists of 124 units. The home economics core is required of all majors and consists of 15 units. Students may select a program of study which prepares them for careers in general home economics, dietetics and food administration, teaching home economics, and as home economists in business.

	Units
General education (may include additional requirements)	40
Special course requirements (US History, US Constitution)	(6)
Major requirements (including 24 units upper division)	48
Home Economics core (15 units) selected from H Ec 20, 39, 50, 54, 70, 103, 105, 107, 108, 113, 120, 131 (at least one course from each discipline area)	
Home Economics approved electives (33 units) selected from courses in the following discipline areas: Child development and family relations, clothing and textiles, food and nutrition, consumer sciences and management, housing and interior design, dietetics and food administration, home economics education.	
Electives and additional requirements	30–36
(At least 40 units upper division)	124

Additional Requirements: Certain courses may be recommended for specific career goals in home economics. Consult departmental adviser; file official *Program of Study* with the registrar.

Dietetics and Food Administration Option

The Dietetics and Food Administration Option meets the requirements of Plan IV of the American Dietetic Association for admission to its internship program. Consult advisers in dietetics for requirements of each specialization: General, Management, Clinical, Community Dietetics.

	Units
H Ec 50, 52, 54, 150, 153, 154, 159, 151 or 160, 165	27
Selected H Ec electives	21
(At least 24 units upper division)	48

Additional Requirements: Chem 2A-B, 8, 150, 151; Micro 20; Phy 33; Soc 1 or Psych 10; Econ 1A; Mgmt 110A; QM 60 or 65; Engl 1; E Ed 130 or S Ed 152.

Credential Program in Home Economics

The single subject waiver program in Home Economics consists of H Ec 24 or 26, 39, 50, 54, 70, 107, 111, 113 or 115, 114, 131, 148, 149T, 150, 171, and 240, including S Ed 151, 152, 155A, 155B, 156, 161, H Ec 121, and 3 graduate units in secondary education.

BACHELOR OF SCIENCE DEGREE (Agricultural Business) REQUIREMENTS
AGRICULTURAL BUSINESS MAJOR FOR THE BS DEGREE

The agricultural business major prepares students for employment in management positions in farming or businesses related to agriculture. Programs of study are available for students seeking careers in agribusiness (management of businesses related to agriculture), marketing of agriculture products, farm management, and agricultural economics. Under this major a student may elect various routes through a combination of subject matter in agricultural economics, plant science, animal science, mechanized agriculture, food science, and other specialized agricultural fields.

	Units
General education (may include additional requirements)	40
Special course requirements (US History, US Constitution)	(6)
Major requirements (including 20 units upper division)	60
Select one course in four of the following six disciplines (12 units):	
Plant science, animal science, food science, soil science, mechanized agriculture, agricultural economics.	
Approved electives in agricultural sciences, business, economics, and/or mathematics (48 units)	
Electives and additional requirements	22–28
(At least 40 units upper division)	128

Additional Requirements: Each student is required to complete certain courses in biological and physical sciences, mathematics, and related subject matter. Consult departmental adviser; file official *Program of Study* with the registrar.

BACHELOR OF SCIENCE DEGREE (Agricultural Education) REQUIREMENTS AGRICULTURAL EDUCATION MAJOR FOR THE BS DEGREE

The Agricultural Education major is designed to prepare vocational agricultural teachers for secondary schools. They may become especially prepared to teach in agricultural production, mechanized agriculture, and areas of both plant and animal sciences as well as food science. Moreover this program will help prepare the graduate for a wide spectrum of career opportunities in the industry of agriculture.

For information on the current credential program, consult departmental advisers and the School of Education; see the section on *Agricultural Specialist Credential.*

	Units
General education (may include additional requirements)	40
Special course requirements (US History, US Constitution)	(6)
Major (including 20 units upper division)	54
Electives in: animal science (15 units), plant science (18 units), mechanized agriculture (15 units), agricultural economics (6 units)	
Electives and additional requirements	28–34
(At least 40 units upper division)	128

Additional Requirements: Each student is required to complete certain courses in biological and physical sciences, mathematics, and related subject matter. Consult departmental adviser; file official *Program of Study* with the registrar.

Single Subject Credential Waiver Program

The Single Subject waiver program in Agriculture consists of 54 units in the following:

Agricultural Economics	Ag Ec 31, 151
Animal Science	Animal Science A Sci 10, 10L, 105, 120, 70 or 170, 125 or Biol 120
Mechanized Agriculture	Ag Me 15, 18, 111, 111L, 151A, 153
Plant Science	Plant 13, 15, 33, 106, 108, 114

Agricultural Specialist Credential Program

The Agricultural Specialist Credential is offered jointly by the School of Agriculture and Home Economics and the School of Education. It requires completion of the Single Subject waiver program (above); professional education courses (see Secondary Education Department—Professional Preparation: Preliminary Credential); and an approved fifth-year program of 30 postgraduate units, including the courses listed below. The credential authorizes holders to teach secondary school vocational agriculture. (For further information, see the departmental coordinator in Agriculture and the Coordinator of Secondary Education.) Required fifth-year courses are Ag Ed 135, 187, 189; Agri 150, 280, 281, 287, 290 (1 unit); S Ed 155B, 161.

Additional Requirements: Each student is required to complete certain courses in biological and physical sciences, mathematics, and related subject matter. Consult departmental adviser; file official *Program of Study* with the registrar.

BACHELOR OF SCIENCE DEGREE (Agricultural Sciences) REQUIREMENTS AGRICULTURAL SCIENCE MAJOR FOR THE BS DEGREE

The Agricultural Science major, with its flexible design, will afford the student an opportunity to acquire the necessary background for a wide variety of career objectives in agricultural industry and professional or graduate study.

Option I provides an opportunity for the students to pursue careers in, but not limited to, dairy industry, food science, enology, animal science, dairy science, poultry science, plant science, agronomy, horticulture, ornamental horticulture, viticulture, international agriculture, or mechanized agriculture.

Option II provides the necessary background in mathematics, chemistry, physics, and modern concepts of biology in preparation for professional or graduate study, including veterinary medicine.

	Units
General education (may include additional requirements)	40
Special course requirements (US History, US Constitution)	(6)
Major: Option I (including 20 units upper division)	45
Select one course in four of the following six disciplines (12 units): Animal science, plant science, food science, soil science, mechanized agriculture, agricultural economics.	
Approved electives in agricultural sciences or related disciplines (33 units)	
Major: Option II (including 20 units upper division)	60
Approved electives in agricultural sciences or related disciplines (30 units)	
Approved electives in biological and physical sciences, mathematics through elementary analysis (calculus) (30 units)	
Electives and additional requirements	22–43
(At least 40 units upper division)	128

Additional Requirements: Each student is required to complete certain courses in biological and physical sciences, mathematics, and related subject matter. Consult departmental adviser; file official *Program of Study* with the registrar.

MINOR

A minor in agriculture or home economics is available to degree students in other departments. The minor consists of 21 units of which 12 must be taken in a particular department and/or area. Of the total units in the minor, at least 9 units must be upper division. Each student is expected to consult with an agriculture or home economics adviser for planning a minor program.

PREVETERINARY PREPARATION

Students planning to attend a school of veterinary medicine may satisfy the entrance requirements at CSU, Fresno. The School of Agriculture and Home Economics is equipped to provide valuable experience with large animals through the student project program. Students desiring further information regarding the preveterinary curriculum should consult the Chairman of the Animal Science Department.

GRADUATE PROGRAM

The master of science degree in agriculture is designed to extend competence for agricultural research, agricultural field work, and the teaching of agriculture, and to provide the first graduate degree for students anticipating advanced graduate study in the agricultural sciences. Authorized options exist in animal and plant science and in agricultural chemistry. Fields covered by courses available under the program include animal and plant physiology, nutrition and genetics; pathology; nematalogy; soils and irrigation; food science; agricultural economics; mechanized agriculture.

The master of science degree program in home economics is designed to increase the competencies of dietitians and secondary school teachers; to prepare teachers for positions in two- and four-year colleges, and to provide the foundation which will qualify some to pursue the doctor's degree. Through appropriate choice of courses, students may focus their study programs in any one of the five areas of home economics; child development and family relations; clothing and textiles, and fashion merchandising; consumer sciences and home management; food and nutrition; and housing and interior design.

MASTER OF SCIENCE DEGREE (Agriculture) REQUIREMENTS

The master of science degree program in agriculture assumes preparation equivalent to a CSUF undergraduate major in one of the areas in the agricultural sciences. A major in one of the life or physical sciences is also acceptable when supplemented by the core courses of the discipline area. It is recommended that graduate students desiring classes in agricultural economics or

agricultural business take the following courses: Agri 211, 212, 213, 214. These four courses are also suggested for MBA students in the School of Business and Administrative Sciences selecting an agricultural business emphasis.

(See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements,* and *Thesis and Thesis Alternatives.*)

Under the direction of a graduate adviser, each student prepares and submits a coherent program individually designed according to Plan A or Plan B listed below:

Plan A—Thesis Program	*Units*
Courses in the Agricultural Sciences, 200 level	18
Electives in the Agricultural Sciences, or related fields	12
Total	30

Specific requirements: Agri 200; 299 (2–6 units); 9 units in one of the following series: Agri 210; 221–229; 230; 240; 250; 280. Other courses may be specified upon examination of the student's record and performance on the departmental qualifying examination. Students are required to complete 2 units in discipline area graduate seminar.

Plan B—Non-Thesis Program	*Units*
Courses in the Agricultural Sciences, 200 series	21
Electives in the Agricultural Sciences, or related fields	9
Total	30

Specific requirements: Agri 200; 220 (2 units); 290 (2 units); 12 units in one of the following series: Agri 210; 221–229; 230; 240; 250; 280. Other courses may be specified upon examination of the student's record and the performance on a departmental qualifying examination. Successful completion of oral and written final examinations consisting of two parts is required: a) a general examination in a field of agricultural science b) an examination dealing with 3 specific areas (e.g., physiology, nutrition, genetics). Students are required to complete 2 units in discipline area graduate seminar.

MASTER OF SCIENCE DEGREE (Home Economics) REQUIREMENTS

Admission to the master's degree program in home economics assumes the equivalent of a baccalaureate degree in home economics at CSUF with a 3.0 GPA in the last 60 units of undergraduate course work. Those holding a degree in a closely related area may also be admitted to the program. Students may be required to correct deficiencies identified in the qualifying examination for advancement to candidacy administered during enrollment in or upon completion of 9 units of their graduate program.

See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements,* and *Thesis.*)

Under direction of a graduate adviser, each student prepares and submits an individually designed program within the following framework:

	Units
Courses in home economics including at least 18 units in the 200-series (See *specific requirements*)	24
Electives in home economics or related areas in the 100- or 200-series	6
Total	30

Specific Requirements: H Ec 200, 290 (3 units), 292 (3–6 units), 299 (6 units). Additional courses may be specified after examination of the student's record and the performance on the departmental qualifying examination.

It is strongly recommended that H Ec 200 be taken the first term with 290 and 292 taken the following term. H Ec 299 should be taken after completion of the foregoing courses.

INTERDISCIPLINARY UNDERGRADUATE STUDY

The school offers the opportunity for interdisciplinary study designed to meet student interest in subject areas compatible but not limited to specific career objectives.

COURSES

Note: Active immunization against tetanus (available through the Student Health Service) is a prerequisite for registration in any laboratory course in agriculture and for any student employment on the University Farm.

AGRICULTURE (Agri)

10. Dimensions in Agriculture (1)
Survey of current social and economic developments and employment opportunities in modern agriculture and related agribusiness areas. Individual career planning.

100. Applied Statistics (3)
Application of experimental methods and statistical procedures in agricultural research. Emphasis on use of standard design and analysis techniques as used in plant and animal science. (2 lecture, 3 lab hours)

106. Enterprise Management (1; max total 6) (Former A Sci 106, 160T section)
Concurrent participation in project program required. Theory and field application of management principles in cotton, field crops, beef, sheep, swine, vineyard, orchard, and other appropriate agricultural operations.

150. Resource Material (2)
Prerequisite: junior standing. Development and application of techniques for obtaining and using resource material including government documents, university and experiment station reports; educational material and services available from governmental agencies, allied industries and professional organizations. Emphasis on material for agriculture and allied fields.

161. International Agriculture (3)
Prerequisite: junior or senior standing. Social, economic and technological aspects of agricultural production and distribution in developing countries.

170. Seminar in International Agriculture (3)
Prerequisite: Ag Ec 31, Agri 161. Written and oral presentation of researched topics on recent developments in international agriculture.

173. Agricultural Internship (1–8; max total 8)
Prerequisite: junior or senior standing and approval of internship committee. Emphasis on development of decision-making ability through industrial experience integrated with basic principles acquired in the classroom.

AGRICULTURAL ECONOMICS DEPARTMENT

FACULTY

Thomas I. Gunn, Department Chairman

John W. Hagen, Carl L. Pherson, John R. Shields, Alan R. Thodey

DEPARTMENTAL PROGRAMS

The Department of Agricultural Economics offers programs of study in, *but not limited to,* agricultural business, farm management, and agricultural economics within the framework of the agricultural business major. Students may prepare for positions in agricultural marketing, farm management and the management of businesses related to agriculture.

Students majoring in agricultural business may follow various educational routes in pursuing their areas of interest (plant science, animal science, mechanized agriculture, food science, enology, and other specialized fields) or they may prepare for a career as professional agricultural economist.

Programs of Study: The department provides competent advisers for students pursuing career objectives in, *but not limited to,* the following areas:

Career Objective	*Suggested Major*
Farm management: animal science, plant science	Agricultural business
Agricultural economics	Agricultural business or agricultural science
Agribusiness management	Agricultural business
Production economics: animal science, plant science	Agricultural business
Agricultural law	Agricultural business or agricultural science
Agricultural marketing	Agricultural business
Agricultural sales: animal science, plant science	Agricultural business
Agricultural sales: mechanized agriculture, food science, agricultural chemicals, animal pharmaceuticals	Agricultural business or agricultural science

Suggested Courses: The following core of courses is recommended for all students majoring in agricultural business: Ag Ec 41, 112, 167, 170, 172, 179, upper division elective; B A 18, QM 60; Acct 3 or 4A. Students planning for graduate study in this area are encouraged to select additional electives in economic theory, statistics, and mathematics.

COURSES

Note: Active immunization against tetanus (available through the Student Health Service) is a prerequisite for registration in any laboratory course in agriculture and for any student employment on the University Farm.

AGRICULTURAL ECONOMICS (Ag Ec)

31. Agricultural Economics (3)
Agricultural and nonagricultural economic development; nature of production, marketing, and consumption of food; basic tools of economic analysis.

41. Agricultural Business Statistics (3)
Prerequisite: Math 4. Measures of central tendencies and dispersion, time series analysis, index numbers, seasonal variation, data collection and presentation, introduction to probability theory, and discrete and continuous probability distributions.

80. Undergraduate Research (1–4; max total 4)
Open to freshmen or sophomores with permission of instructor. Directed study or research on particular problems in the field of agricultural economics.

112. Farm Management (4)
Prerequisite: Ag Ec 31. Basic economic principles relating to farm management; organizing the farm, managing crop and livestock enterprises; farm business administration. (2 lecture, 4 lab hours)

151. Farm Accounting (3)
Prerequisite: Ag Ec 31. Farm accounting systems, farm records, budgets, income tax returns. (2 lecture, 3 lab hours)

160. Marketing Institutions (2)
Business and economic functions performed by various specialized marketing agencies with emphasis on physical operating patterns. Local field trips to marketing firms and workshops with agribusiness managers. (1 lecture, 2 lab hours)

165. Agricultural Labor-Management Relations (3)
Prerequisite: Ag Ec 31. Economic analysis of farm labor market; agricultural mechanization and farm employment; farm labor laws and government regulation; agricultural labor relations, unionization, collective bargaining, and arbitration; farm personnel administration.

167. Agribusiness Management (3)
Prerequisite: Ag Ec 31. Management of businesses related to agriculture, including, for example, farmer cooperatives, feed-seed-fertilizer suppliers, food processors, equipment dealers, and marketing firms; application of management principles and problem solving in agribusiness firms.

170. Agricultural Economics Analysis (3)
Prerequisite: Econ 1A-B. Development of analytical tools for use in solving agricultural economic problems; research methods in agricultural business.

171. Natural Resources Economics (3)
Prerequisite: Ag Ec 31. Problems of our natural resources—land, water, minerals; policies and programs relating to natural resource development; population influences.

172. Marketing of Agricultural Products (3)
Prerequisite: Ag Ec 31; concurrent enrollment in Ag Ec 160 recommended for students desiring marketing field trips. Basic marketing functions, policies, and problems involved in handling agricultural products; economic concepts, business decisions, and practical applications.

174. Advanced Farm Management (3)
Prerequisite: Ag Ec 112. Economic principles and modern decision-making techniques applied to farm management.

175. Agricultural Sales and Communications (3)
Selling agricultural products, public relations in agriculture, agricultural journalism, promotion and advertising of agricultural products; written and oral presentations.

177. Agricultural Finance (3)
Prerequisite: Ag Ec 31. Analysis of agricultural credit problems; acquisition and management of capital; financing the farm business enterprise; farm appraisal.

179. Agricultural Policy (3)
Prerequisite: Econ 1A-B. Governmental policies and programs affecting the economic position of agriculture; evaluation of specific programs which influence agricultural production, marketing, prices, income, and financial aids.

180. Undergraduate Research (1–4; max total 4)
Open to juniors or seniors with permission of instructor. Directed study or research on particular problems in the field of agricultural economics.

185T. Current Topics in Agricultural Business (1–4; max total 6)
Prerequisite: junior standing. Agricultural economics, marketing, sales and communication, policy, agribusiness, and farm management. Topics may require lab hours.

AGRICULTURAL ECONOMICS

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

AGRICULTURE (Agri)

200. Biometrics in Agriculture (3)
Prerequisite: Math 11; permission of instructor. Statistical principles in agricultural research. Emphasis on collection, summarization of data and the design, conduct, analysis, and interpretation of experiments.

210T. Topics in Agricultural Economics (3; max total 15)
Prerequisite: upper division agricultural economics courses appropriate to study topic; permission of instructor. Agricultural marketing, farm management and production analysis, price, credit, and land economics study areas. Topics may require lab hours.

211. Public Policy in Agriculture (3)
Development of local, state, federal and international agricultural policies. Evaluation of alternative policies of such factors as production controls, land use, pesticides, foreign trade and governmental courses of action influencing agriculture.

212. Farm Management Analysis (3)
Modern decision-making techniques applied to farm management. Production economic principles, budgeting analysis, present value analysis, operations research, and risk management models are utilized on farm case studies.

213. Agricultural Marketing Analysis (3)
Marketing principles, problems and practices in agriculture. Evaluation of marketing programs of farm organizations in both domestic and in international trade.

214. Agricultural Management (3)
Case problem analysis and intern practicum of management decisions coordinating production, processing, marketing and financing for agricultural firms including strategies for cooperatives, use of futures markets, resource planning and demand analysis of producing and marketing an agricultural product.

219. Seminar in Agricultural Economics (1–4; max total 4)
Prerequisite: permission of instructor. Written and oral reports in recent literature and problems related to agricultural economics.

220. Readings in Agriculture (2–3)
Prerequisite: permission of instructor. Individually directed readings in a field of special concern to the student's graduate program; appropriate reports and evaluation required.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

299. Thesis (2–6; max total 6)
Prerequisite: see *Master's Degrees—Thesis Requirements.* Preparation, completion, and submission of an acceptable thesis for the master's degree.

IN-SERVICE COURSES (Agri)

(See *Course Numbering System*)

300. Topics in Agriculture (1–3)
Topics may require lab hours.

AGRICULTURAL INDUSTRY AND EDUCATION DEPARTMENT

FACULTY

Howard J. Martin, Department Chairman

Wilbur P. Ball, Bendt A. From, Joo I. Kim, Carlos J. Muller, Fred S. Nury, Clayton C. Pflueger, Richard A. Rogers

DEPARTMENTAL PROGRAMS

The Department of Agricultural Industry and Education offers a wide variety of educational opportunities including programs of study in agricultural education, mechanized agriculture, food science, dairy industry, and enology.

The department provides faculty to counsel students who wish to pursue programs emphasizing teacher education, food science and technology, dairy manufacturing, mechanized agriculture, and wine making. The courses offered in the disciplinary areas listed below provide the necessary background to prepare students for career objectives.

Mechanized Agriculture (Ag Me) prepares students for positions in farm equipment development, sales and service, rural electrification, farm building construction, and general farming. The courses deal with the ever-changing field of agricultural processes and mechanization.

Agricultural Education (Ag Ed) prepares students as teachers of agriculture for the public school grades 7 through 14.

Dairy Industry (D Ind) prepares students for positions in the dairy and food processing industry with in-depth subject matter in production, marketing, government inspection, and food technology.

Food Science (F Sci) prepares students for employment opportunities with governmental agencies engaged in regulatory work; food industry including food processing, canning, freezing, and packaging plants; and research.

Enology (Enol) prepares students for positions in the California wine industry. Typical positions include laboratory technologist, plant sanitarian, wine chemist, processing department supervisor, and production manager.

International Agriculture (Agri) prepares students for opportunities of travel, study, and work in other countries; provides training for work with agencies such as Peace Corps, agricultural missions, international agricultural companies, and private organizations. For courses, see *Interdisciplinary Study.*

Programs of Study: The Department of Agricultural Industry and Education provides competent advisers for students pursuing career objectives in, *but not limited to,* the following areas:

Career Objective	*Suggested Major*
Farm equipment sales and service	Agricultural business
Agricultural engineering	Agricultural science
Dairy industry technology	Agricultural science
Teaching: vocational agriculture, junior high school, community college, college or university	Agricultural education
Food technology, food processing	Agricultural science
Enology, wine technology	Agricultural science
Wine chemistry, food chemistry	Agricultural science
Food plant management	Agricultural business
Agricultural sales: food products, farm equipment	Agricultural business
General farming or ranching	Agricultural education or agricultural science
Food and dairy sanitation	Agricultural science
Agricultural research: food products, agricultural by-products	Agricultural science
International Agriculture	Agricultural Science

Laboratory Units: Theoretical instruction is enhanced through practical application at the various laboratory units. These units include the Dairy Processing Laboratory, Enology

Laboratory, and Agricultural Mechanization Laboratory.

COURSES

Note: Active immunization against tetanus (available through the Student Health Service) is a prerequisite for registration in any laboratory course in agriculture and for any student employment on the University Farm.

AGRICULTURE (Agri)

80. Undergraduate Research (1–4; max total 4)
Open to freshmen and sophomores with permission of instructor. Exploratory work on a suitable agricultural problem in agricultural education, international agriculture, agricultural mechanics, dairy industry, enology, or food science.

160T. Topics in Agriculture (1–4; max total 6 per discipline if no topic repeated)
Prerequisite: junior standing, permission of instructor. Agricultural education, international agriculture, mechanized agriculture, food science, dairy industry, enology. Topics may require lab hours.

180. Undergraduate Research (1–4; max total 4)
Open to juniors or seniors with permission of instructor. Exploratory work on a suitable agricultural problem in agricultural education, international agriculture, agricultural mechanics, dairy industry, enology, or food science.

190. Independent Study (1–3; max see reference)
See *Academic Placement*—Independent Study.

AGRICULTURAL EDUCATION (Ag Ed)

135. Introduction to Agricultural Education (3)
Survey of agricultural education; vocational surveys; occupational analysis; relationship of agriculture to occupational opportunities; qualifications for teaching agriculture. Includes field trips to high school vocational agriculture departments.

187. Organization, Administration, and Supervision of Agricultural Education (3)
Prerequisite: senior standing. A study of the California and federal plans for vocational education as they pertain to agricultural education.

189. Adult and Continuation Education in Agriculture (3)
Prerequisite: senior standing. History, philosophy, organization, administration, and development of teaching rural and urban adult education programs in agricultural mechanics and agricultural sciences.

MECHANIZED AGRICULTURE (Ag Me)

15. Agricultural Mechanics (3)
Mechanical skills in field of agriculture; selection, care and use of common farm tools; projects of wood and metal in farm appliances. (2 lecture, 2 lab hours)

17. Farm Tractors (3)
Operation and maintenance of farm tractors; operation of farm tractor under field conditions; service, maintenance and minor repair of gas, diesel, and butane type engines of wheel and crawler type. (2 lecture, 2 lab hours; 5 hours field operation.)

18. Agricultural Welding (3)
Prerequisite: Ag Me 15. Metallurgy of mechanized agriculture. Arc and oxyacetylene welding, cutting and brazing process as tools of construction, maintenance and repair of the machines of modern agriculture. (2 lecture, 2 lab hours)

25. Agricultural Drafting (3)
May be taken concurrently with Ag Me 15. Use of drafting instruments, lettering, dimensioning, scale drawings and working drawings of projects in agricultural mechanics; elementary plan and perspective drawings of small buildings. (2 lecture, 2 lab hours)

81. Farm Structures and Equipment (3)
Prerequisite: Ag Me 15. Construction and repair of farm structures and equipment; farm carpentry and construction principles: engineering principles, codes; farmstead layouts and basic requirements of farm structures. (2 lecture, 2 lab hours)

91. Farm Surveying (3)
Prerequisite: sophomore standing. Use of the steel tape, level, transit and compass; field problems in chaining distances, laying out building lines, profile leveling for irrigation ditches and drains, land leveling, and measuring land areas. (2 lecture, 2 lab hours)

111. Rural Electrification (2)
Prerequisite: junior standing. Fundamentals of alternating current, wiring practices, circuit layouts and problems, motor and branch circuit protection; safe use of electricity; wiring of farmstead.

111L. Rural Electrification Laboratory (1)
Laboratory experiments to accompany Ag Me 111. (3 lab hours)

115. Farm Machinery (3)
Prerequisite: Ag Me 15. Study and operation of tillage tools, interaction of the soil and tool; cotton, grain, and specialized harvesting machinery and equipment. (2 lecture, 3 lab hours)

116. Farm Machinery (3)
Prerequisite: Ag Me 15. A study of farm machinery used in spring and summer operations. Orchard and field spraying equipment, field and row crop planters, cultivating tools, and haying machinery. (2 lecture, 3 lab hours)

121. Advanced Agricultural Welding (3)
Prerequisite: Ag Me 18. Arc and gas welding processes in construction and repair of farm equipment; inert arc welding; radiograph and shape burning; aluminum and stainless steels; welding tests and design of welded structures. (2 lecture, 3 lab hours)

125. Landscape Ornamental Structures (3) (Former Agri 160T section)
Prerequisite: Ag Me 15, junior standing. Layout and construction of landscape structures. Type of construction; properties and uses of masonry, wood, concrete, and steel. (2 lecture, 3 lab hours)

131. Agricultural Fluid Power (3)
Prerequisite: junior standing. Theory and practice in the operation, service, adjustment, and function of the component parts of fluid power systems. Design application of systems to farm machines. (2 lecture, 3 lab hours)

140. Agricultural Processing Technology I (3)
Prerequisite: junior or senior standing. Principles of plant operations in the food and fiber industries. Basic theory of heat transfer, fluid mechanics, refrigeration, dehydration, cleaning and sorting, cost analysis, and plant layout. (2 lecture, 3 lab hours)

141. Agricultural Processing Technology II (3)
Prerequisite: junior or senior standing. Processing techniques including heat exchange equipment, distillation, process condition, pumps in food industry, fluid flow measurement. (2 lecture, 3 lab hours)

151A–B Farm Power (3–3)
Prerequisite: Ag Me 15. (A) Principles of the internal combustion engine; adjusting, servicing, and minor repairs practical in farming operations. (B) Overhauling and repairing of gasoline and diesel farm tractors and engines; field servicing and repairing of auxiliary power plants on farm machinery. (2 lecture, 3 lab hours)

153. Small Engines (3)
Prerequisite: junior or senior standing. Theory of operation, maintenance and repair of small gasoline internal combustion engines, both 2-cycle and 4-cycle. (2 lecture, 3 lab hours)

159. Pumps and Motors (3)
Prerequisite: Ag Me 15, Plant 59. Operation and study of centrifugal and deep well turbines; testing of pumps and motors under operating conditions to determine efficiency; installation, protective devices, maintenance and proper selection of single and three-phase motors used on the farm. (2 lecture, 3 lab hours)

DAIRY INDUSTRY (D Ind)

23. Dairy Foods and Man (3)
The history and geography, processes and processing of dairy products; their description, composition, and nutritive values; current role of the dairy industry and dairy foods.

103. Manufacturing Dairy Products (3)
Prerequisite: junior standing. Making common varieties of cheese, mix making and freezing desserts, churning butter, and culturing dairy products. (2 lecture, 3 lab hours)

113. Manufactured Dairy Products (3)
Chemistry, physics, and mathematics applicable to the production of butter, concentrated products, cheese, and ice cream.

143. Market Milk Products (3)
Market milk production, marketing, processing and distribution; common laboratory practices and processing methods. (2 lecture, 3 lab hours)

153. Dairy Inspection (3)
Application of the California Agricultural and the United States Public Health Codes to the inspection of dairies, dairy plants, and dairy products.

163. Dairy Chemistry and Testing (3)
Prerequisite: Chem 2A-B. Milk constituents and application of chemical laboratory tests as used in food plants. (2 lecture, 3 lab hours)

ENOLOGY (Enol)

15. Wine and the Consumer (3)
History and development of the wine industry; mechanics of various processes and factors affecting wine quality and consumer acceptance.

15L. Enology Laboratory (1)
Techniques in analyzing and evaluating wines; methods by which sound wines can be made and kept. Field trips to local wineries.

115. Wine Analysis and Production (5)
Prerequisite: Chem 109, Enol 15, Micro 20 or 104, Plant 127. Principles and practices of preparation and analysis of dessert and table wines; operation of plant equipment; controlled tests. (3 lecture, 6 lab hours)

135. Field Studies (1)
Prerequisite: permission of instructor. A six-day field trip, during the Easter recess, covering the north coast wineries to study the techniques and handling methods employed by the many vintners.

165. Wine Technology (3)
Prerequisite: permission of instructor. Technological study of winery equipment; evaluation, location, and operation; sanitation procedures. (2 lecture, 3 lab hours; 3- or 4-day field trip)

175. Winery Management (3)
Prerequisite: permission of instructor. Physical properties of a winery; administrative organizational set-up; personnel; purchasing, packaging, and shipping; local, state, and federal regulatory statutes.

FOOD SCIENCE (F Sci)

1. Food Science and World Food Problems (3)
Modern food processing; world food problems; basic characteristics of processed foods.

100. Food Appraisal and Evaluation (3)
Prerequisite: Math 4, F Sci 1. Analysis, measurement, and methods used in evaluation of organoleptic, kinesthetic, and other quality factors in foods. (2 lecture, 3 lab hours)

110. Food Chemistry (3)
Prerequisite: Chem 8 (or concurrent). Composition, structure, and properties of food; chemistry of changes occurring during processing and utilization.

120A-B. Food Engineering (3–3)
Prerequisite: Phys 2A-B, physical chemistry. (A) Laws of thermodynamics, closed and open (control volume) systems; thermodynamic properties; thermodynamic cycles, phase, and chemical equilibria; gas dynamics. (B) Fluid flow, heat transfer, connection, radiation, heat exchangers. (2 lecture, 3 lab hours)

130. Food Analysis (3)
Prerequisite: 1 year of general chemistry, qualitative analysis. Principles of food analysis; sampling, separation, physical measurements, chemical and biochemical techniques. (2 lecture, 3 lab hours)

140A-B. Food Processing (3–3)
Prerequisite: F Sci 110; Chem 8 (or concurrent). (A) Food preservation by heat, low temperature, dehydration, fermentation, and radiation. (B) Sanitation and control of microbiological problems involved in processing and storing foods; case studies. (B: 2 lecture, 3 lab hours)

170. Food Microbiology I (3)
Prerequisite: Micro 20. Control of microorganisms in production and handling of foods; microbiological methods of examining foods.

171. Food Microbiology II (2)
Food spoilage organisms and microbiological methods of examining foods. (1 lecture, 3 lab hours)

191. Food Science Literature (1)
Prerequisite: senior standing. Review of recent literature.

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

AGRICULTURE (Agri)

200. Biometrics in Agriculture (3)
Prerequisite: Math 11; permission of instructor. Statistical principles in agricultural research. Emphasis on collection, summarization of data and the design, conduct, analysis, and interpretation of experiments.

220. Readings in Agriculture (2–3)
Prerequisite: permission of instructor. Individually directed readings in a field of special concern to the student's graduate program; appropriate reports and evaluation required.

221T. Topics in Food Science (3; max total 12)
Prerequisite: upper division food science course appropriate to study topic; permission of instructor. Advanced studies in a given area; food preservations; processing effect on chemical components; flavor, texture, and other quality factors in foods. Topics may require lab hours.

229. Seminar in Food Science (1; max total 4)
Prerequisite: permission of instructor. Investigation of current research and problems related to food science. Oral and written reports.

230T. Topics in Mechanized Agriculture (3; max total 12)
Prerequisite: upper division mechanized agriculture course appropriate to study topic. Advanced studies in a given area: farm power and machinery, agricultural processes, machinery management. Topics may require lab hours.

280. Seminar in Agriculture (1–3; max see below)
Maximum total credit 9 units in any given area or any combination of the three areas. Prerequisite: bachelor's degree in agriculture. Advanced problems in agriculture; research and experimentation in a selected area: animal science, plant science, or agricultural mechanics.

281. Problems in Agricultural Education (1–3; max total 3)
Prerequisite: graduate standing. Individual supervised research in agricultural education; appropriate reports and evaluation required. Individual conferences.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

299. Thesis (2–6; max total 6)
Prerequisite: see *Master's Degrees—Thesis Requirements.* Preparation, completion, and submission of an acceptable thesis for the master's degree.

IN-SERVICE COURSES (Agri)
(See *Course Numbering System*)

300. Topics in Agriculture (1–3)
Topics may require lab hours.

ANIMAL SCIENCE DEPARTMENT

FACULTY

Edwin J. Rousek, Acting Department Chairman

Jesse T. Bell, John W. Edwards, Floyd M. Hixson, Gary L. Heusner, Arthur S. Hoversland, Darren M. Nelson, Robert B. Osland

DEPARTMENTAL PROGRAMS

The Department of Animal Science offers programs of study in the animal sciences including beef, swine, sheep, horse, dairy, and poultry husbandry. The courses offered deal with the application of various principles of biological and physical sciences to animals. This includes management and production factors as related to environmental interrelationships, cultural modifications and adaptation, protection against pests and diseases, utilization, marketing, and research and development pertaining to the future. Students specializing in animal science may prepare for careers in business, government, foreign service, or the livestock industry where they may be engaged in consultation, management, production, research, teaching, advanced degrees, and other related professional services including veterinary medicine.

The courses offered in the disciplinary areas listed below provide the necessary background to prepare students for career objectives.

Animal Science (A Sci) provides in-depth study in subject areas designed to complement the livestock and poultry disciplines in preparing students for work opportunities in nutrition, reproduction, health, and related areas.

Animal Husbandry (A Sci) prepares students for positions in livestock production, management, and agricultural businesses where beef cattle, sheep, swine, and horse enterprises are an important part of the industry.

Dairy Husbandry (A Sci) trains students for commercial dairy farming enterprises, dairy herd management, milk quality control, field work for breeding associations, dairy sanitation, artificial breeding, and other agribusiness occupations.

Poultry Husbandry (A Sci) prepares students for occupations in commercial egg production, fryer operations, breeder flock management, hatchery management, processing, and sales positions with companies supplying the poultry industry. Graduates may operate their own turkey and poultry farms.

In addition, a selected variety of animal science and agricultural economics courses will provide the necessary background for the following career objective.

Animal Science-Agricultural Business. A combination of courses designed to train students in the important features of animal science and business.

Programs of Study: the Department of Animal Science provides competent advisers for students pursuing career objectives in, *but not limited to,* the following areas:

Career Objective	*Suggested Major*
Ranching	Agricultural science
Feed lot management	Agricultural business
Animal research	Agricultural science
Veterinary medicine	Agricultural science
Agricultural sales: feed, pharmaceuticals	Agricultural business or agricultural science
Dairy herd management	Agricultural business or agricultural science
Breeder, or field work with breed associations	Agricultural business or agricultural science
Foreign service in animal sciences	Agricultural science
Poultry management	Agricultural science or agricultural business
Animal nutrition: feed processing, research	Agricultural science
Meat technology: consumer products	Agricultural science or agricultural business
Artificial insemination: breeder, research	Agricultural science
Livestock judging, fair associations	Agricultural science or agricultural business

Animal Science Laboratory Units: Theoretical instruction in animal sciences is enhanced through practical application at the various laboratory units. These units include the Beef Husbandry Laboratory, Horse Husbandry Laboratory, Sheep Husbandry Laboratory, Swine Husbandry Laboratory, Dairy Husbandry Laboratory, Poultry Husbandry Laboratory, Meats Laboratory, Veterinary and Physiology Laboratory, and Feed Mill Laboratory.

SUPERVISED PROJECTS

The agricultural sciences program is unique in that it provides opportunity for students to gain both theoretical training and practical experience in farming while pursuing their university programs. The supervised project experience is designed to supplement the lecture and laboratory assignments, giving students greater opportunity to develop the practical side of farming. The university owns all of the necessary equipment for student projects. A rental fee is charged for use of equipment. Proficiency in operating equipment must be demonstrated before projects may be undertaken. Students sign contracts wherein they agree to perform the labor required in caring for their projects. The Agricultural Foundation serves as a banking agency in providing the money a student will or may need for project materials. Students must submit records on each enterprise to the Agricultural Foundation and share the profit or loss with the Foundation according to established percentages.

In the Animal Science Department, students may feed out steers, lambs, pigs, fryers or turkeys, or have commercial egg production projects. Animal science students may, with prior approval of the department, engage in self-financed projects. Concurrent registration in Agri 106, *Enterprise Management,* required.

COURSES

Note: Active immunization against tetanus (available through the Student Health Service) is a prerequisite for registration in any laboratory course in agriculture and for any student employment on the University Farm.

ANIMAL SCIENCE (A Sci)

10. Animal Science (3)
Types and breeds of farm animals and poultry in the United States; world distribution, adaptation, production methods; foods and products produced by farm animals, and their role in supplying food for a hungry world.

10L. Animal Science Laboratory (1)
Prerequisite: A Sci 10 (or concurrently). Laboratory practices to accompany A Sci 10. (2 lab hours)

65. Infectious Diseases of Domestic Animals (4) (Former A Sci 160T section)
Prerequisite: Biol 10. Classification, identification, pathogenicity and control of the important bacterial, viral and mycotic agents causing disease in domestic animals of the United States. (2 lecture, 4 lab hours)

70. Feeds and Feeding (3)
Prerequisite: Chem 2A. Principles of nutrition; nutrients and their metabolism; comparison of qualitative nutrient requirements of non-ruminant and ruminant animals and ration balancing to meet these requirements.

80. Undergraduate Research (1–4; max total 4)
Open to freshmen and sophomores with permission of instructor. Exploratory work on a suitable agricultural problem in animal science.

105. Advanced Animal Science Laboratory (2)
Prerequisite: A Sci 10. Not open to animal science majors. Development of skills in applying animal science principles and practices; discussion, demonstration, participation. (2 2-hour lecture-labs; field trips)

110. Anatomy and Physiology of Farm Animals (3)
Prerequisite: Zool 1, or 10; Chem 8. General structures of farm animals and physiological functions of organs of the animal body.

110L. Anatomy and Physiology Laboratory (1)
Prerequisite: A Sci 110 (or concurrently). Laboratory practices to accompany A Sci 110. (3 lab hours)

120. Animal Health and Disease (3)
Prerequisite: A Sci 110. Introduction to etiology, pathology, therapeutics and prevention of diseases of domestic animals.

120L. Animal Health Laboratory (1; max total 3)
Prerequisite: A Sci 120 (or concurrently). Laboratory practices to accompany A Sci 120. Separate sections for horses, dairy, livestock, house pets, and laboratory animals. No section may be repeated. (3 lab hours)

125. Principles of Animal Breeding (3)
Prerequisite: A Sci 10; introductory genetics. Principles of genetics as applied to domestic animals. Practices and problems commonly encountered in animal breeding.

130. Feed Mill Management (3)
Prerequisite: A Sci 70. Planning, operating and maintaining feed mills; mixing, buying and selling feeds; participation in management and operation of university feed mill; field trips. (2 lecture, 3 lab hours)

136. Parasites of Domestic Animals (3) (Former A Sci 160T section)
Prerequisite: Zool 1 or A Sci 120. Classification, life cycle, treatment and control of helminth, arthropod and protozoa parasites pathogenic to domestic animals of United States. Emphasis placed on parasites of greatest veterinary importance. (2 lecture, 2 lab hours)

140. Behavior of Domestic Animals (3)
Not open to students with credit in this section of A Sci 160T. Prerequisite: A Sci 10. Man's understanding and utilization of the principles of behavior in confined and free-ranging domestic animals. (2 lecture, 3 lab hours)

145. Horses for Pleasure (3)
Not open to animal science majors or students with credit in A Sci 151. Intended for students who desire a general knowledge of the modern light horse industry: evaluation and selection, horsemanship principles, training techniques, diseases, and unsoundness, nutrition, breeding, buildings and equipment.

150. Animal Science Seminar (1; max total 2)
Open to seniors majoring in animal science. Latest developments in research; assigned papers in animal science to be presented in both oral and written form.

155. Animal Reproduction (3)
Prerequisite: A Sci 110. Principles of reproductive physiology and their application to domestic animals.

155L. Animal Reproduction Laboratory (1)
Prerequisite: A Sci 155 (or concurrently). Laboratory practices to accompany A Sci 155. (3 Lab hours)

160T. Topics in Animal Science (1–4; max total 6 per discipline if no topic repeated)
Prerequisite: junior standing, permission of instructor. Anatomy, physiology, pathology, nutrition, genetics, economics. Topics may require lab hours.

170. Animal Nutrition (3)
Prerequisite: A Sci 70. Principles of nutrition and metabolism; application of nutrients, nutrient sources, and nutrient requirements to domestic animals.

180. Undergraduate Research (1–4; max total 4)
Open to juniors and seniors. Exploratory work on a suitable agricultural problem in animal science.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

ANIMAL HUSBANDRY (A Sci)

11. Livestock Selection and Evaluation (3)
Basic factors involved in selection and evaluation of beef cattle, horses, sheep, and swine; relationships of live market animal traits to carcass desirability. (2 lecture, 3 lab hours)

21. Beef Husbandry (3)
Prerequisite: A Sci 10. Management of purebred and commercial beef herds; selection of breeding stock; management practices in fattening cattle; marketing slaughter and purebred cattle. (2 lecture, 3 lab hours)

31. Swine Husbandry (3)
Prerequisite: A Sci 10. Principles and practices of purebred and commercial swine husbandry; breeding, feeding, and management program. (2 lecture, 3 lab hours)

41. Sheep Husbandry (3)
Prerequisite: A Sci 10. Breeding, feeding management, and marketing of commercial and purebred sheep; breeds, setting up a program of breeding, housing, and equipment requirements; feeding and care of ewes and lambs; docking, castrating, shearing, tying, sacking, storing wool. (2 lecture, 3 lab hours)

51. Horse Husbandry (3)
Not open to students with credit in A Sci 145. Breeds, selection, care, and feeding of light horses; their use and place in California agriculture. (2 lecture, 3 lab hours)

101. Livestock Evaluation (2; max total 4)
Prerequisite: A Sci 10, 11. Detailed analysis of various visual and physical methods of appraising animal body types as related to functional and economic value of livestock. Written and oral summaries of evaluations. (1 lecture, 3 lab hours; field trips)

111. Advanced Beef Management (3)
Prerequisite: A Sci 21, 120, 170; introductory genetics. Management techniques and principles as applied to beef cattle industry; breeding, nutrition, animal health, and records of performance.

111L. Advanced Beef Management Laboratory (1)
Prerequisite: A Sci 111 (or concurrently). Laboratory practices to accompany A Sci 111. (3 lab hours)

121. Meats (3)
Prerequisite: A Sci 10. Evaluation of live animals and carcasses; selection and preparation of meats and meat products; survey of the meat industry in the United States. (2 lecture, 3 lab hours)

131. Meats and the Consumer (4)
Not open to animal science majors or students with credit in A Sci 121. Consumer problems in buying meat to include quality and price selection, identification, nutritive value, storage, processing, preparation for consumption, and government inspection and standards. (3 lecture, 2 lab hours)

141. Meat Evaluation (3)
Prerequisite: A Sci 10. Evaluation of live animals and carcasses with emphasis on current grading and evaluation concepts as applied to carcasses, meat products, and live animals. (2 lecture, 3 lab hours)

151. Advanced Horse Management (3)
Prerequisite: A Sci 120, 155, 170. Advanced principles of horse husbandry; management of horse breeding farms, breeding systems, training and selling horses, western equitation. (2 lecture, 3 lab hours)

161. Animal Science Technology (3)
Prerequisite: A Sci 10, or junior standing. Techniques used in applying theories and principles of the disciplines encountered in the animal sciences.

171. Marketing Livestock and Meat (3)
Prerequisite: junior standing and permission of instructor. Economic principles in marketing livestock and livestock products; demand, supply, distribution; markets and marketing procedures; classifying, grading, evaluating livestock for marketing.

DAIRY HUSBANDRY (A Sci)

12. Dairying (3)
Selection, breeding, feeding, and management of dairy cattle; basic principles and practices involved in processing, marketing milk and its products.

12L. Dairying Laboratory (1)
Prerequisites: A Sci 12 (or concurrently). Laboratory in the area of dairy cattle fitting, breeding, production management, selection and other areas supporting A Sci 12. (2 lab hours)

112. Dairy Farm Management (4)
Prerequisite: A Sci 12. Planning the development and operation of a complete modern dairy production unit, including all costs and managerial responsibilities required for a successful operation. (3 lecture, 2 lab hours)

122. Dairy Cattle Evaluation (3)
Prerequisite: A Sci 112. Production records, pedigrees, and classification records in their application to evaluating the functional ability of dairy cattle. (2 lecture, 2 lab hours; field trips)

152. Applied Reproductive Control (3)
Prerequisite: A Sci 155, 155L. Basic principles of reproductive control in all species of domesticated animals including artificial insemination, estrus synchronization, super ovulation, ova transfer, sex control. (2 lecture, 2 lab hours)

GRADUATE COURSES
(See *Course Numbring System—Definitions and Eligibility*)

AGRICULTURE (Agri)

200. Biometrics in Agriculture (3)
Prerequisite: Math 11; permission of instructor. Statistical principles in agricultural research. Emphasis on collection, summarization of data and the design, conduct, analysis, and interpretation of experiments.

220. Readings in Agriculture (2–3)
Prerequisite: permission of instructor. Individually directed readings in a field of special concern to the student's graduate program; appropriate reports and evaluation required.

240T. Topics in Animal Science (3; max total 12)
Prerequisite: upper division animal science appropriate to study topic; permission of instructor. Investigation of topic in animal science: anatomy, physiology, pathology, nutrition, genetics or economics. Topics may require lab hours.

241. Endocrine and Reproductive Physiology (3)
Prerequisite: A Sci 155. Physiology which deals with neural and hormonal integration and control of the animal body, including scientific aspects of the processes of reproduction and application of current knowledge in improving reproductive efficiency.

242. Environmental Physiology of Domestic Animals (3)
Prerequisite: A Sci 155; permission of instructor. A study of environmental factors affecting domestic animals under field and controlled conditions.

243. Metabolism and Energy Physiology (3)
Prerequisite: Chem 8. Current aspects of the integral processes involved in metabolism and energy physiology of laboratory and farm animals. Application of the principles concerned in intermediary metabolism. Selected readings in the current literature within the field.

244. Vitamin and Mineral Nutrition (3)
Prerequisites: A Sci 170. A survey of the biochemical and physiological importance of vitamins and minerals in the nutrition of man and his animals. Included is the diagnosis, prevention and treatment of both vitamin and mineral deficiencies.

245. Advanced Animal Breeding (3)
Prerequisite: A Sci 125, 155; permission of instructor. The application of genetic principles to the breeding of livestock and poultry. The study of applied selection and measurements of the results.

260. Seminar in Animal Science (1; max total 4)
Prerequisite: permission of instructor. Written and oral reports on selected areas of research on problems in animal science.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

299. Thesis (2–6; max total 6)
Prerequisite: see *Master's Degrees—Thesis Requirements.* Preparation, completion, and submission of an acceptable thesis for the master's degree.

IN-SERVICE COURSES (Agri)
(See *Course Numbering System*)

300. Topics in Agriculture (1–3)
Topics may require lab hours.

PLANT SCIENCE DEPARTMENT

FACULTY

Harry P. Karle, Department Chairman

Sayed A. Badr, Mahendra S. Bhangoo, Wayne E. Biehler, James R. Brownell, O. J. Burger, Allan A. Hewitt, Mahlon M. S. Hile, Gary M. Koch, Moh Leng Kok-Yokomi, Arthur J. Olney, Vincent E. Petrucci, David J. Redgrave, Gary L. Ritenour, Marinus Van Elswyk, Jr., John H. Weiler, Julian W. Whaley

DEPARTMENTAL PROGRAMS

The Department of Plant Science offers programs of study in the plant sciences, including all aspects of agriculture and applied biology related to the fields of agronomy, horticulture, ornamental horticulture, and viticulture. These include management and production factors as related to environment (soil, water and atmospheric effects, air pollution), cultural modifications and adaptations, protection against pests and diseases, storage and handling practices, utilization, marketing, and mechanization. Careers in modern scientific agriculture include positions in management, sales and service, research, teaching, and government agencies.

The courses offered in the disciplinary areas listed below provide the necessary background to prepare students for career objectives.

Plant Science (Plant) provides study in subject areas designed to complement the production disciplines in preparing students for work opportunities in soils, irrigation, propagation, breeding, and related areas.

Plant Protection (Plant) provides a broad selection of courses for training in physical and biological sciences, plant diseases, insects, weeds, agricultural inspection of food crops, and laws regulating food production. They are designed to prepare students for careers in agricultural chemical industries and private or governmental agencies dealing in crop care and crop protection. In addition, these courses provide a foundation for advanced study in preparation for careers as college teachers, extension specialists, and research scientists in experiment stations and industry.

Agronomy (Plant), including field crops and soil science, prepares students for specific crop production and general farming involving combinations of crops and livestock. They may also prepare students to qualify for employment opportunities in service and sales in seeds, pesticides, and fertilizers; agronomic research; gin management; farm management; and field work or research for county, state, and federal government agencies.

Horticulture (Plant) prepares students for general fruit farming, as managers of orchards, as inspectors in fruit processing plants, for supervisory positions in fruit packing plants, and for careers with county, state, and federal agencies.

Ornamental Horticulture (Plant) prepares students for the nursery industry, landscaping and grounds work, floral industry, and a variety of sales positions. The subject matter serves to enhance participation in farm and home landscape gardening and floral design as an avocation.

Vegetable Crops (Plant) prepares students for specialized farming in vegetable crops, processing and marketing, and regulatory inspection. The growth of the industry in the San Joaquin Valley offers a wide variety of employment opportunities. A vegetable garden is maintained with both fall and spring crops grown for student observation. Land is also available for vegetable projects.

Viticulture (Plant) is one of two instructional programs of its kind in the United States that prepare students for employment as viticulturists in such capacities as vineyard farmers, managers, and developers and positions in related fields of research, inspection, teaching, and packinghouse management for both fresh and dried grapes.

In addition, a selected variety of plant science courses will provide the necessary background for the following career objectives:

Natural Resources. Provides education in physical and biological sciences as they apply to the management of the renewable natural resources (soils, water, forests) designed for the student interested in an understanding of those parts of the environment managed by man or preparation for employment in soil conservation service, land use planning, waste disposal management, or graduate study.

Postharvest Physiology. Provides an education to prepare students for research work in the area of handling fresh fruits and vegetables for domestic as well as foreign markets.

Soil and Water Science. Provides an education in physical and biological sciences applied to soil-water-plant relationships designed for the student interested in farm management, irrigation system design, employment as fertilizer or sprinkler equipment salesman; preparation for governmental and industrial research, irrigation district management and planning, and graduate study.

Plant Science—Agricultural Business. A combination of courses designed to train students in the important features of plant science and agricultural economics.

The Department of Plant Science provides competent advisers for students pursuing career objectives in, *but not limited to,* the following areas:

Career Objective	*Suggested Major*
Research agronomy	Agricultural science
Farming: field crops, vegetable crops	Agricultural science
Fruit production, citrus farming	Agricultural science
Vineyard management	Agricultural business
Ornamental horticulture: landscape design, nursery management, turf management	Agricultural science or agricultural business
Viticulture	Agricultural science
Pomology: production, research	Agricultural science
Diversified farming	Agricultural education
Vegetable processing: frozen, fresh	Agricultural science or agricultural business
Irrigation	Agricultural science
Soil science	Agricultural science
Agricultural sales: plant nutrients, weedicides, insecticides, fertilizers	Agricultural business
Plant pathology	Agricultural science
Agricultural entomology	Agricultural science
Range or pasture management	Agricultural science
Research and development: plant by-products, mechanization, plant breeding	Agricultural science

Suggested Courses: The following core of courses is recommended for all students preparing for a career in one of the plant science disciplines: Chem 2A, 2B, 8; Bot 1 or 10, 104; Biol 120; Zool 1 or 10; Plant 59, 108, 131, 171, and 191.

Plant Science Laboratory Units: Theoretical instruction in plant sciences is enhanced through practical application at the various laboratory units. These units include the Orchard Laboratory (65 acres), Vineyard Laboratory (160 acres), Raisin Processing Laboratory, Post-Harvest Physiology Laboratory, Seed Processing Laboratory, Ornamental Horticulture Laboratory, Pasture and Field Crop Laboratory (950 acres), and Sprinkler Irrigation Test Laboratory.

SUPERVISED PROJECTS

The agricultural sciences program is unique in that it provides opportunity for students to gain both theoretical training and practical experience in farming while pursuing their university programs. The supervised project experience is designed to supplement the lecture and laboratory assignments, giving students greater opportunity to develop the practical side of farming. The university owns all of the necessary equipment for student projects. A rental fee is charged for use of equipment. Proficiency in operating equipment must be demonstrated before projects may be undertaken. Students sign contracts wherein they agree to perform the labor required in caring for their projects. The Agricultural Foundation serves as a banking agency in providing the money students may need for the project materials. Students must submit records on each enterprise to the Agricultural Foundation and share the profit or loss with the Foundation according to established percentages.

In the Department of Plant Science students have an opportunity for project participation, usually limited to five-acre plots. Under certain conditions, reduced or expanded acreage may

be allowed. Students prepare seed beds, plant, cultivate, irrigate, control insect pests and weeds, and harvest and market their crops, in addition to making all managerial decisions necessary to completion of the enterprise. Concurrent registration in Agri 106, *Enterprise Management,* required.

COURSES

Note: Active immunization against tetanus (available through the Student Health Service) is a prerequisite for registration in any laboratory course in agriculture and for any student employment on the University Farm.

PLANT SCIENCE (Plant)

10. Plant and Man (3)
Principles of plant structure, physiology, heredity, and environment in relation to growth, adaptation and management of crops. Techniques of research; future developments in plant sciences.

20. Plant Propagation (3)
Principles of sexual and asexual propagation; seed identification, seedage, cuttage, specialized plant structures for propagation; propagation media, rooting aids, structures. (2 lecture, 3 lab hours)

40. Water and Man (3)
Problem approach to man's need for and use of water; his management of water supply, allocation, use, disposal, and quality control for domestic, aesthetic, agricultural, industrial, power, navigation, and recreational uses.

80. Undergraduate Research (1–4; max total 4)
Open to freshmen and sophomores with permission of instructor. Exploratory work on a suitable agricultural problem in plant science.

140. Plant Breeding (3)
Prerequisite: Biol 120. Application of genetic and environmental principles to improvement of plants; heredity and variation in plants, effects of environmental factors on plant improvements, effects of self and cross fertilization, principles and results of selection and hybridization in plant improvement. (2 lecture, 3 lab hours)

160. Plant Science Seminar (1; max total 2)
Undergraduate seminar for advanced students in junior or senior year.

170T. Topics in Plant Science (1–4; max total 6 per discipline if no topic repeated. Same as Geog 114 section)
Prerequisite: junior standing. Plant science, agricultural climatology, agronomy, horticulture, and other associated areas. Topics may require lab hours.

180. Undergraduate Research (1–4; max total 4)
Open to juniors and seniors. Exploratory work on a suitable agricultural problem in plant science.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

PLANT PROTECTION (Plant)

21. Plant and Food Protection (3)
Origin, history, and evaluation of protective measures (chemical, biological, cultural) for the control of diseases, weeds, insects, and rodents in the field and around the home.

91. Beekeeping (3)
Fundamentals of beekeeping; manipulation of the hive; diseases and enemies of bees; nectar sources and pollination problems; production and marketing of honey and beeswax; laws and regulations pertaining to beekeeping. (2 lecture, 3 lab hours)

101. Plant Quarantine (3)
Prerequisite: Plant 121. The biological, economic, and administrative aspects of plant quarantine; study of the plant pests under federal and state quarantine laws.

111. Fruit and Vegetable Standards (3)
State and federal standards and regulations for packing, processing, and shipping fruits and vegetables.

121. Economic Entomology (3) (Same as Ent 106)
Prerequisite: Bot 10 or Zool 10. General and economic entomology; taxonomy of the principal orders of insects; life histories, habits, recognition, and control of the principal agriculture insect pests of the San Joaquin Valley. (2 lecture, 3 lab hours; field trips)

131. Weeds (3)
Prerequisite: Bot 10, Chem 2A. Weed control in California. Identification of common weeds. Fundamentals of preventive, cultural, biological, physical and chemical weed control methods. (2 lecture, 3 lab hours)

132. Agricultural Chemical Application (3)
Application techniques of agricultural chemicals: fertilizers, insecticides, herbicides, fungicides, nematocides, fumigants. Emphasis on effective and safe use of chemicals and on equipment calibration to ensure proper rate of application. (2 lecture, 3 lab hours)

151. Properties of Pesticides (3)
Prerequisite: Chem 8. Typical uses, modes of action, mechanisms of selectivity, environmental interactions, and user safety of insecticides, herbicides, fungicides, nematocides, rodenticides and plant growth regulators.

161. Plant Nematology (3)
Prerequisite: Zool 10. Morphology, life history, parasitic activity, and control of economically important nematodes with emphasis on plant-parasitic forms. (2 lecture, 3 lab hours)

171. Introduction to Plant Pathology (3)
Prerequisite: Bot 1 or 10. Study of causal agents, disease cycles, and control of diseases. Student participates in a faculty led discussion each week. (2 lecture, 3 lab-discussion hours)

171A. Diseases of Fruit Crops (2) (Former Plant 141)
Prerequisite or concurrently: Plant 171. A laboratory and field study of causal agents, diseases, and control of plant diseases afflicting major fruit, nut, and vine crops. (1 lecture, 3 lab hours)

171B. Diseases of Vegetable and Field Crops (2) (Former Plant 170T section)
Prerequisite or concurrently: Plant 171. A laboratory and field study of causal agents, diseases, and control of diseases afflicting major vegetable and field crops. (1 lecture, 3 lab hours)

171C. Diseases of Ornamental Crops (2)
Prerequisite or concurrently: Plant 171. A laboratory and field study of causal agents, diseases, and control of diseases afflicting ornamental crops. (1 lecture, 3 lab hours)

181. Soil Microbiology (3)
Prerequisite: Plant 171 or Microbiology. Isolation, population studies and biochemical activities of soil organisms related to organic matter and agricultural chemicals decomposition, including their effects on plant growth. (2 lecture, 3 lab hours)

191. Integrated Pest Management (3)
Prerequisite: Ent 106. Concepts and principles of integrated pest management. Insect and mite pest problems; sampling techniques; biology and ecology of major agricultural crop pests; integration of control measures for management of economic pests. (2 lecture, 3 lab hours)

AGRONOMY (Plant)

13. Agronomy (3)
Principles of crop production and survey of important cereal crops; wheat, barley, rice, oats, rye, cultural methods, uses and marketing in California and the San Joaquin Valley. (2 lecture, 3 lab hours; 2 Saturday field trips)

33. Row Crops (3)
Cultural methods, uses and marketing of major California and San Joaquin Valley row crops: corn, grain sorghum, sugar beets, beans, cotton, and other fiber and oil crops. (2 lecture, 3 lab hours)

43. Cereal Crops (3)
Prerequisite: Plant 13. Cereal crops common to the San Joaquin Valley; varieties and cultural practices, harvesting and marketing. (2 lecture, 3 lab hours)

113. Seed Production (3)
Prerequisite: Plant 13. Principles and practices in the culture of vegetable and field crops for seed production; harvesting, storage, yields, quality, seed laws, certification, seed cleaning, and marketing. (2 lecture, 3 lab hours)

123. Field Crop Technology (3)
Prerequisite: Chem 2A, 6 units of agronomy. Evaluation of factors that impart quality to fiber and oil crops, cotton, cereals, and other major California field crops. Relationship of crop quality to varieties, cultural practices, insects and disease, harvesting and storage. (2 lecture, 3 lab hours)

133. Forage Crops (3)
Prerequisite: junior standing. Forage crops of California; alfalfa, silage, irrigated pasture, range, related to livestock feed enterprises, cultural methods, uses and marketing. (2 lecture, 3 lab hours)

173. Range Improvement (3)
Prerequisite: junior standing. Identification of range plants; carrying capacity; methods of range improvement, grazing management, water development, rodents, fertilization, reseeding, brush removal; mountain range resources. (2 lecture, 3 lab hours; 1 Saturday field trip)

183. Advanced Agronomy (3)
Prerequisite: Bot 104, 6 units of agronomy. Relating the various production techniques and problems to the functions of agronomic crops. Practical problem solving; field experimentation; research paper evaluation.

VEGETABLE CROPS (Plant)

14. Vegetable Crops (3)
Culture of vegetable crops for market and home; importance, varieties, cultivation, harvesting, storing, and marketing; vegetable diseases and insect pests; vegetables grown commercially in the San Joaquin Valley. (2 lecture, 3 lab hours; 2 Saturday field trips)

114. Vegetable Field Crops (3)
Prerequisite: Plant 14. Mechanized production, harvesting, processing, packaging, and marketing of vegetables common to the western San Joaquin Valley; morphology and development; management peculiar to vegetable crops. (2 lecture, 3 lab hours; 3-day field trip)

154. Organic Gardening (3)
Prerequisite: Bot 10. Organic method of growing food. Demonstrations, applications in student gardens of principles of composting, crop rotation, mulching, sowing times, natural fertilizers, bio-control of pests and diseases. Emphasis on plant interactions with the environment pertaining to plant/human health. (2 lecture, 3 lab hours)

174. Physiology of Vegetable Crops (3)
Prerequisite: Plant 14, Bot 104. Principles of plant physiology related to factors associated with maturity, quality, pest resistance, development of new varieties, and production of vegetables. (2 lecture, 3 lab hours)

ORNAMENTAL HORTICULTURE (Plant)

15. Introductory Ornamental Horticulture (3)
Planting and maintenance of the garden; selection, planting, fertilization, and pruning of ornamental plants; lawn planting and care. (2 lecture, 3 lab hours)

25. Plant Identification (3)
Identification, habits of growth, culture and landscape use of trees, shrubs, vines, annuals, herbaceous perennials including tropicals, subtropicals, conservatory and house plants. (2 lecture, 3 lab hours)

35. Principles of Nursery Operation (3)
Prerequisite: Plant 20. Nursery structures; practice in production of ornamental, fruit, nut, annual, perennial, bedding, vegetable, and pot plants; retail and wholesale nursery practices. (2 lecture, 3 lab hours)

55. Introductory Landscape Design (3)
History and development in the field of landscape design. A study of the need for landscaping in modern man's environment. Consideration of landscaping practices for the modern home and their effect on the home microenvironment.

65. Floral Design (3)
Introductory floral design; principles and rules of design and color using plants as the media; influence of the Japanese and European schools; emphasis on modern American line-mass design. $10 materials fee required. (2 lecture, 3 lab hours)

75. Indoor Plants (3) (Former Plant 170T section)
Prerequisite: Bot 1 or 10. Identification, growth habits and techniques of growing indoor plants. Use of foliage and flowering plants for interior decoration. (2 lecture, 3 lab hours; 1-day field trip)

105. Arboretums and Botanical Gardens (2)
Arboretums and botanical gardens in the United States; purpose, design, and functions of arboretums and botanical gardens in the present environment. (1 lecture, 3 lab hours)

115. Landscape Graphics (3) (Former Plant 170T section)
Lettering techniques, styles, basic and special drafting equipment used by landscape architects. Graphic construction and techniques used in developing landscape plans, including symbols and rendering techniques. Site plan and elevation rendering; section and detail drawing in landscape architecture. (1 lecture, 6 lab hours)

125. Ornamental Trees (3)
Prerequisite: Bot 1, Plant 20. Trees grown in California for landscaping, shade and ornamentation; identification, habits of growth, cultural requirements, landscape, use. (2 lecture, 3 lab hours)

135. Flower Shop Management (3)
Prerequisite: Plant 65. Practices and principles in planning and managing a retail flower shop. Design of floral compositions for special occasions, weddings, and funerals, including the use of dried and permanent materials. $10 materials fee required. (2 lecture, 3 lab hours; 1-day field trip)

145. Floriculture (3)
The construction, operation, and management of greenhouses and other forcing structures. The greenhouse environment and its relationship to the production of commercial florist crop. (2 lecture, 3 lab hours; 1-day field trip)

155. Plant Hormones (3)
The effects of plant hormones and other growth regulating chemicals on the physiology, growth, and development of horticultural plants. (2 lecture, 3 lab hours)

165. Turfgrass Production and Management (3)
Production and maintenance of grass for lawns, public parks, public institutions, playgrounds, playing fields, golf courses, bowling greens; identification of turfgrasses and turfgrass seed. (2 lecture, 3 lab hours)

175. Nursery Management (3)
Prerequisite: Plant 15, 25. Design, construction and utilization of nursery structures; control of temperature and lighting; business organization. (2 lecture, 3 lab hours)

185. Landscape Design (4)
Prerequisite: senior standing. The analysis and solution of construction problems as they relate to design and site development. (2 lecture, 6 lab hours)

195. Advanced Floriculture (3)
Prerequisite: Plant 145. Practices and techniques in the production of major floricultural crops with emphasis on cut flowers, potted plants, and bedding plants. (2 lecture, 3 lab hours; 2-day field trip)

HORTICULTURE (Plant)

16. Fruits of the World (3)
Origin, history, nutrition value and world distribution of fruits; factors affecting growth, storage and handling, fruit processing, and marketing.

106. Fruit Species of California (3)
Prerequisite: junior standing. Fruit and nut species common to California; their adaptation and uses.

116. Fruit Production I (3)
Prerequisite: Plant 16. Adaptations of fruits to their environments; training, pruning, propagation, rootstocks; fundamentals of fall cultural practices. (2 lecture, 3 lab hours)

126. Fruit Production II (3)
Prerequisite: Plant 16. Fruit and vegetative development; pollination, nutrition, product utilization; fundamentals of spring cultural practices. (2 lecture, 3 lab hours)

136. Citriculture (3)
Prerequisite: Plant 16. History and botany of citriculture; species adaptation to our environment; fruit and vegetative development; cultural practices; production and economics. (2 lecture, 3 lab hours)

166. Postharvest Physiology of Horticultural Crops (3)
Prerequisite: Bot 104. Physiology of maturation, ripening, and senescence of tree fruits, grapes, and vegetables. Principles of handling fresh produce: harvesting, precooling, packaging, storage, and transportation. Control of postharvest problems. (2 lecture, 3 lab hours)

186. Orchard Management (3)
Prerequisite: Plant 116. Practices and principles in planning, establishing, and maintaining fruit and nut crops; new development analysis; survey of scientific literature. (2 lecture, 3 lab hours)

VITICULTURE (Plant)

17. General Viticulture (3)
History and origin of the grape industry; study of major grape producing countries; current trends in the raisin, table, wine, fresh juice and canning segments of the grape industry.

27. Raisin Production and Processing (3)
Prerequisite: Plant 17. Principles and practices of raisin production, dehydration and processing operations; utilization of the university vineyard and raisin processing laboratory. (2 lecture, 3 lab hours)

107. Viticulture I (3)
Prerequisite: Plant 17. Current status and future of grape industry; commercial classes of grapes; climatic and soil requirements for grape growing. Principles and practices of vineyard fertilization, cultivation, and pruning. (2 lecture, 3 lab hours)

117. Viticulture II (3)
Prerequisite: Plant 17. Planning of new vineyards. Principles and practices of propagation, planting, and training grapes. Morphology and physiology of the grapevine and response of the vine to growth regulators and other means of improving grape quality. (2 lecture, 3 lab hours)

127. Grape Varieties (3)
Prerequisite: Plant 17. Grape varieties common to California; rootstocks and species, identification, adaptability, use and acreage; taste testing fresh grapes.

177. Marketing Grapes and Tree Fruit (3)
Prerequisite: Plant 116 or 117, Ag Ec 31. Principles of marketing dealing specifically with grape and tree fruit, fresh and processed; marketing orders, modes of transportation, market news, competing countries, and the export market. (3-day field trip)

187. Advanced Viticulture (3)
Prerequisite: permission of instructor. Relating the various cultural techniques to the physiology of the grape vines; effect of these techniques on vine health and vigor; economics and management of vineyards. (2 lecture, 3 lab hours; 3-day field trip)

SOILS (Plant)

108. Soils (3) (Former Plant 130)
Prerequisite: high school chemistry or Chem 2A (Chem 2B or 2C concurrent). Physical and chemical properties of soils as a medium for plant growth; factors that influence soil formation; evaluation of current studies including food production, soil map interpretation, fertilizer use, soil's role in the biosphere. (3 lecture hours, 1 Saturday field trip)

108L. Soils Laboratory (1) (Former Plant 130L)
Prerequisite: Plant 108 (or concurrently). Physical, chemical and biological analysis. Interpretation of field and laboratory data. (3 lab hours)

118. Soil Classification and Survey (3) (Former Plant 120)
Prerequisite: Plant 108. Influence of environmental factors on soil development; description and identification of soil profiles and mapping, interpretation of survey data. (2 lecture, 3 lab hours)

128. Soil Management (3) (Former Plant 150)
Prerequisite: Plant 108. Factors affecting soil fertility, management of soils, attaining continuous optimum productivity. Physical, chemical, and field tests on soil productivity and crop management. (2 lecture, 3 lab hours; 1 Saturday field trip)

138. Soil Fertility (3) (Former Plant 152)
Prerequisite: Chem 2A–B and 3 units of soils. Evaluation of plant nutrient status of soils, chemistry of the nutrient elements, soil and plant tissue analyses and interpretation, fertilizer use. (2 lecture, 3 lab hours)

IRRIGATION (Plant)

59. Irrigation (3) (Former Plant 50)
Methods of irrigation adapted to the San Joaquin Valley; water requirements of various crops and methods of application. (2 lecture, 3 lab hours; 1 week end field trip)

119. Ornamental Horticulture Irrigation (3) (Former Plant 170T section)
Prerequisite: Plant 59, 108; senior standing. Design, installation, and operation of irrigation systems used for ornamental plants, turf areas, nurseries, and greenhouse operations. (2 lecture, 3 lab hours; 1 Saturday field trip)

129. Field Crop Irrigation (3) (Former Plant 170T section)
Prerequisite: Plant 59 or 108; senior standing. Design, installation and operation of irrigation systems for field, vine, and tree crops. (2 lecture, 3 lab hours; 1 Saturday field trip)

GRADUATE COURSES

(See *Course Numbering System–Definitions and Eligibility*)

AGRICULTURE (Agri)

200. Biometrics in Agriculture (3)
Prerequisite: Math 11; permission of instructor. Statistical principles in agricultural research. Emphasis on collection, summarization of data and the design, conduct, analysis, and interpretation of experiments.

220. Readings in Agriculture (2–3)
Prerequisite: permission of instructor. Individually directed readings in a field of special concern to the student's graduate program; appropriate reports and evaluation required.

250T. Topics in Plant Science (3; max total 12)
Prerequisite: upper division plant science appropriate to study topic, permission of instructor. Advanced studies in a given area: crop physiology, plant breeding, plant pathology, plant nutrition, or economics. Topics may require lab hours.

251. Pesticides (3)
Prerequisite: Bot 10, Chem 8. Modes of action of pesticides. Absorption and translocation of pesticides. Mechanisms of pesticide specificity. Interaction with soil and soil microbes. Methods of pesticide investigations (biological assay, instrumental detection, chemical assay, chemical and microbial degradation). (2 lecture, 3 lab hours)

252. Plant Nutrition (3)
Prerequisite: Bot 104. Mineral requirements of plants; the acquisition and translocation of nutrients by higher plants and the role of nutrient elements in plant development. (2 lecture, 3 lab hours)

254. Plant Hormones and Regulators (3)
Prerequisite: Bot 104, Chem 8. History of discovery, chemical nature, extraction, and identification of naturally occurring hormones. Physiological and biochemical effects of plant growth substances and hormones. Mechanism of action of auxins, gibberellins, cytokinins, inhibitors (ABA), ethylene, and other hormones. Agricultural impacts of growth regulators. (2 lecture, 3 lab hours)

255. Advanced Plant Breeding (3)
Prerequisite: Plant 140. Principles and techniques of plant improvement, breeding methods, combining ability, sterility systems, quantitative genetic analysis, heritability estimates, experimental designs for plant breeding.

256. Plant-Water Relationships (3)
Prerequisite: Bot 104. Physicochemical properties of water and solutions; movement of water, solutes, and growth regulators in plants; study of moisture-sensitive periods of various crops; factors affecting water absorption and retention.

257. Physiology of Cultivated Crops (3)
Prerequisite: Bot 104. Plant cell structure and function. Response of cultivated plants to the environment. Physiology and hormonal control of flower induction, fruit set, and development. Review of pertinent current publications.

258. Plant Disease Control (3)
Prerequisite: Plant 171. Principles of plant disease control; agricultural chemicals used in plant disease control. Methods and theory used in application of chemicals, biological control, and breeding for resistance. Insight into industrial research and development of control measures. (2 lecture, 3 lab hours)

270. Seminar in Plant Science (1; max total 4)
Prerequisite: permission of instructor. Reviews and reports on recent literature and problems in agronomy, horticulture, irrigation, soils, ornamental horticulture, or viticulture and enology.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

299. Thesis (2–6; max total 6)
Prerequisite: see *Master's Degrees-Thesis Requirements.* Preparation, completion, and submission of an acceptable thesis for the master's degree.

IN-SERVICE COURSES (Agri)
(See *Course Numbering System*)

300. Topics in Agriculture (1–3)
Topics may require lab hours.

HOME ECONOMICS DEPARTMENT

FACULTY

Ratana S. Newsome, Interim Department Chairman

Ann S. Bauer, Richard D. Berrett, Shirley J. Bowden, N. Joanne Caid, Nina J. Dilbeck, David E. Goldbloom, Frances H. Harkins, Patricia L. Hennings, Carla A. Kalmbach, Katherine J. Karikka, Michele M. Kilner, Elena F. Kissick, Vivian Y. Kunimitsu, Mary D. Littwin, William C. Rice, Laurence E. Smardan, Alice J. Sollie, Louise P. Turner

DEPARTMENTAL PROGRAMS

The Home Economics Department offers programs of study leading to a major and a minor in home economics for the bachelor of arts degree and a master of science degree. The Home Economics program is accredited by the American Home Economics Association. The programs of study, major/minor in home economics or option in dietetics and food administration, include course work in the various areas of the home economics discipline: Child Development and Family Relations, Clothing and Textiles, Food and Nutrition, Consumer Sciences and Management, Housing and Interior Design.

The Home Economics Department has a cooperative relationship with The Merrill-Palmer Institute. Students may undertake a period of undergraduate or graduate off-campus study at Merrill-Palmer and these courses will apply toward graduation at CSUF.

Career opportunities for home economists in business are available in the areas of child development and family relations, fashion design and merchandising, food services and nutrition, consumer sciences and management, and housing and interior design. Students may qualify for these career opportunities by selecting appropriate electives in their special area of interest. Students should consult with a departmental advisor in selecting appropriate courses for their special areas of interest.

Appropriate selection of courses offered in the disciplinary areas listed below will provide the necessary background to prepare students for careers as home economists.

Child Development and Family Relations courses focus on individual and family development through the life cycle with analysis of the forces affecting personal and family development and relationships. Employment possibilities include working with individuals and/or families in a variety of settings, including teachers in child care programs; cooperative extension; service, social and community agencies.

Clothing and Textiles courses prepare students for employment opportunities in business; extension; government and research laboratories; merchandising; quality control; or textile and apparel design.

Food and Nutrition courses prepare students for careers in research, product development, consultant service, sales management, public relations, and food service.

Consumer Sciences and Management courses focus on the family as a social and economic unit and prepare students for careers as consumer advisors with banks and finance companies, home service advisors, consumer representatives in business, and consumer relations specialists. Other opportunities include work in product testing and research, debt counseling, government agencies, cooperative extension, communications, and equipment consultant services.

Housing and Interior Design courses prepare students for employment as independent interior designers, design associates, or designers with architectural firms or retail stores. Employment may involve sales and/or design of commercial or residential furniture, accessories, floorcoverings, window treatments and wallcoverings. Designers work as space planners, consultants, specifiers and suppliers.

The *Dietetics and Food Administration* option prepares students for admission to internship programs and careers in food service management, dietetic consultant service, hospital dietitian, cooperative extension service, community nutrition, and in foreign service. The program meets Plan IV of the American Dietetic Association.

The *Home Economics (Teacher Education)* approved program for the single subject credential prepares students to teach in public intermediate and secondary schools and ROP and ROC vocational home economics; to serve as business consultants; and to work in cooperative extension service and continuing education.

COURSES

HOME ECONOMICS (H Ec)

1. Contemporary Home Economics (2)
Home economics in America; past and present professional needs, successes and weaknesses; future of the field. Academic preparation for a variety of occupations; participation in the worlds of work, marriage, family, and community.

10. Management for Effective Living (2)
Not open to home economics majors and minors. Human relationships, housing, family finance, consumer problems, meal management and nutrition as they relate to individual and family living.

20. Beginning Textiles (3)
Fiber classification; methods of production; fabric construction; mechanical finishes. Selection, use, and care of fabrics in relation to consumer needs.

22. Fashion Analysis (1)
Factors influencing trends in dress. Selection of color, line and form related to individual needs.

24. Clothing Construction I (3)
Pattern and fabric selection; basic construction techniques, use of commercial patterns; application of these factors to consumer buying. Color line and design in apparel selection. (6 lab hours)

26. Clothing Construction II (3)
Prerequisite: H Ec 24 or experience in clothing construction. Individualization of basic and designer patterns: alteration principles; techniques of handling new fabrics. Selection of color, line and form related to individual and family needs. (6 lab hours)

32. Preparation for Marriage (3)
Analysis of various motivations for intimate interpersonal relationships, particularly those which lead to marriage; attitudes, values and goals related to mate selection.

39. Child Development (3)
Physical, intellectual, social and emotional development of the child from conception through adolescence, in the cultural context of the family approached from an interdisciplinary perspective.

50. Basic Foods and Nutrition (3)
Not open to students with credit in H Ec 10 (Basic Food Study). Introduction to principles of food preparation and characteristics of a nutritionally adequate diet. (2 lecture, 2 lab hours)

52. Dietetics (3)
Elements of nutrition and diet in disease.

54. Elementary Nutrition (3)
Elementary knowledge of high school chemistry and biology strongly recommended. Scientific principles underlying normal nutritional requirements.

70. Housing and Interior Design (3)
Concurrent enrollment in H Ec 71 recommended. Social, psychological, economic, and aesthetic aspects of housing selection and interior design. Integration of design principles; creative expression, and consumer information pertaining to living space.

71. Interior Design Laboratory (1; max total 3)
Prerequisite: H Ec 70 or concurrently. Introductory experience in interior design processes. Studio work: floor plans, spatial arrangements, graphics and design presentations, two and three dimensional design techniques. (2 lab hours)

103. Individual, Family and Near Environment (3) (Former H Ec 3)
Analysis of concepts in the area of food, clothing and shelter that are basic to the rapid changes in our society. Values and goals that are operative in interrelationships of three basic family needs are explored.

105. Decision Making and Problem Solving (3) (Former H Ec 5)
Management concepts related to individual careers and family living. Analysis of values, goals, and standards and their relationship to decision making in the allocation of human and nonhuman resources with case studies in problem solving.

107. Applied Color and Design (3) (Former H Ec 7)
Introduction to the application of color and design to all areas of Home Economics; properties of color, simple graphic methods, and three dimensional design. Studio work and discussions. (6 lab hours)

108. The Individual and Family Interaction (3) (Former H Ec 8)
Individual and family development and family interaction throughout the family life cycle. Diversity of family life styles and forces that influence family relationships and the quality of life will be among the topics examined.

110. Consumer Buying Strategies (3) (Former H Ec 112T section)
Prerequisite: junior standing. Emphasis on consumer buying strategies, sources of information relevant to consumer decision making and the activities and problems of buying goods and services in the marketplace.

111. Household Equipment (3)
Selection, methods of operation, and care of household appliances; testing electrical equipment for efficiency and cost of operation; kitchen planning, arrangement of work, preparation and serving units. (2 lecture, 2 lab hours)

112T. Topics in Home Management, Equipment, and Family Economics (1–4; max total 12 if no topic repeated)
Topics relating to home management, equipment and family economics. Some topics may have labs.

113. Economics for Consumers (3)
Consumer spending related to social and psychological factors influencing consumers. Legislation that protects and relates to the consumer on local, state, and federal level.

114. Home Management Practicum (3)
Prerequisite: H Ec 54, 105, 113, 115, and 117 (may be taken concurrently). Integrated experience in various phases of home economics using MATCHE (Management Approach to Teaching Consumer Homemaking Education) modules. (2 lecture, 2 lab hours)

115. Family Finance (3)
Financial activities of the individual and family; planned spending, bank services, consumer credit, insurance savings, investments, taxes; financial aspects of home ownership and estate planning.

117. Aspects of Aging (3) (Former H Ec 112T section)
Study of the individual during the later stages of the life cycle with emphasis on the special problems of the elderly in management of personal and community resources.

118. Consumer and Family Law (3) (Former H Ec 112T section)
A "law-for-the-layman" course. Broad coverage of individual and family rights in the areas of domestic relations, marriage, divorce, parenting, abortion, consumer protection, property rights, liability and court proceedings

119. Community Resources and Family Management (3) (Former H Ec 112T section)
An exploration of available community resources and facilities and the development of an awareness of how they relate to effective family and individual management.

120. Social and Psychological Aspects of Clothing (3)
The psychological, social, and economic aspects of clothing as related to the individual, family, and society. An understanding of fashion, its development and distribution.

121. Tailoring (3)
Prerequisite: H Ec 22, 24, or 26. Tailoring a suit or coat using various techniques. (6 lab hours)

122T. Topics in Clothing and Textiles (1–4; max total 12 if no topic repeated)
Topics relating to clothing, textiles and fashion merchandising. Some topics may have labs.

123. Pattern Design (3)
Prerequisite: H Ec 22, 24, and/or 26. Application of flat pattern method to apparel design. (6 lab hours)

124. Advanced Textiles (3)
Prerequisite: H Ec 20, 107; Chem 2A–B or 2A–C. Fabric finishes; methods of coloring and decorating fabrics; fabric analysis through laboratory testing and experiments; and hand weaving techniques. (2 lecture, 2 lab hours)

126. Personalized Clothing Design (3)
Prerequisite: H Ec 22, 24 or 26, 123. Creative design through the medium of flat pattern and/or draping. Social implications of clothing. (6 lab hours)

127. Fashion Merchandising (3) (Former H Ec 122T section)

Prerequisite: H Ec 20, 107. Aspects of fashion marketing and fashion related careers. Resource personnel and field trips. Expenses for required off-campus visits are incurred by the student. (2 lecture, 2 lab hours)

128. Fashion Display Techniques (3) (Former H Ec 122T section)
Prerequisite: H Ec 107, 127. Design fundamentals applied to the aesthetic arrangement of promotional and institutional displays in the retail store. Resource personnel and local field trips. Expenses for required off-campus visits are incurred by the student. (2 lecture, 2 lab hours)

131. Family Relationships (3)
Interpersonal relationships within the family; needs, values, and goals of the family at various stages of its life cycle.

132T. Topics in Child Development and Family Relationships (1–4; max total 12 if no topic repeated)
Prerequisite: H Ec 39 and/or 131. Topics relating to child development and family relationships. Some topics may have labs.

133. Children and Family Crises (3)
Prerequisite: H Ec 39, 131, Psych 10, Soc 1 or Anth 2. Crises experienced by children and their families; separation, dissolution, divorce, remarriage and the consequent formation of step-relationships, death, alcoholism, and drug abuse included.

134. Cultural Aspects of Child Rearing (3)
Prerequisites: H Ec 39, 131, Psych 10 and Soc 1 or Anth 2. Cultural and subcultural aspects of child rearing; survey of research studies and findings on cultural child-rearing attitudes and practices.

135. Contemporary Parenting (3) (Former H Ec 132T section)
Prerequisite: H Ec 39, 131. Examination and critique of several contemporary theories of effective adult/child relationships.

136. Middle Childhood and Adolescence (3) (Former H Ec 162T section)
Prerequisite: H Ec 39. Family influences on the physical, intellectual, social and emotional development of children in middle childhood and adolescence. Emphasis on the search for identity, heterosexual development, vocational choice and interpersonal relations.

137. Infant in the Family (3) (Former H Ec 132T section)
Prerequisites: H Ec 39 or 131. A functional and theoretical study of the infant's physical, emotional, social and intellectual development during the first two years of life within the family. (2 lecture, 2 lab hours)

139. Child Development Practicum (3)
Prerequisite: H Ec 39. Observation of and planning a variety of experiences for young children, understanding the child as a member of his family and as he relates to his peers and adults in the laboratory setting. (2 lecture, 3 lab hours)

148. Occupational Home Economics Program Planning (3) (Former H Ec 149T section)
Required for credential candidates. Individualized modules concerning the design, development, implementation and evaluation of home economics related occupational programs.

149T. Topics in Home Economics Education (1–3; max total 15 if no topic repeated; max 3 in one area)
One course in each area required for credential candidates. Topics include Consumer Science Resources; Organization and Management of Food and Nutrition; Clothing and Textiles; Housing and Interior Design; and Child Development and Family Relations. Some topics may have labs.

150. Advanced Foods (3)
Prerequisite: H Ec 50 and Chem 2A–B or 2A–C. An investigation of food preparation principles emphasizing characteristics of high-quality food and evaluation techniques. (1 lecture, 4 lab-demonstration hours)

151. Experimental Food Study (3; max total 6)
Prerequisite: H Ec 150, Chem 2A-B or 2A-C and Biol 10 or 20. Basic principles, procedures, sensory and objective evaluation methods necessary to organize professionally and carry through a food research project. Lectures, demonstrations, individual research and field trips. (1 lecture, 4 lab-discussion hours)

153. Advanced Nutrition (3)
Prerequisite: H Ec 54, Chem 2A–B or 2A–C, Biol 10. Present knowledge of the metabolism of carbohydrates, fats, proteins, vitamins and minerals. Dietary study and evaluation.

154. Nutrition in Disease (3)
Prerequisite: H Ec 153. Nutritional aspects and dietetic treatment of disease. (2 lecture, 2 lab hours)

155. Food Service Management I (3)
Prerequisite: Mgt 110A, permission of instructor. Organization and operation of food services; management principles; food service personnel; food cost control; record keeping.

156. Food Service Management II (3)
Prerequisite: H Ec 150, 155, 160, permission of instructor. Work simplification; plant layout; selecting, procuring and maintaining equipment and furnishings for food service units. Menu planning and quantity food purchasing.

158. Food Service Management III (4)
Prerequisite: H Ec 156. Quantity food production and management; food merchandising and catering. (2 lecture, 4 lab hours)

159. Institution Experience (3)
Prerequisite: H Ec 154, 155, 156, permission of instructor. Supervised work experience in hospital dietary departments. (1 lecture, 4 lab hours)

160. Meal Management (3)
Prerequisite: H Ec 50. Principles of foods and nutrition applied to meal planning, preparation, and service. Economic, aesthetic, nutritional, and managerial aspects of meal planning. (2 lecture, 2 lab hours)

161. Scientific and Creative Food Experiences (3)
Prerequisite: H Ec 39. Emphasis on structuring experiences in food through scientific and creative activities.

162T. Topics in Food, Nutrition and Dietetics (1–4; max total 12 if no topic repeated)
Prerequisite: H Ec 50, 54. Topics relating to food, nutrition and dietetics. Some topics may have labs.

164. Child Nutrition (3)
Prerequisite: H Ec 39 and 54. Prenatal nutrition; nutritional requirements during different periods of growth; malnutrition and mental development; improving nutritional status of children.

165. Cultural Foods (3)
Prerequisite: H Ec 50, 54, Anth 2 recommended, permission of instructor. Dietary and nutritional practices in different cultures, as influenced by cultural and economic conditions. (2 lecture, 2 lab-demonstration hours)

166. Community Nutrition (3) (Former H Ec 162T section)
Prerequisite: H Ec 54 and 154. Principles and practices of nutrition as applied to the community at large.

167. Nutrition and Aging (3) (Former H Ec 162T section)
Prerequisite: H Ec 54. Current issues, nutrition problems and needs of the aging; effects of all aspects of aging on nutrition; nutrition program planning and evaluation.

168. Drug-Induced Nutritional Deficiencies (3) (Former H Ec 162T section)
Prerequisite: H Ec 54. Drug-nutrient interactions; drug-induced nutritional disorders and nutrient deficiencies; dietary improvement.

169. Nutrition and the Consumer (3)
Prerequisite: H Ec 50, 54, 113. Consumer's viewpoint on nutrition and food choices; factors influencing consumer's food choices; new approaches in nutrition education for the consumer.

170. Contemporary Interior Design (3)
Prerequisite: H Ec 70, 71; and architectural drawing. Emergence and development of contemporary furniture and interior accessories. Major designers and their contributions to interior environments. Lab includes design of and critique of contemporary residential and non-residential interiors. (2 lecture, 2 lab hours)

171. Housing and Society (3)
Housing requirements of individuals, families, and special groups. Analysis of human factors related to the design of housing and neighborhoods. Examination of current social problems related to housing. (2 lecture, 2 lab hours)

172T. Topics in Housing and Interior Design (1–4; max total 12 if no topic repeated)
Prerequisite: H Ec 70. Topics relating to housing and interior design. Some topics may have labs.

173. Interior Design Tours (3) (Former H Ec 172T section)
A sampling of architecture and interior space. Tours include northern, central, and southern California architecture. Residential and contract showrooms visited. Expenses for required off-campus visits incurred by the student. Students may anticipate transportation charges up to $65. (6 lecture-lab hours)

174. Contemporary Architecture and Housing (3)
Emergence of contemporary architecture, forces and architects responsible; emphasis on human factors in designed space and recent housing alternatives.

175. History of Architecture and Furnishings (4)
Prior course in Art History recommended. Styles of architecture and furnishings from prehistoric times to the present; sociological, physical, economic and religious influences.

176. Interior Design Materials (3)
Prerequisite: H Ec 20. Interior design materials available for the residential and commercial market. Consumer and specifier considerations: production, distribution, installation, evaluation and use. Lecture, small group research and field trips. (2 lecture, 2 lab hours)

177. Professional Interior Design Practices (3)
Prerequisite: H Ec 70, 176 (or concurrently) and Acct 3. Basic principles, procedures and office systems necessary to professionally organize and carry through a creative interior design project from the original client contact to final billing and collecting. (1 lecture, 4 lab hours)

178. Applied Interior Design (3; max total 6) (Former H Ec 173)
Prerequisite: H Ec 70, 71, 107, 170, or 175, IA 42 or concurrently. A series of creative problems in residential and non-residential interior design. Emphasis on integration with architecture and allied arts. Field trips, design projects, and critiques. (6 lab hours)

179. Interior Design Exhibits (2–3; repeatable for max total 5) (Former H Ec 172T section)
Prerequisite: permission of instructor. Provides a structure for students to participate in a competitive design show. Course can be taken for 2 units (as an assistant) or 3 units (as a show participant).

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

192. Readings and Conference (1–3)
Prerequisite: Permission of instructor. Individually directed readings; reports and evaluation. (hours arranged)

193. Supervised Work Experience (1–6; max total 6)
Prerequisite: second semester junior standing and permission of instructor. Supervised work experience in business and industries, and Federal and Community Service Agencies in all related areas of Home Economics; weekly conference.

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

200. Research Methods in Home Economics (3)
Prerequisite: graduate standing. Methods, techniques of research; locating and formulating problems; collection and interpretation of data; preparation of research reports; analysis of professional literature.

210T. Seminar in Consumer Science and Family Management (3; max total 12 if no topic repeated) (Former H Ec 260T section)
Prerequisite: Permission of instructor. Analytical study of problems pertaining to identifiable segments of the populace; intercultural, socio-economic, age level and ethnic and community groups. Topics such as: Aspects of Aging, Cultural Aspects of Management, Home and Community Relationships, Ergonomics—Aspects of Work Simplification.

220T. Seminar in Clothing, Textiles and Fashion Merchandising (3; max total 6 if no topic repeated) (Former H Ec 281T section)
Prerequisite: H Ec 200. Research and analysis of historical material and contemporary developments in clothing, textiles and fashion merchandising. Topics may include aspects of historical costume and textiles, technological developments in textiles, and trends in purveying fashion. Some topics may have labs.

230T. Seminar in Child Development, Family Relations (3; max total 12 if no topic repeated) (Former H Ec 281T section)
Prerequisite: Permission of instructor. Research, methodology, and issues in family relationships and child development. Course considers seminars in the following: Fatherhood: The Parent Role; Family in Transition, Relational Patterns in Marriage and Family; The Family: Middle and Later Years. Some topics may have labs.

240. Seminar in Consumer Home Economics Education (3) (Former 281T section)
Prerequisite: permission of instructor. Discussion and application of research in teaching consumer and vocational home economics; development, use and evaluation of strategies and resource materials in applying principles and problem-solving techniques.

250T. Seminar in Food, Nutrition and Dietetics (3; max total 6 if no topic repeated) (Former H Ec 280T section)
Prerequisite: H Ec 200. Recent developments in the area of food, nutrition and dietetics. Topics include: history of nutrition, current research in food and/or nutrition, the nutritionally disadvantaged family, health foods and herbs, nutrition-related health problems and international nutrition. Some topics may have labs.

270T. Seminar: Housing and Interior Design (3; max total 12 if no topic repeated) (Former H Ec 281T section)
Prerequisite: permission of instructor. Research, methodology and issues in the areas of design and the near environment will be explored each term. Seminar topics may include the following: The Near Environment, Design for Human Affairs, Future Shelter, Life Styles and Design. Some topics may have labs.

281T. Seminar in Home Economics Education (3; max total 6 if no topic repeated)
Prerequisite: H Ec 200. Applied research; current and future trends of vocational, career, and consumer Home Economics Education. Topics include: Administration, Evaluation, and Supervision in Home Economics; and Home Economics in Higher Education. Some topics may have labs.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

292. Readings in Home Economics (2–3; max total 6 if no topic repeated)
Prerequisite: H Ec 200, and permission of instructor. Individually directed readings in a field of special concern to students in the graduate program; appropriate reports and evaluations required; individual conferences, no formal class meetings.

299. Thesis (2–6; max total 6)
Prerequisite: see *Master's Degrees —Thesis Requirement.* Preparation, completion, and submission of an acceptable thesis for the master's degree.

IN-SERVICE COURSES

See *Course Numbering System*

380. Topics in Home Economics (1–3; max total 9 if no area repeated)

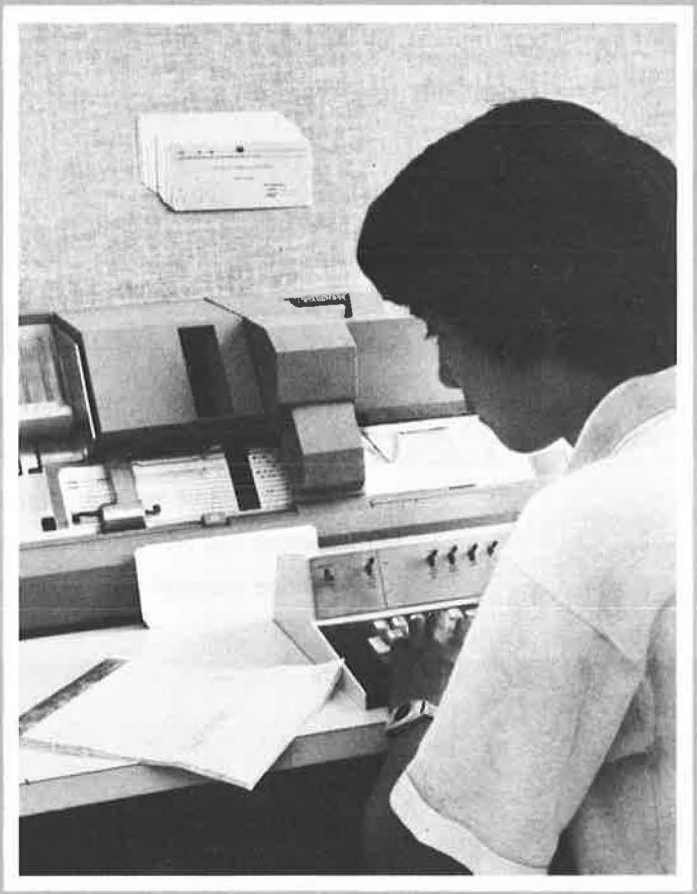


Business student loading magnetic tape for the processing of student programs and administrative reports.

SCHOOL OF BUSINESS AND ADMINISTRATIVE SCIENCES

183

Accounting and Quantitative Studies Department
Finance and Industry Department
Management and Marketing Department
Office Administration Department



Business student processing information on data cards for individualized statistical research.

SCHOOL OF BUSINESS AND ADMINISTRATIVE SCIENCES

Kelly J. Black, Interim Dean

Assistant Dean ..... Allen M. Agnew
Director, Bureau of Business Research and Service ..... Gerald O. Johnston
Director, Graduate Program ..... Joan G. Schroeder

Department	*Chairman*
Accounting and Quantitative Studies	Clayton R. Tidyman
Finance and Industry	Paul M. Lange
Management and Marketing	John H. Kruger, Jr.
Office Administration	Berle Haggblade

DEGREES OFFERED: BS, MS, MBA

MINORS: Administration of the Performing Arts, General Business, Office Administration

OPTIONS:

Accounting
Agribusiness
Business Economics
Computer Applications and Systems
Finance
General Administration
Health Care Management
Insurance
Legal Environment of Business
Marketing
Office Administration
Personnel and Industrial Relations
Quantitative Analysis
Real Estate and Urban Land Economics
Transportation and Physical Distribution Management

SCHOOL PROGRAMS

The School of Business and Administrative Sciences prepares students for careers in the business and professional world and for teaching in secondary schools and community colleges. At the undergraduate level it offers a program in business administration leading to the bachelor of science degree. The program is designed to provide a knowledge of the principles, procedures and practice of business management; an understanding of the role and responsibility of business in present day society; a foundation of basic background materials for participation in the American enterprise system; and the proficiency in technical skills and information required by our complex business society.

At the graduate level the master of business administration and master of science degrees are offered. The master of business administration degree has been developed for those students who wish advanced education of a broad nature encompassing many disciplines in the field of business. It is designed to prepare students for careers in management of business enterprises and other organizations, including public corporations, educational systems, and nonprofit institutions. The master of science degree has been developed for those students who wish to specialize in a particular field of business, such as computer science, marketing, finance, personnel, international business, or other areas. Either degree may be used to deepen the competence of teachers of business subjects in secondary schools and community colleges.

In addition to preparing students for business careers the school offers real estate courses which fulfill the statutory course requirement needed to qualify for the real estate broker examination (Fin 180, 181, 183, B A 184). The bachelor of science degree in business is also considered appropriate and desirable for prelegal students.

The school offers programs for students planning to work toward a teaching credential with a major in business. Business teacher education students should consult the appropriate advisers in the Schools of Business and Administrative Sciences and Education as early in their programs as possible. Students wishing to combine the credential with a master's degree should also consult the Director of the Graduate Program of the School of Business and Administrative Sciences and the Dean of the School of Graduate Studies.

The School of Business and Administrative Sciences is a member of and is accredited by the

American Assembly of Collegiate Schools of Business at both the graduate and undergraduate levels.

BUREAU OF BUSINESS RESEARCH AND SERVICE

The Bureau of Business Research and Service is organized within the School to meet the research and service needs of the San Joaquin Valley business community and to provide ancillary services to the students and faculty of the School. It is a member of and accredited by the Association for University Business and Economic Research. The Bureau compiles, interprets, and publishes statistics and studies on the local and regional economy. It facilitates research in appropriate areas by the students and faculty; seeks cooperative arrangements with outside organizations for conducting specific research and service projects; and arranges and conducts executive development and other programs as part of the School's responsibility to provide continuing education in business.

BUSINESS ADVISORY COUNCIL

Twenty-five leading business executives of the San Joaquin Valley serve as an advisory body to the School of Business and Administrative Sciences, helping to keep the program attuned to the changing needs of business. The Council meets periodically with faculty and its members participate in a number of school functions. Members of the Council are available to faculty and students for consultation and as speakers. The Council sponsors the Executive-in-Residence Program, an Annual Awards Dinner for graduating students, and other events which benefit the School.

MANAGEMENT SEMINARS

Each year, a local business firm brings its top management to the School for a series of seminar type meetings with students. The contact between students and executives allows students to develop a fuller perspective of the managerial function. Arrangements are managed by the Inter Business Council, composed of representatives of professional business student organizations. A Forecast Luncheon featuring a nationally recognized business executive or economist is held annually in conjunction with the local business community.

MANAGEMENT BLOCK PROGRAMS

Management Block Programs, a unique feature of the School of Business and Administrative Sciences, are planned to bridge the gap between the classroom and the outside world. There are two programs: Management 101, Basic Management Block and Management 102 A-B-C-D, Advanced Management Block. Each course meets 12 hours per week for 12 units of credit. Students engage in a variety of group projects and are graded on their performance rather than on tests or examinations. Information is gathered from local businesses which the students analyze in research projects and classroom presentations. More than 45 business and community leaders are invited as guest speakers each semester.

Either or both of the Block Programs may be substituted for some requirements. The basic Management Block substitutes for four basic courses required in all business majors. Students majoring in other fields may use credits to partially meet requirements for a minor in Business. Advanced Management Block credits can be substituted for elective and some required course credits. Consult the Assistant Dean, School of Business and Administrative Sciences, for details.

OTHER SPECIAL FEATURES

A number of internships in local firms and agencies are available. Units are granted the business interns and some also carry stipends.

The School works with the Internal Revenue Service in bringing the VITA (Volunteer Income Tax Assistance) program to the Fresno community. Students are trained to assist low-income citizens with their tax returns. Students receive credit from the School for this voluntary service. The School also works with the Small Business Administration and SCORE (Service Corps of Retired Executives) to improve the managerial performance of new or existing minority-owned enterprises. The School cooperates with the student operated San Joaquin Valley Export-Import Association which advises, conducts research, and makes market surveys. Courses are offered in international business. Graduate assistantships in the field are available.

Opportunity is afforded students through classes and student organizations to become acquainted with business and industrial organizations in California and the San Joaquin Valley. Effort is made to adapt the program to meet the particular needs of the San Joaquin Valley.

Business and industrial concerns in Fresno and vicinity cooperate to make possible practical application of the theory studied in the classroom through field trips and guest lecturers in classes. The School sponsors professional organizations for both men and women. Convocations are held annually, bringing to the campus a well-known leader to discuss some scholarly aspect of business. This blending of the practical and theoretical is designed to insure vitality of instruction and breadth of vision.

UNDERGRADUATE PROGRAM

High School Preparation

High school preparation for business majors should include the typical college preparatory courses in social sciences, natural sciences, English, and mathematics through intermediate algebra.

Community College Preparation

It is recommended that students taking their first two years of study at a community college complete, if possible, general education requirements, including the appropriate courses in behavioral sciences, speech, English composition, mathematics, and a year of principles of economics. The following business courses are recommended: principles of accounting, one semester of data processing, one semester each of business law and business statistics. Other transfer business courses taken in community colleges are accepted as elective credit. Transfer students should see the School of Business and Administrative Sciences evaluator prior to registering for business classes.

BACHELOR OF SCIENCE DEGREE IN BUSINESS ADMINISTRATION REQUIREMENTS

All students seeking a bachelor of science degree in business administration must complete a minimum of 124 units. A uniform set of 33 units constitutes the business core and is required in all options. Students with a major in business must complete a minimum of 39 upper division business units. The student must complete a total of 55 units outside the School of Business and Administrative Sciences, including the 40-unit general education course requirements for a degree. Within these 55 units the following specific requirements must be met: 3 units each of Economics 1A and 1B, English composition and speech. Business majors must also meet the School's behavioral science requirement by completing 9 units from one or more of the following: psychology, sociology, cultural anthropology, ethics (BA 101 or Philosophy 120), Geography 3.

Each student must complete course work for one of the various options in the School of Business and Administrative Sciences. See departmental listing of options.

Core Requirements (Required of all business majors)

The 33 unit business core provides students with a general background commonly acknowledged as furnishing the basis for effective management of business enterprises. The following courses (in alphabetical order) are required of all business majors.

	Units
Accounting 4A–4B Financial and Managerial Accounting Principles and Systems	6
Business Administration 18 Business and the Legal Environment	3
Finance 133 Business Finance	3
Management 110A–110B Administration and Organizational Behavior	6
Management 124 Operations Management	3
Management 187 Seminar in Business Strategy	3
Marketing 100 Principles of Marketing	3
Quantitative Methods 65 Statistical Analysis I	3
Quantitative Methods 103 Statistical Analysis II	3
	33

BUSINESS MINORS

Administration of the Performing Arts

Provides an opportunity to study the economic and business problems of the arts, to explore their future implications, and to supply the necessary tools for administrative decision making.

	Units
Acct 3, B A 18, 128, Mgt 110A, Q M 65	15
Mktg 140	3
	18

General Business

Designed for students with majors in other fields who wish a minor in the broad basic areas of business.

	Units
Acct 4A	3
Elect from: B A 18, Fin 133, Mgt 110A-B, Mktg 100, Q M 65	6
Elect from not more than two fields (8 ud): Acct, B A, Fin, Ind R, Mgt, Mktg, O Ad, Q M	11
	20

Office Administration

Designed primarily to enable students, especially those in professional studies, the humanities, and other liberal arts fields, to acquire the basic business preparation necessary to enter their chosen fields.

	Units
O Ad 4, 23	7
O Ad 112, 114, 121	9
	16

CREDENTIAL PROGRAM

The single subject waiver program in Business consists of the Bachelor of Science major (33-unit core plus a departmental option) and all of the following not incorporated in the major: O Ad 4, 103, 105, 107, 116 and Q M 60.

GRADUATE PROGRAM

The School of Business and Administrative Sciences offers programs for the master of business administration and the master of science degrees. The master of business administration degree program is designed to prepare students for careers in the upper levels of the management of business organizations, public corporations, educational systems, government and nonprofit institutions and agricultural enterprises. The master of science degree is offered for those graduate students who wish to specialize in certain approved areas of study at the graduate level. Either program may be used to increase the competency of teachers in secondary schools and community colleges.

Admission: The MBA and MS programs are open to students with business or other undergraduate degrees who have demonstrated intellectual promise and ability to perform at a satisfactory level. Evidence of such promise is required by: (1) a baccalaureate degree from an accredited institution; (2) a satisfactory undergraduate grade point average (2.75 overall or 3.00 on the last 60 units); (3) a minimum score of 475 on the Graduate Management Admission Test (GMAT). Foreign students must also obtain a score of 500 or higher on the Test of English as a Foreign Language (TOEFL). Test scores must be submitted to the School before action can be taken on the admission application.

Acceptance by the university for graduate study does not imply acceptance by the School of Business and Administrative Sciences. Only students who meet all of the above criteria will be eligible for the School's graduate programs. Special application forms in addition to those required by the university are required by the School.

Before a student can enroll in a graduate (200-series) course, classified standing is required. Students who have met all admission requirements are eligible for placement in classified standing when admitted to the graduate program. Teaching credential candidates may take Bus 280, and 282 in unclassified standing when approved by the Business Credential Adviser.

(See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements;* and *Thesis and Thesis Alternatives.)*

MASTER OF BUSINESS ADMINISTRATION DEGREE REQUIREMENTS

The degree of master of business administration is awarded upon satisfactory completion of a 30-unit program of study. Students are required to have background courses in accounting, business law, computer science, economics, finance, management, marketing, operations analysis, and statistics. Students who lack any of the required background courses must remove any deficiencies by completing the appropriate graduate foundation courses. For details, consult the Director, Graduate Business Program, School of Business and Administrative Sciences.

Foundation Requirements:

	Units
Bus 202, 205, 208, 209, 211, 214, 216, 217, 218	0–27

MBA Core Course Requirements:

	Units
Bus 221, 223, 225, 226, 228, 229	18
Elect from other Business seminars; must include Bus 291 or Bus 299 or comprehensive examination	12

(For students desiring an agricultural business emphasis, the following four courses offered by the School of Agriculture and Home Economics may be elected: Agri 211, 212, 213, 214.)

Total	30

MASTER OF SCIENCE DEGREE REQUIREMENTS

The master of science degree is offered for students who wish to specialize in one particular area of study at the graduate level. The degree is based on individual programs developed in the student's special area of interest and it is awarded upon satisfactory completion of a 30-unit program of study. Students are required to have taken the appropriate background courses or to remove any deficiencies as outlined above in the section describing the master of business administration degree. Application for approval of individual programs must be made through the Director, Graduate Business Program, School of Business and Administrative Sciences.

The MS degree requires a minimum of 30 units, including Bus 221, 223, and 299. Interested students should consult the Director, Business Graduate Programs, for program approval.

Foundation Requirements:

	Units
Bus 202, 205, 208, 209, 211, 214, 216, 217, 218	0–27

MS Core Requirements:

	Units
Bus 221, 223, 299	12
Approved electives	18
Total	30

ACCOUNTING AND QUANTITATIVE STUDIES DEPARTMENT

FACULTY

Clayton R. Tidyman, Department Chairman

Sarah G. Bedrosian, Elwyn L. Christensen, Harry G. Costis, Mostafa Elhag, Gerald L. Johnston, William D. McFerrin, Dell L. Mortimer, Kristofer C. Neslund, Joan G. Schroeder, Frank E. Taylor, Charles B. Titus, William C. Wayne, T. Hillman Willis

Options

Accounting
Quantitative Analysis
Computer Applications & Systems

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

Business majors must complete the core requirements (33 units) which are listed under the School of Business and Administrative Sciences. The three options available to the students are outlined below. The completion of the 27–36 units as required by the options, the General Education requirements, special course requirements, and the electives, which may include a minor, total the 124 units required for the bachelor of science degree in business administration.

Accounting Option

	Units
Two semesters of approved college level mathematics	6
Acct 120A-B, 132, 144A, 162, and 144B or 167	18
B A 118, Q M 60, 64	9
O Ad 105	3
	36

Quantitative Analysis Option

Statistics:

Two semesters of approved college level mathematics	6
Q M 60, 63, 161A-B, 174	15
Elect from: B A 100, Q M 166, 175, 176, 178	6
	27

Computer Applications & Systems:

Two semesters of approved college level mathematics	6
Q M 60, 64, 161A, 161B or 163, 166	15
Elect from: B A 100, Q M 162, 165, 168, 169, 173, 174	9
	30

COURSES

ACCOUNTING (Acct)

1B. Principles of Accounting (3)
Not open to freshmen. Primarily for community college transfers. Acct 1A no longer offered. Prerequisite: Acct 1A. Accounting for partnerships, corporations manufacturing accounting, accounting managerial controls, budgeting, funds flow statements.

3. Essentials of Accounting (3)
Not open to students majoring in accounting or business administration. Basic concepts in preparation of business financial statements; introduction to understanding, analyzing, and interpreting accounting data by investors, managers, and creditors for decision making, planning, and control. Only minor attention given to recordkeeping procedures.

4A-B. Financial and Managerial Accounting Principles and Systems (3–3)
Not open to freshmen; meets requirements for Acct 1A-B. (A) Financial accounting; accounting statements, transaction analysis, and data accumulation; partnership and corporation accounting. (B) Prerequisite: Acct 4A. Balance sheet analysis and interpretation: managerial control and information systems; organization, planning, budgeting; cost accumulation and capital budgeting; measuring and reporting performance.

120A-B. Intermediate Accounting (3–3)
Prerequisite: for 120A, Acct 1A-B or 4A-B; for 120B, 120A, Math 71 and 72 or Q M 21A-B recommended. Preparation and analysis of balance sheet and income statements; partnership and corporation accounts; basic accounting theory; theory of current and fixed assets, investments, liabilities, funds, reserves, and accounting ethics.

128. Managerial Accounting (3)
Not open to students with credit in Acct. 120A or 132; not open for credit toward major in accounting. Prerequisite: Acct. 1A-B, or Acct. 4A-B. Analysis and interpretation of accounting statements. Use of accounting data by management for planning and control; price level problems; flow of current resources, accounting information and reports—uses and limitations; income tax implications.

132. Cost Accounting (3)
Prerequisite: Acct 1A-B or 4A-B; Math 71 and 72 or Q M 21A-B recommended. Industrial cost accounting; general principles of job-order, process and standard cost systems; special problems; use of linear programming and computer.

144A-B. Tax Accounting and Planning (3–3)
(A) Effect of federal and California income tax laws on individual tax returns and tax planning. (B) Prerequisite: Acct 120A-B. Effect of federal and California income tax laws on partnerships, corporation, estates and trusts; social security taxes, estate and gift taxes; business income tax planning.

162. Auditing (3)
Prerequisite: Acct 120A-B (120B may be taken concurrently). Objectives and techniques in verification of business financial statements; duties, responsibilities, and professional ethics of the auditor; auditor's reports; analysis of internal controls; audits of computerized systems.

167. Advanced Accounting Problems (3)
Prerequisite: Acct 120B. Partnership, corporation, governmental and institutional accounting.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

198. Supervised Work Experience (1)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Learning through on-the-job experience in a business. Written reports.

199. Internship (2–6; max total 6)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Student holds responsible position in business or government agency and reports on firm's operations and suggested improvements.

200 series. Graduate courses are listed under *Business.*

QUANTITATIVE METHODS (Q M)

21A-B. Quantitative Analysis (3–3)
(A) Prerequisite: two years high school algebra, one year high school geometry. Applications of finite mathematics and discrete probability models in the quantitative formulation and solution of problems of modern management. (B) Prerequisite: Q M 21A. Applications of selected tools of mathematical analysis and continuous probability models in the quantitative formulation and solution of problems of modern management.

60. Computer Concepts (3)
Introduction to computer hardware and software systems, and to several basic computer languages. Discussion of the social impact of computers and automation.

63. Automation and Computer Language—FORTRAN (3)
Prerequisite: Q M 60. Programming in FORTRAN, cards, disk, and tape.

64. Automation and Computer Language—COBOL (3)
Prerequisite: Q M 60. Programming in COBOL, cards, disk, and tape 1/0.

65. Statistical Analysis I (3)
Prerequisite: Math 51 or 71 or Q M 21A; Econ 1A-B recommended. Introduces statistical theory and its application to management decision making problems. Role, limitations of statistics, descriptive data analysis. Probability theory including Bayes theorem, discrete and continuous distributions, sampling theory and estimation. Time series analysis and index numbers.

103. Statistical Analysis II (3)
Prerequisite: Q M 65. Introduces statistical inference to managerial problems of decision making. Emphasizes the inferential process and model building. Interval estimation, hypotheses testing, ANOVA, regression, non-parametric methods, Bayesian decision theory.

104. Quantitative Analysis in Health Care Systems (3)
Prerequisite: Q M 65. Survey of quantitative decision-making techniques and models and their applications in health care organizations.

105. Information in Health Care Organizations (3) (Former Q M 189T section)
Prerequisite: Acct 4A, Q M 60. Design, implementation and evaluation of comprehensive information systems for planning and controlling the operations of health care organizations.

161A-B. Principles of Operations Research (3–3)
(A) Prerequisite: QM 103. Introduction to OR—systems approach; mathematical models and managerial decisions. Linear programming, Markov Process. (B) Prerequisite: QM 103, 161A. Stochastic models, queing theory, simulation, Monte Carlo, PERT/CPM.

162. Advanced Computer Programming (3)
Prerequisite: Q M 63, 64. Algorithmic and procedure-oriented languages; arrays, graphs, sorting, merging, symbol tables, searching, list processing, simulation techniques, discs and tape program segmentation and linkage.

163. Business Models and Simulation (3)
Prerequisite: QM 63 or QM 64 and QM 65, QM 103 desirable. Computer modeling of inventory, queueing, network, financial and planning problems.

165. File Organization and Data Base Systems (3)
Prerequisite: QM 63 or QM 64. Data and storage structure; file design; approaches to data base management system design; use of generalized data base management systems.

166. Applied Computer Systems (3)
Prerequisite: Acct 4A-B, 128 or 132, Q M 64 (Q M 63 and 161A-B desirable). Development and programming of management information systems; accounting subsystems for external reporting and for internal control; techniques and methods used in systems analysis.

168. Data Processing Management (3)
Prerequisite: Acct 4A-B, 128 or 132, Q M 63 or 64 (Mgt 124 desirable). Theories, cost and problems of operation of a computer center; standards; flow of work, scheduling, batching, spooling, multiprogramming, and multiprocessing techniques as methods of control and operation.

169. Machine Language Programming (3)
Prerequisite: Q M 63 or 64. Machine assembly and symbolic languages; report generators; development of macro instructions. Requires development of programs in several languages.

173. Computer Configurations (3)
Prerequisite: Q M 63 or 64, and a basic electronics course (I A 151). In-depth study of selection and installation of hardware and software of various computers; feasibility studies, comparisons of self-managed versus service bureau operations; comparison of competitive systems; costs of reprogramming.

174. Regression and Correlation Models Time Series (3)
Prerequisite: Q M 103. Bivariate, joint and conditional probability distributions, regression analysis, linear and nonlinear regression and multiple relationships, covariance and significance tests; autocorrelation, serial and partial correlation; time series analysis.

175. Sample Survey Methods and Applications (3)
Prerequisite: Q M 103. Sampling distributions, sample design, estimations of means, proportions, ratios, totals, simple random sample; stratified, cluster, and systematic sample design; replicated sampling techniques, acceptance sampling; industrial uses of sampling and nonprobability sampling.

176. Design of Scientific Experiments (3)
Prerequisite: QM 103. Notion of sampling distributions, theoretical probability distributions, gamma and F-distribution; analysis of variance, one-way and two-way classification tests; mixed and random effect models. Latin and Graeco Latin squares; factorial experimentation.

178. Bayesian Inference and Decision Theory (3)
Prerequisite: Q M 103. Revision of probability and subjective interception, the Bayes' theorem, statistical estimation of various parameters and decision theory, prior analysis and prior probability distributions; posterior analysis and posterior probability distributions; utility problems, expected profit of perfect information.

189T. Topics in Quantitative Methods (1–3; max total 6 if no topic repeated)
Prerequisite: 12 units in quantitative methods. Theory or application of statistics, operations research, or computers applied to current developments.

190. Independent Study (1–3; max total see reference)
See *Academic Placement—Independent Study.*

198. Supervised Work Experience (1)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Learning through on-the-job experience in a business. Written reports.

199. Internship (3-6; max total 6)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Student holds responsible position in business or a government agency and reports on firm's operations and suggested improvements.

200 Series. Graduate courses are listed under *Business.*

FINANCE AND INDUSTRY DEPARTMENT

FACULTY

Paul M. Lange, Department Chairman

Ellis T. Austin, Ray Benson, Wayne A. Brooks, Robert A. Carr, Irving F. Davis, J. Parry Dodds, Tom Doyel, John T. Emerson, Rex A. Havens, James M. Highsmith, F. Lee Hull, Nalini Jeyapalan, Marshall E. Minich, John C. O'Brien

Options

Agribusiness
Business Economics
Finance
Insurance
Legal Environment of Business
Real Estate and Urban Land Economics

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

Business majors must complete the core requirements (33 units) which are listed under the School of Business and Administrative Sciences. The six options available to the student are outlined below. The completion of 24–30 units as required by the options, the General Education requirement, special course requirements, and the electives, which may include a minor, total the 124 units required for the bachelor of science degree in business administration.

Agribusiness Option	*Units*
One semester of approved college level mathematics	3
Q M 60	3
Ag Econ 177, Fin 137	6
Approved upper division electives from the Schools of Business and Agriculture	12
	24

Business Economics Option	
One semester of approved college level mathematics	3
B A 100, 101, Fin 104, 135	12
B A 115 or 117	3
Elect from: Econ 103, 110 and approved electives	12
	30

Finance Option	
One semester of approved college level mathematics	3
Acct 120A or 128	3
B A 100, 101	6
Fin 104, 134, 139	9
Fin 132 or 135	3
B A 115 or 117	3
Q M 60 or 161A or 165	3
	30

Insurance Option	
One semester of approved college level mathematics	3
Fin 143, 144, B A 115, 119	12
Elect from approved upper division courses in Accounting, Business Administration, Finance, Industrial Relations, Management, Marketing, Office Administration, Quantitative Methods	9
	24

Legal Environment of Business Option	
One semester of approved college level mathematics	3
Elect from B A 115, 116, 117, 118, 119, 156 and 184	12
Elect from approved upper division courses in Accounting, Business Administration, Finance, Industrial Relations, Management, Marketing, Office Administration, Quantitative Methods	9
	24

Real Estate and Urban Land Economics Option

One semester of approved college level mathematics	3
B A 100, Fin 104	6
Fin 132 or 135	3
Elect from B A 184, Fin 180, 181, 183, 186	12
	24

COURSES

BUSINESS ADMINISTRATION (B A)

8. Law and Society (3)
Function of law in implementing solutions to human problems, in giving body to theories of justice and to ethical judgments, and in providing a frame of order and authority within which clashes of value may be resolved. Lecture discussion; case studies, analysis.

10. Business and Society (3)
Examination of the interaction of business and social forces in modern society. Nature of business and the management of firms in a changing environment; interrelationships among business, government, labor, and the public. Emphasis on current business-environmental problems.

18. Business and the Legal Environment (3)
Prerequisite: sophomore standing. Legal environment of business through examination of sources of law; relation of the legal system to business through examination of the law of contracts and of agency; case studies; analysis.

50. Business Lectures (1; max total 2)
Various viewpoints on current business problems and developments presented by a different guest business executive each class meeting.

100. Business Economics (3)
Prerequisite: Econ 1A-B. Applications of economic principles in business management; measure of profit, analysis of demand, cost analysis; price, wage, and public policies; case studies.

101. Economics, Ethics and Civilization (3)
Theories of ethics and their relevance to the realm of business; economic, social, and political implications of theories advanced by Adam Smith, Machiavelli, William Graham Sumner, John Dewey, Keynes, Eric Fromm, and others.

106. Health Legislation and Legal Controls (3) (Former B A 189T section)
Legislation applicable to health care laws influencing the provision and administration of health services to individuals and communities. Patient rights, controls on practitioners and institutions, use of medical information.

115. Government Regulation and Control of Business (3)
Prerequisite: B A 18. An analytical approach to the government regulation of business as it affects employment, inflation, consumerism, pollution, wages, and restraints on business and corporate power. Legislative analysis and case studies.

116. Environmental Legislation and Controls (3)
Review of environmental problems, search for root causes and objectives; identification and evaluation of past and present controls; examination of alternative legislative remedies for present and anticipated problems.

117. Administrative Law and Business (3)
Prerequisite: B A 18. The effects of regulatory agencies, such as F.T.C., I.C.C., on business. Study of their rule making powers, procedures, and control through judicial review.

118. Law and Business Activities (3)
Prerequisite: B A 18. Nature of property and the relation of the legal environment to the ambiguities of economic capability through examination of the law of bailments, shipments, sales, commercial paper, and secured transactions; case studies; analysis.

119. Law of Business Organizations (3)
Prerequisite: B A 18. Partnerships, corporations and trusts with reference to their advantages and limitations. Effect of form of operations on taxation, freedom from liability, and on social responsibilities. Includes bankruptcy and security transactions, such as mortgages and installment sales.

128. Business Environment of the Fine Arts (3)
Proseminar for seniors. Integration of principles of business management with production in the fine arts; case studies; analysis.

156. Labor Law (3)
Prerequisite: Econ 1A-B; B A 18, Mgt 110A-B recommended. Proseminar in the law of industrial relations; historical and current principles for legal settlement of labor-management disputes; statutes, court decisions, administrative rulings; case studies; individual presentations.

174. Introduction to International Business (3)
Principles and practice of international business and finance; government policies; mechanisms of world trade; international commercial relations.

175. Management of Multinational Enterprises (3)
Entering foreign markets; building an operational organization abroad to meet host country requirements; management strategies; problems of managing in foreign environments; trade barriers; comparative management styles of foreign businesses; case studies.

176. World Commerce and Development (3)
History, growth and change in world trade; importance of foreign trade in national economies; relationship of social and cultural development to foreign trade; opportunities and constraints for expansion of international business.

178. Technical Aspects of International Business (3)
International finance, foreign exchange, balance of payments, source of capital, management of funds, IMF, World Bank; accounting procedures in foreign countries; handling of multinational transactions; inflation, valuation of currencies, taxes and financial reporting; import/export procedures; international investments.

184. Real Estate Law (3)
Meets California statutory course requirement for real estate license. Prerequisite: B A 18. Legal aspects of acquisition and ownership of real estate; conveyances, mortgages, evidences of title; planning and zoning.

189T. Topics in Business Administration (1–3; max total 9 if no topic repeated)
Prerequisite: senior standing. Studies in business administration.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

198. Supervised Work Experience (1)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Learning through on-the-job experience in a business. Written reports.

199. Internship (3–6; max total 6)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Student holds responsible position in business or government agency and reports on firm's operations and suggested improvements.

200 series. Graduate courses are listed under *Business.*

FINANCE (Fin)

34. Personal Investments (3)
Alternative uses of personal savings; stocks, bonds, mortgages and other securities, mutual funds, credit unions, banks, savings and loans, real estate investment trusts, insurance; financial security; mathematics of finance.

103. Financial Management in Health Care Institutions (3)
Prerequisite: Fin 133. Administrative use of financial information for internal control, capitalization and budgeting, and credits and collections. Sources of financing, asset management, operational planning and control, and investments in health care facilities.

104. Business Forecasting (3)
Prerequisite: Q M 103. Business activity analysis; methods of forecasting; general and specific forecasts; analysis of trends in product groups, sectors, regions, and other areas of the world economy; mathematical models and statistical decisions; analysis of case problems.

132. Financial Institutions (3)
Prerequisite: Econ 1A-B, Acct 4A-B. Theory of the financial system; intermediation; gross and net money doctrines; financial institutions; money and capital markets; mathematical models, simulation, case problems.

133. Business Finance (3)
Prerequisite: Econ 1A-B; Acct 4A-B. Theory of financing the business firm under uncertainty. The supply of and demand for capital; asset management, simulation problems, capital structure analysis, cost of capital, capital budgeting decisions, mathematics of finance.

134. Security Analysis (3)
Prerequisite: Fin 133. Analysis of security markets; financial mathematics; stocks, bonds and mortgages; fundamental analysis; public and private regulation of security markets.

135. Monetary Theory and the Banking System (3)
Not open to students with credit in Econ 135. Prerequisite: Econ 1A-B. Monetary theory, commercial banking, central banking; the Federal Reserve system; the international monetary system; mathematical models of money flows.

137. Credit Management (3)
Mercantile and consumer credit; derivation of credit information from business data; credit agencies and credit bureaus; valuation; analysis of financial statements; technical and legal problems; collections.

138. Small Business Finance and Development (3)
Prerequisite: permission of the instructor. Practical application of business principles to improve small businesses; minority business problems; students serve as consultants to owners, managers; class reports.

139. Intermediate Business Finance (3)
Prerequisite: senior standing, B A 100, Q M 103. Integration of analysis and policy for financial organizations; decisions under uncertainty; mathematical models and simulation.

143. Risk and Insurance (3)
Prerequisite: B A 8 or 18 (may be taken concurrently). Fundamental principles of insurance; risk aversion, actuary statistics, property and casualty insurance and insurance carriers.

144. Life Insurance (3)
Prerequisite: B A 8 or 18 (may be taken concurrently). Nature and use, scientific basis, types and forms of life insurance; organization, management; public regulation and control.

180. Real Estate Principles and Practice (3)
Meets California statutory course requirement for real estate practitioner license. Prerequisite: Econ 1A-B. Theory and practice of urban land use. Location and legal dimensions, planning and market processes; financial and investment decisions in real estate; case analysis.

181. Real Estate Appraisal (3)
Meets California statutory course requirement for real estate practitioner license. Prerequisite: Fin 180. Theory of real property value; historical development; methods used in urban and rural property appraisals; special purpose appraisals. Field work required.

183. Real Estate Finance and Investment (3)
Meets California statutory course requirement for real estate practitioner license. Prerequisite: Fin 180. Financial analysis, pricing, acquiring, managing, and marketing the real estate investment.

186. Urban Land Economics (3)
Prerequisite: Fin 180. Metropolitan and regional growth analysis, population pressures and urban land use patterns, planning, and investment decisions.

189T. Topics in Finance and Industry (1–3; max total 9 if no topic repeated)
Prerequisite: senior standing or permission of instructor. Studies in business including agricultural economics, business economics, business law, finance, real estate and urban economics.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

198. Supervised Work Experience (1)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Learning through on-the-job experience in a business. Written reports.

199. Internship (3-6; max total 6)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Student holds responsible position in business or government agency and reports on firm's operations and suggested improvements.

200 Series. Graduate courses are listed under *Business.*

MANAGEMENT AND MARKETING DEPARTMENT

FACULTY

Richard D. Tellier, Acting Department Chairman

David C. Anderson, Harold L. Best, Douglas A. Cords, Charlotte M. Erb, Robert E. Hampton, D. E. Johnson, Robert I. Kutscher, Robert J. Piersol, Douglas B. Simpson, Charles E. Swanson, Richard D. Tellier, Louis D. Volpp, Irwin Weinstock, Charles H. Wetmore

Options

General Administration
Health Care Management
Personnel and Industrial Relations
Marketing
Transportation and Physical Distribution Management

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

Business majors must complete the core requirements (33 units) which are listed under the School of Business and Administrative Sciences. The five options available to the student are outlined below. The completion of the 24–27 units as required by the option, the General Education requirement, special course requirements and electives, which may include a minor, total the 124 units required for the bachelor of science degree in business administration.

General Administration Option	*Units*
One semester of approved college level mathematics	3
Elect from: Fin 104 or Mktg 104	3
Ind R 150	3
O Ad 105	3
Q M 60	3
Elect: 12 approved upper division units from one of the following areas or 6 units from each of two areas: Accounting, Business Administration, Finance, Industrial Relations, Management, Marketing, Office Administration, Quantitative Methods.	12
	27

Health Care Management Option	
One semester of approved college level mathematics	3
B A 106	3
Fin 103	3
H S 100	3
Mgt 108	3
Elect from: Acct 132, H S 109, Mgt 127, Q M 60, 105, approved Independent Study or Internship, approved courses in chemistry, physiology, and/or zoology	12
	27

Personnel and Industrial Relations Option	
One semester of approved college level mathematics	3
Ind R 150, 152, 159	9
Elect from: B A 156, Ind R 153, 154, 189T, Mgt 127, O Ad 105, QM 60, approved Independent Study or Internship, Econ 150, 151, Psych 134, 176, Soc 146	12
	24

Marketing Option	
One semester of approved college level mathematics	3
Mktg 101, 104, 109	9
Elect from: B A 118, Fin 104, Mgt 146, 147, Mktg 112, 117, 127, 130, 140, 142, 150, 155, 176, O Ad 105, QM 60, approved Independent Study or Internship, Jour 113, Ag Ec 172	12
	24

Transportation and Physical Distribution Management Option

One semester of approved college level mathematics	3
Mgt 146, 147, 148	9
Elect from: B A 115, Fin 104, Ind R 152, Q M 60, 63, Mgt or Ind R 189T (appropriate section), Mktg 104, 176, Acct 128, approved Independent Study or Internship, Geog 152, O Ad 105, Econ 170	12
	24

COURSES

INDUSTRIAL RELATIONS (Ind R)

150. Administration of Personnel (3)
Prerequisite: Mgt 110A-B or 110 or Econ 150. Composition of labor force; acquisition and utilization of human resources in organizations: recruitment; selection; performance appraisal; motivation; compensation; communications; social issues and government influence. Individual and group projects; written and oral reports.

152. Labor Relations and Collective Bargaining (3)
Prerequisite: Mgt 110A-B or 110 or Econ 150. Relations between employers and organized employee groups; organization, election, and certification procedures; techniques of collective bargaining; labor agreements; grievance handling; settlement of industrial disputes.

200

153. Management Development (3)
Prerequisite: Mgt 110A-B or 110. Knowledge and skills leading to effective interpersonal relations; understanding one's self as leader and others as individuals and members of working groups; leadership practice and decision making as individuals and small groups.

154. Compensation Administration (3)
Prerequisite: Mgt 110A-B or 110, Ind R 150. Analysis of compensation programs for business, not-for-profit, and government organizations. Special attention given to job evaluation programs, motivation-to-work theory, micro and macro forces influencing compensation decisions. Case analysis; individual and group reports.

159. Seminar in Personnel and Industrial Relations (3)
Prerequisite: Ind R 150, 152. Advanced problems in various areas of Personnel and Industrial Relations. Case analysis and discussion; individual and/or group reports.

189T. Topics in Industrial Relations. (1–3; max total 9 if no topic repeated)
Prerequisite: senior standing. Studies in personnel and labor relations: recruiting and selection, motivation, compensation, training, evaluation, labor organizations, collective bargaining, government and industrial relations, special problems in industrial relations.

190. Independent Study (1–3; max see reference)
See *Academic Planning—Independent Study.*

200 series. Graduate courses are listed under *Business.*

MANAGEMENT (Mgt)

101. Basic Management Block (12)
Meets School of Business requirements for Mgt 110A-B or 110, 124, Mktg 100. Not open to students with credit in Mgt 110A-B, 110, 124, Mktg 100. Prerequisite: first-semester junior, Econ 1A-B, Acct 4A, Q M 65, application, and permission of instructor. Special integrative undergraduate seminar: 12 hours weekly; marketing, production, administration, organizational behavior. Small group projects; field trips and research; computer simulation; student planned and presented programs; business, government, academic guest presentations. Consult school or departmental office.

102A-B-C-D. Advanced Management Block (3-3-3-3)
Can be substituted for some option requirements. Concurrent enrollment in A-B-C-D. Prerequisite: Permission of instructor. Undergraduate seminar integrating business disciplines, decision applications, models of local businesses, business simulation by computer, case analysis, student planned programs, individual and group presentations with executives and academicians, field trips, negotiations, group projects.

108. Health Care Facility Management (3) (Former Mgt 189T section)
Prerequisite: Mgt 110A. Operational and administrative demands of health care facilities including the processes of planning and decision-making, organizational structure and behavior, and important areas of managerial control.

110. Administration and Organizational Behavior (6)
Not open to students with credit in Mgt 110A or B. Combines Mgt 110A and B into an integrated, one-semester course, under one instructor. Extended use of small group work, individual research, and class presentation. (See Mgt 110A–B description for course content.)

110A–B. Administration and Organizational Behavior (3–3)
Prerequisite: Mgt 110A prerequisite to B. Organizational theory; structure and forms of organization, authority, leadership, group dynamics, policy formulation, conflict resolution, organizational control, theory of work and motivation, individual differences, communications, planning, development, evaluation, managerial processes, management of human resources. Lecture-discussion, individual and group projects and reports.

124. Operations Management (3)
Prerequisite: Q M 65, Mgt 110A or 110. Operations systems and problems; facility location and design; material handling; operation planning and control; inventory control; product development; quality control; methods analysis and job design; work measurement. Lecture discussion; application of quantitative methods in solution of operations problems; computer simulation.

127. First-Line Supervision (3) (Former Ind R 189T section)
Prerequisite: Mgt 110A-B or 110. Emphasis on motivating, communicating, counseling, training, managing time, evaluating performance, and understanding the worker. Guest speakers, role-playing and incident reports.

128. Problems in Small Business Management (3)
Prerequisite: senior standing. Special problems of small businesses: initiation, financing, operations. Class projects: studying local business operations; preparing business plans and financial requests.

146. Transportation Management (3)
Prerequisite: Econ 1A-B. Major modes for movement of goods and people; comparison of alternatives; carrier organization and management; rate structures; government regulation; effect of transportation on plant location, pricing, and markets; urban and national transportation problems.

147. Physical Distribution Management (3)
Prerequisite: Mktg 100. Systems approach to physical distribution; traffic management; plant and warehouse location; inventory control; information flows and order processing; supply scheduling; total cost planning; organizational patterns.

148. Advanced Transportation Management (3)
Prerequisite: Mgt 146, 147. New tools and techniques in carrier management, physical distribution management, carrier-shipper cooperation; trends in intracarrier and intercarrier competition, pricing and regulatory philosophy; case problems; computer simulation; individual and group problem solving.

187. Seminar in Business Strategy (3) (Former Mgmt 120)
Prerequisite: second semester senior and completion of School of Business core requirements. Integration of various fields of knowledge through utilization of previously acquired academic and practical experience; emphasis upon decision making under conditions of uncertainty, and experience with policy formulation and implementation.

189T. Topics in Management (1–3; max total 9 if no topic repeated)
Prerequisite: senior standing. Studies in management, organizational theory, organizational behavior, production, transportation, business administration, special management and organizational problems.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

200 Series. Graduate courses are listed under *Business.*

MARKETING (Mktg)

100. Principles of Marketing (3)
Prerequisite: Econ 1A-B. Economic and social problems involved in moving goods and services from the producer to the consumer; major kinds of goods and services to be marketed; the institutions and agencies of distribution, and the series of functions involved.

101. Consumer Behavior (3)
Prerequisite: Mktg 100. Consumer motivation and behavior based on analysis of the findings of the behavioral sciences.

104. Proseminar in Marketing Research (3)
Prerequisite: Econ 1A-B; Mktg 100; Q M 65 (may be taken concurrently). Fundamentals of market and marketing analysis, research procedure, methods of analysis; individual and group problem analysis and presentation of results; computer simulation.

109. Marketing Problems (3)
Prerequisite: Mktg 104, and senior standing. Integration and application of marketing theory; decision making and decision models, class analysis; individual and small group research and presentations, computer simulation. Relationship of other business areas to marketing.

112. Product and Pricing Policies (3)
Prerequisite: Mktg 100. Policies and practices involved in developing and maintaining products, services, and prices.

117. Industrial Marketing (3)
Prerequisite: Mktg 100. Analysis of marketing systems serving business, industry, government, and other institutions; industrial procurement practices; individual and group problem research, analysis and presentation of results.

127. Consumerism and Marketing (3)
Prerequisites: B A 18, Mktg 100. Consumerism impact on marketing strategy and decision-making. Examination and evaluation of consumerist movement; historical development and current state of consumerism; consideration of consumerist groups, role of government, involvement of private enterprise and general public. Individual and group presentations; seminar instruction.

130. Retailing Management (3)
Prerequisite: Mktg 100. Management operations and functions of retailing organizations; structure, personnel, impact on the community; buying, pricing and selling of merchandise.

140. Advertising Principles (3)
Analytical approach to advertising as a broad social influence; functions in our culture; application as a marketing and communication force; individual and group problem analysis and presentation of results; individual field research.

142. Advertising Problems (3)
Prerequisite: Mktg 140. Advertising production and media problems; market research techniques; selection of campaign themes, copy preparation, art and layout. Field trips required.

150. Psychology of Personal Persuasion (3)
Prerequisite: Mktg 100. Behavioral science approach to personal selling. Emphasis on analysis of psychological aspects of consumer decision-making and consumer attitudes toward the salesman that affect success. Case analysis, individual and group presentations.

155. Sales Administration (3)
Prerequisite: Mktg 100. Techniques of personal persuasion; behavioral science methods; selection, training, and supervision of sales staff.

176. International Marketing (3)
Prerequisite: Mktg 100. Examination and evaluation of business policies and practices of firms engaged in world trade; the marketing area; organization, product, channels of distribution, marketing research, demand creation, and other management problems.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

198. Supervised Work Experience (1)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Learning through on-the-job experience in a business. Written reports.

199. Internship (3–6; max total 6)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Student holds responsible position in business or government agency and reports on firm's operations and suggested improvements.

200 Series. Graduate courses are listed under *Business.*

OFFICE ADMINISTRATION DEPARTMENT

FACULTY

Berle Haggblade, Department Chairman

Allen M. Agnew, Gerald O. Bryan, Jack Coffey, Robert A. Flam, Margaret W. MacMillan, Victor G. Panico, Dwayne G. Schramm, Gayle A. Sobolik

Option

Office Administration

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

Business majors must complete the core requirements (33 units) which are listed under the School of Business and Administrative Sciences. The Office Administration option is outlined below. The completion of the 27 units as required by the option, the General Education requirement, special course requirements, and electives which may include a minor, total the 124 units required for the bachelor of science degree in business administration.

Office Administration Option	*Units*
One semester of approved college level mathematics	3
O Ad 103, 105, 107	9
Q M 60	3
Elect from: O Ad 4, 112, 114, and 121, or 12 units from Acct 120A–B, 128, 132, B A 100, 118, Q M 63, 64, and 166	12
	27

COURSES

OFFICE ADMINISTRATION (O Ad)

*** 1. Typewriting (2)**
Not recommended for students with one or more semesters of high school typewriting. Development of typewriting techniques and their applications to practical usage. (4 lab hours)

*** 2. Typewriting (2)**
Prerequisite: O Ad 1. Review of keyboard; use of the typewriter as a communication tool; refinement of typewriting techniques with personal and business applications. (4 lab hours)

*** 4. Office Production (3)**
Prerequisite: O Ad 1. Problems and solutions applicable to office production and word processing centers; use of duplicating equipment, machine transcription; executive typewriter. (2 lecture; 2 lab hours)

† 23. Shorthand (4)
Prerequisite: adequate typewriting ability. Mastery of theory; proficiency in reading, writing and transcribing shorthand.

103. Principles of Office Management (3)
Office management in business and industry; organization and control of office services; selection, training, and supervision of personnel; utilization of the computer and peripheral equipment in the office; improvement of office efficiency; office planning and layout; equipment and supplies.

105. Business Communication (3)
Prerequisite: 3 units of English composition and junior standing. Business communication theory; analysis of communication alternatives; effective business writing and dictating; case studies.

* Not more than six units of credit in typewriting will be allowed toward any degree.
† Not more than ten units of credit in shorthand will be allowed toward any degree.

107. Management of Information Systems (3)
Records organization, management, and control; basic principles and procedures of information storage and retrieval; impact of data processing on the records area. Observation of retrieval systems in business installations.

† 112. Advanced Shorthand (3)
Prerequisite: O Ad 23 or one year high school shorthand. Review of theory and development of proficiency in writing and transcribing shorthand notes; speed and endurance in writing and transcribing shorthand notes.

114. Transcription (3)
Prerequisite: O Ad 112 (may be taken concurrently). Transcription from shorthand and machine dictation; development of production standards for office transcription.

116. Office Appliances for Business Teachers (3)
Prerequisite: O Ad 1. For students working toward a standard secondary credential in business and those wishing to teach business subjects in community colleges. Operation of all modern business machines. (2 lecture; 2 lab hours)

121. Office Services and Procedures (3)
Prerequisite: O Ad 114. Duties and responsibilities of executive secretarial positions.

189T. Topics in Office Administration (1–3; max total 6 if no topic repeated)
Prerequisite: 3 units in office administration or permission of instructor. Special areas of office administration: communications, management, records management, secretarial science.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

198. Supervised Work Experience (1)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: Learning through on-the-job experience in a business. Written reports.

199. Internship (3-6; max total 6)
Open only to business majors. Prerequisite: permission of instructor. Workstudy: student holds responsible position in business or government agency and reports on firm's operations and suggested improvements.

200 Series. Graduate courses are listed under *Business,* following.

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† Not more than ten units of credit in shorthand will be allowed toward any degree.

GRADUATE COURSES—BUSINESS AND ADMINISTRATIVE SCIENCES

(See *Course Numbering System—Definitions and Eligibility*)

BUSINESS (Bus)

Note: The foundation courses (Bus 202, 205, 208, 209, 211, 214, 216, 217, and 218) are open only to classified graduate students and are required of those who have not completed equivalent undergraduate courses. Other 200 series courses are open only to graduate students in classified standing, except that teaching credential candidates may take Bus 280 and 282 in unclassified standing when approved by the Business Credential Adviser.

202. Economics for Business Decisions (3)
Not required of students with credit in Econ 1A-B. Microeconomic decisions; product, service, and factor markets; risk, uncertainty, and profits; macroeconomic framework of business decisions.

205. Financial and Managerial Accounting (3)
Not required of students with credit in Acct 1A-B or 4A-B. Financial accounting; statement analysis and interpretation; transaction analysis; partnerships and corporations; taxation; financial reporting; managerial controls, information systems, budgeting; costs, capital budgets.

208. Quantitative Methods in Business (3)
Not required of students with credit in Q M 65, 103. Statistical analysis in business, tests of hypotheses, time series, correlation analyses, index numbers, estimation models, and Bayesian statistics in business decision making.

209. Computers and Programming (3)
Not required of students with credit in Q M 60 and 63 or 64. Computing algorithms, statistical and other software packages, data processing, programming languages; COBOL, FORTRAN, Interactive BASIC-PLUS.

211. Legal Environment of Business (3)
Not required of students with credit in B A 18. Basic legal concepts; nature of the legal system, law of contracts, sales, negotiable instruments, agencies, partnerships, corporations.

214. Organization and Management Theory (3)
Not required of students with credit in Mgt 110 or 110A–B. Organizational theory, structure and forms of organization, authority, leadership, group dynamics, policy formulation; conflict resolution, organizational control.

216. Operations Analysis (3)
Not required of students with credit in Mgt 124. Prerequisite: Bus 208 and 214 recommended. Operations theory and methods; operations planning and control; methods analysis, work measurements; materials handling and control, facilities location and layout; application of statistical techniques and electronic data processing; relationships with other functional areas of management.

217. Marketing Organization and Policies (3) (Former Bus 221)
Not required of students with credit in Mktg 100. Prerequisite: Bus 202 recommended. Environmental factors for marketing, elements of marketing and marketing systems, marketing activities and strategies of the firm; evaluating marketing programs and systems.

218. Principles of Finance (3)
Not required of students with credit in Fin 133. Prerequisite: Bus 205; Bus 202 recommended. Impact of uncertainty and environmental considerations upon the finance function. Financial problems and policies: working capital management, capital budgeting, cost of capital, and dividend policy. Problems and cases.

221. Seminar in Business Research (3) (Former Bus 200, 222)
Prerequisite: Bus 208, 209. Methods of research; applications to business problems.

223. Seminar in Organizational Behavior (3)
Prerequisite: Bus 214; Bus 221 or concurrently. Problems of the individual and groups brought about by modern industrial organizations and techniques; motivations for work and cooperation between executives and different economic and social groups; analysis of effect of company policy on employee and public relations.

225. Seminar in Managerial Economics (3) (Former Bus 229)
Prerequisite: Bus 202, 208; Bus 221 or concurrently. Economic analysis of managerial problems; theory of the firm.

226. Seminar in Accounting Control and Reporting (3)
Prerequisite: Bus 205, 208; Bus 221 or concurrently. Procedures for financial reporting, systems and internal control, interpretation of administrative reports; accounting control—statistical inference, budgetary planning, standard costs, differential cost analysis, profit volume relationships.

228. Seminar in Quantitative Analysis (3)
Prerequisite: Bus 208, 216; Bus 221 or concurrently. Quantitative analysis of business problems; development of operations research models for decision making; applications.

229. Seminar in Business Policy (3) (Former Bus 220)
Prerequisite: completion of foundation courses; completion of MBA core or concurrently completing MBA core. Advanced problems in business policy; evaluation, determination, execution, administration, and control; policy objectives in integration of product, marketing, manufacturing, finance, and organization; analysis of administrative policy-making bodies and processes.

232. Seminar in Money and Capital Markets (3)
Prerequisite: Bus 218. Analysis of money and capital markets, their organization and role in economic activity.

233. Seminar in Business Finance (3)
Prerequisite: Bus 218. Critical review of theory and practice; supply and demand factors; sources and uses of business funds; management of financial assets; cost of capital; theory of financial structures; promotion; liquidation of firms; current trends; changing institutional environment.

237. Seminar in Public Policy and Enterprise (3)
Prerequisite: Bus 211. Development of legal controls of business; constitutional problems; legal aspects of business organization; anti-trust laws and competition, securities regulation, consumer protection.

240. Seminar in Marketing (3)
Prerequisite: Bus 217. Critical review of the literature of marketing, special reports and research dealing with marketing institutions and organization, and marketing functions.

242. Seminar in Marketing Management (3)
Prerequisite: Bus 217. Analysis of basic problems of marketing management and alternative methods of approaching these problems; case studies; use of statistics, economics, psychology, and other tools in directing marketing activities; relation of marketing to other areas of business administration.

250. Seminar in Personnel Management (3)
Prerequisite: Bus 214. Trends and problems in management-employee relationships; administrative action in selection, motivation, and development of personnel; relation of personnel administration to other areas of management; concentrated study by each student of a special phase of personnel work.

252. Seminar in Labor Relations (3)
Prerequisite: Bus 214. Current trends in labor relations theory and practice; labor relations systems; contract negotiations; dispute prevention and settlement; role of government; applications of behavioral sciences; individual research.

253. Manpower Management (3)
Prerequisite: Bus 214, 250. Principles and methods for understanding the effective use of manpower resources, macro and micro. Analysis and resolution of specific manpower problems at the operating level.

255. Seminar in Operations Management (3)
Prerequisite: Bus 216. Current operations management theories and problems; critical analysis and review of present practices and theories.

258. Seminar in Office Management (3)
Managerial control of office functions, services, and personnel; case studies.

260. Seminar in Accounting Theory (3)
Prerequisite: Bus 226. Development of accounting theory; current accounting theory; areas of accounting theory where professional differences exist; AICPA research studies, governmental regulations, recent literature, and accounting classics.

261. Accounting for Non-Profit Organizations (3)
Prerequisite: Bus. 205. Accounting for various types of funds as applied to governmental and other not-for-profit organizations. Budgets and accounting controls; revenues and appropriations, expenditures and encumbrances; accounting statements and reports.

262. Seminar in Programming (3)
Prerequisite: Bus 209 . Advanced techniques of sorting, file maintenance and information systems, controls and teleprocessing directed toward business applications.

263. Seminar in Cost Accounting (3)
Prerequisite: Bus 226. Advanced study of process and standard costs; overhead costs; budgeting; use of cost accounting data in economic analysis and managerial control; problems illustrating course material.

264. Seminar in Auditing (3)
Prerequisite: Acct 162. An advanced study of the philosophy, theory, and practice of auditing with special emphasis in recent developments, and cases involving ethical and legal responsibilities, statistical sampling methods, using the computer, and reliance on internal control; operational auditing.

265. Seminar in Information Systems (3)
Prerequisite: Bus 209. Analysis of integrated and decentralized systems related to business organizations, their decision and control centers; underlying technologies and methods for designing, implementing, and operating an information system.

266. Data Processing Management and Computer Selection (3)
Prerequisite: Bus 205, 209. Theories, costs, and problems of operating computer centers: standards, flow of work, scheduling, batching, spooling, multiprogramming techniques. In-depth study of hardware and software of various computers; feasibility studies; comparisons of competitive systems; costs of reprogramming.

267. Sampling Design (3)
Prerequisite: Bus 208. Theory and applications of probability and sampling distributions; theory of point and internal estimations of means, proportions, ratios, totals; precision of estimation and sample designs; probability and nonprobability designs; simple, stratified, cluster, systematic, and Bayesian estimation.

268. Regression, Correlation, Factor Analysis (3)
Prerequisite: Bus 208. Conditional, marginal, and joint probability distributions; statistical dependence; simple, multiple, linear and nonlinear regression models; correlation analysis; analysis of variance and regression; introduction to Bayesian decision theory.

269. Seminar in Taxation (3)
Prerequisite: Acct 144A–B. Tax planning and decision making with respect to income, estate, and gift taxes; tax research and review of current cases involving application of tax laws to individuals, partnerships, corporations, and fiduciaries; analysis of governmental tax policy.

272. Seminar in International Finance (3)
Prerequisite: Bus 202, 218. Theory and practice in international money and capital markets; foreign exchange; balance of payments; problems of adjustment; comparative financial systems.

275. Seminar in International Business (3)
Prerequisite: Bus 225. International trade and finance; cultural and institutional environment of multinational enterprise, trade and development aid; accounting, marketing, production and operations aspects of international trade and enterprise.

280. Seminar in Business Education (3)
Study of advanced problems in business education.

282. Seminar in Business Curricula (3)
Objectives, principles, and curricula of business in secondary schools, and colleges and universities; evaluation and trends of current programs.

289T. Seminar in Business Topics (3; max total 9 if no topic repeated) (Former Bus 210T, 230T)
Prerequisite: 9 units of 200 courses. Theory and developments in accounting, administration and organization, business education, communications, consumer economics, finance, industrial and regional studies, international business, law, management, marketing, personnel and industrial relations, quantitative studies, real estate and urban economics, records management, resource economics, risk and insurance, or transportation.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

291. Management Project (3)
Prerequisite: Completion of the MBA core or concurrently completing the MBA core. Independent field analysis of an operating business firm or one of its principal functional areas. The managerial audit may be submitted to the faculty in lieu of a thesis.

292. Readings in Business (2–3; max total 6)
Prerequisite: permission of instructor. Individually directed readings in a field of special concern to the student's graduate program; appropriate reports and evaluation required. Individual conferences; no formal class meetings.

299. Thesis (3 or 6)
Prerequisite: Completion of master's core or concurrently completing master's core. See *Master's Degrees—Thesis Requirement.* Preparation, completion, and submission of an acceptable thesis for the master's degree. Elective for master of business administration.

IN-SERVICE COURSES

(See *Course Numbering System.*)

367. CPA Review (4)

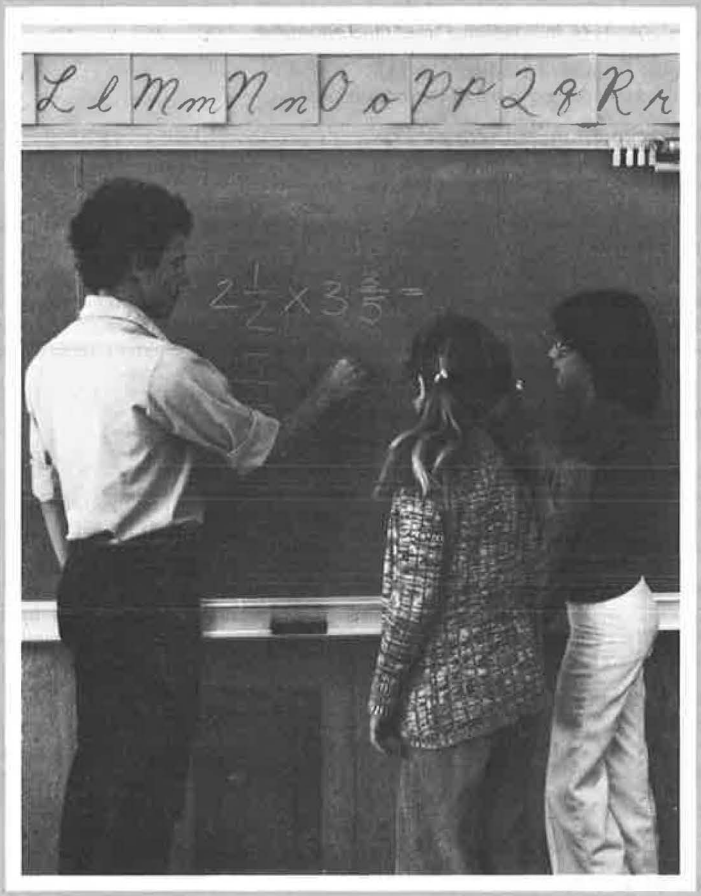
380T. Topics in Business (2; may be repeated if no topic repeated)

381. Instructional Procedures in Vocational Business Education (2–3)

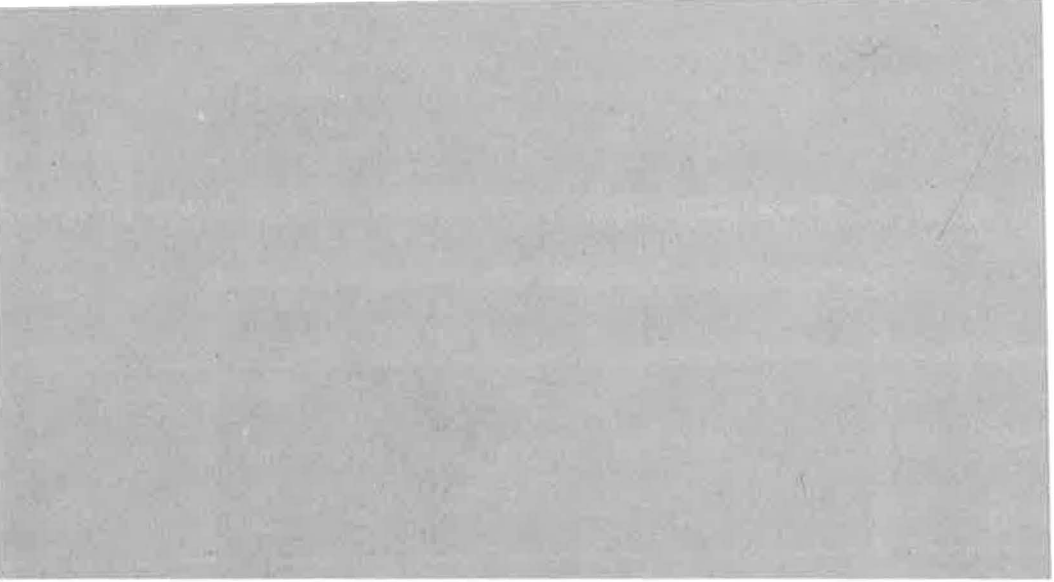
385. Bridging the Gap (2–4)

389. Workshop in Business Education (1–6; max total 6)

398. Business Internship (1–6; max total 6)



Direct experience is provided an elementary education student in methods of instruction in a public school environment.

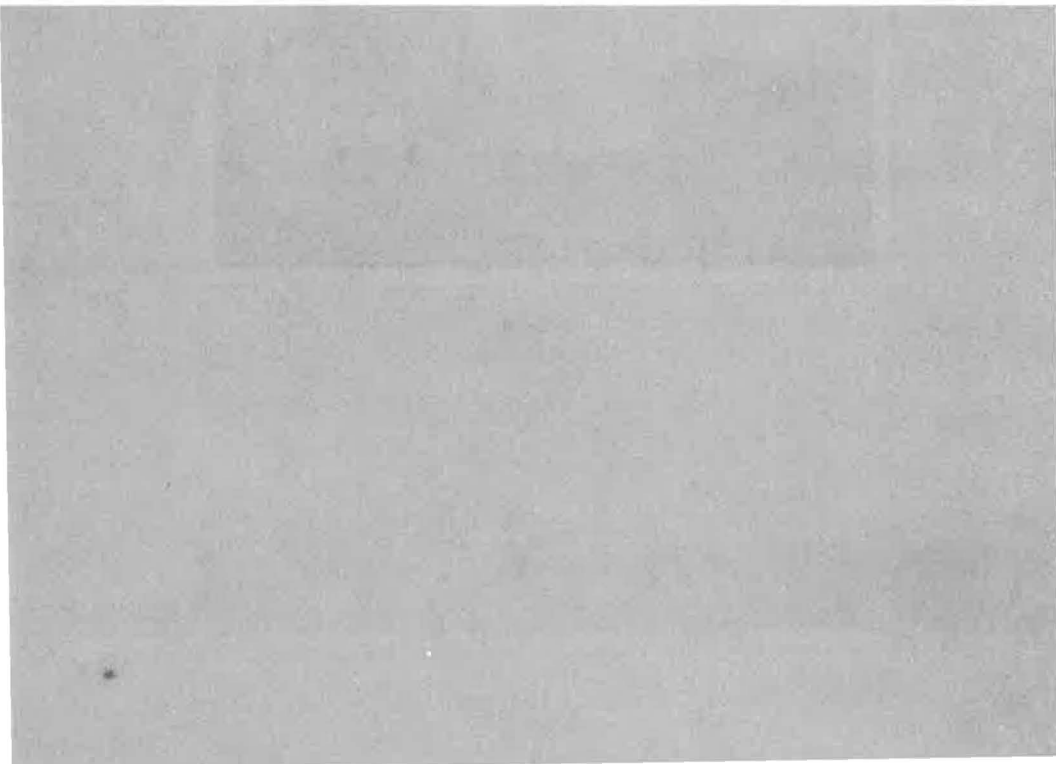


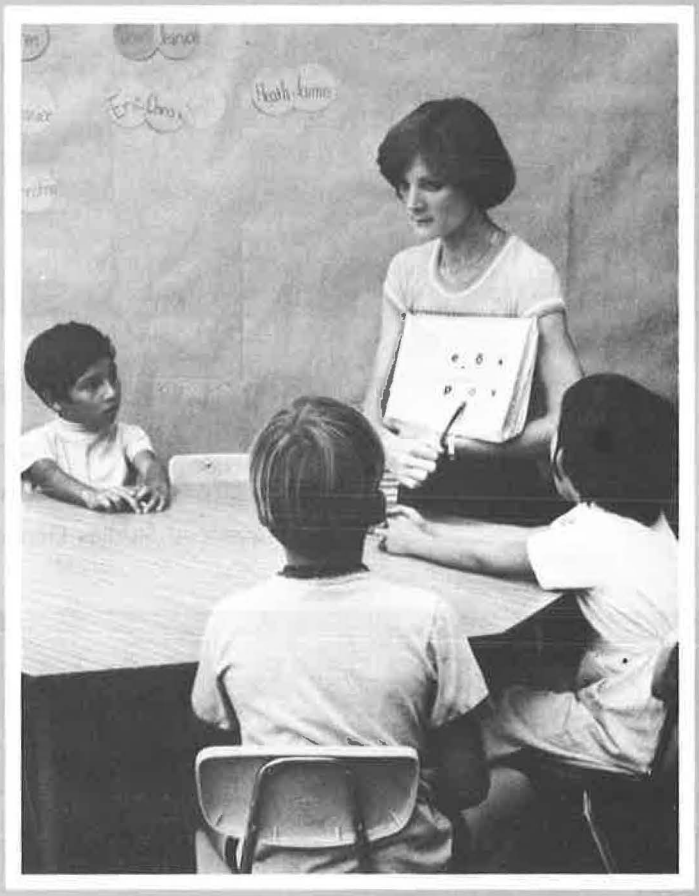
SCHOOL OF EDUCATION 211

Elementary Education Department

Secondary Education Department

Advanced Studies Department





Elementary education student instructing children in phonics.

SCHOOL OF EDUCATION

Carl R. Stutzman, Interim Dean

Departments

Elementary Education
Secondary Education
Advanced Studies

Degree and Credential Programs and Services

Admission and Certification
- Credential Analyst ..... Janet Smith
- Admissions Secretary ..... Charlotte Dishian

Liberal Studies ..... Ivan H. Rowe
Multiple Subjects (Elementary Education) ..... David Haimbach
Single Subjects (Secondary Education) ..... Lester Roth
Administration ..... Richard K. Sparks
Bilingual/Cross-Cultural Education ..... Cecilio Orozco
Early Childhood Education ..... Joyce M. Huggins
Pupil Personnel Services ..... Ray E. Brewer
Reading ..... Beatrice E. Bradley
Special Education ..... Gordon Johnson
Graduate Studies ..... Bruce M. Wilkin

DEGREES OFFERED: MA in Counseling
MA in Education
MA in Special Education

The School of Education utilizes the resources of the university in the preparation of teachers, administrators, and special service personnel for elementary and secondary schools. The teacher education program is based on the assumption that a teacher or administrator needs a liberal education, should be competent in subject matter, and must be well trained in the principles and practices of teaching, including psychological and cultural factors influencing learning and achievement.

The School of Education provides basic teaching credential programs for elementary (multiple subjects) and secondary (single subject) teaching; specialist teaching credential programs in the agricultural, bilingual/cross-cultural, early childhood, reading, and special education fields; and advanced credential programs for administrative, clinical-rehabilitative, health (school nurse), and pupil personnel (including school psychologist) services.

Supporting services included in the school organization are the Curriculum Library, Children's Library in the University Library, Instructional Materials Center for Special Education, Learning Laboratory, and Reading Center.

COOPERATING PUBLIC SCHOOL DISTRICTS

The professional preparation programs of the School of Education utilize the services and facilities of a number of cooperating public school districts for assignments in student teaching, and field work. Teachers, administrators, consultants, and other personnel assist students to gain practical experience in the field. The school works closely with the public schools in planning and implementing credential programs.

The following school agencies and districts are currently cooperating in the university program:

California State University, Fresno (Campus Day Care Center)
Caruthers Union High School District
Central Union High School District
Chowchilla Union High School District
Clovis Unified School District
Coalinga Unified School District
College of the Sequoias
Dinuba Joint Union High School District
Firebaugh-Las Deltas Unified School District
Fowler Unified School District
Fresno City College
Fresno Colony School District
Fresno County Department of Education
Fresno Unified School District

Hanford Elementary School District
Hanford Joint Union High School District
Hughson Union High School District
Kerman Union High School District
Kern Joint Unified High School District
Kings Canyon Joint Unified School District
Lindsay Unified School District
Madera Unified School District
Merced Union High School District
Newman-Crows Landing Unified School District
Raisin City Elementary School District
Sanger Unified School District
Selma Unified School District
Sierra Union High School District
State of California Diagnostic School for Neurologically Handicapped Children
Tranquility Union High School District
Tulare City Elementary School District
Tulare County Department of Education
Visalia Unified School District
Washington Union High School District
Woodlake Union High School District

CREDENTIAL PROGRAMS

The state now issues credentials for public school service under the provisions of the Teacher Preparation and Licensing Law of 1970 (the Ryan Act).

Information regarding the Ryan Act and the professional preparation programs is available in the departmental offices of the School of Education and in the School of Education Admissions Office (EdP 120).

Basic Teaching Programs

Multiple subjects (elementary teaching)	*see* Elementary Education Department
Multiple subjects, with emphasis in early childhood education	*see* Elementary Education Department/Coordinator of Early Childhood Education
Multiple subjects, with emphasis in bilingual/cross-cultural education	*see* Elementary Education Department/Coordinator of Bilingual/Cross-Cultural Education
Single subject (For major requirements, see subject matter departments.)	*see* Secondary Education Department

Specialist Teaching Programs

Agricultural	*see* Agricultural Industry and Education Department
Bilingual/Cross-Cultural	*see* Elementary Education Department/Coordinator of Bilingual/Cross-Cultural Program
Early Childhood	*see* Elementary Education Department/Coordinator of Early Childhood Education
Reading	*see* Elementary Education Department/Coordinator of Reading Specialist Program
Special Education	*see* Advanced Studies Department (Education)/Coordinator of Special Education

Services Credential Programs

Administrative	*see* Advanced Studies Department (Education)/Coordinator of School Administration Program
Clinical-Rehabilitative	*see* Communicative Disorders Department/Coordinator of Special Education
Health (School Nurse)	*see* Nursing Department
Pupil Personnel, including School Psychologist	*see* Advanced Studies Department (Education)/Coordinator of Pupil Personnel Program

APPLICATION FOR ADMISSION TO CREDENTIAL PROGRAMS

Students planning to undertake a program of studies leading to a credential must apply for admission in the School of Education Admissions Office (EdP 120). Application for admission should be filed during the first semester of the junior year or immediately after transferring to CSUF. Application for student teaching is a separate action and must be filed no later than the fourth week of the semester preceding the semester in which the applicant desires to take student teaching (E Ed 110 and 160, S Ed 155A and 155B).

The following minimum requirements must be met for acceptance in the respective credential programs (*Title 5, California Administrative Code, Section 41100*):

1. **Academic Aptitude.** Students who fall below the percentile rank of 50 on the college aptitude and reading tests must demonstrate compensating strength in other areas listed in the following sections.

2. **Scholarship.** Candidates for credentials with elementary (multiple subject) specialization must present a minimum grade-point average of 2.50 in the total university program; candidates for secondary (single subject) specialization must present a minimum grade-point average of 2.75 in the waiver program and the total university program. A grade-point average of not less than 2.50 must be maintained in all work taken at CSUF.
3. **Professional Aptitude.** Evidence of ability to work with pupils, parents, and school officials must be demonstrated by the candidate.
4. **Physical Fitness.** All candidates for public school credentials must secure medical clearance from the staff of the university Student Health Service before admission to a credential program is approved.
5. **Language Usage.** Habitual use of clear, correct, and appropriate language, both written and oral, is required, including demonstrated competency in composition and reading.
6. **Personality and Character.** Personal qualifications required for professional service are expected. These include appearance, dress, poise, force, vitality, social attitudes, cooperativeness, temperament, emotional stability, integrity, and such personal habits and manners as are not offensive to pupils, co-workers, and school patrons.
7. **General Fitness for Teaching.** Weakness in the foregoing items, or evidence of unfavorable traits of character or personality, will disqualify a student from candidacy for a credential program.

The School of Education Admissions Committee is responsible for recommending to the Dean applicants who qualify for admission to teaching, specialist, and services credential programs. Students who do not meet all of the criteria for admission to a credential program may submit written petitions to the Admissions Committee requesting review of their applications.

Note: All applications for admission to credential programs are to be made in the School of Education Admissions Office, EdP 120.

GRADUATE PROGRAMS

The Master of Arts degree programs in Education are administered by the School of Education and are designed to provide advanced study and research for the purpose of extending the competence of classroom teachers and specialists, counselors, and school administrators; to increase depth of insight into educational problems; and to provide for a first graduate degree for persons anticipating advanced graduate study related to school service. To meet these purposes, the following programs are offered: elementary teaching, secondary teaching, reading, educational theory, administration, counseling, and special education.

In addition to making application for admission to the university through the Office of Admissions, the student should consult the School of Education Graduate Office for program information, special application forms for admission to the School of Education graduate programs, and assignment to an appropriate adviser. The School of Education Graduate Office maintains a record center for all students who are working toward the master's degree in the School of Education. It also maintains liaison between the School of Graduate Studies and departments in the School of Education offering master's degree programs.

In order to ensure selection of courses that will be acceptable on a master's degree program, candidates should consult with an adviser as indicated below:

MA in Education

Elementary Teaching	see Elementary Education Department
Secondary Teaching	*see* Secondary Education Department
Reading	*see* Coordinator of Reading Specialist Program
Educational Theory	*see* Coordinator of Graduate Studies
Administration	*see* Coordinator of Administrative Services Program
MA in Counseling	*see* Coordinator of Pupil Personnel Services Program
MA in Special Education	*see* Coordinator of Special Education Program

MASTER OF ARTS DEGREE IN EDUCATION (Concentration in Reading)

The Master of Arts degre program in Education with a concentration in Reading is designed to provide professional and specialized preparation for classsroom and resource teachers and consultants; diagnosticians; and supervisors in reading clinics, schools, and community colleges. It enables graduates to do consulting and editing for publishing companies and to pursue advanced graduate study in universities offering the doctoral degree.

Admission to the program requires possession of a basic teaching credential and satisfaction of the CSUF School of Graduate Studies requirements for classified graduate standing.

Prerequisite: Fifteen units in Education.

Requirements: Under the direction of a graduate adviser, each student prepares and submits a program within the following framework:

	Units
Educ 220 and 298 or 299	7
Educ 164 or 234, 174, 224, 244	12
Approved electives	11
Total	30

MASTER OF ARTS DEGREE IN EDUCATION (Concentration in Educational Theory)

Prerequisite: Fifteen units in Education.

Requirements: Under the direction of a graduate adviser, each student prepares and submits a program within the following framework:

	Units
Educ 220 and 298 or 299	7
One or more courses from each of the following groups	12
(1) Psychological and sociological foundations	
(2) Historical and philosophical foundations	
(3) Counseling, guidance, and measurement	
(4) Administration, curriculum, methodology, supervision	
Approved 100- or 200-series courses outside A S-E Ed-S Ed	4–9
Approved electives	2–7
Total	30

INTERDEPARTMENTAL COURSES

EDUCATION (Educ)

101. Practicum in Tutoring (1–3) (Former S Ed 165)

Skills in tutoring individuals and small groups. Study habits, problem solving, writing and test-taking skills. Field work in tutoring. Not applicable for public school credentials.

122F. Field Work in Outdoor Education (1–2; max total 2) (Former E Ed 122F)

Prerequisite: E Ed 130 or S Ed 152; permission of instructor. Practice at camp with responsibilities of counseling, camp leadership, curriculum planning and evaluation; utilization of resource people from several disciplines.

135. Audio-Visual Education (2) (Former E Ed/S Ed 135)
Evaluation, selection, and utilization of various types of contemporary instructional materials, systems, and equipment. Laboratory experiences in the operation of equipment and materials design.

136. Multicultural Education (3) (Former E Ed 136)
Helps teachers cope effectively with diverse student needs in a plural society. Considers ethnic, socio-economic, sex, religious, other subcultural differences and problems of curriculum and instruction in multi-group classrooms.

138. Teaching the Linguistically Different (3) (Former E Ed 180T, E Ed 138)
In-depth study of principles and problems of new bilingual and bicultural modes in the education of the culturally and linguistically different child of Hispanic descent in the USA. Contrasting linguistic, cultural, learning styles, including classroom implications.

139. Bilingual/Cross-Cultural Education (3) (Former E Ed 180T, E Ed 139)
Methods and materials for bilingual/cross-cultural classrooms. A practical look at language arts methodologies for English and Spanish; teaching subject matter in two languages to bilinguals; bilingual teacher-pupil interaction strategies.

141. School Library Reference and Bibliography (3) (Former E Ed/S Ed 141)
Prerequisite: permission of instructor. Evaluation and use of basic reference tools found in the school library; selection, critical evaluation, and sources.

142. Selection and Uses of Library Materials (3) (Former E Ed/S Ed 142)
Prerequisite: permission of instructor. Selection and use of materials for school media centers according to the needs of children and the educational goals of the school program.

143. Literature for Young People (3) (Former E Ed/S Ed 143)
Prerequisite: permission of instructor. Survey of selected materials appropriate to the needs, interests, and abilities of young poeple. Use of books for curricular, leisure, and guidance purposes, practice in reviewing media and in giving book talks.

144. Advanced Cataloging (3) (Former E Ed/S Ed 144)
Prerequisite: permission of instructor. Extensive practice in cataloging, with emphasis upon resources requiring special description, such as audio-visual, resource material, and pamphlets.

145. School Library Practicum (9) (Former E Ed/S Ed 145)
Prerequisite: permission of instructor. Observation and practice work in selected school libraries; includes at least 180 clock hours of supervised library experience under the supervision of a credentialed librarian.

147. Administration of School Library Services (3) (Former E Ed/S Ed 147)
Prerequisite: admission to credential program. The materials-centered library; effective organization and maintenance based on standards, aims, and policies for the library in relation to curriculum, budgeting, reporting, and evaluating.

148. Organization of School Library Materials (3) (Former E Ed/S Ed 148)
Prerequisite: Educ 147 and admission to credential program. Acquisition, cataloging, classification, and allied processes for a materials-centered school library. Practice in cataloging and classifying library materials; development of a sample catalog.

153. Educational Statistics (3) (Former AS 153)
Methods of describing, analyzing, and interpreting data; statistical inference, including "t" test, ANOVA, correlation and prediction, chi square, and simple research design.

154. Measurement in Education (3) (Former AS 154)
Objective measurement of capacities and achievement of pupils; construction of informal, objective examinations and criteria for selection of standardized measuring instruments; planning and administering a measurement program.

157. Curriculum and Instruction in the Middle School (3)
Prerequisite: E Ed 130 or S Ed 152 (may take concurrently). Principles and practices of instruction in middle schools, classroom organization and management, measurement and evaluation.

164. Tutorial Reading (3) (Former E Ed/ S Ed 164)
Prerequisite: E Ed or S Ed 156. Designed to give the student direct involvement with a child who has reading problems; practical experience that uses the knowledge, skills, and techniques obtained in the prerequisite basic reading course. Testing, diagnosis, and remediation techniques are stressed. (2 lecture, 2 lab hours)

166. Reading Improvement (2)
A course to improve reading abilities. Emphasis placed on improving vocabulary, comprehension, and flexibility in reading skills.

174. Theory of Reading (3) '(Former E Ed 174)
Prerequisite: E Ed or S Ed 156 and permission of instructor. Study of the theory of teaching as it relates to the psychology of reading, thinking, and learning; the structure and dialects of the English language; cultural differences; motivation of children, colleagues, and communities.

180T. Topics in Education (1–3; max total 9) (Former E Ed 180T)
Issues and topics in educational foundations; curriculum and instruction; early childhood, elementary, middle school, and secondary education; special education; pupil personnel services; and supervision and administration.

181. Methods and Materials in College Teaching (2)
Prerequisite: Graduate standing. Instructional strategies, procedures, and techniques. Laboratory management, audio visual techniques, measurement and evaluation. (1 seminar, 2 lab hours)

182. Field Work in College Teaching (4)
Prerequisite: Educ 181 or S Ed 161, advancement to candidacy for master's degree. Supervised field experiences, including teaching practice in community colleges, minimum 45 hours. Scheduled conferences with university supervisor and cooperating community college instructor.

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*

220. Research in Education (3) (Former E Ed/S Ed/AS 220)
Prerequisite: 15 units of education courses or equivalent. Seminar in research methodology; identification of educational research problems; use of library resources, data gathering and processing, writing a research report; applies to elementary and secondary teaching, early childhood, reading, administration, counseling, special education, and related fields.

224. Diagnosis and Correction of Reading Disabilities (3) (Former E Ed 224)
Prerequisite: E Ed or S Ed 156 and permission of instructor. Causes of reading disabilities; observation and interview procedures; diagnostic instruments; standard and informal tests; materials and methods of instruction (2 lecture, 2 lab hours)

234. Practicum in Reading Disabilities (3) (Former E Ed/S Ed 234)
Prerequisite: E Ed or S Ed 156, Educ 224. Laboratory experiences in the diagnosis and correction of reading disability cases under supervision (2 lecture, 2 lab hours)

244. Research in Reading Curriculum (3) (Former E Ed/S Ed 244)
Prerequisite: Educ 174, 224, 234, and permission of instructor. Study of selected curricula; planning curriculum in reading; effective ways of dealing with the functions and duties of reading specialists and consultants.

250. Seminar in Curricululm (3) (Former E Ed 250)
Prerequisite: teaching credential. Theory and practice of curriculum development, evaluation, and revision. Study of contemporary problems and curricular approaches to meet societal needs.

254. Supervised Field Experiences in Reading (3) (Former E Ed/S Ed 254)
Prerequisite: Educ 224, 244, and permission of instructor. Intensive varied supervised field experiences involving diagnosis and treatment of reading difficulties; development or refinement of reading programs; evaluation of reading instruction; application of interpersonal communications and group process skills.

275. Practicum in Curriculum Development (1–6; max total 6) (Former E Ed/S Ed 275)
Prerequisite: teaching credential. Study and application of contemporary research in curriculum development.

277. Professional Organizations in Education (3)
Prerequisite: graduate standing. Role of educators' organizations in American education. Occupational problems and issues, economic and political advocacy, occupational ethos and control, job security, ethics, grievances, collective bargaining.

282. Philosophy of Education (3) (Former S Ed/AS 282)
Prerequisite: S Ed 152, teaching experience. Seminar on philosophical issues in educational theory and practice and their historical backgrounds. Educational implications of current and historical systematic philosophical outlooks.

284. Seminar in International Education (3) (Former AS 284)
Analysis of historical, social and political forces which shape national education endeavor. Emerging international education efforts and organizations.

285. Seminar in Advanced Educational Psychology (3) (Former AS 285)
Prerequsite: E Ed 130 or S Ed 152. Seminar on the psychological foundations of education; nature and characteristics of development, learning process, forces which affect educational growth.

286. Social Issues in Education (3) (Former AS 286)
Prerequisite: Educ 186 or E Ed 140 or S Ed 151, or course in sociology or anthropology and permission of instructor. Seminar for analysis of effect on institutional and ideological trends and problems on the role and operation of the school in American society.

287. Seminar in History of Educational Thought (3) (Former AS 287)
Prerequisite: Educ 282, or philosophy course and permission of instructor. Seminar on historical foundations of educational theory; growth of thought regarding teaching and learning; relationship of educational theory and practice in the United States.

298. Directed Research (4) (Former E Ed/S Ed/AS 298)
Prerequisite: advancement to candidacy for MA degree; B average on 24 units of MA program including Educ 220. Research in solution of educational problems in administration and supervision, counseling and guidance, educational theory, early childhood, reading, special education. Individual research papers and weekly seminar conference arranged.

299. Thesis (4) (Former E Ed/S Ed/AS 299)
Prerequisite: see Master's Degrees—Thesis, Project, or Thesis alternative. Preparation, and completion and submission of an acceptable thesis for the master's degree.

IN-SERVICE COURSES
(See *Course Numbering System*)

306. Foundations of Adult Education (3) (Former S Ed 362)
Scope and function of adult education, curriculum principles and practices, instructional techniques and media, student and instructional evaluation; applicable on a BS degree in Vocational Education.

316. Seminar in Adult Education (3) (Former S Ed 364)
Prerequisite: Educ 306. Community and occupational relationships, work experience, counseling and guidance, leadership development, community and cultural differences; applicable on a BS degree in Vocational Education.

326. Independent Study in Adult Education (3)
Prerequisite: Educ 316. Individually prescribed assignments in terms of candidate's educational and occupational background and teaching field; applicable on a BS degree in Vocational Education.

353. Curriculum Problems and Practices (1–3; max total 12 if no topic repeated) (Former E Ed/S Ed 353)

380T. Topics in Education (1–6; max total 12) (Former E Ed/S Ed 380T)

395. Supervision of Student Teachers (2; max total 4) (Former E Ed/S Ed 395)

Note: Educ 306, 316, and 326 are equivalent to the CSUC consortium courses D S 306, 316, and 326; they satisfy specified requirements for the Designated Subjects Credential for Adult and Vocational Education.

ELEMENTARY EDUCATION DEPARTMENT

FACULTY

George E. Avery, Leonard H. Bathurst, Beatrice E. Bradley, Robert D. Brenner, Maxima A. Dandoy, David Haimbach, Joyce M. Huggins, Alexander H. Lark, Jerome E. Leavitt, James B. Lundberg, John E. Martin, Georgia E. Nicklett, Arne J. Nixon, Cecilio Orozco, Richard F. Osterberg, Thelma M. Rea, Sandford W. Reitman, Ivan H. Rowe, Deanne E. Schilling, Forrest E. Sloan, Charlene K. Smith, Carl R. Stutzman

CREDENTIAL PROGRAMS

The Department of Elementary Education offers programs leading to the Multiple Subjects, Bilingual/Cross-Cultural, Early Childhood Specialist, and Reading Specialist credentials. Advisers for the respective programs are assigned when students make application for admission to a particular program in EdP 120.

Multiple Subjects Credential Program

Holders of Multiple Subjects credentials are authorized to teach in self-contained classrooms as commonly found in elementary schools. The preliminary Multiple Subjects credential requires (1) certification of subject matter competency, established by examination or completion of an approved waiver program (see Liberal Studies major below); (2) completion of an approved program of professional preparation, including one semester (or equivalent) of full-time student teaching; and (3) a bachelor's degree.

Liberal Studies Major. The Liberal Studies Credential Major at CSUF is accepted by the California Commission for Teacher Preparation and Licensing as an alternative to taking and attaining qualifying scores on the National Teachers Examination (NTE—Commons Branch). Candidates who complete this major are also adjudged to have completed all the General Education requirements for the baccalaureate degree. *(Note: P1 Si 2 or 101 must be completed in addition to the Liberal Studies Major.)*

The Liberal Studies Major must be completed prior to or concurrently with the final student teaching assignment, and it consists of the following categories and courses:

Area I *English*
- A. Required:
  1. Engl 1
  2. Engl 20
  3. Ling 10 or 134
  4. Spch 3 or 4 or 8
- B. Select 6-12 units in upper division courses in one of the following disciplines: English, Linguistics, Speech

Area II *Humanities and Fine Arts*
- A. Required:
  1. One course from Art 20, 27, 40, 60, 70, 91
  2. One course from Music 9, 73, 74
  3. One course from Drama 22, 33, 34
  4. One course from Art H 10, 20, 134, 136, 140, 142, 144, 160, 162, 170, 173, 175; or Ethnic Studies 2; or Humanities 10 or 11; or three units from Music 3, 4, 5, 6, 8, 11, 12, 13, 15, 16, 18, 20, 21, 22, 25, Dance 116, 160, PE AC 111A, 111B, 113A, PE 151A, 151B, 157A.
  5. Six units in one foreign language may be substituted for 3 and 4 above.
- B. Select 6–12 units in upper division courses from one of the following disciplines: Art, Drama, one Foreign Language, La Raza, Music, Philosophy

Area III *Mathematics and Sciences*
- A. Required:
  1. Math 41
  2. One course from Math 4, 11, 52, 70, 71, 72
  3. P Sci 20 or 21, or Chem 1, or Geol 1 or 2, or Geog 5 or 7
  4. Biol 10 or Bot 10 or Zool 10
- B. Select 6–12 units in upper division courses from one of the following disciplines: Biology,

Chemistry, Geology, Mathematics, Physical Geography (select from 111, 112, 114, 117, 118, 120, 121, 126, 128, 129), Physics

Area IV *Social Sciences*

A. Required:
   1. Hist 2
   2. Hist 12
   3. Geog 2 or 4
   4. Anth 2 or Soc 1 or Psych 10 (prerequisite to E Ed 130) or Eth S 1

B. Select 6–12 units in upper division courses from one of the following disciplines: Anthropology, Economics, Geography (excluding Geog 111, 112, 114, 117, 118, 120, 121, 126, 128, 129), History, La Raza, Political Science, Psychology, Sociology

Bilingual/Cross-Cultural Emphasis in Liberal Studies. Students wishing to prepare to teach in bilingual/cross-cultural educational settings should include the following courses in their Liberal Studies Credential Major program: In Area I B, 6 units in Linquistics from 132, 141, 147, 148, 171; Area II A 5, 6 units of Spanish; Area II B, 9 units of upper division Spanish from 102, 104, 106T, 118, 126, 139, 142, 143; Area IV B, 9 units from La R 105, 110, 112, 114A, 114B, 142, 145.

Students in this program are given a student teaching assignment (E Ed 160) in a bilingual/cross-cultural setting; they should include Educ 138 in their professional educational program. In addition to the 9 units of upper division Spanish, students may use La R 104, 121A or 121B in Area II B.

National Teachers Examination (NTE). If candidates select any major other than Liberal Studies, they must attain qualifying scores on the Commons Branch section of the NTE before they may be admitted to full-time student teaching in the Multiple Subjects Credential Program. Consult the office of Testing Services (JAd 218) for information about the National Teachers Examination.

Admission to Multiple Subjects Credential Program. Candidates must apply in Room 120, Education-Psychology Building, and complete the required steps in the admissions process during the first semester of enrollment in the professional preparation program. Those who are not approved by the Admissions Committee of the School of Education will not be permitted to enroll in E Ed 160.

Professional Preparation: Preliminary Credential. The approved program of professional preparation for the preliminary Multiple Subjects Credential consists of 24–25 upper division units; three options are available. Option I, which most candidates complete, assumes that the candidate has had limited or no experience with children and teaching. Option II is designed for candidates who wish to prepare for a specialization in Early Childhood Education. Option III is designed for candidates who have had extensive experience with children and teaching and for those who are working toward the Special Education Specialist Credential with emphasis on Communication Handicapped.

The sequence of required courses in the three options is as follows:

Option I	*Option II*	*Option III*
E Ed 110 (2)	E Ed 110 (1–1–1)	E Ed 130 (3)
E Ed 130 (3)	E Ed 130 (3)	E Ed 140 (3)
E Ed 140 (3)	E Ed 140 (3)	E Ed 150 (4)
E Ed 150 (4)	E Ed 150 (4)	E Ed 156 (3)
E Ed 156 (3)	E Ed 156 (3)	E Ed 160 (5–5)
E Ed 160 (5–5)	E Ed 160 (5–5)	Elect (2)
25	26	25

Early Childhood Emphasis. Students wishing to prepare for teaching in early childhood educational settings should select Option II (See Professional Preparation: Preliminary Credential above); it includes a block program with field work and student teaching in early childhood agencies and classes.

Fifth-Year Program: Clear Credential. Candidates must secure approval, in advance, for all courses intended to satisfy the requirement of an approved fifth-year program of postgraduate work, including courses taken in the last semester of the senior year that are not required for graduation. The fifth-year of preparation must be completed within five years of the date of issuance of the preliminary credential in order to qualify for a clear Multiple Subjects Credential. The fifth-year program must be approved by an assigned credential adviser and the Coordinator of Elementary Education. *Note: The clear credential requires a total of 30 units of professional education.*

The California Commission for Teacher Preparation and Licensing has announced "that all individuals receiving a clear teaching credential after July 1, 1979, [shall] have received training in the needs of, and methods of providing educational opportunities to, individuals with exceptional needs." See the Coordinator of Elementary Education for the means of satisfying this requirement.

Bilingual/Cross-Cultural Specialist Credential

The Bilingual/Cross-Cultural Specialist Credential requires completion of a basic teaching credential program and approval of an application for admission to the specialist credential program. Courses taken in the Bilingual/Cross-Cultural program may be used to satisfy part or all of the fifth-year postgraduate semester units, for the multiple and single subjects credential programs, providing prior approval is obtained from the Coordinator of the Bilingual/Cross-Cultural program and the Coordinator of Elementary or Secondary Education.

Required courses: Educ 138, 139; E Ed 160—bilingual (or equivalent); La R 105, 110, 145; Ling 132, 141; and Span 102, 104, 139, for a minimum of 30 postgraduate units.

Early Childhood Specialist Credential

The Early Childhood Specialist Credential requires completion of a basic teaching credential program and approval of application for admission to the specialist credential program. Courses taken in the Early Childhood program may be used to satisfy part or all of the fifth-year postgraduate requirement, of 30 semester units, for the multiple and single subjects credential programs, providing prior approval is obtained from the Coordinator of Early Childhood Education and the Coordinator of Elementary Education.

Required courses: E Ed 151, 171, 231, 241, 251, 271, and 12 units of approved electives (see Graduate Program below for coordination with a Master of Arts Degree in Education), for a minimum of 30 postgraduate units.

Reading Specialist Credential

The Reading Specialist Credential requires a basic teaching credential and completion of a Master of Arts Degree in Education with a concentration in Reading. On completion of the degree, a supervised field experience of one semester is required. Courses taken in the Reading program may be used to satisfy part or all of the fifth-year postgraduate requirement of 30 semester units for the multiple and single subjects credential programs, providing prior approval is obtained from the Coordinator of the Reading program and the Coordinator of Elementary or Secondary Education.

Required courses: Educ 164 or 234, 174, 220, 224, 244, 254, 298 or 299, and electives, for a minimum of 30 postgraduate units (see Graduate Program for the Master of Arts Degree in Education with a Concentration in Reading).

Recommended electives: Educ 138, 139; E Ed 120ST, 143, 213, 214; Ling 136, 140T; Drama 137; A S 114, 116.

Mini-Corps Program

The California Migrant Teacher Assistant Program (Mini-Corps) is a special program to prepare teachers for meeting the educational needs of migrant children. Through the Mini-Corps, qualified undergraduates working toward teaching credentials obtain early classroom experience while serving as assistants to teachers of migrant children.

Additional information may be obtained from the CSUF Mini-Corps Coordinator in the Education-Psychology Building, Room 153.

GRADUATE PROGRAM

The Elementary Education Department offers a program leading to the Master of Arts Degree in Education with a concentration in Elementary Teaching; interest areas include Classroom Teaching and Early Childhood. Prospective candidates can usually plan to coordinate many of the requirements for the degree with the fifth-year program required for a clear multiple or single subject credential (see Credential Programs above). See School of Graduate Studies—Master's Degrees for general requirements; see Elementary Education Department program adviser for specific requirements.

Prerequisites

Fifteen units in Education and an adequate background for advanced work in the interest area.

Requirements	*Units*
Educ 220, 285, 298 or 299	10
Required and elective courses in interest area	20
Total (at least 15 units in 200 series)	30

Interest areas	*Units*
Classroom teaching: Adviser-approved courses in a subject-related and/or professional needs area	20
Early childhood: E Ed 151, 171, 231, 241, 251, 271	18
Approved elective	2

COURSES

ELEMENTARY EDUCATION (E Ed)

110. Student Teaching in Elementary School (1–3) (Former E Ed 132A)
Orientation to problems and practices of elementary teaching; observation, participation and directed teaching in multicultural, multigrade classrooms. Minimum of 45 minutes per day per unit, with additional conference periods, observations and visitations by arrangement.

120. Problems in Elementary Education (2–3; repeatable with different topics) (Former E Ed 120T section)
Study in depth of various areas in elementary education including children's literature (CL), classroom organization and management (CM), curriculum (CU), kindergarten (KG), language arts (LA), mathematics (MA), nursery school (NS), science (SC), social studies (SS), storytelling (ST).

130. Psychological Foundations of Education (3) (Former E Ed 105)
Prerequisite: Psych 10; E Ed 110 (Option II, concurrent enrollment); admission to Multiple Subjects Credential Program. Facts, ideas and principles fundamental to an understanding of educational procedures in teaching and learning and to the growth and development of children.

137. Creative Dramatics (2) (See Drama 137)

140. Cultural Foundations of Education (3) (Former E Ed 100)
Prerequisite: E Ed 110 (Option II, concurrent enrollment); admission to Multiple Subjects Credential Program. Functions of education in America's multicultural society; role of the school and teacher; impact of social conflict and interaction on the school's function; relationship between school and community.

150. Curriculum and Instruction in Elementary Schools (4) (Former E Ed 120T section)
Prerequisite: admission to Multiple Subjects Credential Program. E Ed 110 (Option II, concurrent enrollment), 130, and 140. Current conceptions of curriculum and instructional resources in the elementary school; methods of teaching. (3 lecture, 2 lab hours)

151. Organization of Programs for Young Children (3)
Prerequisite: admission to credential program. A study of varied types of organization and administrative patterns in programs for young children. Principles of democratic supervision and policies related to purposes and organization, licensing, equipment, records, financing, parent and community relations, personnel policies, and staff development.

156. The Teaching of Reading (3)
Prerequisite: admission to credential program; E Ed 110 (Option II, concurrent enrollment). Designed for candidates for multiple subject credential. The nature of reading; methods and materials for teaching reading skills; provision for individual differences (ethnic, socio-economic, dialectal); theories, programs, and organization; stimulation of interest; improvement in oral reading and phonics.

157. Conservation of Natural Resources (3) (See Biol 157)

158. Communication and Learning (3) (See Spch 114)

160A–B. Student Teaching in Elementary School (5A-5B) (Former E Ed 132B)
Prerequisite: admission to Multiple Subjects Credential Program. Completion of Liberal Studies Major or qualifying score on National Teachers Examination; completion of all required courses in approved program. Supervised teaching in public school classrooms; total assignment requires full days or equivalent. Special sections provided for Early Childhood, Communicative Disorders, Special Education. (See *Schedule of Courses*)

161. Management of Programs for Young Children (3)
Prerequisite: E Ed 151. Seminar to consider the administrator's responsibility for records, bookkeeping, inventories, equipment sources, efficient food services, resources for general supplies, insurance, employee benefits, and budget problems.

171. Principles of Early Childhood Education (3)
Prerequisite: H Ec 39 and Psych 101. A study of the physical, social and psychological influences on the young child's learning, the development of program models, and principles of curriculum development for the child up to eight years of age.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

GRADUATE COURSES

See *Course Numbering System—Definitions and Eligibility*

213. Language in the Elementary School (3)
Prerequisite: graduate standing. Seminar in the study of the English language arts. Objectives, curriculum, materials, and research in oral and written communication; project required.

214. Children's Literature (3)
Prerequisite: graduate standing. Seminar in children's literature; critical interpretation of children's literature; emphasis upon impact of changing social and cultural patterns in books for children; project required.

221. Early Childhood Education (3)
Prerequisite: E Ed 171 and admission to Early Childhood Emphasis or Specialist program. Seminar dealing with individualizing the school experience, gathering of learner information related to interests, skills, achievement and planning appropriate educational strategies.

231. Curriculum in Early Childhood Education (3)
Prerequisite: E Ed 171; admission to Early Childhood Emphasis or Specialist program. Concepts underlying curriculum development for children eight years and younger. Teacher's role in planning, implementing, and assessing curriculum; development of teaching strategies in environmental settings to include nursery, kindergarten, and primary levels. (2 seminars, 2 lab hours)

241. Field Work in Early Childhood Education (3)
Prerequisite: admission to Early Childhood Emphasis or Specialist program; concurrent enrollment in E Ed 231. Supervised experiences in work with young children in a variety of settings aimed at enabling the student to implement curriculum content and demonstrate teaching skills with the young child and his family in a prekindergarten program and at least one other age group. (minimum of 135 hours)

250. Elementary School Curriculum Development (3)
Prerequisite: teaching credential. Seminar on concepts and principles of curriculum planning; evaluation of processes and programs; availability and use of resources; innovations and research in curriculum development. Project required.

251. Home, School, Community Resources in Early Childhood (3)
Prerequisite: admission to Early Childhood Emphasis or Specialist program. Teacher-parent relationships in individual and group settings; role of classroom aides and community volunteers; work with student teachers; organization and execution of in-service programs using home, school, and community resources.

271. Comparative and International Studies in Early Childhood (3)
Prerequisite: admission to Early Childhood Emphasis or Specialist program. Factors affecting personality, language, and cognitive skills in early childhood. Analysis of similarities and contrasts among varying cultures to include Mexican-American, Black, Oriental, European, and Asian environments for young children; Unesco and International children's agencies. Project required. (2 seminars, 2 lab hours)

290. Independent Study (1–3; max see reference)
(See *Academic Placement—Independent Study.*)

IN-SERVICE COURSES

(See *Course Numbering System*)

381. Planning and Organizing Outdoor Education (2)

383. Problems in Child Study (2; max total 12)

SECONDARY EDUCATION DEPARTMENT

FACULTY

Donald Allison, Richard S. Brown, Norma Cochran, James P. Echols, Arthur A. Hiatt, Lester J. Roth, M. Marty Santigian

CREDENTIAL PROGRAMS

The Department of Secondary Education offers a program leading to the Single Subject credential. Single Subject coordinators (see below) advise credential candidates majoring in their respective departments, teach the methods courses in their subject fields, assign and supervise their student teachers, and act as official liaison between the subject matter departments and the Secondary Education Department.

Single Subject Areas
Agriculture: R. Rogers
Art: Dolarian
Business: Schramm
English: Karr
English—Drama: G. Anderson, Eldridge
English—Speech: G. Anderson
Foreign Language: H. Roth
Home Economics: Bauer

Single Subject Areas
Industrial Arts: Winegar
Life Science (Biology): Clay
Mathematics: Hiatt
Music: Bakkegard, Irwin
Physical Education—Men: Burgess
Physical Education—Women: Bevans, Mott
Physical Science: Schockley
Social Science: J. Christensen, Echols

Single Subject Credential Program

Holders of Single Subject credentials are authorized to teach subjects commonly offered by secondary schools and specified on their credentials. The preliminary Single Subject credential requires (1) certification of subject matter competency, established by examination or completion of an approved waiver program (see above for majors and advisers); (2) completion of an approved program of professional preparation, including one semester (or equivalent) of full-time student teaching; and (3) a bachelor's degree.

Single Subject Majors. CSUF offers approved waiver programs in Agriculture, Art, Business, English, English—Drama, English—Speech, Foreign Language, Home Economics, Industrial Arts, Life Science (Biology), Mathematics, Music, Physical Education, and Social Sciences. A program in Physical Science is currently being submitted for approval. For further information about waiver programs, see the Coordinator of Secondary Education and the appropriate departmental coordinator listed above.

Single Subject Examinations. Candidates who wish to obtain authorization to teach additional subjects may validate such subject matter competency by passing an examination in one or more of the single subject categories listed above. For further information, see the Coordinator of Secondary Education.

Admission to Single Subject Credential Program. Candidates must apply in Room 120, Education-Psychology Building, and complete the required steps in the admissions process during the first semester of enrollment in the professional preparation program. Those who are not approved by the Admissions Committee of the School of Education will not be permitted to enroll in S Ed 155B.

Professional Preparation: Preliminary Credential. The approved program of professional preparation for the preliminary Single Subject Credential consists of 24 upper division units in professional education courses as follows:

		Units
S Ed 155A	Student Teaching	4
S Ed 151	Social Foundations	3
S Ed 152	Psychological Foundations	3
S Ed 161	Methods and Materials in Secondary Teaching	3
S Ed 155B	Student Teaching	4-4 (or 8)
S Ed 156	The Teaching of Reading	3
		24

Fifth Year Program: Clear Credential. Candidates must secure approval, in advance, for all courses intended to satisfy the requirement of an approved fifth-year program of postgraduate work, including courses taken in the last semester of the senior year that are not required for graduation. The fifth year of preparation must be completed within five years of the date of issuance of the preliminary credential in order to qualify for a clear Single Subject Credential. The fifth-year program must be approved by the departmental coordinator and the Coordinator of Secondary Education. *Note: The clear credential requires a total of 30 units of professional education.*

The California Commission for Teacher Preparation and Licensing has announced "that all individuals receiving a clear teaching credential after July 1, 1979, [shall] have received training in the needs of, and methods of providing educational opportunities to, individuals with exceptional needs." See the Coordinator of Secondary Education for the means of satisfying this requirement.

Agricultural Specialist Credential

The Agricultural Specialist Credential is offered jointly by the School of Education and the School of Agriculture and Home Economics. It requires completion of a bachelor's degree program (see School of Agriculture and Home Economics—Agricultural Education Major for the BS Degree), professional education courses (see Professional Preparation: Preliminary Credential above), and an approved fifth-year program of 30 postgraduate units. The credential authorizes candidates to teach secondary school vocational agriculture. (For further information, see the departmental coordinator in Agriculture and the Coordinator of Secondary Education.)

Mini-Corps Program (*see* Elementary Education Department)

GRADUATE PROGRAM

The Secondary Education Department offers a program leading to the Master of Arts Degree in Education with a concentration in Secondary Teaching. The program includes at least 11 semester units in a subject matter field, and each candidate is advised jointly by a departmental coordinator and a graduate adviser in the Secondary Education Department. See School of Graduate Studies—Master's Degrees for general requirements; see Secondary Education Department graduate adviser for specific requirements.

Prerequisites

Fifteen units in Education and an adequate background for advanced work in professional education and the subject matter area.

Requirements	*Units*
Educ 220, 298 or 299	7
Educ 282, 284, 285, 286, 287 (select 2)	6
S Ed 272, 273, 274	6
Courses in a subject matter field	11
Total	30

COURSES

SECONDARY EDUCATION (S Ed)

151. Social Foundations of Education (3)
Scope and function of secondary schools, social, historical and philosophical influences, curriculum, recent trends and issues.

152. Psychological Foundations of Education (3)
Prerequisite: Psych 10. Educational psychology, growth and development, learning, personality and self concepts of adolescents, implications for learning and teaching.

153. Curriculum and Instruction (3)
Prerequisite: S Ed 152. Theory and practice of curriculum development; principles and organization of instruction; audio-visual education, classroom management and discipline, measurement and evaluation.

155A. Student Teaching (4)
Supervised field experiences and teaching in public schools; minimum 120 hours. Scheduled conferences with college supervisors, and public school personnel.

155B. Student Teaching (4 or 8; max total 12)
Prerequisite: S Ed 151, 152, 161 (or concurrent), 155A, senior standing, admission to Single Subject Credential Program, approval of major department or passing of single subject examination. Supervised field experiences and teaching in public schools; minimum 120 hours for each 4 units. Scheduled conferences with college supervisor and public school personnel.

155C. Student Teaching (12)
Not open to students with credit in S Ed 155B. Prerequisite: S Ed 151, 152, 161 (or concurrent), senior standing, admission to Single Subject Credential Program, approval of major department or passing of single subject examination. Supervised field experiences and teaching in public schools; minimum 360 hours. Scheduled conferences with college supervisor and public school personnel.

156. The Teaching of Reading (3)
Not open to students with credit in E Ed 156. Prerequisite: admission to the credential program. Designed for candidates for single subject credentials. The nature of reading; methods and materials for teaching reading skills; provision for individual differences (ethnic, socio-economic, dialectal); theories, programs and organizations; stimulation of interest improvement in oral reading and phonics. (2 lecture, 2 lab hours)

161. Methods and Materials in Secondary Teaching (3)
Prerequisite: S Ed 152, admission to credential program or teaching experience. A methods course in secondary school subjects. Instructional procedures, techniques, and resources for teaching; appraisal of instructional innovations; classroom organization and management; measurement and evaluative techniques. Some areas have labs.

190. Independent Study (1–3; max see reference)
(See *Academic Placement—Independent Study.*)

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

272. Instructional Planning and Evaluation (2)
Principles and practices of instructional planning, assessment and testing of learning outcomes, performance appraisal, test construction and analysis, grading. Evaluation of teaching.

273. Secondary School Curriculum (2) (Former S Ed 253)
Prerequisite: S Ed 155B (may take concurrently). Seminar on concepts and principles of curriculum planning; evaluation of processes and programs; availability and use of resources; innovations and research in curriculum development. Project required.

274. Social Interaction in Teaching (2)
Prerequisite: S Ed 155B (may take concurrently). Problems of social interaction between teachers, students and parents, classroom guidance, extra curricular activities, mental hygiene of teachers.

290. Independent Study (1–3; max see reference)
(See *Academic Placement—Independent Study.*)

IN-SERVICE COURSES

(See *Course Numbering System*)

361. General Methods of Teaching (3)

363F. Field Work in Curriculum (1–3; max total 6, if no project repeated)

ADVANCED STUDIES DEPARTMENT

FACULTY

Ray E. Brewer, Peter G. Fast, I. Ace Griffiths, Gordon F. Johnson, Leland E. Mach, Robert H. Monke, H. Dan Smith, James C. Snider, Richard K. Sparks, Robert E. Valett, Bruce M. Wilkin

The Advanced Studies Department offers programs for credentials and master's degrees in the areas of school administration, pupil personnel, and special education. The programs utilize the services and facilities of community agencies and many of the school districts listed at the beginning of this (School of Education) section.

CREDENTIAL PROGRAMS

The Advanced Studies Department credential programs may, with prior approval, be used for some or all of the fifth-year requirement for a clear teaching credential.

Special Education Specialist Instruction Credential

The Special Education credential program offers preparation for teaching in the areas of learning handicapped, severely handicapped, communication handicapped, and the gifted.

An emphasis in Career/Vocational Education is available to all Special Education credential candidates; see the Coordinator of Special Education for details.

Program requirements. Candidates for the Special Education credential must do the following:

(1) File a credential applicant locator card in EdP 120.
(2) Consult the Coordinator of Special Education concerning specific admission requirements.
(3) Complete requirements, if any, for a basic teaching credential.

Course requirements. All emphases except Communication Handicapped include Educ 153 and A S 114, 116, and 170. Additional requirements are as follows:

Learning Handicapped (educationally handicapped, behaviorally disturbed, and educable mentally retarded): A S 230, 242, 243, 245, 246, 248, 253, 256.

Severely Handicapped (severely mentally regarded, severely emotionally disturbed or autistic, and multiple handicapped): A S 230, 242, 243, 245, 246, 253, 254, 256.

Communication Handicapped: see Communicative Disorders Department.

Gifted: A S 230, 245, 256D, 257, 258, 259, 260, 290

Administrative Services Credential

Candidates for the Administrative Services credential must satisfy the following requirements in order to be recommended to the Commission for Teacher Preparation and Licensing:

(1) Possession of a valid California teaching credential based on a bachelor's degree, or a pupil personnel services credential.
(2) Verification of three years of successful, full-time teaching experience in the public schools, or in private schools of equivalent status, or three years of experience in the field of pupil personnel work.
(3) Completion of a credential applicant locator card to be filed in EdP 120.
(4) Admission to the Administrative credential program (see Coordinator of School Administration Program for details).
(5) Completion of A S 261, 262, 263, 264, 266, 272, 273, 275, 276.

Note: The California Commision for Teacher Preparation and Licensing has announced "that all individuals receiving an Administrative Services credential after July 1, 1979, [shall] have received training in the needs of, and methods of providing educational opportunities to, individuals with exception needs." See the Coordinator of the School Administration Program for the means of satisfying this requirement.

Pupil Personnel Services Credential—Counseling

Candidates for the Pupil Personnel Services Credential—Counseling must satisfy the following requirements in order to be recommended to the Commission for Teacher Preparation and Licensing:

(1) Completion of a credential applicant locator card to be filed in EdP 120.
(2) Application for admission to graduate standing at CSUF.

(3) Application for admission to the Pupil Personnel Services credential program in EdP 131 during the first 15 units of course work; due November 30 for spring semester and April 30 for summer or fall semester. (See Coordinator of Pupil Personnel Services for further details.)
(4) Completion of prerequisites: Educ 153 and A S 174; program requirements: Educ 220 and A S 118, 172, 222, 223, 224, 224FA or 224FB, 225, 226, 227, 228, 230, 231.

Note: See the Psychology Department for the Psychology track program leading to the Pupil Personnel Services Credential—Counseling.

Pupil Personnel Services Credential—School Psychologist
See the Psychology Department.

GRADUATE PROGRAMS

The Advanced Studies Department offers programs leading to Master of Arts Degrees in Counseling, Education with a concentration in Administration, and Special Education. Candidates who qualify for a preliminary teaching credential with completion of a bachelor's degree program may, with prior approval, use a master's degree program to satisfy the fifth-year requirements for a clear teaching credential.

MASTER OF ARTS DEGREE IN COUNSELING

The Master of Arts degree program in Counseling is designed for persons who desire to practice in the field of Counseling. Persons completing this degree may qualify to work with public schools, social agencies, community colleges, four-year colleges and universities and in vocational settings, marriage and family counseling, and related areas.

Prerequisites: Evidence of satisfactory academic background in (1) human growth and development, (2) social and cultural foundations, (3) statistics, (4) oral and written communication, and (5) introduction to counseling. The student must file an autobiography, three letters of recommendation, a health clearance, satisfactory scores on the GRE Aptitude and Advanced Tests in Education, and transcripts of all college work. Students entering the program should go to EdP 131 for appropriate forms; admission to the program is recommended by a departmental committee. Students may apply during fall and spring semesters. Those seeking admission for the fall semester should submit applications during the preceding spring semester.

Requirements: Under the direction of a graduate adviser, each student prepares and submits an individually designed program within the following framework:

	Units
Educ 220 and 298 or 299	7
A S 222, 224, 227, 228, 231	16
Approved electives	7
Total	30

Electives. Select from A S 118, 172, 223, 224FA, 224FB, 224FC, 225, 226, 230, and other approved courses. Substitutions must be approved by the Program Coordinator.

MASTER OF ARTS DEGREE IN EDUCATION, CONCENTRATION IN ADMINISTRATION

The Master of Arts Degree program in school administration is designed to provide professional preparation for the positions of building principal, consultant, supervisor, program director, assistant superintendent, and superintendent.

Prerequisites. Fifteen units in Education and an adequate background for advanced work in the field.

Requirements. Educ 220, 298 or 299; A S 261, 262, 263, 264, 266, 272, and approved electives, to total 30 semester units.

Electives. A S 273, 275, 276, or other approved courses.

MASTER OF ARTS DEGREE IN SPECIAL EDUCATION

The Master of Arts Degree program in special education offers specializations in the gifted, learning handicapped, and severely handicapped for those interested in professional work with retarded or gifted children and with regular and exceptional children having specific learning

disabilities.

Prerequisites. Fifteen units in Education, including statistics (Educ 153 or equivalent), and an adequate background for advanced work in the field.

Requirements	*Units*
Educ 220 and 298 or 299	7
Required courses in area of specialization	18–19
Approved electives	4– 5
Total	30

Area of specialization, required courses.

Gifted A S 256D, 257, 258, 259, 260, 290	18
Learning Handicapped A S 242, 243, 245, 246, 248, 256	19
Severely Handicapped A S 242, 243, 245, 246, 253, 256	19

Electives. Select from A S 114, 115F, 116, 163A, 163B, 163C, 164A, 164B, 170, 230, 244, 249, 254, 290.

COURSES

ADVANCED STUDIES (A S)

114. Education of Exceptional Children (3)
Identification of common and differentiating characteristics of exceptional children. Diagnostic instructional program of legal provisions, certification requirements. Observation in clinical sites on and off campus, public and/or parochial schools. Students will incur travel expenses. (2 lecture, 2 lab hours)

115F. Field Work With Exceptional Children (1–3; max total 6)
Prerequisite: permission of instructor. Supervised observation and participation in selected programs for exceptional children; educational planning, guidance, and counseling.

116. Prescriptive and Individualized Instruction (3)
Prerequisite: A S 114. Development and examination of methods and materials relative to individual learning problems; study of models and individual programs. (2 seminar, 2 lab hours)

118. Mental Hygiene and Guidance (3)
Seminar on emotional and social problems of children in their adjustments to school and home practices and pressures.

163A. Student Teaching: Severely Handicapped (1–8; max total 8)
Prerequisite: admission to Special Education credential program. Directed observation, participation, and teaching in classes for the mentally retarded in public schools under supervision. Weekly conference with university supervisor.

163B. Student Teaching: Learning Handicapped (1–8; max total 8)
Prerequisite: admission to Special Education credential program. Directed observation, participation and teaching in classes for the educationally handicapped in public schools under supervision. Weekly conference with university supervisor.

163C. Student Teaching: Gifted (1–8; max total 8)
Prerequisite: admission to Special Education credential program. Directed observation and teaching in classes for the gifted and creative in public schools under supervision. Weekly conference with university supervisor.

164A. Student Teaching: Speech and Hearing Handicapped (4–9; max total 9)
Prerequisite: 4–6 units of C D 130 or 230, including 150 clock hours of therapy; admission to the credential program. To be taken concurrently with C D 209. Directed observation, participation, and clinical practice (120 hours minimum) under supervision. Weekly conference with university supervisor.

164B. Student Teaching: Deaf and Hard of Hearing (4–9; max total 9)
Prerequisite: 4 units of C D 160 or 260; approval by a departmental review committee; admission to the credential program. Teaching under supervision in a class for the deaf or hard of hearing. Directed observation; participation and weekly conference with university supervisor.

170. Introduction to Learning Disabilities (3)
Prerequisite: A S 114. Introduction to theories, programs, and methods of educating children with specific learning disabilities. (2 lecture, 2 lab hours)

172. Laws Relating to Children (3)
Current and proposed legislation in parent-child relationships, adoption, and guardianship, education of the minor, marriage contract, child labor, juvenile delinquency, and child welfare programs.

174. Principles and Techniques in Guidance (3) (Same as Psych 174)
Recommended for both elementary and secondary credential candidates. Prerequisite to all courses in the pupil personnel services credential sequence. Principles, procedures, and techniques in guidance; interrelationships and responsibilities of school personnel; identifying and meeting student needs.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

222. Seminar in Occupational Analysis and Information (3)
Prerequisite: A S 174. Theories of vocational development, job classification systems, placement techniques, skill assessment, work evaluations, and problems in vocational counseling. Test materials fee. (2 seminar, 2 lab hours)

223. Seminar in Counseling of Children and Parents (3)
Prerequisite: A S 174. Study of theories and techniques in counseling with parents and children. Emphasis on methodology and application of counseling skills in working with problems of children.

224. Seminar in Counseling Techniques (3)
Prerequisite: A S 174 or R C 201. Emphasis given to interviewing skills, counseling philosophy, theory and methodology as applied to self, and rational approaches to counseling. (2 seminar, 2 lab hours)

224FA. Field Work in Counseling (2–12; max total 12)
Prerequisite: 12 units in counseling program, including A S 224. Supervised practice in a school. (40 hours field work required for one unit of credit.)

224FB. Field Work in Child Welfare and Attendance (2–12; max total 12)
Prerequisite: 12 units in counseling program, including A S 224. Supervised practice in a child welfare and attendance office. (40 hours field work required for one unit of credit.)

224FC. Field Work in Counseling—Professional Services (3–12; max total 12)
Prerequisite: 12 units in counseling program, including A S 224. Designed for students wishing to do field work in professional counseling services, including, but not limited to, agencies, colleges, and universities. Supervised placement (40 hours field work required for one unit of credit).

225. Seminar in Advanced Theories and Techniques in Counseling (3)
Prerequisite: A S 224. Emphasis on philosophy, theory, and methodology as applied to Gestalt and behavioral approaches to counseling. (2 seminar, 2 lab hours)

226. Seminar in Guidance Services (3)
Prerequisite: A S 222, 224. Organization, administration, and evaluation of programs related to the areas of pupil personnel services.

227. Seminar in Tests in Counseling (3)
Prerequisite: Educ 153. Selection, administration, and evaluation of psychological tests and psychometric data for use in counseling settings. Test materials fee. (2 seminar, 2 lab hours)

228. Seminar in Group Process (3)
Prerequisite: A S 174 or R C 201. Theories and methods of group leadership, group effectiveness, communication within groups, and group counseling. (2 seminar, 2 lab hours)

230. Seminar in Guidance of Exceptional Children and Their Parents (3)
Theories and techniques in working with parents of exceptional children; emphasis placed on individual and group counseling skills with parents, case study, and current legislation. (2 seminar, 2 lab hours)

231. Counseling Practicum (4; max total 8)
Prerequisite: 12 units in counseling program, including A S 224. Supervised on-campus counseling experiences with school-aged students. Experience in individual counseling, critiquing of tapes and typescripts, observations, and case report writing.(2 seminar, 4 lab hours)

242. Seminar in Behavior Modification (3)
Behavior modification principles, programs, and techniques employed in special education and clinical-prescriptive teaching. Emphasis on school and home applications. (2 seminar, 2 lab hours)

243. Motor, Sensory, and Perceptual Abilities (3)
Prerequisite: A S 114, 170, 245. Seminar in the special education of children who are educationally handicapped with psychomotor disabilities. Diagnostic-prescriptive programming and critiques required. (2 seminar, 2 lab hours)

244. Organization and Supervision of Special Education (3)
Seminar in the organization, financing, housing, equipping, staffing, and supervision of the special education program; desirable educational provisions for each type of exceptionality; legal provisions for special education including curriculum development, inservice education, and teacher-pupil relationships.

245. Seminar in Identification and Evaluation of Exceptional Children (4)
Prerequisite: A S 114, Educ 153. Seminar and field work in the identification and evaluation of exceptional children. Review of testing techniques, evaluation of psychological reports, development of psychoeducational recommendations as a clinical process. Extensive independent child study and evaluation with appropriate diagnostic instruments. Test materials fee. (2 seminar, 2 lab hours, 2 field work hours)

246. Language and Cognitive Abilities (3)
Prerequisite: A S 114, 170, 243, 245. Seminar in the special education of children who are educationally handicapped with language and cognitive disabilities. Diagnostic-prescriptive programming and critiques required. (2 seminar, 2 lab hours)

248. Social and Affective Education (3)
Seminar. Development and remediation of social skills and affective abilities. Model programs for normal children and prescriptive interventions for those with social and personal behavior disorders. (2 seminar, 2 lab hours)

249. Practicum/Clinic: Career Education for the Handicapped (3–9; max total 9)
Prerequisite: A S 253 and permission of instructor. Clinical experience in private and public agencies involved with vocational/career training for the handicapped work evaluation and job training programs supervised by university personnel. (2 lab hours and 1 hour outside preparation per unit)

253. Vocational/Career Education for the Handicapped (3)
Seminar. Examination and application of vocational/career education and training for the handicapped; local, state, and federal models. Test materials fee. (2 seminar, 2 lab hours)

254. Seminar in the Severely Handicapped Child (3)
Prerequisite: A S 114. Characteristics, identification procedures, training programs, legal, and administrative problems. Research in causation, prevention, and treatment. Counseling of parents.

256. Practicum in Special Education (3–9; max total 9)
Prerequisite: A S 114, 170, 243, 245, 246. Clinical experience in diagnosis and evaluation of exceptional children, prescriptive program development, prescriptive instruction, and program management. Experience to include data gathering, program planning and execution, evaluation, and consultation. (2 field hours per unit)

256D. Practicum and Clinical Experience: Gifted (3-9; max total 9)
Prerequisite: A S 114. Clinical experience in community agencies dealing with the identification, diagnosis, and education of mentally gifted children. Practical field experience in cooperating school districts with special and experimental programs. (2 field hours per unit)

257. Seminar on the Gifted Child (3)
Prerequisite: A S 114. Research and practice regarding community attitudes, means of identification, types of giftedness, behavioral characteristics, environmental backgrounds, differentiated needs of the gifted.

258. Seminar in Educational Provisions for the Gifted (3)
Prerequisite: A S 114. Research pertaining to administrative provisions, program planning, curricular adaptations, teaching-learning strategies, and ways of motivating gifted and talented youth.

259. Seminar in Creative Children and Youth (3)
Prerequisite: A S 114. Analysis of current theory and research on creativity, its manifestations and measurement; guidelines for creative development, creative approaches in learning and teaching.

260. Seminar in Research in Contemporary Problems: Gifted and Creative (3)
Prerequisite: A S 114. Analysis of research problems regarding the gifted, creative, and talented. Individual critiques or original research. Development of research project in preparation for the thesis.

261. Organization for Administration and Support of Education (3)
Prerequisite: teaching experience. Interrelationships of federal, state, county, city, and district units in the administration and promotion of programs of education.

262. Seminar in School Principalship (3)
Prerequisite: teaching experience; A S 261. Seminar on problems, procedures, and organizational relationships of elementary and secondary schools; principal's responsibilities in areas of organization and control; teacher personnel, pupil personnel, noncertificated personnel; special and auxiliary agencies; guidance; supervision; community relationships.

263. Seminar in Supervision for Improvement of Instruction (3)
Prerequisite: teaching experience; Educ 250 or S Ed 273; A S 261. Seminar for clarification and application of modern concepts and techniques of supervision; practice in leadership roles, promoting productive human relationships, developing communication skills, and evaluation of teaching; ways of helping teachers in their credential fields.

264. Seminar in the Legal Aspects of Education (3)
Prerequisite: teaching experience; A S 261. A case study approach in reviewing important court decisions, both state and federal, that have directly affected the public schools. Legal relationships in public education applied to federal, state, and local levels.

266. Seminar in School Finance and Business Administration (3)
Prerequisite: A S 261. Principles and practices of school finance and business administration; local, state, and federal responsibility for financial support of education.

272. Seminar in Advanced Curriculum Evaluation and Development (3)
Nature and scope of curriculum development: administrative determiners of curriculum; influence of governmental agencies and organizations, foundations, business and industry, and power structures as curriculum determiners; international influence on curriculum development and curriculum evaluation at various levels of governmental operation.

273. Field Work in Administrative Services (3)
Prerequisite: 18 units of course work in school administration to be selected from: A S 261, 262, 263, 264, 266, 272, 275. For individuals working toward an administrative services credential. Involves on-the-job experiences in the solution of practical administrative problems with written reports thereon; seminar discussions of field experiences and related literature and interaction in field and in seminar with practicing school administrators.

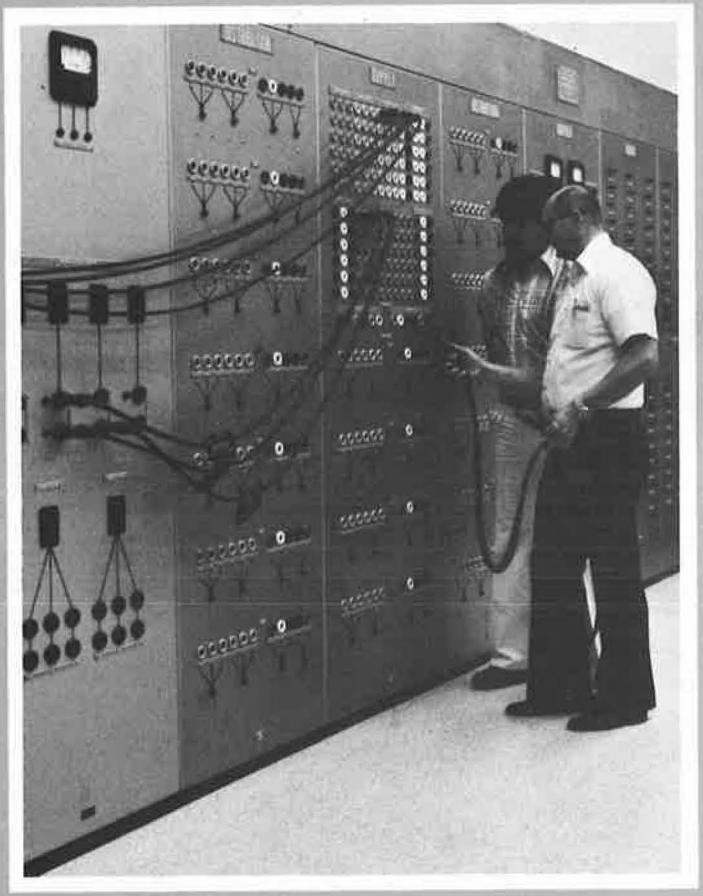
275. Seminar in Advanced Techniques of Personnel Administration in Education (3)
Prerequisite: A S 262, 264, 266. Advanced techniques of staff improvement in service, staff participation in policy making, improvement of communication channels and methods of communication, economic and contractual relationships, and improvement of working conditions; work and responsibiliy of nonteaching staff members.

276. Seminar in School-Community Relations and Facilities (3)
Prerequisite: A S 261, 262, 263. Seminar on interaction with community forces, news media, political agencies, and minority groups in policy development; decision-making based on factual data; and management of physical facilities.

290. Independent Study (1-3; max see reference)
See *Academic Placement—Independent Study.*

IN-SERVICE COURSES
(See *Course Numbering System*)

373. Instructional and Curriculum Problems and Practices (1-3; max total 12 if no topic repeated)



Electrical engineering student learning the analysis of a power system network.

SCHOOL OF ENGINEERING 241

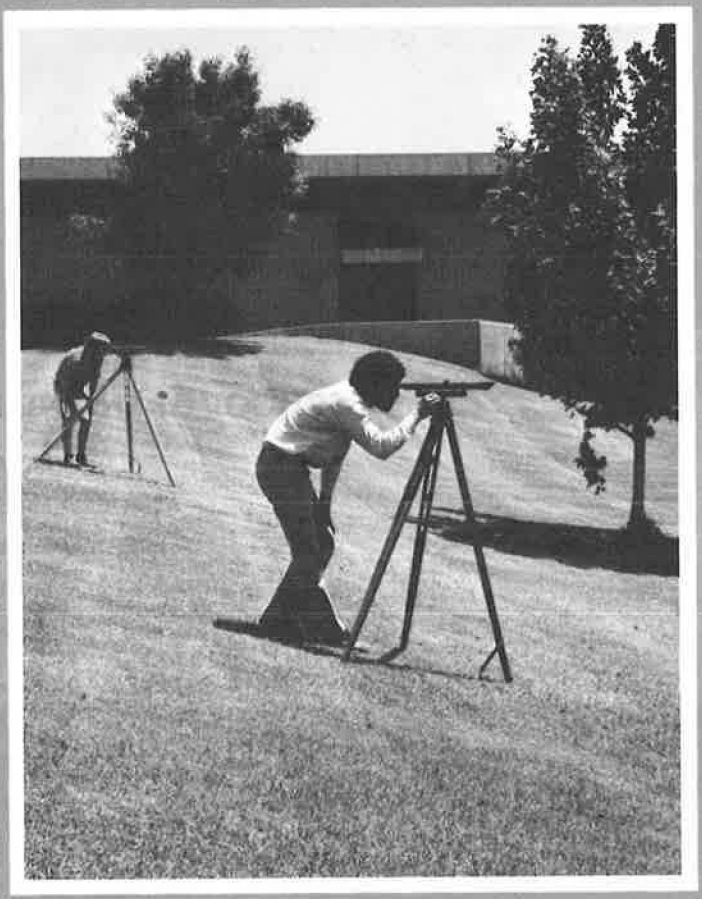
Civil Engineering

Electrical Engineering

Industrial Engineering

Mechanical Engineering

Surveying and Photogrammetry



Civil engineering students learning land survey measurement techniques during a field practice session.

SCHOOL OF ENGINEERING

James Matheny, Dean

FACULTY

Andy Bazar, Vincent D. Bevill, W. Kenneth Bodger, George Burnham, Shyhming Chang, Wayne P. Dominick, Dennis Hagopian, Charles W. Haynes, Mushtaq Hussain, McRae Jarrett, Kandiah Jeyapalan, Irvin H. Kral, Richard Leake, Samuel Y. Liao, Satya Mahanty, Fareed W. Nader, Joseph Plunkett, Hans B. Puttgen, Herbert D. Richards, D. E. Robison, Walter F. Rowland, Jankie N. Supersad, Bovornsak Vathayanon, Mohamad Yousef

DEGREES OFFERED: BS (Civil, Electrical, Industrial or Mechanical Engineering, or Surveying and Photogrammetry), MS (Civil Engineering), MS (Electrical or Mechanical) at Edwards Air Force Base

Options:

Civil
Electrical
Industrial
Mechanical
Surveying and Photogrammetry

SCHOOL PROGRAMS

Engineering may be defined as the application of science and technology for the benefit of society. Therefore, the engineering student pursues courses in the sciences, mathematics, humanities, and social sciences; and in engineering science which interfaces the courses in science with those in professional engineering. Because it embraces a broad horizon, engineering is divided into interrelated fields of specialization. The School provides instruction in the fields of civil, electrical, industrial, and mechanical engineering, and in surveying and photogrammetry. Electrical engineering includes the study of electronics. A program in surveying and photogrammetry is also offered. Engineering students are prepared to enter the practice of professional engineering or graduate study; students studying surveying and photogrammetry are prepared to become specialists in the various aspects of surveying.

The civil, electrical, and mechanical engineering programs are accredited by the Engineers' Council for Professional Development (ECPD), the nationally recognized accrediting agency of the engineering profession. The surveying and photogrammetry program is accredited by the appropriate state agency.

The School of Engineering offers a program in cooperation with the Health Science Department. The program is designed to prepare its graduates for careers in occupational health and safety. Interested persons are referred to the section of this catalog entitled Health Science Department.

ENGINEERING FIELDS

Civil Engineering. Civil engineering is concerned with the science and technology of planning, analyzing, designing, constructing, operating, and maintaining structures, transportation systems, environmental works, and water resource developments. Within these fields the civil engineer deals with buildings, bridges, foundations, highways, airports, waterways, pipelines, surveying, mapping, water supply systems, waste treatment systems, environmental water quality control, dams, hydropower installations, irrigation, flood control, and other fixed engineering works.

The civil engineer may utilize computer methods of analyzing and designing complex structures and systems; undertake research on structural use of new materials or on advanced methods of water and waste treatment; design protective structural features and radiation shielding in nuclear power plants; participate in structural and facility aspects of aerospace projects; or work in municipal engineering, urban planning, or vehicular traffic control.

Electrical Engineering. Electrical engineering deals with energy and information in electrical form. This dynamic field of contemporary technology encompasses activities such as the

conversion and control of energy; the application of physical electronics phenomena in devices, circuits, and systems; the design and characterization of electronic communication and electromagnetic systems; the development and application of computers; and the automation and control of industrial processes and man-machine interactions.

Electrical engineers design and develop electronic circuits, equipment, and systems in the areas of *electromagnetics* (antennas; radar, radio, and television systems), *communications and control* (telephone systems; satellite communications; aircraft and missile guidance systems), *computer sciences* (computers; automated manufacturing; robots; artificial intelligence), *physical electronics and optics* (transistors; integrated circuits; optical display devices; lasers), *power systems and energy conversion* (hydro, thermal, nuclear, solar electric power generation; analysis and synthesis of power transmission and distribution systems; on-line power control and dispatch centers), and *bioelectronics* (sensory aids for the physically handicapped; biomedical instruments for clinical applications).

Industrial Engineering. Industrial engineering is concerned with the design, improvement, and installation of integrated systems of people, materials, equipment, and energy. It draws upon specialized knowledge and skill in the mathematical, physical, and social sciences together with the principles and methods of engineering analysis and design to specify, predict, and evaluate the results to be obtained from such systems.

Industrial engineers give valuable service to management in decision making relative to the most efficient utilization of people, materials, equipment, and energy. Industrial engineers are a prime source of management talent and therefore are in demand by a wide variety of organizations, even those not usually regarded as "industrial."

Mechanical Engineering. Mechanical engineering deals with engineering problems relating to the generation, transmission, and utilization of energy in the thermal or mechanical form. It is concerned also with engineering problems related to the production of tools, machinery, and their products and to heating, ventilation, refrigeration, and plumbing in their research, design, production, operation, organization, and economic aspects.

Mechanical engineers are concerned with propulsion systems; cryogenics; environmental systems for control of humidity, temperature, and air cleanliness; transportation equipment including land, water, and space vehicles and mechanical, pneumatic, and hydraulic conveyor systems; power components including engines, turbines, rockets, jets, and fuel cells; and machinery such as pumps, fans, compressors, blowers, valves, and material handling and processing equipment including machine tools and food processing equipment.

SURVEYING AND PHOTOGRAMMETRY

This program prepares specialists in the science and art of making measurements necessary to determine the relative positions of points on or near the earth's surface (Surveying) and the science of making measurements of photographs (Photogrammetry).

The Surveyor/Photogrammetrist applies his knowledge for: map making, locating property boundaries, collecting data for engineers and architects to use in design of structures, making measurements for guiding construction operations, measuring the size and shape of the earth, delineating boundaries of water bodies, and accurately establishing horizontal and vertical control points for scientific and engineering works. Photogrammetry is used for a wide variety of unusual measurements such as: topology of the human body, non-destructive testing of engineering materials, determining size and volume of animals, vehicle accident investigations, structural deformations, criminology investigations, and architectural and anthropological surveys.

HIGH SCHOOL PREPARATION

Recommended preparation for engineering or surveying and photogrammetry consists of: English (4 years), algebra (2 years), geometry (1 year), trigonometry (½ year), physics or chemistry (1 year). Additional recommended courses are: advanced mathematics (½ year), chemistry or physics (1 year), mechanical drawing (½ year).

TRANSFERS

Transfers from community colleges or other institutions of higher learning are accepted under provisions outlined under *General Information—Admissions*. Students planning to transfer to the California State University, Fresno engineering or the surveying and photogrammetry programs should follow as closely as possible the outline of the program of their choice.

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

The bachelor of science degree is granted upon completion of the following programs: civil, electrical, industrial, or mechanical engineering; surveying and photogrammetry. These programs include the general education and degree requirements of the university. Foreign students taking I S C 10, 21, and 93 in their first year may postpone courses that are not prerequisite to courses in their major.

For specific requirements see course outline under selected option.

CIVIL ENGINEERING

(74 units engineering; 133 units total) [1]

FIRST SEMESTER		Units
C E 1, L	Plane Surveying	3
C E 85	Introduction to Civil Engineering	1
Engr 26	Engineering Graphics	4
Math 75	Mathematical Analysis I	4
Engl 1	Composition	3
		15

SECOND SEMESTER		Units
C E 2, L	Advanced Plane Surveying [5]	3
Engr 70	FORTRAN IV Programming	2
Math 76	Mathematical Analysis II	4
Phys 5A	Principles of Physics I	5
Hist 11/12	American History	3
		17

THIRD SEMESTER		
Engr 20	Engineering Mechanics: Statics	3
Math 77	Mathematical Analysis III	4
Phys 5B	Principles of Physics II	5
Chem 1A	General Chem & Qual Analysis	5
		17

FOURTH SEMESTER		
Engr 31	Engineering Materials	2
Math 81	Applied Analysis	4
Pl Sc 2	American Govt and Institutions	3
Chem 8	Elementary Organic Chemistry	3
Geol 1	Physical Geology	4
		16

FIFTH SEMESTER		
Engr 121, L	Mechanics of Materials	4
C E 150	Transportation Planning & Design	3
Engr 112	Engineering Mechanics Dynamics	3
Engr 116, L	Fluid Mechanics	4
Soc Sci	See [3]	3
		17

SIXTH SEMESTER		
C E 123, L	Soil Mechanics	3
C E 130	Theory of Structures	3
C E 142, L	Water Supply & Wastewater	4
Engr 136	Thermodynamics	3
Humanities	See [4]	3
		16

SEVENTH SEMESTER		
C E 124	Concrete Laboratory	1
C E 132	Reinforced Concrete	3
C E 185	Civil Engineering Practice	1
Engr 160	Engineering Economy	2
Engr 110, L	Principles of Electrical Circuits	4
App Elect	See [2]	6
		17

EIGHTH SEMESTER		
C E 133	Steel and Timber Structures	4
C E 180	Senior Project	1
Engr 182	Engineering Writing	1
App Elect	See [2]	6
Humanities	See [4]	3
Soc Sci	See [3]	3
		18

[1] Students must satisfy the University's requirements in English.

[2] Approved Electives: Select from courses in one or more of the following groups; selection of asterisked courses requires the Dean's prior approval.
Environmental Water Quality: C E 140, 144, 145; Biol 133 *.
Structures: Engr 122; C E 131, 134, 135.
Surveying: C E 3, 101, 102, 104, 105.
Transportation: C E 101, 140, 151, 152, 153.
Water Resources: C E 140, 141, 143, 144.
Additional approved electives: C E 161, 190, 191T, 193; Engr 161, I E 110.

[3] Social Sciences: Select from Anth 2, 3, 4; As Am 15; B1 S 38, 135; Crim 1, 132; Econ 1A, 1B, 101; Geog 3, 4; Hist 4, 5; La R 3, 5; NAS 103; P1 Si 1, 4, 5, 6; Psych 134; Soc 1, 2; W S 10.

[4] Humanities: Select from Art 1; Art H 10, 20; B1 S 25; Drama 1, 62; Engl 30, 76; Hist 1, 2; La R 7, 9; Phil 1; RTV 127, 128; W S 145, 168.

[5] Environmental Water Quality Students: With the Dean's approval, substitute Bot 10 for C E 2, L.

[6] General Electives: May be approved electives.

ELECTRICAL ENGINEERING

(66 units engineering; 128 units total)

FIRST SEMESTER		Units
Math 75	Mathematical Analysis I	4
Chem 1A	General Chem & Qualitative Analysis	5
E E 1	Intro to Electrical Engineering	1
Engr 70	FORTRAN IV Programming	2
Engl 1	Composition	3
		15

SECOND SEMESTER		Units
Math 76	Mathematical Analysis II	4
Phys 5A	Principles of Physics I	5
Chem 8	Elementary Organic Chemistry	3
Engr 27	Graphics for Electrical Engineering	3
		15

THIRD SEMESTER		
Math 77	Mathematical Analysis III	4
Phys 5B	Principles of Physics II	5
E E 85	Mini/Microcomputers as Sys Components	2
Engr 20	Engineering Mechanics: Statics	3
Hist	See [1]	3
		17

FOURTH SEMESTER		
Math 81	Applied Analysis	4
Engr 31	Engineering Materials	2
Engr 110, L	Principles of Electrical Circuits	4
Engr 112	Engineering Mechanics: Dynamics	3
Government [1]		3
		16

FIFTH SEMESTER		
Mathematics Elective [5]		3
E E 126	Electromagnetic Theory & Appl I	3
E E 128, L	Electronics I	4
Engr 136	Thermodynamics	3
Humanities [3]		3
		16

SIXTH SEMESTER		
E E 121	Electromech Sys & Energy Conversion	3
E E 124	Electrical Circuit Analysis	3
E E 133	Digital Sys & Computer Organization	2
E E 136, L	Electromagnetic Theory & Appl II	4
E E 138, L	Electronics II	4
		16

SEVENTH SEMESTER		
EE 114	Physical Electronics	3
E E 121L	Electromech Sys & Energy Conv Lab	1
Engr 160	Engineering Economy	2
Approved Elective [6]		4
General Elective [4]		4
Social Sciences [2]		3
		17

EIGHTH SEMESTER		
E E 155	Control Systems	3
E E 180	Senior Project	1
Engr 116	Fluid Mechanics	3
Approved Elective [6]		3
Humanities [3]		3
Social Sciences [2]		3
		16

[1] See Special Course Requirements under Degrees and Credentials.

[2] Social Sciences: Select from Anth 2, 3, 4; As Am 15; Bl S 38, 135; Crim 1, 132; Econ 1A-B, 101; Geog 3, 4; Hist 4, 5; La R 3, 5; NAS 103; Pl Si 1, 4, 5, 6; Psych 134; Soc 1, 2; W S 10.

[3] Humanities: Select from Art 1; Art H 10, 20; Bl S 25; Drama 1, 62; Engl 30, 76; Hist 1, 2; La R 7, 9; Music 73, 74, 75; Phil 1; RTV 127, 128; W S 145, 168.

[4] General Electives: May be approved electives but at least 1 unit must be from any area of General Education.

[5] Mathematics Electives: Select from Math 107, 121, 124, 128, 181, or 182.

[6] Approved Electives: Select from the following courses with at least 4 units from the underlined course numbers and to include at least one laboratory course from EE 183A, B, C, D:

(a) Electronics and communications: E E 134, 140, 161, 166, 171, 176, 183A, 183C.

(b) Computer sciences and digital systems: E E 106, 107, 175, 183B, Engr 173.

(c) Power systems and energy conversion: E E 151, 183D.

INDUSTRIAL ENGINEERING

(65 units engineering; 132 units total)

FIRST SEMESTER		*Units*
Engr 26	Engineering Graphics	4
Math 75	Mathematical Analysis I	4
Chem 1A	General Chem & Qualitative Analysis	5
Hist 11/12	American History	3
		16

SECOND SEMESTER		*Units*
Engr 70	FORTRAN IV Programming	2
M E 11, L	Manufacturing Processes	3
Math 76	Mathematical Analysis II	4
Chem 8	Elementary Organic Chemistry	3
Phys 5A	Principles of Physics I	5
		17

THIRD SEMESTER		
Engr 20	Engineering Mechanics: Statics	3
Engr 31	Engineering Materials	2
Math 77	Mathematical Analysis III	4
Phys 5B	Principles of Physics II	5
Econ 1A	Principles of Economics	3
		17

FOURTH SEMESTER		
Pl Si 2	American Govt and Institutions	3
Mgt 110A	Adm and Org Behavior	3
Math 81	Applied Analysis	4
Acct 4A	Financial and Managerial Accounting Principles and Systems	3
Engl 1	Composition	3
		16

FIFTH SEMESTER		
I E 110	**Statistical Anal & Control**	3
I E 111	**Work Measurement**	2
Engr 112	**Engineering Mechanics: Dynamics**	3
Engr 116, L	**Fluid Mechanics**	4
Approved Elective See [1]		3
Engr 160	**Engineering Econ**	2
		17

SIXTH SEMESTER		
I E 114	Facilities Engineering	2
Engr 121, L	Mechanics of Materials	4
Engr 110, L	Principles of Electrical Circuits	4
Engr 136	Thermodynamics	3
Approved Elect See [1]		3
		16

SEVENTH SEMESTER		
I E 112	Statistical Design of Experiments	3
I E 113	Operations Analysis	3
E E 121, L	Electromechanical Systems & Energy	
or, E E 128	Electronic Devices & Circuits	4/3
App Elect	See [1]	4/5
Humanities	See [2]	3
		17

EIGHTH SEMESTER		
I E 125	Hum Fact in Engr & Design	3
I E 180	Senior Project	1
Engr 182	Engineering Writing	1
App Elect	See [1]	4
Humanities	See [2]	3
Nat/Soc Sci	See [3]	4
		16

[1] Approved Electives: Select from I E 116, 118, 120, 190, 191T, 193; Engr 122, 161, 173; M E 134.
[2] Humanities: Select from Art 1; Art H 10, 20; Drama 1, 62; Hist 1, 2; Engl 30; Phil 1.
[3] Natural or Social Sciences: Select from Psych 10, 134.

MECHANICAL ENGINEERING

(72 units engineering; 128 units total)

FIRST SEMESTER		Units
Engr 26	Engineering Graphics	4
Math 75	Mathematical Analysis I	4
Chem 1A	General Chem & Qualitative Analysis	5
Engl 1	Composition	3
		16

SECOND SEMESTER		Units
Engr 70	FORTRAN IV Programming	2
Math 76	Mathematical Analysis II	4
Chem 8	Elementary Organic Chemistry	3
Phys 5A	Principles of Physics I	5
Humanities	See [2]	3
		17

THIRD SEMESTER		
Engr 31	Engineering Materials	2
Hist 11/12	American History	3
Math 77	Mathematical Analysis III	4
Phys 5B	Principles of Physics II	5
Soc Sci	See [3]	3
		17

FOURTH SEMESTER		
M E 11, L	Manufacturing Processes	3
Engr 20	Engineering Mechanics: Statics	3
Math 81	Applied Analysis	4
Soc Sci	See [3]	3
Pl Si 2	American Govt and Institutions	3
		16

FIFTH SEMESTER		
Engr 112	Engineering Mechanics: Dynamics	3
Engr 116	Fluid Mechanics	3
M E 117	Instrumentation & Fluid Laboratory	2
Engr 121	Mechanics of Materials	3
Humanities	See [2]	3
		14

SIXTH SEMESTER		
M E 131	Advanced Engineering Materials	3
M E 134	Dynamics in Machine Design	3
Engr 136, L	Thermodynamics	4
Engr 110, L	Principles of Electrical Circuits	4
App Elect	See [1]	3
		17

SEVENTH SEMESTER		
M E 154	Design of Machine Elements	3
M E 156, L	Adv Thermodynamics-Fluid Mechanics	4
E E 121, L	Electromechanical Systems & Energy Conversion	4
App Elect	See [1]	6
		17

EIGHTH SEMESTER		
M E 180	Senior Project	1
Engr 160	Engineering Economy	2
Engr 182	Engineering Writing	1
App Elect	See [1]	6
Engr Elect	See [4]	3
Gen Ed	(any area)	1
		14

[1] Approved Electives: Select at least 6 units from each of the following groups: Group A: Engr 122; E E 155; M E 137, 142; Group B: Engr 173; M E 143, 146, 146L, 151, 164.

[2] Humanities: Select from Art 1, Art H 10, 20; Drama 1, 62; Engl 30; Hist 1, 2; Phil 1.

[3] Social Sciences: Select from Anth 2, 3; Econ 1A, 1B; Geog 3, 4; Hist 4; Pl Si 1, 5, 6; Psych 134.

[4] Upper division.

SURVEYING AND PHOTOGRAMMETRY

(65 units engineering; 127 units total)

FIRST SEMESTER		*Units*
C E 1, L	Plane Surveying	3
Engr 26	Engineering Graphics	4
Math 75	Mathematical Analysis I	4
Chem 2A	Introductory General Chemistry	3
		14

SECOND SEMESTER		*Units*
C E 2, L	Advanced Plane Surveying	3
C E 6	Photographic Processes	3
Math 76	Mathematical Analysis II	4
Chem 2B	Introductory General Chemistry	3
Phys 5A	Principles of Physics I	5
		18

THIRD SEMESTER		
C E 3	Photogrammetry	2
Math 77	Mathematical Analysis III	4
Phys 5B	Principles of Physics II	5
Geol 1	Physical Geology	4
Engl 1	Composition	3
		18

FOURTH SEMESTER		
C E 4	Machine Comp & Comp Programming	3
C E 5	Photogrammetric Instrumentation	3
Spch 3	Fundamentals of Oral Communication	3
Soc Sci	Geog 4 World Geog recommended	3
Hist 11/12	American History	3
		15

FIFTH SEMESTER		
C E 102, L	Geodetic Surveying	3
C E 103	Advanced Photogrammetry	3
C E 104	Boundary Control & Legal Principles	3
E E 104	Basic Electronics	3
URP 100	Intro to Urban & Regional Planning	3
		15

SIXTH SEMESTER		
C E 101, L	Route Surveying	3
C E 108	Geodesy	3
C E 109	Subdivision Preparation	2
App Elect	See[1]	3
Geog 105	Aerial Photograph Interpretation	3
Pl Si 2	American Govt and Institution	3
		17

SEVENTH SEMESTER		
C E 105	Advanced Survey Computations	3
C E 107	Electronic Distance Measurements	3
C E 186	Surveying Practice	1
Engr 160	Engineering Economy	2
Geog 100	Cartography	3
Humanities	See General Education Requirements	3
		15

EIGHTH SEMESTER		
C E 106	Cartographic Techniques & Map Repro	2
C E 180	Senior Project	1
Engr 161	Legal Aspects of Engineering	2
Engr 182	Engineering Writing	1
Geog 104	Map Interpretation	3
App Elect	See [1]	3
Humanities	See General Education Requirements	3
		15

[1] Approved Electives: Select from the following courses: C E 120, 120L, 150, 190, 191T; Engr 20, 31, 70, 110, 112, 116, 121; Math 81; Mgt 110A.

BACHELOR OF SCIENCE DEGREE (Undesignated) REQUIREMENTS

The Bachelor of Science degree in Engineering without designated area of specialization is offered by the School. The intent of the program is to allow a student with particular career goals to formulate an individualized interdisciplinary course of study in non-traditional areas of engineering.

The non-designated degree meets the standards of the engineering accreditation agency with regard to requirements in mathematics, basic science and engineering. However, it is not an accredited program.

The student's program of study must be agreed upon in advance by the student, and his engineering faculty adviser and be approved by the Dean of the School.

The student must complete at least 45 units to meet the minimum requirements for the bachelor's degree after approval is given to his program of study.

	Units
Math: 75, 76, 77, 81	16
Science: Chem 1A, 8, Phys 5A and 5B	18
* Humanities and Social Sciences: Political Science 2, Hist 11/12 Humanities (6), Social Science (6)	18
English 1A	3
Engineering: Engr 20, 26, 31, 70, 110, 110L, 112, 116, 116L, 121, 136, 160, EE 124	33
Speciality (including a minimum of 16 upper division units)	24
Electives (Maximum)	16
	128

GRADUATE PROGRAM

The School of Engineering offers a Master of Science in Engineering degree and an off-campus program at Edwards Air Force Base leading to an MS degree.

The MS degree program with option in Civil Engineering is designed to provide additional benefits of salary and career opportunities to graduates of a baccalaureate degree program in engineering; for the continued development of practicing engineers, additional career entry preparation for continuing students, and for preparation for persons planning to teach in pre-engineering, engineering technology and engineering programs. This program also provides the first graduate degree for students desirous of pursuing further graduate study in Civil Engineering; Engineering Mechanics and related areas.

MASTER OF SCIENCE DEGREE (Civil Engineering) REQUIREMENTS

Requirements. (See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements,* and *Thesis and Thesis Alternatives)*

Admission. The requirements for graduate admission to California State University, Fresno must be met. To be admitted to the program, applicants should possess a Bachelor's Degree in Civil Engineering from an institution accredited by the Engineers' Council for Professional Development. To be admitted, students must have a 3.0 grade point average overall on the basis of 4.0 being A; or the approval of the Graduate Committee of the School of Engineering. If an applicant's preparation is deemed insufficient by the Graduate Committee of the School of Engineering, the applicant will be required to take additional courses which will be specified in writing to remove the deficiency. Such courses, taken as an unclassified student, are in addition to the minimum of 30 semester hours credit for the Master's Degree in Engineering.

* Selected to meet the General Education and School of Engineering requirements.

Continuation in the Program. Prior to their being admitted to classified standing, students will be required to take the Graduate Record Examination. The minimum grades considered passing are verbal 450, and quantitative 430. The advanced portion of the examination for engineering is not required. The student, together with an adviser, will complete a contract program within his first twelve semester hours of coursework taken for graduate credit. This program must be approved by the Graduate Committee of the School of Engineering. Satisfactory progress towards completion of the contract program is a requirement for continuation in the program. Students must maintain a 3.0 average on all coursework attempted while enrolled as a graduate student. A minimum of twelve semester hours must be earned before the average will be determined.

Program. Students are required to complete a core, a thesis or project, a Civil Engineering course requirement, and may elect up to nine units. These nine units are restricted to three hours of existing undergraduate coursework, and six hours of Civil Engineering 200-level electives.

Under the direction of a graduate adviser, each student prepares and submits a coherent program individually designed within the following framework.

MASTER'S DEGREE IN ENGINEERING

Required Core

Mathematics or Management from the following courses:
Math 101 Statistical Methods, 121 Numerical Analysis I,
123 Topics in Applied Mathematics, 128 Complex Analysis, or
Mgt 110A-B 6
Engr 205 Computing in Engineering Analysis 3
Engr 299 Thesis, or Engr 298 Project 6

Total Core 15

FOR THE CIVIL ENGINEERING OPTION

Required

Engr 231 Structures and Structural Dynamics 3
Engr 221 Incompressible Fluids 3
Civil Engineering electives, 200-level 6
Approved electives 3

Total Core Option 15
Total Program 30

Candidates will normally complete Plan A with a six semester hour thesis. Individuals with extensive background in project management may request permission from the Graduate Committee of the School of Engineering to complete the degree requirements using Engineering 298—Project.

Undergraduate courses that may be used as electives
Engr 122. Advanced Mechanics of Materials (3)
Engr 161. Legal Aspects of Engineering (2)
Engr 173. Analog Computation (2)
CE 103. Advanced Photogrammetry (3)
CE 105. Advanced Surveying Computations (3)
CE 107. Electronic Distance Measurement (3)
CE 108. Geodesy (3)
CE 131. Intermediate Theory of Structures (3)
CE 134. Foundation Design (3)
CE 135. Reinforced Concrete Design (2)
CE 140. Hydrology (3)
CE 141. Water Resources Engineering (3)
CE 142. Water Supply & Wastewater Engineering (3)
CE 143. Engineering Hydraulics (3)
CE 144. Water Quality Control (3)
CE 150. Transportation Planning & Design (3)

Graduate Courses (Engr)

205. Computing in Engineering Analysis (3)
221. Incompressible Fluids (3)
231. Structures and Structural Dynamics (3)
290. Independent Study (1–3)
291T. Topics in Civil Engineering (3; max total 6)
298. Project (6)
299. Thesis (6)

MASTER OF SCIENCE DEGREE AT EDWARDS AIR FORCE BASE

The School of Engineering at California State University, Fresno operates an off-campus degree program at Edwards Air Force Base. This program leads to the MS Degree in Engineering, with options in Electrical Engineering, and in Mechanical Engineering. For information about the program, or admission to the program, write the Office of the School of Graduate Studies.

COURSES

ENGINEERING (Engr)

20. Engineering Mechanics: Statics (3) (Former CE 20)
Prerequisite: Phys 5A, Math 77 (or concurrently). Analysis of force systems, equilibrium problems, section properties; graphic, algebraic, and vector methods of problem solution. (2 lecture, 2 lab hours)

26. Engineering Graphics (4)
Prerequisite: Math 75 (or concurrently). Principles and applications of orthographic projection and graphical mathematics to the solution of engineering problems. (2 lecture, 2 3-hour labs)

27. Graphics for Electrical Engineering (3)
Prerequisite: Engr 70, Math 75. Principles of electrical and electronics drafting; production drawings; drawing structure and hierarchy; engineering graphs and display of data; computer programming for graphics; transformations and other mathematical operations for interactive graphics; graphics terminal and interactive devices familiarization, practice, and applications.

31. Engineering Materials (2) (Former ME 31)
Prerequisite (or concurrently): Chem 8, Phys 5A. Fundamental nature and properties of engineering materials; structure of matter and its effect on mechanical, electrical, magnetic, and thermal properties.

70. FORTRAN IV Programming (2)
Prerequisite: Algebra, trigonometry. Flowcharting, program structure, computation and arithmetic functions, input-output, transfer of control, looping, subscripted variables, subprograms, file processing, printer plotting techniques, terminal and batch processing procedures.

100. Technology and Society (3)
Prerequisite: junior standing. Technological developments and their effects on society; ecology and environment; selected examples.

110. Principles of Electrical Circuits (3) (Former EE 110)
Prerequisite: Engr 70, Phys 5B, Math 81 (or concurrently). Direct-current circuit analysis; circuit theorems; transient phenomena in RLC circuits; phasor concept; sinusoidal steady-state response; power and RMS calculations in single-phase and polyphase alternating-current circuits; principles of electrical instruments; computer solutions.

110L. Principles of Electrical Circuits Laboratory (1) (Former EE 110L)
Prerequisite: Engr 110 (or concurrently). Experiments on direct- and alternating-current circuits, including single-phase and polyphase systems. Use of electrical instruments, development of laboratory techniques, and verification of basic principles. (3 lab hours)

112. Engineering Mechanics: Dynamics (3) (Former ME 112)
Prerequisite: Engr 20. Development of principles of kinematics and kinetics in engineering.

116. Fluid Mechanics (3) (Former ME 116)
Prerequisite: Chem 1A, Engr 112 (or concurrently). Fundamentals of fluid mechanics as applied to engineering problems.

116L. Fluid Mechanics Laboratory (1) (Former ME 116L)
Prerequisite: Engr 116 (or concurrently). Applications of experimental methods used in engineering practice to fluid systems. (3 lab hours)

121. Mechanics of Materials (3) (Former CE 121)
Prerequisite: Engr 20. Application of principles of mechanics to find stresses and deformations in machine and structural members.

121L. Mechanics of Materials Laboratory (1) (Former CE 121L)
Prerequisite: Engr 121 (or concurrently), Engr. 31. Application of the principles and methods of testing to verify theory and determine limitations of principles of mechanics of materials. (3 lab hours)

122. Advanced Mechanics of Materials (3) (Former CE 122)
Prerequisite: Engr 121, Engr 70, Math 81. Advanced topics in mechanics of materials.

136. Thermodynamics B (3) (Former ME 136)
Prerequisite: Chem 8, Engr 112 (or concurrently). Fundamentals of thermodynamics, fluid mechanics, and heat transfer as applied to engineering problems.

136L. Thermodynamics Laboratory (1) (Former ME 136L)
Prerequisite: ME 117, Engr 136 (or concurrently). Applications of experimental methods as used in engineering practice to thermofluid systems. (3 lab hours)

160. Engineering Economy (2)
Prerequisite: upper division standing in engineering. Importance of economic analyses of problems in engineering and in management decision making; interest, depreciation, income tax, classification of costs, break-even and minimum cost points, economic comparisons of alternatives, economy of replacement.

161. Legal Aspects of Engineering (2)
Prerequisite: senior standing in engineering. Development of law, canons of ethics, torts, principles of contracts, contracting procedure and specifications, property, negotiable instruments, sales, agency and patents; preparation of reports.

173. Analog Computation (2)
Prerequisite: Phys 5B, Math 77 (or concurrently). Introduction to electronic analog computer programming.

182. Engineering Writing (1)
Prerequisite: senior project (concurrently). Preparation of applications, forms, letters, reports, and specifications. Substance of final report: senior project investigation.

191T. Topics in Engineering (1–4; max total 8)
Prerequisite: permission of instructor. Investigation of selected engineering subjects not in current courses.

192. E.I.T. Review (3)
Preparation for Engineer-in-Training Examination. Basic mathematics, chemistry, statics, dynamics, mechanics of materials, fluid mechanics, thermodynamics, electrical theory, materials science, economic analysis.

CIVIL ENGINEERING (C E)

1. Plane Surveying (2)
Prerequisite: Math 5. Familiarization with surveying instruments; calculations; topographic surveying.

1L. Plane Surveying Laboratory (1)
Prerequisite: C E 1 (or concurrently). Field practice in measurements of distance and use of level, transit, and plane table in solution of practical problems. (3 lab hours; field trips required)

2. Advanced Plane Surveying (2)
Prerequisite: C E 1L. Theory and computations covering land surveying; engineering astronomy; introduction to route surveying.

2L. Advanced Plane Surveying Laboratory (1)
Prerequisite: C E 2 (or concurrently). Field practice in land surveying, astronomy, triangulation, and route layout. (3 lab hours; field trips required)

3. Fundamentals of Metrical Photogrammetry (2)
Prerequisite: C E 1. Fundamental characteristics of metrical photography and photogrammetric equipment; extraction of metrical data from single and overlapping photographs; flight planning and control considerations for photogrammetric mapping; accuracy and economy. (1 lecture, 3 lab hours)

4. Machine Computing and Computer Programming (3)
Prerequisite: C E 2L, Math 76. Survey computations by use of desk calculator; electronic computer programming. (2 lecture, 3 lab hours)

5. Photogrammetric Instrumentation (3)

Prerequisite: C E 3, 4 (or concurrently). Applications of theory of optics to photogrammetric and surveying instruments. Theory of stereo-orientation; theory of optical and optical-mechanical plotting instruments; calibration and maintenance of plotting instruments; mapping with stereo-plotting instruments, orthophoto mapping. (1 lecture, 2 3-hour labs)

6. Photographic Processes in Engineering (3)
Use of photographic process in engineering drawing. Annotated photo-drawings. Use of special films in engineering reproduction. Use of microfilm in engineering drawings, storage, and reproduction. (2 lecture, 3 lab hours)

85. Introduction to Civil Engineering (1)
Introduction to the Civil Engineering Profession.

101. Route Surveying (2)
Prerequisite: C E 2L. Computation and field work covering surveys for highway, irrigation, construction, and other kinds of engineering projects. (1 lecture, 3 lab hours; field trips required)

101L. Route Surveying Laboratory (1)
Prerequisite: C E 101 (or concurrently). Survey for highway location, stakeout of roads and intersections from plans. (3 lab hours)

102. Geodetic Surveying (2)
Prerequisite: C E 2L, Math 76. Triangulation: adjustment of geodetic figures; base line measurement; map projection; precise leveling. (1 lecture, 3 lab hours; field trips required)

102L. Geodetic Surveying Laboratory (1)
Prerequisite: C E 102 (or concurrently). Field work for surveying and photogrammetry majors. (3 lab hours)

103. Advanced Photogrammetry (3)
Prerequisite: C E 5. Introduction to analytical photogrammetry; analog strip triangulation, independent model triangulation, block triangulation; analytical plotters. (1 lecture, 2 3-hour labs)

104. Boundary Control and Legal Principles (3)
Prerequisite: C E 2. Legal principles that control the boundary location of real property.

105. Advanced Survey Computations (3)
Prerequisite: C E 4 or Engr 70, C E 102. Statistics, propagation of errors, theory of least squares, observation and condition equations. Adjustments of traverse, level nets, triangulation, and trilateration; simultaneous block adjustment. (2 lecture, 3 lab hours)

106. Cartographic Techniques and Map Reproduction (2)
Prerequisite: C E 3, Chem 2B. Cartographic color separation, scribing; line and half-tone copy, theory of photographic processes, photographic optics, emulsions, developers, lenses; offset lithographic process, single- and multicolor photolithographic reproduction; modern edge enhancement and photo-tone techniques. (1 lecture, 3 lab hours)

107. Electronic Distance Measurements (3)
Prerequisite: C E 102, E E 104. Introduction to electronic surveying systems. Analysis of main elements in electronic surveying instruments; geometrical concepts in electronic measurements. Use of electronic distance measurements in surveying, traverse, and trilateration. Use of airborne systems. (2 lecture, 3 lab hours; field trips required)

108. Geodesy (3)
Prerequisite: C E 4, 102. Analytic geometry, three-dimensional coordinate system; introduction to geometric geodesy, geodetic astronomy, gravimetric geodesy and satellite geodesy; deviation of the vertical and Laplace stations; applications of map projections in surveying.

109. Subdivision Preparation (2)
Prerequisite: C E 104. Subdivision Map Act, title research, zoning study. Tentative and final subdivision layout, map drafting; environmental impact study. (1 lecture, 3 lab hours)

120. Strength of Construction Materials (3)
Not open to civil engineering majors. Prerequisite: Phys 2A. Stress and deflections in steel and wood structures and in formwork for concrete structures.

120L. Strength of Construction Materials Laboratory (1)
Prerequisite: C E 120 (or concurrently). Application of testing procedures to determine and verify limitations on the use of construction materials. (3 lab hours)

123. Soil Mechanics (2)
Prerequisite: Engr 121. Physical and mechanical properties of soil as an engineering material; theoretical studies in permeability, compressibility, stress-deformation, and strength characteristics.

123L. Soil Mechanics Laboratory (1)
Prerequisite: Engr 121L, C E 123 (or concurrently). Experiments to illustrate and amplify the principles of soil mechanics. (3 lab hours; field trips required)

124. Concrete Laboratory (1)
Prerequisite: Engr 121L. Proportioning of concrete mixes; admixtures; workability tests; compressive, flexural, and tensile strength tests; reinforced concrete. (3 lab hours; field trips required)

130. Theory of Structures (3)
Prerequisite: Engr 121. Trusses and frames analyzed by algebraic and graphic procedures; influence lines and live loading analysis; rigid frames analyzed by slope deflection and moment distribution. Introduction to matrix methods.

131. Intermediate Theory of Structures (3)
Prerequisite: C E 130. Analysis of statically indeterminate beams, trusses, and frames; column analogy; advanced topics in slope deflection and moment distribution; matrix methods.

132. Reinforced Concrete (3)
Prerequisite: C E 130. Analysis and design of elements of concrete structures by working stress, ultimate strength, and prestressed methods.

133. Steel and Timber Structures (4)
Prerequisite: C E 130. Steel and timber members for buildings and bridges designed for dead, live, impact, wind, and seismic loads; light gage design; plastic design of steel. (3 lecture, 3 lab hours)

134. Foundation Design (3)
Prerequisite: C E 123, 132 (or concurrently). Theory and design of footings, piles, retaining walls, and other structures combining the use of soil mechanics and structural analysis.

135. Reinforced Concrete Design (2)
Prerequisite: C E 132. Design of concrete structures; working stress, ultimate strength, and prestressed methods. (1 lecture, 3 lab hours)

140. Hydrology (3)
The Hydrologic cycle, atmospheric conditions, precipitation, infiltration, ground water, soil moisture, evaporation, runoff, streamflow, hydrographs, flood routing, hydrologic frequency analyses and their effects in water resource planning and management.

141. Water Resources Engineering (3)
Planning, design, and engineering-economic evaluation of water resources projects. (2 lecture, 3 lab hours; field trips required)

142. Water Supply and Wastewater Engineering (3)
Prerequisite: Engr 116. Design of urban water distribution, storm drainage, and sanitary sewer systems. Introduction to water purification and wastewater treatment processes. (Field trips required)

142L. Water Quality Laboratory (1)

Prerequisite: C E 142 (or concurrently). Study and analysis of the physical, chemical and biological characteristics of raw and waste waters. (3 lab hours)

143. Engineering Hydraulics (3)
Prerequisite: Engr 116. Theory and analysis of pressure-conduit and open-channel flow systems. Applications to hydraulic structures and control works, hydraulic power conversion, sediment transport, and channel stabilization.

144. Water Quality Control (3)
Prerequisite: C E 142 or senior-level chemical or biological science. Physical, chemical, and biological operations and processes in water quality control. Process and hydraulic design of water purification and wastewater treatment facilities. (Field trips required)

145. Unit Operations (2)
Prerequisite: C E 142L, 144 (or concurrently). Analyses of the unit operations used in the physical, chemical and biological control of raw and wastewater quality. (1 lecture, 3 lab hours)

150. Transportation Planning and Design (3)
Prerequisite: C E 2. Transportation as a multimode system; functions, development, elements, and characteristics. Transportation planning; design of geometric elements of route and terminal. (2 lecture, 3 lab hours)

151. Pavement and Drainage Design (2)
Prerequisite: C E 123 (or concurrently). Factors affecting drainage and load-bearing elements of transportation facilities. Capacity design of drainage facilities. Structural design of highway and airfield pavements.

152. Transportation Engineering Materials (2)
Prerequisite: C E 123. Soil stabilization with bitumen, lime, and portland cement for pavement construction; properties of bituminous road materials; properties, design, and testing of bituminous paving mixtures for pavement construction. (1 lecture, 3 lab hours; field trips required)

153. Traffic Operations and Control (2)
Prerequisite: C E 150 (or concurrently). Highway traffic characteristics and studies; regulation and control; administration. Air traffic control; railroad operation control.

161. Construction Engineering I (3)
Prerequisite: senior standing in civil engineering. Basics of civil engineering contracting, organization of construction firms, project planning and control, selection and use of construction equipment, safety procedures and practices, work method improvement, mathematical models. (Field trips required)

180. Senior Project (1)
Prerequisite: senior standing in civil engineering or in surveying and photogrammetry; approved subject; Engr 182 (or concurrently). Study of a problem under supervision of a faculty member; final typewritten report required. (Individual project except by special permission.)

185. Civil Engineering Practice (1)
Prerequisite: senior standing in Civil Engineering. Practice of Civil Engineering; opportunities in Civil Engineering; transition from student to professional engineer; technical communication. (2 hour lecture-lab, field trips required)

186. Surveying Practice (1)
Prerequisite: senior standing in Surveying and Photogrammetry. Application of various surveying and photogrammetric methods.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

191T. Topics in Civil Engineering (1–3; max total 6)
Prerequisite: permission of instructor. Investigation of selected civil engineering subjects not in current courses.

193. Internship in Civil Engineering (1–3; max total 3)
Prerequisite: senior standing in Civil Engineering. Supervised professional practice in a private firm or public agency.

ELECTRICAL ENGINEERING (E E)

Students may be expected to purchase supplementary materials for senior projects and special topic laboratory and activity classes.

1. Introduction to Electrical Engineering (1)
The electrical engineering profession and its career opportunities; educational requirements and the E E curriculum; E E laboratory facilities, requirements, and engineering methods for experimentation; laboratory and technical report preparation; calculator comparison and selection; familiarization with electronic components.

85. Mini/Microcomputers as System Components (2)
Prerequisite: Engr 70. Basic principles for the application of a small digital computer as a dedicated electronic system component for on-line and real-time measurement, control, and computation in such areas as data acquisition, automated testing, corrective measurement, real-time computation, and visual display; assembly language programming. (1 lecture, 3 lab hours)

92. Electrical Engineering Laboratory Techniques (1; max total 8)
Prerequisite: permision of instructor. Individual laboratory work involving measurement, construction, or operation of electronic equipment or systems. Preparation of informal reports, procedures, and drawings as appropriate to the project. Student selected projects supplemented by instructor assignments.

104. Basic Electronics (3)
Not open to electrical engineering majors. Prerequisite: Math 75, Phys 2B. Basic concepts of electronic circuits, oscillators, and high-frequency transmitters and receivers, with applications to measurements in surveying. (2 lecture, 3 lab hours)

106. Introduction to Switching Theory (3)
Prerequisite: Phys 2B or Phys 5B. Axiomatic development of Boolean algebra; logic gates and memory elements; realization of Boolean networks; Boolean function minimization procedures; state assignment and state transitions; analysis and synthesis of linear sequential networks; synchronous and asynchronous behavior.

107. Digital Data Handling (3)
Prerequisite: Engr 70. Data acquisition by computers; data encoding and machine representation; data storage devices; logical and physical-media data structures; data structure processing algorithms; static and dynamic properties of data structures; applications of symbol manipulation to engineering.

114. Physical Electronics (3)
Prerequisite: Phys 5B, Engr 31. Electronic structure of metals, semiconductors, and insulators; crystal lattices; energy band structure; thermal, optical, dielectric and magnetic properties; transport properties; microscopic and macroscopic behavior.

121. Electromechanical Systems and Energy Conversion (3)
Prerequisite: Engr 110, 110L. Principles of direct- and alternating-current machinery and other energy-conversion devices and associated apparatus.

121L. Electromechanical Systems and Energy Conversion Laboratory (1)
Prerequisite: E E 121 (concurrently). Experiments and computations on direct- and alternating-current machinery and on other energy-conversion devices and associated apparatus. (3 lab hours)

124. Electrical Circuit Analysis (3)
Prerequisite: Engr 110, 110L. Introduction to the operational analysis of linear electric circuits and related systems; Laplace transformation; Fourier analysis; state-space representations; computer solutions.

126. Electromagnetic Theory and Applications I (3)
Prerequisite: Engr 110 (or concurrently). Electrostatic and magnetostatic fields, time-varying fields, Maxwell's equations, plane waves.

128. Electronics I (3)
Prerequisite: Engr 110 (or concurrently). Physical electronics, characteristics and properties of electronic devices, both thermionic and solid state; theory and analysis of electronic circuits.

128L. Electronics I Laboratory (1)
Prerequisite: E E 128 (concurrently). Experiments on static and dynamic characteristics of electron tubes and solid-state devices, and on electronic circuits. (3 lab hours)

133. Digital Systems and Computer Organization (2)
Prerequisite: E E 85, 128. Architectural organization of digital computers and digital systems including minicomputers and microcomputers; real-time and on-line processors and controllers; computer networks and data transmission; computer graphics processors; electronic interfacing techniques; signal timing considerations; design and analysis of interconnected elements.

134. Information Transmission (3)
Prerequisite: E E 124. Mathematical modeling of signals and noise; information theory; modulation techniques; communications; information loss due to noise; digital communications; statistical communications theory.

136. Electromagnetic Theory and Applications II (3)
Prerequisite: E E 124, 126. Principles of transmission of electromagnetic energy over wires at power and communication frequencies and through wave guides and space at ultra-high frequencies, filter circuits and antennas; design of transmission systems; methods for computer solution.

136L. Electromagnetic Theory and Applications Laboratory (1)
Prerequisite: E E 136 (concurrently). Experiments on the transmission of electromagnetic energy through wires, wave guides, and space; filters and antennas; impedance matching; cross-over networks; location of faults on lines. (3 lab hours)

138. Electronics II (3)
Prerequisite: E E 128, 128L. Analysis and design of high frequency, power, and feedback amplifiers; dc and operational amplifiers; oscillators, modulators, and demodulators for communications and instrumentation. Emphasis on modern design methods, including applications of linear active integrated circuits.

138L. Electronics II Laboratory (1)
Prerequisite: E E 138 (concurrently). Design oriented experiments to study the characteristics and limitations of various circuits included in E E 138. (3 lab hours)

140. Pulse and Digital Circuits Design (3)
Prerequisite: E E 124 (or concurrently), 128, 128L. Design and analysis of wave-shaping, linear-sweep, electronic-gate, multistable, and negative-resistance circuits; Boolean algebra and digital logic design.

151. Electrical Power Systems (3)
Prerequisite: E E 121, 121L (or concurrently). Power system networks and equipment, steady-state operation, short-circuit analysis, power system stability analysis by digital computation, synchronous generator excitation and governor systems, system load representation, numerical analysis techniques.

155. Control Systems (3)
Prerequisite: EE 124. Analysis, design, and synthesis of linear feedback control systems; non-linear systems; sampled-data and optimal control systems; stability.

161. Network Synthesis (3)
Prerequisite: E E 124. Characteristics of linear, passive, lumped-parameter systems; modern synthesis procedures for realizing driving-point and transfer functions of one-, two-, and n-terminal networks.

166. Microwave Devices and Circuits Design (3)
Prerequisite: E E 136, 136L. Microwave theory and techniques, propagation, waveguides, cavities, circuits, S-parameters, microwave devices including klystrons, traveling-wave tubes, magnetrons, and solid state devices.

171. Quantum Electronics (3)
Prerequisite: E E 126. Review of wave properties; cavity mode theory; radiation laws; interaction of radiation and matter; laser amplifiers and oscillators; morphology of masers and lasers.

175. Design of Digital Systems (3)
Prerequisite: E E 106. Logic and memory devices; analog-to-digital and digital-to-analog signal conversion transducers; computer architectures and system structures; control units; memory systems; arithmetic units; input-output subsystems; digital signal transmission and error correction; reliability; self-repair.

176. Computer-Aided Circuit Design (3)
Prerequisite: E E 124, 128, 128L. Digital computer methods in analysis and simulation of lumped parameter circuits; topological and matrix representation; modeling; time and frequency domain algorithms; optimization; worst-case and statistical analysis; use of problem oriented programs for circuit design. Introduction to system design.

180. Senior Project (1)
Prerequisite: senior standing in electrical engineering, coursework in technical report writing, approved subject. Study of a problem under supervision of faculty member; final typewritten report required. (Individual project except by special permission)

183A. Electronic Circuits and Electrical (1)
Prerequisite: EE 124, 138, 138L. Signal measurement and analysis techniques for communication networks; discrete, hybrid, and integrated electronic circuit design and testing; analog and digital filter realization; computer-aided analysis and design of circuits and networks. (3 lab hours)

183B. Digital Devices and Systems Laboratory (1)
Prerequisite: EE 133. Logic circuit measurement techniques; logic device characterization; combinational and sequential network realization; design, testing and evaluation of digital subsystems for computation, memory, display, communications, etc.; interfacing to mini- and micro-computers for on-line and real-time applications. (3 lab hours)

183C. Physical Electronics and Electromagnetics (1)
Prerequisite: EE 114, 128, 128L, 136, 136L. Solid state device design and characterization; rf component design with stripline and microstrip techniques; electromagnetic signal analysis; noise reduction techniques; antenna pattern measurements; radiation field and static electricity hazard determination; laser system design. (3 lab hours)

183D. Electrical Power and Control Systems (1)
Prerequisite: EE 121, 121L, 124, 155 (or concurrently). Measurement of characteristics and testing of power systems; computer-aided design and simulation of power and control systems; design and testing of feedback control systems; parametric study of control system implementations. (3 lab hours)

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

191T. Topics in Electrical Engineering (1–3; max total 6)
Prerequisite: permission of instructor. Investigation of selected electrical engineering subjects not in current courses.

195. Electrical Engineering Cooperative Internship (3–4)
Prerequisite: permission of adviser. Engineering practice in an industrial or governmental installation over a period of about 7 months duration. Each period must span a summer-fall or spring-summer interval.

INDUSTRIAL ENGINEERING (I E)

110. Statistical Analysis and Control (3)
Prerequisite: Math 76. Fundamentals of probability and statistics; general theory and practice of statistical quality control; sampling plans; introduction to statistical methods. (Field trips required)

111. Work Measurement (2)
General approach to the design process; application of design process to problem solving. Methods evaluation techniques: motion and time study, work sampling, and simulation. (2 2-hour lecture-labs; field trips required)

112. Statistical Design of Experiments (3)
Prerequisite: I E 110, Engr 70. Analysis of variance; regression and correlation; analysis of covariance; randomized blocks and Latin squares; design of experiments; response surface analysis and determination of optimum conditions.

113. Operations Analysis (3)
Prerequisite: I E 110, Engr 70, Math 81. Application of quantitative and numerical techniques for analysis of complex operational problems.

114. Facilities Engineering (2)
Value analysis, materials handling, packaging, layout of facilities, safety, location of facilities.

116. Fire Protection Engineering (2)
Basic theory of fire behavior; common fire hazards; classification of fires; sources of ignition; structural effects upon cause or control of fire; fire detection and alarm systems; extinguishment systems; codes and regulations; inspection methods.

118. Principles of Safety Engineering (3)
Prerequisite: junior standing. Principles of Safety Engineering with emphasis directed to industrial situations. Selected topics include: materials handling, machine guarding, lighting, noise, ventilation, personal protective equipment, instrumentation, plant inspection, accident investigation.

120. Systems Safety Engineering (3)
Prerequisite: Math 51. Principles of system safety engineering. Selected topics include: human factors engineering, key system interfaces, logic trees, fault and risk tree analyses, hazard identification and analysis, safety review system trees, statistical analysis, product safety.

125. Human Factors in Engineering and Design (3)
Fundamental issues in human performance, perceptual-motor processes, information processing. Anthropometry, workplace design and layout, arrangement of system components. Controls and displays. Work physiology. Industrial biomechanics, hard tool design. Environmental physiology, effects of noise, vibration, heat and illumination on human performance.

180. Senior Project (1)
Prerequisite: senior standing in industrial engineering, approved subject, Engr 182 (or concurrently). Study of a problem under supervision of a faculty member; final typewritten report required. (Individual project except by special permission)

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

191T. Topics in Industrial Engineering (1–3; max total 6)
Prerequisite: permission of instructor. Investigation of selected industrial engineering subjects not in current courses.

193. Work Experience in Industrial Engineering (3–6)
Prerequisite: IE 111; Second semester junior standing and permission of supervising instructor. Supervised industrial engineering work experience in a private firm or a public agency. Six or more scheduled conferences with supervisor(s).

MECHANICAL ENGINEERING (M E)

11. Manufacturing Processes (2)
Processing techniques, including casting, welding, forming, and machining; capabilities and limitations of these techniques.

11L. Manufacturing Processes Laboratory (1)
Prerequisite: M E 11 (or concurrently). Examples of the application of manufacturing processes in industry. (3 lab hours; field trips required)

117. Instrumentation and Fluid Laboratory (2)
Prerequisite: Engr 116 (or concurrently). Study of instrumentation and experimental methods; applications; fluid mechanics laboratory. (2 3-hour labs)

131. Advanced Engineering Materials (3)
Prerequisite: M E 11, Engr 31, 121. Applications of the principles of materials science to the study of the mechanical behavior of metalic, polymeric, ceramic, and composite materials. Effects of stress and environmental variables. (2 lecture, 3 lab hours)

134. Dynamics in Machine Design (3)
Prerequisite: Engr 26, 112 (or concurrently), 121 (or concurrently), Math 81. Analytical and graphical solutions to design problems in machinery. Mechanisms, kinematics, dynamic forces, vibrations.

137. Pressure Flow and Turbomachinery (3)
Prerequisite: Engr 136, 136L (or concurrently). Applications of fluid mechanics and thermodynamics and rotor-fluid energy interchange. Steady flow problems; real fluids in pipes. Pumps, compressors, and turbines with incompressible and compressible fluids.

142. Mechanical Vibration (3)
Prerequisite: M E 134. Mathematical and physical basis of vibration theory with applications to engineering; design; transient and steady state phenomena; distributed and lumped parameters; coupled systems; computer solutions.

143. Mechanical Design Laboratory (1)
Prerequisite: M E 134. Theory and techniques of static and dynamic stress measurements. Experimental determination of dynamic strain, force, and displacement. Vibration analysis. Experimental stress analysis. (3 lab hours)

146. Air Conditioning (3)
Prerequisite: Engr 136 (or concurrently). Theory and practice in air conditioning including psychrometrics, load estimating, heating and cooling systems, fluid design and controls.

146L. Air Conditioning Laboratory (1)
Prerequisite: M E 146 (or concurrently). Practical laboratory work with commercial type units; test of components of air conditioning systems. (3 lab hours; field trips required)

151. Materials in Engineering Design (2)
Prerequisite: Engr 121, M E 11, 131. Evaluation of design requirements, economic considerations. Techniques for selecting suitable materials for specific applications; optimization. Case studies.

154. Design of Machine Elements (3)
Prerequisite: ME 11, 11L, 134. Analytical study of principles of the design of machine components.

156. Advanced Thermodynamics—Fluid Mechanics (3)
Prerequisite: Engr 136. Advanced topics in thermodynamics, fluid mechanics, and heat transfer as applied to engineering problems.

156L. Advanced Thermodynamics—Fluid Mechanics Laboratory (1)
Prerequisite: Engr 136L, 156 (or concurrently). Applications of advanced experimental methods used in engineering practice to thermo-fluid systems. (3 lab hours)

164. Machine Design (3)
Prerequisite: M E 154, Engr 136, 160 (or concurrently). Design of several machines, with related theory as needed. (2–3 hour lecture-labs)

180. Senior Project (1)
Prerequisite: senior standing in mechanical engineering, approved subject, Engr 182 (or concurrently). Study of a problem under supervision of a faculty member; final typewritten report required. (Individual project except by special permission)

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

191T. Topics in Mechanical Engineering (1–3; max total 6)
Prerequisite: permission of instructor. Investigation of selected mechanical engineering subjects not in current courses.

GRADUATE COURSES (Engr)

(See *Course Numbering Systems—Definitions and Eligibility*)

205. Computing in Engineering Analysis (3)
Prerequisite: Graduate status in engineering. Solution of engineering problems using digital computation. Modeling of engineering systems for numerical analysis.

221. Incompressible Fluids (3)
Prerequisite: Graduate status in engineering. The kinematics of liquids and gases, LaGrangian and Eulerian frames of reference. Equations of motion. Potential motion and potential functions. Stream functions.

231. Structures and Structural Dynamics (3)
Prerequisite: Graduate status in engineering. Analysis of elastic beams, frames, plates, and shells. Response of structures to transient and steady-state forcing functions.

290. Independent Study (1–3; max total 3)
Prerequisite: Graduate status in engineering. See General Information, CSUF Catalog, Independent Study.

291T. Topics in Civil Engineering (3; max total 6)
Prerequisite: Permission of instructor. Investigation of selected Civil Engineering topics.

298. Project (6; max total 6)
Prerequisite: Graduate status in engineering. See thesis, project and thesis alternative. Independent investigation of advanced character as the culminating requirement for the master's degree.

299. Thesis (6; max total 6)
Prerequisite: See Master's Degree—Thesis Requirements. Preparation, completion, and submission of an acceptable thesis for Master's Degree.

IN-SERVICE COURSES
(See *Course Numbering System*)

311. Professional Examination Review (2; may be repeated in different fields)

321. Professional Engineering Seminar (1–3; may be repeated in different fields)



Health science students practicing cardiopulmonary resuscitation (CPR) on computerized mannequin to acquire proficiency in first aid techniques.

DIVISION OF HEALTH PROFESSIONS 265

Communicative Disorders Department

Health Science Department

Nursing Department

Physical Therapy Program

Rehabilitation Counseling Program



Speech clinician helping a child develop accurate speech articulation.

DIVISION OF HEALTH PROFESSIONS

C. Dean Mitchell, Director

Department or Program	*Chairman or Coordinator*
Communicative Disorders	Steven D. Wadsworth
Health Science	Sanford M. Brown
Nursing	Helen J. Sprengel
Physical Therapy Program	(Coordinator) E. Joan Turnquist
Rehabilitation Counseling Program	(Coordinator) Ted R. Hilliard

DIVISION PROGRAMS

The departments of the Division of Health Professions provide programs leading to the bachelor of arts, the bachelor of science, the master of arts, and the master of science degrees. Preparation is offered for professional careers in the specialized areas of physical therapy; rehabilitation counseling; communicative disorders with options in speech and language pathology, audiology, and education of the deaf; health science with options in environmental health science, occupational health and safety, and school and community health; nursing and in the general areas of teaching, business, public, or governmental service.

For specific degrees and programs, refer to the individual departmental information on the following pages.

COMMUNICATIVE DISORDERS DEPARTMENT

FACULTY

Steven D. Wadsworth, Department Chairman

Bette J. Baldis, Jon M. Fitch, , Karen M. Jensen, Michael Z. May, Marion D. Meyerson, Susan J. Shanks, Donald M. Wilson

DEGREES OFFERED: BA, MA
Minor

DEPARTMENTAL PROGRAMS

The department offers a bachelor of arts degree program with a major and minor in communicative disorders providing for emphasis in speech and language pathology, audiology, or education of the deaf. The major is designed to provide a broad and basic understanding of language, hearing, and speech disorders. The program provides a foundation for the master of arts degree in this field, which is required for certification by the American Speech and Hearing Association and the Council on Education of the Deaf.

UNDERGRADUATE PROGRAM

Admission to the Department of Communicative Disorders will be granted to all interested students seeking a BA in the major. Those students who seek BA only and do not intend to pursue graduate professional study and training in Communicative Disorders can adjust their programs with the assistance of an adviser in the Department of Communicative Disorders.

Admittance to the clinical program will be contingent on the student's earning a 3.0 GPA in 18 units of selected core courses. These courses include: CD 100, 101, 121, 104, 114, 131, E Ed 130, 140, and Ling 134. The student may be allowed to complete a BA without the clinical program but will be unable to continue in the post-baccalaureate professional sequence without the clinical component.

Each student will be requested to complete a departmental information sheet before entering the clinical program.

Speech and Language Pathology: The baccalaureate curriculum with emphasis in speech and language pathology and a fifth year of prescribed study may be followed to satisfy requirements for a Multiple Subjects Teaching Credential, a Special Education Specialist Credential—Communication Handicapped, Clinical-Rehabilitative Services Credential (Language, Speech and Hearing Services), Licensure as Speech Pathologist by the State of California Board of Medical Quality Assurance, and the Certificate of Clinical Competence in Speech Pathology awarded by the American Speech and Hearing Association. Upon the completion of the graduate requirements, a student is qualified for a position in public or private schools, colleges, universities, hospitals, community or private clinics, and extended care facilities. (Certified and Licensed graduates may also enter private practice.)

Audiology: The baccalaureate curriculum with emphasis in audiology and a fifth year of prescribed study may be followed to satisfy the academic requirements for the Certificate of Clinical Competence in Audiology awarded by the American Speech and Hearing Association and the Licensure as Audiologist by the State of California Board of Medical Quality Assurance. Graduate audiologists are hired by physicians, community, private and hospital clinics, some public schools, and college and university clinics. Careers in the armed services are also available.

Education of the Deaf: The baccalaureate curriculum with emphasis in education of the deaf and a fifth year of prescribed study may be followed to satisfy requirements for a Multiple Subjects Teaching Credential, a Special Education Specialist Credential—Communication Handicapped, and basic certification of the National Council on Education of the Deaf, and for the master of arts degree. Positions are available in public, private and residential schools. Undergraduate curriculum is also relevant for other health professionals offering services to the deaf.

The Communicative Disorders Department conducts a Language, Hearing, and Speech Clinic as part of its program. Any regular student may take advantage of its services without charge.

BACHELOR OF ARTS DEGREE REQUIREMENTS

The communicative disorders major consists of 39 units. To complete the requirements for the BA degree, a student must complete the major as outlined, meet the General Education requirement, special course requirements, and electives, which may include a minor (85 units), totaling at least 124 units.

	Units
C D 100, 104, 107 (1 unit), 121, 128 (1 unit), 108 (1 unit), 131, 132, 136	22
Elect one area:	9
Speech and Language Pathology: C D 101, 105, 106, 110, 112	
Audiology: C D 133 (required) plus 6 units of the following: CD 101, 105, 106, 112	
Education of the Deaf: C D 162, 163, 164	
Approved Electives	8
E Ed 130, 140; Ling 134; C D 111, 114, 116, 130, 135, 137, 205, 260, 266; Spch 162; additional communicative disorders courses and other approved nondepartmental electives.	
	39

COMMUNICATIVE DISORDERS MINOR

	Units
C D 100, 104, 131, Spch 160 or Ling 134	12
Elect one area:	9
Speech and Language Pathology: C D 101, 105, 121	
Audiology: C D 101, 132, 133	
Education of the Deaf: C D 132, 135, 136	
	21

CREDENTIAL PROGRAM

The Special Education Specialist—Communication Handicapped Credential Program is administered jointly by the Department of Communicative Disorders and the Special Education Program in the School of Education. See School of Education for other Special Education Specialist credentials. Information about the Special Education Specialist: Communication Handicapped Credential and the Clinical Rehabilitative Services Credential (Language, Speech and Hearing Services) is available by writing to the Department of Communicative Disorders.

For credential candidates. See *Admissions—Undergraduate Application Procedures,* and *School of Education—Admission to the Credential Programs.*

The following schedule of courses described below was developed according to the Ryan Act Guidelines (1973). The curriculum also provides undergraduate preparation for the master of arts degree with emphasis in communicative disorders. Additional information may be obtained from the departmental credential advisors in each area of specialty.

SPECIAL EDUCATION SPECIALIST: COMMUNICATION HANDICAPPED CREDENTIAL PROGRAM

Deaf and Severely Hard of Hearing	*Units*
Core courses: CD 100, 104, 107, 108, 121, 128 and 131 (concurrently), 132, 136	22
Ed Deaf core: CD 135, 137, 162, 163, 164, 211, 232, 262, 263, 264, 266	33
Clinical core: CD 160 or 260; AS 164B (4–9); CD 268 (6 units)	12–17
Generic core: CD 114, 116; E Ed 130, 140, 156, 160 A, B (6 units)	21
Education core: E Ed 150, 160 (6 units) *	10
Approved electives: CD 111, 133; Ling 134	12
	98–103

* See requirements for the student teaching multiple subjects credential—School of Education.

COMMUNICATIVE DISORDERS

Speech and Hearing

	Units
Core courses. CD 100, 104, 107, 108, 121, 128 and 131 (concurrently), 132, 136	22
Spch and Hearing core: CD 101, 105, 106, 110, 112, 205, 206, 207, 210, 213, 214, 215, 220	36
Clinical core: CD 130 (1–6 units), 209 (1 unit), 230 (1–6 units), 250 (2 units); AS 164A (4–9 units)	12–21
Generic core: CD 114, 116; E Ed 130, 140, 156, 160 A, B (6 units) *	21
Education core: E Ed 150, 160 A, B (6 units) *	10
Approved electives: CD 133, 204, 211, 232; Psych 177	15
	101–110

Aphasic/Severe Oral Language Handicapped

	Units
Core courses: CD 100, 104, 107, 108, 121, 128 and 131 (concurrently), 132, 136	22
Aphasic/Severe Oral Lang core: CD 101, 105, 106, 110, 111, 112, 205, 207, 212, 214, 220, 232	36
Clinical core: CD 130 (1–6 units), 209 (1 unit), 230 (1–6 units), 250 (2 units), AS 164A (4–9 units)	12–21
Generic core: CD 114, 116; E Ed 130, 140, 156, 160 (6 units)*	21
Education core: E Ed 150, 160 (6 units) *	10
Approved electives: CD 133, 211, 213; AS 245; Ling 243; Psych 169, 177	
	101–110

CLINICAL REHABILITATIVE SERVICES CREDENTIAL (LANGUAGE, SPEECH AND HEARING SERVICES) PROGRAM

	Units
Generic Courses: CD 100, 101, 104, 105, 106, 107, 108, 110, 111, 112, 114, 116, 121, 128, 131, 132, 205; Psych 101, 136	52
Advanced Specialization in Language, Speech, and Hearing: Ling 134, CD 204, 206, 207, 209, 210, 213, 214, 215, 220	28
Clinic Core: CD 130 (3 units), 230 (6–9 units), AS 164-A (4–9 units), CD 250 (2 units)	15–21
Approved Electives: E Ed 156, 150, 120MA, CD 133, 232, 211, PE 146, CD 104L	
	98–101

GRADUATE PROGRAM

The master of arts degree program in communicative disorders is designed to extend the competency of persons engaged in speech and language pathology, audiology, or education of the deaf. The program also provides the first graduate degree for students anticipating advanced graduate study in these areas.

An applicant to the master of arts degree program in communicative disorders must have undergraduate preparation equivalent to a CSUF undergraduate major in communicative disorders. A student with academic deficiencies may be admitted in conditional classified standing but must complete the deficiencies prior to receiving classified standing. Prerequisite courses may not be used on the master's degree program. Additional requirements for classified standing are a grade point average of 3.0 (B) on the last 60 units attempted, plus a departmental evaluation form and self-evaluation.

(See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements* and *Thesis and Thesis Alternatives.*)

MASTER OF ARTS DEGREE REQUIREMENTS

Under the direction of a graduate adviser, each student prepares and submits a coherent program individually designed according to one of the following plans:

* See requirements for the student teaching multiple subjects credential—School of Education.

Plan A—Thesis Program

	Units
Courses in communicative disorders (See *specific requirements*)	15
Approved electives in communicative disorders or related fields	9–12
Thesis or research project	3–6
Total (including at least 15 units in 200-series)	30

Specific Requirements: A course in statistics; CD 298 or 299. Select a minimum of 15 units from one of the areas of concentration listed below.

Plan B—Non-Thesis Program

	Units
Courses in communicative disorders (See *specific requirements*)	15
Approved electives in communicative disorders or related fields	15
Total (including at least 15 units in 200-series)	30

Specific Requirements: A course in statistics. Comprehensive written and/or oral examination. CD 133 required of students in Education of the Deaf. Select a minimum of 15 units from one of the areas of concentration listed below.

Areas of Concentration

Audiology: CD 231, 232, 233, 234, 250, 270.

Education of the Deaf: CD 211, 232, 262, 263, 264, 266, 268.

Speech and Language Pathology: CD 204, 205, 206, 207, 209, 210, 211, 213, 214, 215, 220, 232.

COURSES

COMMUNICATIVE DISORDERS (C D)

100. Principles of Communicative Disorders (3)
The bases of normal communication; acquisition and disorders; evaluation and remediation in the fields of audiology, education of the deaf, and speech pathology.

101. Phonetics of American English (3)
Perceptual and physiological characteristics of speech sounds of American English; application of phonetics to the study of normal and aberrant speech patterns and to American regional dialects.

104. Physiology and Anatomy of Speech and Hearing Mechanisms (3)
Physical, physiological, and neurological basis of speech and hearing mechanisms and pathology.

104L. Physiology and Anatomy Laboratory (1)
Prerequisite: C D 104 or concurrent. Laboratory study of anatomy and physiology of speech and language; cadaver dissection.

105. Voice and Articulation Disorders (3)
Prerequisite: C D 100, 101, 104, 121. Seminar in prognostic and therapeutic procedures related to voice and articulation disorders of children.

106. Stuttering (3)
Prerequisite: C D 100, 101, 104, 121, permission of instructor. Seminar in exploration of theories and therapies, psychological and educational concepts of stuttering; development of parent-child relationships.

107. Field Experience in Communicative Disorders: Speech Pathology (1–3; max total 3)

Observation of diagnostic evaluations, parent counseling and clinical services in Language, Hearing and Speech Clinic, in the public/private schools, and related clinical settings. Students are expected to defray travel and personal expenses resulting from off-campus clinical instruction.

108. Field Experience in Communicative Disorders: Education of the Deaf (1–3; max total 3)

Observation of diagnostic evaluations, parent counseling and educational/clinical services at clinical sites on campus, in public and/or private schools, and at residential schools for the deaf. Students are expected to defray travel and personal expenses resulting from off-campus clinical instruction.

110. Diagnostic Procedures (3)

Prerequisite: CD 105, 106, 112, concurrent with CD 130 or 230. Seminar in selection and use of various speech, language, voice and prosody tasks and procedures used in the diagnostic process. Team approach concepts.

111. Neurological and Physiological Basis of Speech (3)

Prerequisite: C D 104. Neuroanatomy and physiology in relation to the processes of speech and language.

112. Management of Language Disorders in Children (3)

Prerequisite: C D 100, 101, 104, 121. Seminar in determination of rationale for selection from various approaches to therapy; preparation to administer language programs; evaluation of language therapy with children; observation in public and/or private schools. Students are expected to defray travel and personal expenses resulting from off-campus clinical instruction. (2 lecture, 2 lab hours)

114. Education of Exceptional Children (3) (Former A S 160) (See A S 114)

116. Prescriptive and Individualized Instruction (3) (See A S 116)

121. Language Acquisition (3)

Prerequisite: C D 100, Ling 134. Analysis of research in the details of normal speech and language acquisition; observation and research, normal language acquisition in children; compilation of a detailed outline of specific milestones in language acquisition.

128. Observation in Communicative Disorders: Audiology (1-3; max total 3)

Prerequisite: C D 131 concurrent. Observation of diagnostic evaluations of hearing disorders in Language, Hearing and Speech Clinic or other clinical settings. Students are expected to defray travel and personal expenses resulting from off-campus clinical instruction.

130. Clinical Practice in Speech and Hearing Therapy (1-3; max total 6)

Prerequisite: C D 100, 101, 104, 105, 106, 112, 121. Supervised clinical practice in speech and hearing therapy; diagnosis of speech deficiencies, referral procedures, parent counseling, case records. Clinical sites on campus, satellite centers, public and/or private schools. Students are expected to defray travel and personal expenses resulting from off-campus clinical instruction.

131. Principles of Audiology (3)

Prerequisite: CD 128 concurrent. Anatomy, physiology, and neurology of the hearing mechanism; medical aspects of deafness and surgical treatment of hearing loss; psychological and social factors.

132. Aural Rehabilitation (4)

Prerequisite: C D 131. Techniques employed in selecting amplification supplemented by speech reading and audition in the communication process; physics of sound and application of all sensory modalities. Observation of hearing aid evaluations and participation in therapy related to visual-auditory training.

133. Audiometry (3)
Prerequisite: CD 128/131. Concepts of perception of speech; testing procedures utilized in detection and evaluation of hearing loss; application of testing procedures for diagnostic and rehabilitative purposes.

135. History, Education and Guidance of the Deaf (3)
History of the education of the deaf; source material; research studies related to psychology, social adjustment, and learning problems of the deaf.

136. Manual Communication for the Deaf (3)
Prerequisite: permission of instructor. Development of skills necessary to communicate with deaf adults and children through use of finger spelling and the language of signs.

137. Psychology of Deafness (3)
Psychological implications and effects of deafness; psychological testing of deaf children; role of the adult deaf in our society.

138. American Sign Language (2) (Former C D 188T section)
Prerequisite: permission of instructor. The study of American Sign Language, its syntax and grammar. Communication with the adult deaf in American society.

139. Instructional Techniques with the Multihandicapped Deaf (3) (Former C D 188T section)
Prerequisite: permission of instructor. Adapting instruction for the multihandicapped deaf child. Includes individualized learning stations and other personalized approaches.

140. Behavior Modification for the Multihandicapped Deaf (3) (Former C D 188T section)
Prerequisite: permission of instructor. Techniques of adapting behavior modification principles with multihandicapped deaf children. Includes contingency contracting, positive reinforcement, charting behavior, and videotaped observations.

160. Clinical Practice in Education of the Deaf (2; max total 6)
Prerequisite: C D 132, 136, 162, 163, 164. Supervised clinical participation and practice in clinical/classroom teaching of persons who are deaf and severely hard of hearing; parent counseling. Therapy planning and implementation; clinical sites on campus and public and/or private schools. Students are expected to defray travel and personal expenses resulting from off-campus clinical instruction.

162. Speech for the Deaf (3)
Seminar in techniques employed in the development of speech with deaf children. Yale charts and diacritical marking systems. Devices for developing all English sounds. Includes observation, demonstration, and practice with deaf children.

163. Language for the Deaf (3)
Seminar in techniques employed in the development of language with deaf children; systems of teaching techniques, construction of English sentences and grammar; methods of correcting language mistakes of the deaf child. Includes observation and demonstration.

164. Elementary School Subjects for the Deaf (3)
Prerequisite: permission of instructor. Seminar in detailed study of the process of teaching reading to deaf children. Investigation of classroom procedure and presentation of content areas (math, science, social studies); integration with visual instructional materials. Includes observation and demonstration.

188T. Topics in Communicative Disorders (1-3; max total 6)
Speech pathology, audiology, education of the deaf, speech and hearing science, language disorders.

190. Independent Study (1-3; max total 6)
See *Academic Placement—Independent Study.*

COMMUNICATIVE DISORDERS

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

204. Seminar in Stuttering (3)
Prerequisite: permission of instructor. In-depth study of specific characteristics, causes, and therapeutic approaches to remediating stuttering.

205. Functional Speech Disorders in Children (3)
Prerequisite: C D 105, 106. Seminar in clinical approaches to understanding functional aspects of speech and language disorders of children. Emphasis given to parent counseling, parent-child interaction, and child-centered therapy.

206. Communication Disorders Articulation (Phonemic) (3)
Prerequisite: C D 101, 110, 105. Seminar in the nature of articulatory process; symptomatology; etiology in relation to diagnosis and appraisal of articulatory problems. Comparisons of therapy approaches; planning and conducting therapy; critical review of recent research trends in articulation.

207. Dysphasia in Adults (3)
Prerequisite: CD 111. Seminar in the history of dysphasia; neurological concepts needed for understanding this disorder; application of linguistic theory to testing and therapy; formulation of programs for dysphasics.

209. Speech-Hearing in Public School Environment (1)
Prerequisite: C D 110; concurrent enrollment in A S 164A. Seminar in selection, application, and interpretation of diagnostic tests for public school children; demonstration and application of therapy for children with a variety of language, hearing, or speech disorders; organization and administration of school speech and hearing program.

210. Seminar in Structural Speech Disorders (3)
Prerequisite: permission of instructor. Theories, etiologies, and habilitative processes. Emphasis given to orofacial growth and cleft palate.

211. Programmed Instruction (3)
Prerequisite: C D 130, 160, A S 164A or B, and permission of instructor. Seminar in the integration of theory; techniques and methods for developing individualized instruction utilizing programmed procedures; development of sophisticated materials for use with hearing, language, and speech clients.

212. Management of Severe Language Disorders (3) (Former C D 188T section)
Prerequisite: C D 112 and permission of instructor. Seminar in incorporating clinical speech and language approaches to meet individual needs of severe language handicapped children in the classroom. Causation, assessment and remediation of phonological, semantic, morphemic, and syntactic disorders. Parent counseling. Travel to off-campus settings for observation at student expense.

213. Seminar in Neurological Speech Disorders (3)
Prerequisite: C D 104, CD 111. Symptomatology, etiology, habilitative, and rehabilitative processes related to neurological speech disorders of children and adults.

214. Seminar in Language Disorders of Children (3)
Prerequisite: C D 112, 121. Etiology, symptomatology, assessment, and habilitation of language disorders in children. Practical experience includes diagnosis and management of a child's language disorder. Clinic sites on campus and in public and/or private schools. Travel to off-campus settings at student expense.

215. Seminar in Voice Disorders (3)
Prerequisite: C D 104, 105. Nature of normal and deviant vocal production. Symptomatic assessment and voice therapy.

220. Communicative Disorders of Second Language Usage (3)
Prerequisite: Ling 134 or 136. Seminar in clinical approaches to speech and language therapy for those for whom standard English is a second language; emphasis on U. S. minority groups.

230. Advanced Clinical Practice in Speech and Hearing Therapy (1–3; max total 6)
Prerequisite: C D 105, 106, 112, 130. Supervised clinical practice in diagnosis/treatment of complex speech and hearing problems; causative factors; outlining therapy; parent counseling; referrals. Clinic sites on campus, satellite centers, and public and/or private schools. Travel to off-campus settings at student expense.

231. Seminar in Audiology (3; max total 6)
Prerequisite: C D 131. Projects in library research or experimentation.

232. Seminar in Differential Diagnosis of Auditory Disorders in Children (3)
Procedures for differentiating children who may have hearing deficits, mental retardation, emotional disturbances, or brain disfunction. Syndromes characteristic of these disorders.

233. Seminar in Analysis of Hearing Aids (3)
Prerequisite: C D 131, 133, 231. Study in depth of current hearing aids, body, post-auricle, and insert types; specific application to conductive and sensory-neural hearing losses. Analysis of frequency response and harmonic distortion of various instruments; theory of sloped amplification.

234. Seminar in Industrial Audiology (2)
Prerequisite: permission of instructor. Principles of industrial hearing conservation and the design of a comprehensive plan for a specific industry.

250. Advanced Clinical Practice, Audiology (2; max total 6)
Prerequisite: C D 130, 131, 132, 133. Supervised clinical practice in diagnosis and treatment of complex hearing problems; causative factors, counseling parents, therapy planning, etc.

260. Advanced Clinical Practice, Education of the Deaf (2; max total 6)
Prerequisite: C D 132, 136, 162, 163, 164. Supervised clinical participation and practice in clinical/classroom teaching of persons who are deaf and severely hard of hearing; parent counseling. Therapy planning and implementation. Clinical sites on campus and in public and/or private schools. Travel to off-campus settings at student expense.

262. Seminar in Speech for the Deaf (3)
Prerequisite: C D 162, permission of instructor; and successful completion of the NTE Commons Branch Exam or Single or Multiple Subjects Credential. Development of oral communication for deaf child. Detailed study of essentials of good speech and methods to build or correct speech of the deaf. Projects in library research or experimentation. Includes demonstration and off-campus practicum. Travel at student expense.

263. Seminar in Language for the Deaf (3)
Prerequisite: C D 163, permission of instructor; and successful completion of the NTE Commons Branch Exam or a Single or Multiple Subjects Credential. Investigation of language errors of the deaf. Comparative study of various language curricula. Techniques with older deaf students. Includes demonstration and off-campus practicum with deaf students. Travel at student expense.

264. Seminar in Elementary School Subjects for the Deaf (3)
Prerequisite: C D 164 and successful completion of the NTE Commons Section or a Single or Multiple Subjects Credential. Special problems and techniques of adjusting the elementary school curriculum to the needs of deaf children; innovations and research in curriculum development. Project required. Includes demonstration and practice.

266. Instructional Strategy and Technology for the Deaf (3)
Prerequisite: C D 162, 163, 164 and successful completion of the NTE Commons Section or a Single or Multiple Subjects Credential. Seminar in the development of techniques for organizing instruction for the deaf. Specialized equipment and production of visual materials used in classrooms for the deaf.

268. Internship with the Deaf (6)
Prerequisite: C D 136, 262, 263, 264, 266, A S 164B, and successful completion of the NTE Commons Section or a Single or Multiple Subjects Credential. Supervised internship in a residential school for the deaf. Full time in residence for 8 weeks.

270. Seminar in Organization and Management of Audiology Clinics (3)
Prerequisite: C D 131, 133. Establishing, organizing, and maintaining audiology clinics in colleges and universities, hospitals, and private organizational settings. Project required.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

298. Individual or Group Research Project (1–6; max total 6)
Prerequisite: consent of advisory committee. Utilization of communication research principles and techniques to select study design, determine data collection techniques, collect and process data, interpret findings, and prepare final written report. Same standards as for thesis.

299. Thesis (1–6; max total 6)
Prerequisite: see Master's Degrees—Thesis requirement. Preparation, completion and submission of an acceptable thesis or project for the master's degree.

IN-SERVICE COURSES

(See ***Course Numbering System***)

300T. Selected Topics in Communicative Disorders for Continuing Education (1–3)

HEALTH SCIENCE DEPARTMENT

FACULTY

Sanford M. Brown, Assistant Director

Donald G. Casperson, Wayne N. Clark, James A. Fikes, Henry F. Fricker, Trevor D. Glenn, John G. Hardgrave, Nathan E. Liskey, Ronald C. Schultz

DEGREES OFFERED: BS, MS, Minor

Options
Environmental Health Science
Occupational Safety and Health
School and Community Health

DEPARTMENTAL PROGRAMS

The Department of Health Science offers curricula leading to a bachelor of science degree, including a major and minor in health science with options in environmental health science, occupational safety and health, school and community health.

These programs are designed to provide basic education for employment in environmental health programs, community health programs, occupational safety and health programs, public health programs, voluntary health agencies, and the allied health professions.

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

A major in health science consists of a minimum of 36 units. To complete the major for the BS degree, students must complete the health science core (15), one of the options outlined below (21–31), and any additional requirements in related fields as specified.

The General Education requirement, special course requirements, and electives, which may include a minor, complete the 78–88 units, totaling at least 124 units required for the BS degree. Consult the department adviser for recommended sequence of major and general education courses.

Health Science majors may not apply credit-no-credit grading toward major requirements for a baccalaureate degree.

Health Science Core	*Units*
H S 90, 100, 102* 105, 109	15
Elect one option below	21–31

Options

Environmental Health Science Option

H S 161, 162, 163, 165, 167, 168, 169
Additional requirements: Biol 10, 105, Chem 2A–B, Math 5, Phy 33

Registration as a Sanitarian: Students who desire to take the *State Examination for Registration as a Sanitarian* must complete H S 185F, Ent 107 or H S 166T Vector Control, F Sci 170, and must include among their electives and general education selections the following courses: Micro 20, Chem 8, Phys 2A-B, Engl 1, Spch 3, and 3 units upper division behavioral science. Consult the departmental adviser concerning substitutions and additions. (Accredited by the State Department of Health.)

Occupational Safety and Health Option

H S 113, 143, 168, 169, M E 11, 11L, I E 110, 116, 118, 120, Engr 26, 160, 161
Additional requirements: Biol 10, 105, Chem 2A–B, Math 5, Phy 33

Students who desire to meet the recommendations for the Safety Professional must complete among their electives and general education selections the following courses: B A 8, 18, Fin 143, Mgt 110A, Engr 70, Engl 1, Phys 2A-B, Psych 176, H S 152T, Ind A 133, 162, Econ 1A, and Spch 3.

* Students completing the occupational safety and health option may substitute IE 110 for H S 102 in the required core.

School and Community Health Option

H S 104, 110, 113, 123, 124

Elect from: H S 111, 112, 115, 117, 129, 141, 143, 152T, 161, 163, 168, H Ec 131, La R 117, Psych 171

Additional requirements: Biol 10 or 105, Chem 2A, 2C, Math 5 or 70, Phy 33

Field assignments may be required for which students are expected to defray travel and personal expenses.

HEALTH SCIENCE MINOR

The minor in health science consists of 20 units composed of the health science core requirement and 5 units from the courses required in any one option. Consult the department adviser for assistance in program planning.

GRADUATE PROGRAM

The master of science degree in health science is designed to provide advanced study for teachers of health in the high schools and junior colleges, public health personnel, community health agency personnel, and for other professionals who wish to pursue graduate study in the general area of health science. Concentrations have been designed to provide in-depth study in environmental health (approved by the State of California Department of Health), administration and supervision, and teaching.

Admission: The MS program is open to students with health science or related undergraduate degrees who have demonstrated the ability to perform at an advanced level. Evidence of such ability is required by: (1) a satisfactory undergraduate grade point average (2.50 overall and 3.00 in the major or on the last 60 units); (2) a minimum Graduate Record Examination Score (Q-430, V-450); (3) passing successfully the department examination; (4) completion of all prerequisites.

(See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements,* and *Thesis and Thesis Alternatives.*)

MASTER OF SCIENCE DEGREE REQUIREMENTS

Under the direction of a graduate adviser, each student prepares and submits a coherent program individually designed within the following framework:

	Units
Core courses in health science (See *specific requirements*)	10
Courses in health science concentration	14–17
Approved electives	3– 6
Total (including 18 units in 200-series)	30

Specific Requirements: Health Science 102, 280, 298 or 299.

COURSES

HEALTH SCIENCE (H S)

90. Health Science (3)
Meets general education requirements. Significance of basic health problems applicable to the young adult and to society. Field assignments may be required.

100. Community Health (3) (Former H S 157)
Prerequisite: H S 90. Public health services as they affect the community; investigation and analysis of community health problems. Field assignments may be required.

102. Public Health Statistics (3) (Former H S 158)
Public health statistics and principles of epidemiology; methods of investigating epidemics, collecting of data, analysis and reports. Field assignments may be required.

104. International Health (3) (Former H S 140)
Prerequisite: H S 90. History and evaluation of programs of international health organizations; health problems on a world scale. Field assignments may be required.

105. Environmental Safety (3)
The physical environment as it relates to accidents and safety; investigation and analysis of factors involved in the areas of home, school, industry, recreation, and traffic; human factors; accidents by type, age groups, and occupations. Field assignments may be required.

109. Epidemiology of Disease (3) (Former H S 155)
Prerequisite: H S 102. Modern concepts and principles of epidemiology; interaction of all agents, host, and environmental factors of communicable and noncommunicable diseases; problems of the aged. Field assignments may be required.

110. Habit Forming Substances (3)
Problems of tobacco, depressants, and stimulants including hallucinogens; use and effects on adolescents and adults. Field assignments may be required.

111. Alcohol and Alcoholism (3) (Former H S 152T section)
Physical, mental, and social factors related to the consumption of alcoholic beverages; the development of alcohol dependence. Field assignments may be required.

112. Consumer Health (3) (Former H S 152T section)
Consumer health as it relates to selection of health care products and services; how to differentiate fact from fiction in health matters. Field assignments may be required.

113. Advanced First Aid and Emergency Care (3) (Former H S 103)
American Red Cross Advanced First Aid and Emergency Care course; safety factors in daily living; disaster preparedness programs, emergency treatment for various types of injuries; including cardiopulmonary resuscitation (CPR); control of bleeding, artificial respiration, transportation, splinting, and bandaging. Also includes emergency childbirth, water and auto extrication. Certificates issued when requirements are met. Field assignments may be required. (2 lecture, 2 lab hours)

114. Public Health Science (2) (Former Nurs 114)
Open to all students. Required for Nursing students; prerequisite or concurrent with first semester in Nursing major. Trends in public health administration, organization, functions; national, state, local, public, voluntary agencies; interpretation and use of vital statistics; environmental health and epidemiology. Field assignments may be required.

115. Health Problems of Aging (3)
Health problems of the aged population including basic principles and concepts of the aging process, both physical and emotional. Field assignments may be required.

117. Holistic Health (3) (Former H S 152T section)
Includes the discovery and integration of the individual into all levels of being: body, mind and spirit. Total approach will be investigated in terms of preventive health practices. Field assignments may be required.

120. Elementary School Health Science Education (3)
Designed for the multiple subjects teacher credential candidate (non-health science major) to meet current California legislative requirements. Focus upon the methods, processes, and content used in the elementary schools for the teaching of health science. Student evaluation based on expected competencies. Field assignments are required.

121. Secondary School Health Science Education (2)
Designed for the single subject teacher credential candidate (non-health science major) to meet current California legislative requirements. Focus upon the methods, processes, and content used in the secondary schools for the teaching of health science. Student evaluations based on expected competencies. Field assignments are required.

123. School Health Programs (3)
Health science in the public school curriculum, with emphasis on current health problems; the determining factors in teaching content; school health programs. Field assignments may be required.

124. Human Sexuality (3) (Former H S 180)
Factors relating to the significance of sexuality as a function of being human. Field assignments may be required.

125. Perspectives in Sexuality for Health Professionals (3) (Former H S 152T section)
Prerequisite: H S 124. Designed specifically for upper division students in Health Professions. Focus on those individual sexual problems leading to the service of physical therapists, rehabilitation counselors, nurses or other helping professions. Field assignments may be required.

126. Female Sexuality (3) (Former EXP 150) (Same as W S 127)
Studies on female sexuality which include past and present sexual roles, female sexual response patterns, and discussion of common problems encountered by women functioning as sexual beings. Field assignments may be required.

129. Rural Health (3) (Former H S 130)
Health problems of rural areas including community medical services, medical facilities, federal, state, and local legislation and administrative problems. Field assignments may be required.

141. Driver and Traffic Safety Education (3) (Former H S 170)
Prerequisite: H S 105, senior standing, valid California driver's license. Materials, equipment, and procedures for driver education and training including training with simulators. Field assignments may be required. (2 lecture, 2 lab hours)

143. Occupational and Industrial Safety (3) (Former H S 106)
Application of safety and accident prevention measures that provide a basis for insight into the hazards of occupational and industrial situations. Field assignments may be required.

152T. Topics in Health (1-3; max total 12)
Analysis and investigation of selected areas in school and community health, public health, and health and safety with some topics including laboratory experiences. Field assignments may be required.

161. Environmental Health I (3)
Basic principles and concepts of environmental health with a particular emphasis on health hazards. Environmental health organizations; communicable disease and environment; contamination control, water, air, solid waste, and noise. Field assignments may be required.

162. Environmental Health II (3)
Basic principles and concepts of environmental health with a particular emphasis on health hazards. Radiation, food, rodent control, managing special environments, planned environments, value systems, and community organizations. Field assignments may be required.

163. Public Health Administration (3)
Principles of public health administration; fundamentals of organization and administration in public health. Field assignments may be required.

165. Directed Group Study in Environmental Health (3)
Prerequisite: H S 161, 162. Problems of environmental health studied through field trips, observations, demonstrations, and seminars. (2 lecture, 2 lab hours)

166T. Topics in Environmental Health (1–3; max total 12)
Analysis and investigation of selected areas in environmental health with some topics including laboratory experiences. Field assignments may be required.

167. Public Health Laboratory Techniques (3) (Former H S 152T section)
Designed to provide training in the use of laboratory procedures and techniques of adjusting and operating monitoring equipment used in water quality, air pollution, noise pollution, food sanitation, radiological health and toxic substances. Field assignments may be required. (2 lecture, 2 lab hours)

168. Occupational and Industrial Health (3) (Former H S 107)
Prerequisite: H S 161 or 162. Concepts of occupational health as they pertain to appraising and controlling environmental health hazards; occupational diseases, chemical, biological, and physical agents that produce organic or systemic damage. Problems in toxicology, measurement instruments, and evaluating health hazards. Field assignments may be required.

169. Radiological Health and Safety (3) (Former H S 108)
Prerequisite: Phys 2A–B. Problems with ionizing radiation in the work environment. Biological effects of exposure, radiation monitoring, data interpretation, and radiation protection. Field assignments may be required.

185F. Field Work in Health (1–3; max see below)
Repeatable to 3 units in any one area, maximum total 6. Prerequisite: completion of 24 units of the health science major. Provides practical experience in a community work setting.

190. Independent Study (1–3; max see reference.)
See *Academic Placement—Independent Study.*

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

203. Seminar in Community Health Organization (3) (Former H S 257)
Prerequisite: H S 100 and 123. Individual research, analysis, and evaluation in relation to educational aspects of community health programs; group procedures; community organizations; selection, development, and use of media. Field assignments are required.

205. Seminar in Safety Problems and Programs (3)
Prerequisite: H S 105. Development, organization, and administration of safety programs; individual research, analysis, and evaluation of pertinent problems. Field assignments are required.

210. Seminar in Administration of the Health Science Program (3)
Prerequisite: H S 123. Individual research, analysis, and evaluation of the organization, administration, and legal aspects of the health science program. Field assignments are required.

220. Seminar in Physical Handicaps (3)
Prerequisite: H S 123. Individual research, analysis, and evaluation of the cause, treatment, and educational implication of crippling conditions, including cerebral palsy of preschool and school-age children; rehabilitation and adjustment problems. Field assignments are required.

222T. Seminar in School and Community Health (1–3; max total 15) (Former H S 234T)
Individual research, analysis, and evaluation of current topics in school health education and community health education programs such as family life education, consumer health problems, substance abuse, and chronic disease. Field assignments may be required.

223. Seminar in Health Science Education (3)
Prerequisite: H S 123; teaching experience. Individual research, critical analysis and evaluation of the health science program; curriculum materials, and special techniques relating to instruction, services, and environment. Field assignments are required.

242T. Seminar in Occupational Safety and Health (1–3; max total 15)
Prerequisite: H S 105 and 143. Individual research, analysis, and evaluation of current topics such as loss control, product safety laws, and governmental occupational standards. Field assignments may be required.

262T. Seminar in Environmental Health (1–3; max total 15) (Former H S 230T)
Individual research, analysis, and evaluation of current topics: air, water, housing, vector control and other selected environmental health problems. Field assignments may be required.

280. Seminar in Techniques of Health Research (3)
Research methodology, identification of health research problems, use of library resources, data gathering and processing, writing a research report.

285F. Field Work in Health (1–4; max total 10)
Planning, implementation, participation, evaluation in selected areas: safety, school health, community health, physical handicaps, occupational health, and environmental health.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

298. Directed Research (2–4; max total 4)
Prerequisite: advancement to candidacy for MS degree in health science. Individual research projects in health science; weekly independent and group conferences.

299. Thesis or project (2–4; max total 4)
Prerequisite: see *Master's Degrees—Thesis Requirement.* Preparation, completion, and submission of an acceptable thesis or project for the master's degree.

IN-SERVICE COURSES

(See *Course Numbering System*)

302. Selected Topics in Health (1–3; repeatable with different topics)

NURSING DEPARTMENT

FACULTY

Helen J. Sprengel, Assistant Director, Division of Health Professions, Nursing Programming

Carol L. Avent, John Bergey, Martha A. Davis, Eleanore B. Greene, M. Ursula Guthormsen, Marie N. Haddad, Evelyn M. Husson, Dolores J. Kindell, Fred C. Krell, Myrthel S. Nelson, Karen H. Nishio, Emperatriz N. Rabago, Eleanor M. Stittich, Margaret C. Thorburn, Monnette C. Viau, Marie R. Welch

DEGREES OFFERED: BS, MS

DEPARTMENTAL PROGRAMS

The Nursing Department offers a bachelor of science degree program with a major in nursing. The student upon completion of the junior year will have the option to take the examination required by the California Board of Registered Nursing for licensure to practice as a registered nurse. The senior year of the program offers a course in Community Health Nursing and a selected clinical focus in nursing. Students will be eligible for the California certificate in public health nursing upon graduation. The program also provides the foundation for graduate study. For the registered nurse from the community colleges seeking a bachelor of science degree in nursing, the program offers a point of articulation at the beginning of the junior year. The program is accredited by the National League for Nursing and the California Board of Registered Nursing.

COOPERATING HOSPITALS AND AGENCIES

The Nursing Department utilizes the resources of Bel Haven Convalescent Hospital, Beverly Manor Convalescent Hospital, Fresno Community Hospital, Sierra Hospital, St. Agnes Medical Center, Valley Children's Hospital, Veteran's Administration Medical Center, Kings View Community Mental Health Services, Valley Medical Center, Fresno County Health Department, San Joaquin Gardens Health Center, Madera County Health Department, Merced County Health Department, and Kings County Health Department. These facilities are used for clinical nursing laboratory experience.

PLACEMENT EXAMINATIONS

Registered nurses (diploma program graduates) and licensed vocational nurses are urged to contact community colleges for AA or AS degree requirements and credit for nursing programs.

Any student may contact the Department of Nursing for the policy and procedure for receiving credit by examination.

REGISTERED NURSES

Registered nurses must meet the following criteria for admission: current licensure in California, evidence of graduation from accredited nursing school, AA or AS degree from an accredited community college (diploma graduates contact community colleges for granting nursing credit toward AA or AS degree), qualify for admission to the university and a GPA of 2.5 in the prerequisite sciences and Nutrition, General Psychology and Child Psychology. Each course must be completed with a minimum grade of C. Credit grades (CR) are not acceptable for prerequisite or required courses. The RN student is then ready to make application to the Office of Admissions of the university for the nursing major to enter the BS Program at the beginning of the junior year of the curricula and follow the pattern outlined to complete 29 nursing units and other courses to qualify for graduation (total 130 units).

UNDERGRADUATE PROGRAM

The bachelor of science degree in nursing consists of 130 units, 61 of which are in the nursing major.

An application for admission to the university must be completed to determine the student's eligibility for admission to the institution. A separate nursing application must be submitted to the University Admissions Office during (or after) the semester in which the student is completing at least two of the science prerequisites to the major (Chemistry 2A and 2B or Chemistry 2A and 2C or Chemistry 1A and 8, Physiology 64 and 65 and Microbiology 20 or equivalent courses). H Ec 39 or Psych 101 (Growth and Development) must be completed prior

to entrance into the major.

Applications to the major will be screened by the University Admissions Office. Students are admitted Fall and Spring semesters. Non-resident and foreign resident applicants are not eligible for the nursing major. To qualify for admission, applicants must be determined to be California residents for admission and tuition purposes.

Considerations for admission to the major will be a 2.8 GPA in the required prerequisites. Each prerequisite and required course must be completed with a minimum grade of C. Credit/No Credit grades are not acceptable for prerequisite or required courses. High school and college transcripts must be submitted and specific health criteria must be met. Recommended foundation courses are high school chemistry, algebra 1 and 2, college mathematics, English courses, and foreign language.

A student transferring from a community college who meets the criteria will be considered on the same basis as a CSUF student applying for admission to the major. Basic applicants will be selected in rank order according to the GPA earned in prerequisites as recorded on transcripts filed by document deadlines.

Criteria for retention and progression in the program include a minimum grade of C in each nursing course and all courses required by the major. (Credit/No Credit grades are not acceptable except in courses as designated by Nursing Department.) Refer to the department for complete admission, progression, and retention policy as stated in the Student Nurses Handbook.

Students must carry malpractice insurance and must provide for their transportation for clinical experiences. They are requested to carry 12 or more units while in the nursing major. Completion of requirements for the nursing major may take more than four years. For application form and further admissions information write to the Office of Admissions, California State University, Fresno. For further information regarding curricula, write to the Department of Nursing, California State University, Fresno.

With the 1976–77 catalog, the Nursing Department initiated a significant restructuring of the nursing major. This revision was a response to Legislative enactment which requires that with normal progress through the major, students must be qualified to take the State Board of Nursing Examination at the end of the junior year. However, students may take further course work and wait until after graduation to take the examination for licensure. The first class of students progressing through the restructured 4-year program will be completing the fourth year of the BS degree program in Spring, 1979.

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

NURSING MAJOR

	Units
Nurs 1, 1L, 105A	9
Nurs 100, 100L, 101, 101L, 102, 102L, 103, 103L, 104, 104L, 105B, 106, 106L, 125, 128A, 128AL	45
Nursing Clinical Focus 128B, 128BL	7
	61

Additional Requirements: Complete prior to entrance into major—Micro 20; Psych 101 or H Ec 39; Chem 2A–2B or 2A–2C or 1A–8; Phy 64 and 65. Complete prior to graduation—Speech 3 or 4 or 5 or 7 or 8 or 103 or Soc Wel 124; Engl 1; H S 114; H Ec 52 or 54 or 154; Psych 10 or 60T (minimum 3 units); Soc 1 or 2 or Anth 2; minimum 3 units Statistics (suggestions—H S 102, Soc 25, Math 11, Educ 153); minimum 3 units Ethnic Studies (suggestions—As Am 15, Bl S 135, NAS 50, La R 5). Recommended—Span 110T, Practical Spanish for Health Professions.

The nursing major is responsible for 61 units as outlined. The completion of additional requirements, General Education courses, special course requirements, and electives, which may include a minor, (69 units) total 130 units required for the BS degree.

Transfer students will be required to have a minimum of 6 units for the Chem (Inorganic and either Organic or Biochemistry) course sequence; 5 units including lab for the Anat-Physio course sequence, and 4 units including lab for Micro.

Students are expected to enroll in Nurs 100 and 101 concurrently, 102 and 103 concurrently, and 104 and 106 concurrently.

SUGGESTED PROGRAM FOR NURSING MAJOR

SOPHOMORE YEAR (Basic)

FIRST SEMESTER (Enrollment in minimum 12 units expected)		Units
Oral Comm	(see Speech requirement)	3
Nurs 1	Fund Ns Th Cncpt	3
Nurs 1L	Found Nsg Pract	3*
Nurs 105A	Biopsychosoc Dys	3
HS 114	Public Health Sci	2
Elective (Phys Educ. suggested)		1
		15

SECOND SEMESTER		Units
Nurs 100	Nurs of Child	3
Nurs 100L	Nurs Chld Pract	3*
Nurs 101	Nurs Exp Family	3
Nurs 101L	Ns Ex Fmly Pract	3*
Nurs 105B	Med Therapeutics	3
Elective (Now or Summer Session)		2
		17

JUNIOR YEAR (Basic)

FIRST SEMESTER		
Nurs 102	Nurs Adult I	3
Nurs 102L	Nurs Adult Pract I	3*
Nurs 104	Ns Per Behav Mal	2
Nurs 104L	Ns Beh Mal Pract	3*
Pol Sci Requirement		3
		14

SECOND SEMESTER		
Nurs 103	Nurs Adult II	3
Nurs 103L	Ns Adult Prac II	3*
Nurs 106	Prin Ld Mgt Ns	2
Nurs 106L	Prn Ld Mgt Pract	3*
Amer Hist Requirement (Now or Summer Session)		3
Elective (Now or Summer Session)		3
		17

JUNIOR YEAR (For Registered Nurses)

FIRST SEMESTER		
Nurs 105A	Biopsychosoc Dys	3
Nurs 105B	Med Therapeutics	3
HS 114	Pub Health Sci	2
Nurs 136	Phys Assess	3
Elective—GE	Requirements (determined by Evaluations Office)	4
		15

SECOND SEMESTER		
Nurs 106	Prin Ld Mgt Ns	2
Nurs 106L	Prn Ld Mgt Pract	3*
Electives—GE Requirements (Now or Summer Session)		10
		15

SENIOR YEAR (Basic and RN)

FIRST SEMESTER		
Nurs 128A	Cncpt Comm Hlth Ns	3
Nurs 128AL	Cl Pract Comm Hlth Ns	3*
Clinical Support Course		3
Statistics (see suggestions)		3
Elective		3
		15

SECOND SEMESTER		
Nurs 128B	C1 Focus Nurs	2
Nurs 128BL	Pract Select C1 Focus	5*
Clinical Support Course		3
Nurs 125	Intro Resch Hlth	2
Elective		3
		15

* 1 unit-3 hours.

HEALTH SERVICES CREDENTIAL AUTHORIZING SERVICES AS A SCHOOL NURSE

This post baccalaureate program is designed to prepare nurses as school nurse clinicians. Requirements for admission include (1) graduation from an accredited baccalaureate program with an upper division major in a health related field, (2) a grade point average of 2.5 in the last 60 semester units or 90 quarter units, (3) registered nurse licensure in California, (4) public health nursing certificate or one year of experience in school nursing or community health nursing, (5) three letters of reference, (6) interview, and (7) application to the program. Eligibility for the credential will be certified by the university upon successful completion of the program within five years. Consult the Nursing Graduate Curriculum Coordinator for further information and identification of courses applicable to the master's degree.

The following course requirements for the credential are:

			Units
CD	128	Observation in Communicative Disorders: Audiology	1
CD	131	Principles of Audiology	3
CD	133	Audiometry	3
(An Audiometrist Certificate is accepted in lieu of CD 128, 131, 133)			
Nurs	136	Physical Assessment	3
HS	102	Public Health Statistics	3
CD	114, AS 114 or Psych 168	Exceptional Children	3
AS	224	Seminar in Counseling Techniques	3
Nurs	249	Seminar in Nursing Education	3
Nurs	245T	Community Health/School Nurse Seminar	3
Nurs	250T	Community Health/School Nurse Practicum	3
Nurs	250T	Community Health/School Nurse Internship	3
Nurs	125	Introduction to Research for Health Professions	2
			33

All clinical practice courses require 5 hours of lab per unit of credit.

GRADUATE PROGRAM

The master of science degree in nursing is designed to prepare competent clinicians in selected advanced specialty areas: Medical-Surgical, Psychiatric-Mental Health, Community Health Nursing. In addition, students elect the functional role of clinical specialist, educator or administrator. Such preparation is consistent with employment opportunities available both currently and in the predicted future.

The requirements for entrance into the masters program are: (1) admission to CSUF School of Graduate Studies; (2) a bachelor of science degree in nursing from an NLN accredited program; (3) a course in basic statistics; (4) overall GPA of 2.5 with 3.0 in nursing; (5) current licensure as an RN in California; (6) GRE score of 450 (verbal) and 430 (quantitative); (7) malpractice insurance; (8) one year of clinical practice; (9) three letters of reference; (10) introductory course in Research; and (11) Physical Assessment.

MASTER OF SCIENCE DEGREE REQUIREMENTS

(See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements, and Thesis and Thesis Alternatives.*)

Under the direction of the graduate adviser, each student prepares and submits an individually designed program within the following framework:

	Units
Courses in core program (see specific requirements)	10
Courses in field of concentration and functional role	12
Approved electives (upper division or graduate level)	8
(Electives may be in nursing, biological, or social sciences)	
Total	30

Specific Requirements: Core program—Nurs 210 (3 units), Nurs 223 (3 units), Nurs 299 (2–4 units); field of concentration and one of the three functional roles (seminars and practicum to be completed in one field):

Field of Concentration:

Nurs 245T (3 units; Nurs 250T (3 units): Medical Surgical, Psychiatric-Mental Health,

Community Health

Functional Roles:

Clinician in the field of concentration: Nurs 245T (3 units); Nurs 250T (3 units). Teacher in the field of concentration: Nurs 249 (3 units); Nurs 252 (3 units). Administrator in the field of concentration: B 214 (3 units); H S 210 (3 units)—see Business and Health Science for course descriptions.

All practicum courses require five (5) hours of lab per unit of credit.

A qualifying examination is required after completion of Nurs 210 and the first semester of Nurs 245T and Nurs 250T for advancement to candidacy.

All graduate students are responsible for policies and regulations of the School of Graduate Studies and those specified in the graduate program in nursing brochure.

COURSES

NURSING (Nurs)

1. Fundamental Nursing Theories and Concepts (3)
Prerequisite: admission to nursing major, H Ec 39 or Psych 101 (Growth and Development); Nurs 1L, 105A, H S 114 concurrently. Socialization to the professional role and introduction to foundational practice. (2 lecture, 2 lab hours)

1L. Foundational Nursing Practice (3)
Prerequisite: Nurs 1 concurrently. Application of basic skills under controlled conditions in a variety of settings to develop a holistic approach to health care. (9 lab hours)

80T. Topics in Nursing (1–3; max total 12 if no topic repeated) (See Nurs 180T)

100. Nursing of Children (3)
Prerequisite: Nurs 1, 1L, 105A, H Ec 52, 54 or 154; Nurs 100L, 101, 101L, 105B concurrently. Application of nursing theories and concepts to children relative to health maintenance, promotion and restoration and prevention of illness.

100L. Clinical Practice in Nursing of Children (3)
Prerequisite: Nurs 100 concurrently. Application of special knowledge and skills in nursing care of children from birth through adolescence at various stages in the health-illness continuum. (9 lab hours)

101. Nursing the Expanding Family (3)
Prerequisite: Nurs 1, 1L, 105A, H Ec 52, 54 or 154; Nurs 101L, 100, 100L, 105B concurrently. Application of current theories and concepts to family centered maternity nursing with emphasis on health promotion, maintenance, and restoration related to the neonate and the child-bearing years.

101L. Clinical Practice in Nursing the Expanding Family (3)
Prerequisite: Nurs 101 concurrently. Application of knowledge and special skills in nursing the child-bearing mother and the neonate with emphasis on the family as a unit. (9 lab hours)

102. Nursing of Adults I (3)
Prerequisite: Nurs 100, 100L, 101, 101L, 105B; Nurs 102L, 104, 104L concurrently. Nursing processes in health maintenance for the adult; biophysiologic health problems; assessment and interventive processes to facilitate adaptive resources and health promotion/restoration.

102L. Clinical Practice in Nursing of Adults I (3)
Prerequisite: Nurs 102 concurrently. Application of nursing process in the care of adults throughout the health-illness continuum. (9 lab hours)

103. Nursing of Adults II (3)
Prerequisite: Nurs 102, 102L, 104, 104L; Nurs 103L, 106, 106L concurrently. Nursing processes in health maintenance for the adult; continuation of concepts, principles, and processes of Nurs 102; includes concepts associated with aging and implications for health care.

103L. Clinical Practice in Nursing of Adults II (3)
Prerequisite: Nurs 103 concurrently. Application of nursing process in the care of adults throughout the health-illness continuum; long term care in meeting the specific needs of the elderly. (9 lab hours)

104. Nursing of Persons with Behavioral Maladaptations (2)
Prerequisite: Nurs 102, 102L, 105B; Nurs 100, 100L, 101, 101L, 104L, concurrently. Speech 4, 162 or Soc Wel 124 recommended. Eclectic presentation of theories and concepts as they apply to the dynamic treatment of patients suffering from mental illness.

104L. Clinical Practice with Patients Suffering Behavioral Maladaptations (3)
Prerequsite: Nurs 104 concurrently. Application of nursing theory in caring for patients suffering from a major mental illness with special focus in interpersonal skills and the nurse's role in common treatment modalities. (9 lab hours)

105A. Biopsychosocial Dysfunction (3)
Prerequisite: admission to the nursing major, Psych 101 or H Ec 39; concurrent with first semester of nursing major. Theories of stress and causation related pathologies and therapeutics. Homeostatic adaptive mechanism in preserving integrity of function; pathologic processes and effects: Principles of therapy to restore balance of function capacity.

105B. Medical Therapeutics (3) (Former Nurs 180T)
Prerequisite: Nurs 1, 1L, 105A; concurrent with the first upper division course of clinical nursing. Nature of the drug action and interactions; physiologic effects of pharmacologic agents; clinical uses, indications, and precautions in drug therapy; assessment of patient responses and implications for nursing interventions.

106. Principles of Leadership and Management in Nursing (2)
Prerequisite: Nurs 102, 102L, 104, 104L, 105B; Nurs 103, 103L, 106L concurrently. Application of organizational theories and concepts in the delivery of nursing care in a variety of settings.

106L. Clinical Practice of Leadership and Management in Nursing (3)
Prerequisite: Nurs 106 concurrently. Application of special skills in organization, delegation, coordination and evaluation in the delivery of nursing care in a variety of settings. (9 lab hours)

125. Introduction to Research for Health Professions (2)
Prerequisite: Statistics, senior standing in a Health Professions major. Basic concepts of research and evaluation and application of research findings in health practice.

128A. Concepts in Community Health Nursing (3)
Prerequisite: senior standing in the major, H S 114; Nurs 128AL and clinical nursing support course prior to or concurrently. Theories, concepts and principles of community health nursing and community mental health nursing. Identifies interrelatedness of biopsychosocial and environmental forces affecting promotion, maintenance and restoration of health in the consumer and family.

128AL. Clinical Practice in Community Health (3)
Prerequisite: Nurs 128A concurrently. Application of theories, concepts and skills to individuals, families and groups. (9 lab hours)

128B. Clinical Focus in Nursing (2)
Prerequisite: Nurs 128A, 128AL; Nurs 128BL and clinical support course concurrently. Concepts in selected clinical focus: community health, maternal child, medical-surgical and psychiatric nursing. See Department for semester clinical focus offerings.

128BL. Practicum in Selected Clinical Focus (5)
Prerequisite: Nurs 128B concurrently. Application of nursing process in the case of selected population of clients/patients/families in primary, secondary, or tertiary care settings, consistent with the clinical focus. (15 lab hours/week)

180T. Topics in Nursing (1–3 units; max total 12 if no topic repeated)
Selected topics include pharmacology, aging, nursing as a career, etc. Some topics may have lab.

190. Independent Study. (1–3; max see reference)
See *Academic Placement—Independent Study.*

GRADUATE COURSES

(*See Course Numbering System—Definitions and Eligibility*)

210. Seminar in Nursing (3)
Prerequisite: Admission to the master's degree in nursing. Review and critical analysis of current developments in nursing.

223. Advanced Research Methodology in Nursing (3)
Prerequisite: Advancement to candidacy for master of science degree in nursing. In-depth study of research principles and techniques. A major requirement is the completion and submission of a thesis or project proposal.

245T. Seminar in Clinical Nursing (3; max total 6)
Prerequisite: Nurs 250T concurrently. Synthesis and application of knowledge pertinent to clinical specialization in nursing. The topics include community health nursing, medical-surgical nursing, and psychiatric-mental health nursing.

249. Seminar in Nursing Education (3)
Prerequisite: Admission to the master's degree in nursing. Philosophical and conceptual foundation for teaching in schools of nursing and nursing service organizations.

250T. Practicum in Clinical Nursing (3; max total 6)
Prerequisite: Nurs 245T concurrently. Assignment for field experience to a variety of local health agencies. The topics include community health nursing, medical-surgical nursing, and psychiatric-mental health nursing.

252. Practicum in Nursing Education (3)
Prerequisite: Nurs 210, 249, 245T (Seminar in Clinical Nursing I), 250T (Practicum in Clinical Nursing I). Assignment for field experience to local departments, schools of nursing, or inservice programs in nursing.

290. Independent Study (1–3; max total 3)
See *Academic Placement—Independent Study.*

299. Project or Thesis (2–4; max total 4)
Prerequisite: See *Master's Degree—Thesis Requirement; Nurs 223.* Preparation, completion, and submission of an acceptable project or thesis, based on an approved proposal, for the master's degree.

IN-SERVICE COURSES

(See *Course Numbering System*)

302T. Selected Topics in Nursing (1–6; repeatable with different topics)

PHYSICAL THERAPY PROGRAM

FACULTY

E. Joan Turnquist, Coordinator

Sondra E. Dunkle, Helen G. James

DEGREES OFFERED: BS

THE PROGRAM:

The Physical Therapy Program leads to a bachelor of science degree with a major in physical therapy. The program prepares students for professional careers in hospitals, schools for crippled children, clinics, and other facilities where physical therapists are needed. It is accredited by the American Physical Therapy Association. It is a four-year curriculum, plus a clinical internship at the end of the last year.

An application for admission to the University must be completed to determine the student's eligibility. Graduate students are not eligible for the program. A separate application must be submitted to the Admissions Office on or before February 1 of the year the student wishes to enter the program. All required prerequisites must be completed by the end of the spring semester prior to entering the major. A very limited number of students are admitted to the program each fall. Applications to the Physical Therapy Program will be screened during the spring semester.

The following admissions criteria will be reviewed by the screening committee.

(1) Completion of the required units as listed below.

(2) A grade of B or better in each of the required courses.

(3) Completion of 60 units including all University requirements.

(4) Evidence of knowledge of physical therapy through employment, volunteering or observation in a physical therapy department for a minimum of 15 hours.

(5) Evidence of knowledge of content of the prerequisite courses by passing a written comprehensive examination.

(6) Participation in a personal interview.

Recommended foundation courses are high school chemistry, physics, algebra, geometry and biology.

Meeting the above criteria does not guarantee acceptance into the major.

Students transferring from community colleges and other colleges or universities who meet the above criteria will be considered on the same basis as California State University, Fresno, students applying for admission to the major.

Criteria for retention and progression in the program include a grade of C or better in each physical therapy course and completion of all courses in the major.

Students must carry malpractice insurance and must provide their own transportation to hospitals and clinics for off campus classes and clinical laboratories. Students must also provide for all expenses while taking the clinical internship at the end of the senior year. For supplemental application form write to the Admissions Office, California State University, Fresno, Fresno, California 93740 and include a self-addressed legal size envelope for requested return information.

COOPERATING INSTITUTIONS

The resources of institutions including Fresno Community Hospital, Valley Medical Center of Fresno, Saint Agnes Hospital, Sierra Hospital, U.S. Veterans Administration Hospital, and other hospitals and clinics throughout the State will be utilized to provide clinical laboratory experience. In addition, schools within the Fresno City Unified District, Fresno County Schools, and other agencies which deal with the physically handicapped will be involved. As the program expands, additional resources will be used.

BACHELOR OF SCIENCE DEGREE REQUIREMENTS

The bachelor of science degree curriculum in physical therapy consists of 132 units of which 69 are in the physical therapy major. The candidate for the BS degree is required to complete the General Education requirements and special course requirements.

	Units
Ph Th 50, 100, 115, 116, 120, 121, 122, 123, 130, 131, 132, 133, 143, 151, 152, 153, 155, 175	58

Phy 155, 160, Psych 166	11
Prerequisite requirements (Prephysical Therapy Preparation)	
Chem 1A-B or 2A-B, Psych 10, Zool 10, Phy 64, 65,	
Phys 1A or 2A, Psych elective, HEc 39	31
Recommended Courses	
Engl 20, Soc 1, Spch 3, Psych 101, Math 5 or 11, CD 100	19
Other Electives	13
	132

COURSES

PHYSICAL THERAPY (Ph Th)

50. Introduction to Medical Terminology (1)
Required for Physical Therapy majors. May be taken concurrently with Ph Th 100. Introduction to common medical conditions and terminology by anatomical systems.

100. Principles in the Practice of Physical Therapy (2)
Prerequisite: Ph Th 50 or concurrent. Introduction to the profession; role of the physical therapist in helping the patient who suffers from disabilities. Investigation and discussion of basic concepts, code of ethics, and governing bodies of the physical therapy profession.

115. Applied Anatomy and Kinesiology (5)
Prerequisite: Physiology 64, 65. Mechanical laws and movement of the locomotor system of the human body as applied to the advanced anatomical study of the skeletal, circulatory, neuromuscular and respiratory systems with special emphasis on the skeletal and upper and lower extremities. (3 lecture, 6 dissection lab hours)

116. Advanced Applied Anatomy and Kinesiology (5)
Prerequisite: Ph Th 115. Mechanical laws and movements of the locomotor system of the human body applied to the advanced anatomical study of the skeletal, circulatory, neuromuscular, and respiratory systems of the trunk. (3 lecture, 6 dissection lab hours)

120. Procedures in Physical Therapy I (4)
Principles and clinical application of hydrotherapy, cryotherapy, radiant heat, electrotherapy, and massage: rationale and techniques to restore function. Lecture, demonstration, and student practice in application of modalities used in physical therapy. (2 lecture, 6 lab hours)

121. Procedures in Physical Therapy II (4)
Prerequisite: Ph Th 120. Introduction to the theory and practice of exercise as it relates to posture, muscle reeducation, coordination, stretching, ambulation, strengthening, and special routines. (2 lecture, 6 lab hours)

122. Procedures in Physical Therapy III (4)
Prerequisite: Ph Th 121. Principles and techniques of range of motion, joint measurements and muscle testing as it applies to evaluation for treatment planning. (2 lecture, 6 lab hours)

123. Procedures in Physical Therapy IV (3)
Prerequisite: Ph Th 122. Presentation of special exercise techniques as related to specific medical disease entities including neuromuscular facilitation, Bobath method, sensory-motor perception, and respiration. (2 lecture, 3 lab hours)

130. Medical Science I (3)
Prerequisite: Ph Th 115. Presentation of pathology and medical-surgical management of common orthopedic conditions and physical therapy procedures for the rehabilitation of patients with these conditions.

131. Medical Science II (3)
Prerequisite: Ph Th 130. Presentation of pathology and medical-surgical management of common disorders of the vascular, respiratory, endocrine and digestive systems to include the application of physical therapy procedures for treatment and restoration of function.

132. Medical Science III (3)
Prerequisite: Ph Th 131. Presentation of pathology and medical-surgical management of common disorders of the central nervous systems, introduction to common psychiatric disorders, psychosomatic implications and special problems of children.

133. Physical Medicine and Rehabilitation (3)
Prerequisite: Ph Th 121. Techniques of rehabilitating patients in a clinical setting through lectures, demonstrations, conferences, and ward rounds.

143. Administration and Supervision (3)
Prerequisite: Ph Th 100. Techniques of supervision and management of a physical therapy department including planning a new physical therapy department, carrying out personnel policies, developing a budget, purchasing equipment, and filling out governmental and insurance forms.

151. Clinical Laboratory (1)
Prerequisite: Ph Th 120. Clinical participation under supervision of a registered physical therapist in local hospitals and clinics.

152. Intermediate Clinical Laboratory (2)
Prerequisite: Ph Th 121, 151. Clinical practice of the techniques learned in Ph Th 120 and 121. Observation of outpatient clinics relating to the practice of physical therapy.

153. Advanced Clinical Laboratory (2)
Prerequisite: Ph Th 122, 152. Clinical practice of techniques learned in Ph Th 120, 121, and 122. Clinical observation.

155. Emotional Problems of the Physically Handicapped (2)
Prerequisite: Psych 10, Ph Th 151 and 152. An understanding of emotional problems of the Physically Handicapped.

175. Clinical Internship in Physical Therapy (8)
Summer offering only as final experience for majors. Prerequisite: Ph Th 153. Integrated application of professional practice demonstrating achievement of the behavioral objectives of the program in selected hospitals and clinics throughout California.

180T. Topics in Physical Therapy (1–3; max total 12 if no topic repeated)
Prerequisite: permission of instructor. Advanced techniques in physical therapy and new trends relating to the care of patients.

190. Independent Study (1-3; max see reference)
See *Academic Placement—Independent Study.*

IN-SERVICE COURSES

(See *Course Numbering System)*

302T. Selected Topics in Physical Therapy (1–6; repeatable with different topics)
Selected topics in Physical Therapy for practicing clinician in the health fields.

REHABILITATION COUNSELING PROGRAM

FACULTY

Ted R. Hilliard, Coordinator

Everett W. Stude, J. L. Townsend

DEGREES OFFERED: MA

GRADUATE PROGRAM

The graduate program in rehabilitation counseling, accredited by the Council on Rehabilitation Education, prepares prospective rehabilitation counselors for employment in State and federal vocational rehabilitation programs, public, and private agencies. These include rehabilitation units in mental hospitals, correctional institutions, public schools, rehabilitation agencies and centers, sheltered workshops, adjustment centers, social service agencies, and other organizations serving persons who are mentally, emotionally, socially, or physically handicapped for employment. The program also provides advanced training for persons presently employed in agencies and facilities offering services to handicapped individuals.

Emphasis is placed upon professional education for developing the skills and knowledge necessary for effective rehabilitation counseling of handicapped persons. The variety of activities performed by rehabilitation counselors necessitates a program highly diversified in character and interdisciplinary in nature. In addition to the development of a broad understanding of human behavior, techniques of individual and group counseling, interprofessional relations, vocational appraisal and adjustment, and use of community resources in facilitating rehabilitation of mentally, emotionally, socially, and physically handicapped persons are stressed.

The graduate program of study leads to the degree of master of arts in rehabilitation counseling. The program meets the professional employment requirements of state and federal rehabilitation programs throughout the United States. No teaching credential is required or awarded upon completion of the program. Graduates of this program are eligible to take the Certified Rehabilitation Counselor Examination.

The Rehabilitation Counseling Program at CSUF is accredited by the Council on Rehabilitation Education (CORE). CORE is recognized by the Council on Post Secondary Accreditation as the accreditary body for master's degree programs in rehabilitation counseling education. This national recognition of the CSUF rehabilitation programs enhances the career opportunities of our graduates.

INTERNSHIP

The internship in rehabilitation counseling is required of all students who have had no previous rehabilitation agency experience. In addition, observation of and participation in clinical procedures with selected clients is an integral part of the academic course content. The internship provides an opportunity for students to develop techniques and skills in connection with the total rehabilitation process. It gives students an opportunity for application of theory in the practice of rehabilitation counseling and case management in a rehabilitation setting. The internship is provided under the direction of the rehabilitation counseling program and the immediate supervision of qualified personnel in approved and cooperating rehabilitation agencies or facilities. Enrollment in the internship constitutes full-time study for the semester and is permitted for only those students who have demonstrated their readiness to undertake the experience.

COOPERATING INSTITUTIONS

Rehabilitation facilities and agencies throughout California participate in the rehabilitation counseling program by providing field experience and observation. These include offices of the California Department of Rehabilitation, Community College Enabler Programs, County Mental Health Units, Goodwill Industries of America, Fresno Community Hospital, and Kelso School and Activity Center. Other agencies are added as relationships are established. Other cooperating agencies include out-of-state rehabilitation programs which have demonstrated effective and innovative approaches to the rehabilitation of the disabled.

MASTER OF ARTS DEGREE REQUIREMENTS

The master of arts degree program in rehabilitation counseling prepares prospective rehabilitation counselors for employment in state and federal vocational rehabilitation programs as well as in public and private agencies. It also provides advanced training for persons presently

employed in agencies offering services to handicapped and/or disabled individuals. The program is highly diversified and interdisciplinary in scope and contributes to the development of a broad understanding of human behavior.

The master of arts degree in rehabilitation counseling assumes undergraduate preparation in psychology or counseling or a closely related area. A baccalaureate degree in an unrelated area is acceptable provided that the student has a working knowledge of the behavioral sciences. A knowledge of elementary statistics is also expected. Admission to classified standing is dependent upon an evaluation of the student's background by the rehabilitation counseling faculty.

(See also *Admission to Graduate Standing, Advancement to Candidacy* and *Program Requirements.*)

The degree requires 60 units of credit and is designed to cover two years' full-time course work, including a full semester of internship. A thesis is not required; however, the student must demonstrate proficiency by the satisfactory completion of a comprehensive examination in addition to fulfillment of all other specified degree requirements.

Under the direction of the graduate adviser, each student prepares and submits an individually designed program within the following framework:

	Units
Courses in core program (see *specific requirements)*	31
Courses in supporting curriculum (at least 18 units in 200-series courses)	29
Total	60

Specific Requirements: Core program—R C 201, 203, 211, 212, 221, 251T, and 296.

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

REHABILITATION COUNSELING (R C)

201. Rehabilitation Counseling: Concepts, History, and Issues (3)
Seminar in the fundamental concepts of rehabilitation counseling and vocational rehabilitation including examination and analysis of historical, philosophical, organizational and functional principles. Community rehabilitation agency or orientation visits.

203. Job Placement in the Rehabilitation Process (3)
An experiential seminar concerning the attitudes, skills, and abilities necessary to provide effective vocational and job placement services with the disabled, including vocational diagnosis, job development, placement techniques, job analysis, affirmative action, and appropriate legislation. (2 seminar, 2 lab hours)

211. Medical Aspects of Disability (3)
Seminar in the treatment of disabling conditions including etiology, functional limitations, and vocational implications. Student presentation of case studies.

212. Psychological and Social Aspects of Disability (3)
Seminar in psychological and sociological effects of physical and mental disability and the dynamics of adjusting to disabling conditions. Student presentation of case studies.

221. Case Practices in Rehabilitation Counseling (4)
Prerequisites: RC 201, 211. Seminar in methods for facilitating client rehabilitation including: interviewing, case recording, plan development, ethical practices; field placement in a community rehabilitation agency; and student case presentations. (2 class hours, 6 lab hours)

251T. Selected Topics in Rehabilitation (3; max total 6)
Prerequisites: RC 201, 203, 211, 212, 221. Topics seminar rotated each semester to include subjects such as principles and techniques of supervision and administrative duties, rehabilitation program evaluation, sheltered workshop administration, rehabilitation research, current issues in rehabilitation counseling as a profession.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

296. Internship in Rehabilitation Counseling (12)
Prerequisites: RC 201, 203, 211, 212, 221, 251T, permission of instructor. Full-time, supervised field placement in one of a variety of settings including case responsibilities.

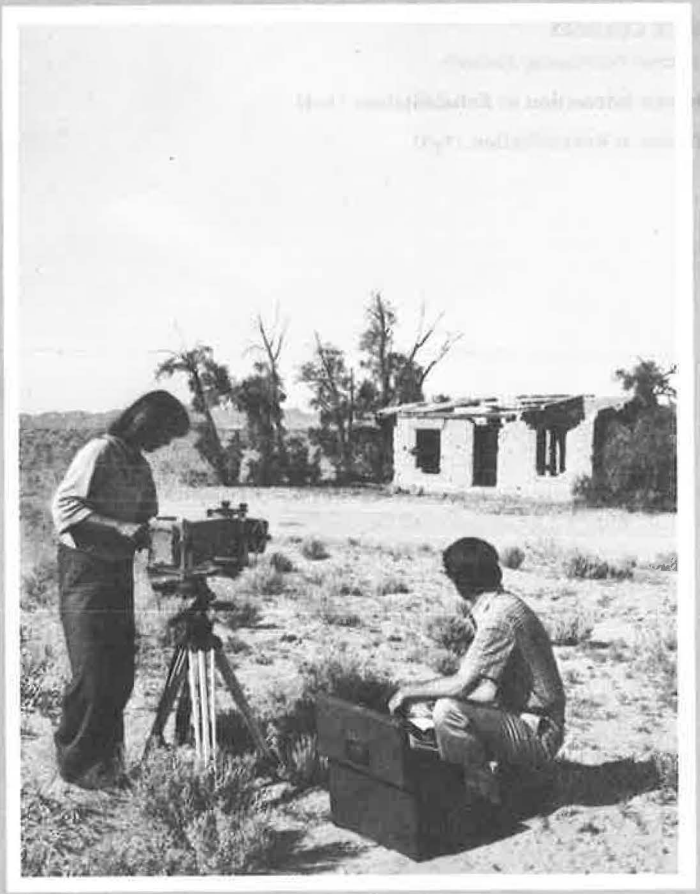
299. Thesis or Project (2–6; max total 6)
Prerequisite: see *Master's Degrees—Thesis Requirement.* Preparation, completion, and submission of an acceptable thesis or project for the master's degree.

IN-SERVICE COURSES

(See *Course Numbering System*)

303. Human Interaction in Rehabilitation (1–3)

333T Topics in Rehabilitation (1–3)



Art students on location in advanced photographics class. Application of large format camera techniques at 19th century adobe ruins along the Colorado River.

SCHOOL OF HUMANITIES 297

Art Department
English Department
Foreign Language Department
Linguistics Department
Philosophy Department



Art students practicing rendering techniques and perspective constructions.

SCHOOL OF HUMANITIES

Joseph Satin, Dean

Department	*Chairman*
Art	Edward O. Lund
English	Kenneth A. Seib
Foreign Language	Jose A. Elgorriaga
Linguistics	P. J. Mistry
Philosophy	James M. Smith

SCHOOL PROGRAMS

Opportunities in the School of Humanities exist for students who wish to major or minor in any of the five departments, or who desire to take courses in any of the disciplines to meet general education requirements. The courses designed for general education treat their subject matter from a substantive point of view so that an understanding of the course content contributes to the understanding of the problems of an individual as well as the modern world.

The curriculum for each of the departments consists of introductory and developmental courses on the lower division level and a series of upper division courses for each area of study. Upper division work is designed primarily to meet the needs of students with a major or minor in one of the departments of the school and graduate students. Each department except Philosophy offers a master of arts degree program. The Linguistics Department offers both bachelor of arts and master of arts degree programs in bilingual studies. The Philosophy Department offers an option in religious studies under its major for the bachelor of arts degree. For specific information concerning courses that meet requirements for general education, teaching credentials, and degree programs, consult the chairman of the department of the area of interest.

INTERDISCIPLINARY HUMANITIES (HUM)

The school also offers the following interdisciplinary Humanities courses as general electives open to all students:

10. Introduction to the Humanities, I (3)
Interrelationships among art, literature, music, and philosophy, from Greece and Rome through the Renaissance.

11. Introduction to the Humanities, II (3)
Interrelationships among art, literature, music, and philosophy, from the Seventeenth Century Age of Reason to the present.

IN-SERVICE COURSES

(See *Course Numbering System*)

300T. Topics in Humanities (1–3; max total 12 if no topic repeated)

NEXA courses:

See *Special Programs*

ART DEPARTMENT

FACULTY

Edward O. Lund, Department Chairman

Joyce B. Aiken, Terrence L. Allen, Lawrence L. Anderson, Roger H. Bolomey, Richard W. Delaney, Ara H. Dolarian, Charles F. Gaines, Susan L. Herman, Dickran Kouymjian, Heinz N. Kusel, Frank B. Laury, Norman H. Lockwood, Mary L. Maughelli, Thomas McDougall, William E. Minschew, Jr., S. Michael Opper, Ernest Palomino, Raphael X. Reichert, R. Gayle Smalley, Gina Strumwasser, Wesley M. Williams

DEGREES OFFERED: BA, MA

DEPARTMENTAL PROGRAMS

The Art Department offers a major in art which leads to a bachelor's degree and a program leading to a master's degree. The major in art is designed to provide a liberal education, and is not directed toward terminal vocational or professional training.

The department cooperates with other departments to provide a variety of curriculum choices within the art major. Students are advised to consult regularly with an appropriate faculty member on such choices for information and guidance.

Students producing exceptional work may be asked to leave their work with the department for three years for exhibition purposes.

CREDENTIAL PROGRAM

The single subject waiver program in Art consists of Art 21, 30 or 80, 40, 50 or 60, 70, 101 or 127 or 130, 109T, 117, 120, 140, 150 or 160 or 161, 170 or 171 or 174; Art H 10, 20, 130, 134; 12 units of upper division electives. Consult the departmental coordinator for teacher education.

BACHELOR OF ARTS DEGREE REQUIREMENTS

	Units
Lower division courses	21
Upper division courses	33
	54

(including Art 101 or 102, 12 upper division units in art history and 9 upper division units in a single area of specialization)

To complete the requirements for the BA degree, a student must complete 54 units required by the major, meet the General Education requirement, special course requirements, and electives, which may include a minor, (70) totaling at least 124 units.

Students with a demonstrated interest in art history may, with the approval of the chairman, take up to 24 upper division units of art history toward the major. The remaining units must include Art 101 or 102 and courses taken from the department's studio offerings.

Students wishing to apply art related offering from other departments as substitutes to the general requirements of the major may petition to do so, and with the approval of the department chairman, they may substitute up to 9 upper division units.

GRADUATE PROGRAM

The graduate program for the master of arts degree in art is based upon the equivalent of the undergraduate major in art at CSU, Fresno. The program provides specifically for certain nonvocational areas of interest; photography, crafts, design, drawing, painting, ceramics, sculpture, art history, and theory. With prior approval, programs with multiple concentrations may be arranged. For specific requirements consult the departmental graduate program director; for general requirements see School of Graduate Studies.

The master of arts degree program in art assumes preparation equivalent to the undergraduate major in art at CSUF. Applicants must first complete university requirements for admission to the School of Graduate Studies, including the Graduate Record Examination Aptitude Test. Applicants must also pass the Department of Art Classified Standing Screening Review.

(See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements, and Thesis and Thesis Alternatives.*)

MASTER OF ARTS DEGREE REQUIREMENTS

Under the direction of a graduate adviser, each student prepares and submits a coherent program individually designed within the following framework:

	Units
Courses in art (See *specific requirements*)	18–30
Courses in art or related fields in the 100- or 200-series	0–12
Total	30

Specific Requirements: At least 3 units in both Art 230 and 260; at least 3 units from Art 220T or 240; 2–6 units from Art 298 or 299. For advancement to candidacy, prior to the completion of 20 units on the approved program, a student will review the program with a graduate adviser appropriate to the selected area of concentration.

COURSES

ART HISTORY (Art H)

Art History Surveys

10. The Ancient and Primitive World (3) (Former Art 5)
An introductory survey to the arts of the prehistoric and primitive realms, including Western traditions (Egyptian, Greek, Roman, Medieval) through the 14th century.

20. The Modern World (3) (Former Art 6)
An introductory survey of Western art from the Renaissance through the Twentieth Century, including Mannerism, Baroque, Rococo, Neoclassicism, Romanticism and Impressionism.

109T. Topics in Art History (1–3; max 3 per area) (Former Art 105T)
Specific areas in art history not normally covered in the regular course offering. Possible topical areas include African, Pre-Columbian, Primitive, Early Migrations, American Indians, Buddhism, Chinese Painting, Happenings, Cinematography, Picasso, Duchamp.

Western Art Surveys*

120. Italian Renaissance (4) (Former Art 105T)
Artistic revival of classical antiquity in Italy between 1300–1550.

122. Northern Renaissance (4) (Former Art 171)
Painting and sculpture from the Netherlands, France and Germany between 1300–1550.

124. Italian Baroque (4) (Former Art 105T)
Baroque art from its conception in Rome to its dispersal throughout Italy.

126. Northern Baroque (4) (Former Art 105T)
Diffusion of Italian Baroque art to the Netherlands, France, Spain, Germany and Austria between 1600–1700.

128. Rococo to Neoclassicism (4) (Former Art 105T)
European art during the eighteenth century.

130. Modern Art (4) (Former Art 105T)
Evolution of painting and sculpture in the nineteenth and twentieth centuries.

134. America (4) (Former Art 176)
Art from colonial times to 1945.

* See *Art Department Course Description* available at the Art Department.

136. Art Since 1945 (4) (Former Art 175)
Prerequisite: Art H 130. The moving forces in the changing modes of art today.

Asian Art Surveys*

140. India and South East Asia (4) (Former Art 177)
The art of India and its influence on surrounding territories from the Himalayan (Tibet) to Cambodia.

142. China and Japan (4) (Former Art 144, 178, 179)
Art of the Far East from prehistoric times to the present.

Primitive Art Surveys*

160. Africa (4) (Former Art 105T)
Sculpture, painting, architecture, festivals and personal adornment of sub-Saharan Africa. Field trips may be required.

162. Oceania (4) (Former Art 105T)
Art of the Pacific basin, including Australia. Field trips may be required.

Art of the Americas Surveys*

170. North American Indian and Eskimo (4) (Former Art 105T)
Arts of the indigenous North American cultures from the Arctic to the American Southwest. Field trips may be required.

173. Pre-Columbian Mexico (4) (Former Art 105T)
Art of the Olmec through the Aztec cultures. Field trips may be required.

175. Pre-Columbian Andes (4) (Former Art 105T)
Art of the Chavin through the Inca cultures. Field trips may be required.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

STUDIO (Art)

1. Art Forms (3)
Description and investigation of traditional and contemporary art form.

2. Visual Perception (3) (Former Art 110T section)
Seeing and interpretation of artistic conceptualization.

20. Drawing (3) (Former Art 15)
Introductory course in drawing concepts, materials and techniques. (6 lecture-lab hours)

21. Figure Drawing (3) (Former Art 16)
Introductory course in the basic concepts of figure drawing problems and techniques. (6 lecture-lab hours)

25. Lithography (3) (Former Art 57)
Studio class offering work in stone, metal plate, and color lithography. $6 fee. (6 lecture-lab hours)

* See *Art Department Course Description* available at the Art Department.

26. Intaglio Processes (3) (Former Art 58)
Studio class offering work in basic intaglio processes such as etching, engraving, drypoint, aquatint, color etching. $6 fee. (6 lecture-lab hours)

27. Silk Screening (3)
Investigation into techniques of silk screening. (6 lecture-lab hours)

30. Photography (3) (Former Art 70)
Introductory course in black and white photography. Basic theoretical and practical aspects of the photographic process relevant to the medium as an art form. (2 lecture, 3 lab hours)

40. Painting (3) (Former Art 25)
Introduction to painting processes through studio problems and critiques. (6 lecture-lab hours)

45. Watercolor (3) (Former Art 20T section)
Introduction to techniques in watercolor painting with emphasis on transparencies. (6 lecture-lab hours)

50. Sculpture (3) (Former Art 51)
Introductory course in materials and concepts. (6 lecture-lab hours)

60. Beginning Ceramics (3) (Former Art 12)
A survey of ceramic materials and their functions in the arts. Basic studio practices in the handbuilding processes, glazing, and throwing on the potter's wheel. $10 fee. (6 lecture-lab hours)

70. Crafts (3) (Former Art 65)
Fundamental exploration of several media (fiber, wood, leather) with emphasis on understanding the potential of the various materials. (6 lecture-lab hours)

80. Photographics: Introduction to the 35 mm Camera (3) (Former Art 120T section, Art 180)
The theoretical, practical and creative aspects of 35 mm black and white photography in the fine arts. Emphasis in 35 mm single lens reflex camera work as well as black and white printing techniques. (2 lecture, 3 lab hours)

93. Design (3) (Former Art 46)
Exploration of basic art concepts through two- and three-dimensional design problems. (6 lecture-lab hours)

101. Content and Form (3) (Former Art 114)
Prerequisite: Art 1 or 2, 93. The concept of form in art and its effects upon content, style, materials, and techniques through studio problems and critiques. (6 lecture-lab hours)

102. Philosophies of the Visual Arts (3) (Former Art 30)
Prerequisites: Art 1 or 2, 93. Visual representation of past and present art movements.

105. Interaction of Color (3) (Former Art 41)
Prerequisites: Art 1 or 2, 20, 40, 93. Interaction of color as developed by Joseph Albers; basic design principles in connection with color work. (6 lecture-lab hours)

109T. Topics in Studio Art (1–3; max total 3 per area) (Former Art 120T)
Prerequisite: permission of instructor. Specific advanced studio processes not normally covered in regular course offerings. Areas offered may be drawing, painting, ceramics, sculpture, photography, printmaking, design, crafts, motion-picture, art education. ($10 fee in some sections. (6 lecture-lab hours)

110. Art Tours (3; max total see below) (Former Art 160)
Prerequisite: permission of instructor. May be repeated for credit; no more than 6 units may be applied on the art major. Directed trips to galleries, museums and other places of interest to the student of art; half of the semester devoted to studio projects, half to out-of-town tours; assigned papers, studio projects, discussion. Chartered travel costs approximately $60. (6 lecture-lab hours)

111. Guest Artists (3; max total 9) (Former Art 120T section)
Seminar with experienced guest artists. (6 lecture-lab hours)

112. Gallery Techniques (3; max total 9) (Former Art 122)
Prerequisite: Art 1 or 2, 93. Introduction to museum practices related to exhibition selection, design, and installation techniques. Field trips, lectures, projects and critiques. (6 lecture-lab hours)

114. Feminist Art (3; max total 6) (Same as W S 124) (Former Art 124)
Prerequisite: permission of instructor. Multimedia art in varied forms creating images based on women's unique experiences and feelings. Exposure to art and lives of women artists; development of awareness of female heritage in arts. (6 lecture-lab hours)

117. Development of Artistic Expression (3) (Former Art 164)
Art materials and techniques, as they apply to the elementary school curriculum; introduction to current philosophies in art education, theories of the development phases of artistic expression in children. (6 lecture-lab hours)

119T. Topics in Art (1–3; max total 3 per area) (Former Art 110T)
Specific lecture area not normally covered in regular course offerings or in art history. Topics may include but are not limited to: Black art, Chicano art, cinema art, urban aesthetics, formalism in art, economics of art, careers in art, portfolio preparation.

120. Drawing (3; max total 9) (Former Art 125)
Prerequisite: Art 1 or 2, 20, 93. Investigation of advanced concepts through the techniques of the drawing medium. (6 lecture-lab hours)

121. Figure Drawing (3; max total 9) (Former Art 117)
Prerequisite: Art 1 or 2, 21, 93. The human figure and its relevancy to advanced drawing concepts and techniques, emphasis on individual exploration in studio problems. (6 lecture-lab hours)

125. Lithography (3; max total 9) (Former Art 157)
Prerequisite: Art 20, 21, or 25. Permission of instructor required for investigation of wood block or serigraphy. Studio class designed for advanced work in stone, metal plate, and color lithography; transfer methods. $6 fee. (6 lecture-lab hours)

126. Intaglio Processes (3; max total 9) (Former Art 158)
Prerequisite: Art 20, 21, or 25. Permission of instructor required for investigation of wood block or serigraphy. Designed to offer advanced work in intaglio processes such as etching, engraving, drypoint, aquatint, mezzotint, color, photoengraving, inkless intaglio, viscosity printing. $6 fee. (6 lecture-lab hours)

127. Silk Screening (3; max total 9) (Former Art 120T section)
Prerequisite: Art 20, 21, 27, permission of instructor. Investigation into techniques of silk screening, including paper, glue, tusche, film, photo, and pencil stencils. (6 lecture-lab hours)

130. Photography (3; max total 9) (Former Art 146 ABCD)
Prerequisite: Art 30. Advanced photography. Possible emphasis: black and white, color, history and appreciation, and individual production. (6 lecture-lab hours)

133. Photographic Image Making Systems (3; max total 9)
Prerequisite: Art 30. Exploration of photographic processes which may be used to evolve personal imagery. May include high contrast, pigment printing and obsolete printing processes in current use. (6 lecture-lab hours)

140. Painting I (3) (Former Art 127)
Prerequisite: Art 1 or 2, 20 or 21, 40, 93, 105. Individual investigation of advanced aesthetic concepts; continued search into personal direction. (6 lecture-lab hours)

141. Painting II (3; max total 9) (Former Art 128)
Prerequisite: Art 140. Designed primarily for students with two or more semesters of experience in painting. Emphasis on individual involvement in the painting process aiming toward advanced formal and technical expression. (6 lecture-lab hours)

142. Mixed Media (3; max total 9) (Former Art 120T section)
Prerequisite: Art 1 or 2, 20 or 21, 93, 105, permission of instructor. Collage, transfer, assemblage, experimental techniques. (6 lecture-lab hours)

145. Watercolor (3; max total 9) (Former Art 120T section)
Prerequisite: Art 1 or 2, 20 or 21, 93, 105, permission of instructor. Painting with emphasis on transparencies. (6 lecture-lab hours)

150. Sculpture: I (3; max total 9) (Former Art 151)
Prerequisite: Art 1 or 2, 20, 50, 93. Individual investigation in use of materials (such as clay, plaster, metal and wood) and techniques as applied to aesthetic concepts. (6 lecture-lab hours)

151. Sculpture: II (3; max total 9) (Former Art 155)
Prerequisite: Art 150. Continued investigation of concepts in sculpture with an emphasis on one or two different materials centering on individual choice of direction. (6 lecture-lab hours)

160. Intermediate Ceramics (3; max total 9) (Former Art 183)
Prerequisite: Art 20, 93, permission of instructor. Emphasis will be on promoting a greater awareness of form as developed on the potter's wheel. A concentrated study of surface treatments and their integration with clay forms. $10 fee. (6 lecture-lab hours)

161. Advanced Ceramics (3; max total 9) (Former Art 184)
Prerequisite: Art 160, permission of instructor. Advanced study in ceramic art. Individual projects in selected ceramic areas with emphasis on showing and portfolio presentation of work. $10 fee. (6 lecture-lab hours)

162. Ceramic Construction (3; max total 9) (Former Art 185)
Prerequisite: Art 161, permission of instructor. A course with an emphasis on structural techniques in constructing ceramic sculpture; with particular concentration on form, surface treatments, and their relation to environment. $10 fee. (6 lecture-lab hours)

165. Ceramic Glazes (3; max total 9) (Former Art 120T section)
Prerequisite: Art 61, 160, permission of instructor. Concentrated study in glazes through the empirical methods with some discussion on historical and technical integration of glazes with clay forms. $10 fee. (6 lecture-lab hours)

166. Glass Blowing Studio (3; max total 9) (Former Art 120T section)
Prerequisite: Art 20, 61, 93, permission of instructor. A basic course in studio glass blowing techniques with technical information on glass compositions, furnace design and construction. (6 lecture-lab hours)

170. Crafts (3; max total 9) (Former Art 136)
Prerequisite: Art 2, 70, 93. Advanced design in a variety of materials. Study of contemporary designer craftsmen. (6 lecture-lab hours)

171. Textile Design: Dyeing and Printing (3; max total 9) (Former Art 137)
Prerequisite: Art 2, 93, 105. Design relating to fabrics, tie dye, batik, and silk screen. (6 lecture-lab hours)

172. Textile Design: Applied (3; max total 9) (Former Art 138)
Prerequisite: Art 171. Advanced design problems in processes related to textile designing. Emphasis on study in depth in a single process. (6 lecture-lab hours)

174. Weaving (3; max total 9) (Former Art 139)
Prerequisite: Art 2, 70, 93. Exploration of fiber as a creative medium. Loom building and experimentation with emphasis on technique, form, design, and sensitivity. (6 lecture-lab hours)

175. Silversmithing (3; max total 12) (Former Art 140)
Prerequisite: Art 2, 70, 93. Exploration of nonferrous metals as creative medium with an emphasis on understanding and experimenting with basic techniques, fabrication, lost-wax casting (6 lecture-lab hours)

181. Photographics: Function and Form (3; max total 6) (Former Art 120T section)
Prerequisite: Art 80, 180, permission of instructor. Advanced work with medium format camera, introduction to aspects of visual perception theory relevant to formation and interpretation of photographic imagery, its function and form. Course includes field and lab experiences, photographic projects and the production of a photographic folio. (2 lecture, 3 lab hours)

182. Photographics: Large Format Techniques (3; max total 9) (Former Art 120T section)
Prerequisite: Art 181, permission of instructor. Introduction to large format camera technique and applications. Assignments exploit the precision and versatility of this machine in both creative and applied photographic assignments. This course includes field work and the production of a photographic folio. (2 lecture, 3 lab hours)

183. Photographics: Field and Studio (3; max total 9)
Prerequisite: Art 182, permission of instructor. Advanced applications of photographic methods in contrasting environments of field and studio. Course may include extended field assignments at remote locations. Coordinated group projects in creative and applied photography. (2 lecture, 3 lab hours)

184. Photographics: Art-Architecture-Artifact (3; max total 9)
Prerequisite: Art 182, permission of instructor. Advanced assignments in photographing art, architecture and artifacts for the artist and scholar. Experience includes supervised collaborative projects in studio and field environments. Course includes the production of a professional quality folio of photographic prints. (2 lecture, 3 lab hours)

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

193. Design (3; max total 9) (Former Art 109)
Prerequisite: Art 2, 93. Continuation of the exploration of two- and three-dimensional design problems. (6 lecture-lab hours)

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

220T. Topics in Studio Processes (3; max total 9)
Prerequisite: permission of instructor. Specific studio processes not normally covered in regular course offerings. Areas offered may be: drawing, painting, ceramics, sculpture, photography, printmaking, design, crafts, dance, art education.

225. Seminar in Art Education (3; max total 9)
Prerequisite: permission of instructor. Curriculum development; implications of recent research and philosophic inquiry on the subjective dimensions of art education.

230. Seminar in Art Theory (3; max total 9)
Prerequisite: permission of instructor. Theory and concepts in the visual arts; patterns and technique of art criticism; preparation, oral presentation, and defense of critical papers.

240. Seminar in Art Studio (3; max total 15, max 9 in one area)
Prerequisite: permission of instructor. Opportunity to work individually with selected staff in areas of specialization such as printmaking, crafts, dance, sculpture, design, ceramics, photography, drawing and painting. Concurrent obligation to periodic seminars as scheduled by the instructor.

260. Seminar in Art History (3; max total 9)
Prerequisite: six units of art history or permission of instructor. Research problems in art history. Group or individual inquiry as determined by instructor.

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

298. Exhibition (2–6; max total 6)
Prerequisite: permission of Art Department Graduate Committee chairman. Preparation, production, design, and installation of original works produced while engaged in the graduate program. An exhibit committee must approve of the work, location, and quality of installation. Students must pass an oral examination based on the work exhibited. $10 fee.

299. Thesis (2–6; max total 6)
Prerequisite: permission of chairman of Art Department Graduate Committee; see *Master's Degrees—Thesis Requirement.* Preparation, completion, and submission of an acceptable thesis for the master's degree.

IN-SERVICE COURSES

(See *Course Numbering Systems.*)

343. Contemporary Approaches in Art (1–3; repeatable for credit)

ENGLISH DEPARTMENT

FACULTY

Kenneth A. Seib, Department Chairman

Robert S. Billings, Gene Bluestein, Roger D. Chittick, William H. Cowling, Peter P. Everwine, Lillian Faderman, James E. Frey, Everett Frost, Charles G. Hanzlicek, Francis A. Hart, Harold S. Karr, Donald E. Kausch, Philip Levine, George M. Lewis, Barry L. Logan, John J. McDermott, H. Ray McKnight, Robert M. O'Neil, Martin T. Paul, Jean E. Pickering, Stanley H. Poss, Joachim S. Ries, Judy A. Rosenthal, Joseph Satin, Andrew M. Simmons, Walter H. Stuart, Michael G. Tate, Eugene E. Zumwalt

DEGREES OFFERED: BA, MA

DEPARTMENTAL PROGRAMS

The English Department offers a major in literature, language, and writing leading to the bachelor of arts and master of arts degrees. For students majoring in other departments it provides courses of general interest in reading, composition of various kinds, and literature. A daily tutorial program is available to all students.

The major in English for the bachelor of arts degree provides for the study of English, American, and world literature, language studies, and creative writing. It will prepare students for postgraduate training in English and in business, law, medicine, theology, civil service, teaching, and in the other fields that recommend a grounding in the liberal arts as preparation for occupational training.

The English curriculum has basically five sorts of courses in the upper division: ***The Masterpiece Courses*** (101, 102, 103). These are broad, largely reading courses which, as their titles indicate, introduce students to the major works in English, American, and World Literature. ***The Literary History Courses***(112, 113, 114, 146, 147 150, 151, 152, 153, 154, 155, 156). These are introductory courses covering in depth the literature and background of a period in American, English, or World Literature. ***The Literary Genre Courses*** (167, 168T, 169T). These courses are comparable in level and difficulty to the Literary History courses, except that rather than dealing with a specific period they deal with a type of literature (novel, drama, poetry, epic, comedy, etc.) broadly conceived. ***The Literary Seminars*** (183T, 189, 193T). These courses offer an in-depth study of a single author or work or of a limited literary movement (symbolism) or type (20th Century Drama). ***The Writing Courses.*** These courses are of three sorts: (a) the writing of fiction; (b) the writing of poetry; (c) the writing of nonfiction prose. Students interested in creative writing may take as many as 16 units of their major in the writing of poetry and fiction, and up to 8 lower-division units in these areas.

BACHELOR OF ARTS DEGREE REQUIREMENTS

	Units
Upper division (including 8 units from English 189 and 193T or 8 units from English 193T; English 193T should ordinarily not be taken until 3 upper division courses have been completed.)	28

In addition to the requirements of the major (28 units), the student is responsible for completion of the General Education requirement, special course requirements, and electives, which may include a minor (96 units), totaling 124 units for the BA degree.

Courses taken as CR-NC may not apply to the major, with the exception of 4 units of 175T and 176T.

Not more than 6 units by extension and correspondence courses may be applied toward the English major; correspondence courses may be applied only if they are acceptable for the major at the college where the course is offered.

Students majoring in English are advised to select a course in English history as one of their upper division electives.

The student will propose a program in consultation with his adviser, selecting courses in appropriate proportions from among the following general categories: Literary History, Advanced Writing, Forms of Literature, Seminar in Literary Studies, Major Writers, and Linguistics.

CREDENTIAL PROGRAM

The single subject waiver program in English consists of Engl 182 (2–4 units), 189, Ling 135 (or equivalent); an upper division writing course (excluding Engl 160); and 16 units in upper division literature courses for a total of 30–32 units. Credential candidates are advised to take Engl 182 concurrent with student teaching, and it is recommended that they take at least one unit before beginning student teaching. Students preparing for the teaching credential are also strongly advised to select a course in speech in fulfilling their general education requirements for graduation. Consult the departmental coordinator for teacher education for program planning. See the Communication Arts and Sciences Department for single subject waiver programs in English—Drama and English—Speech.

GRADUATE PROGRAM

The master of arts program in English language and literature is designed to intensify and extend the knowledge of students desiring a year of study beyond the baccalaureate, students desiring their first graduate degree in anticipation of advanced graduate study, and teachers in secondary schools and colleges. For those students wishing to specialize in creative writing, an option in this field is available.

Admission to the master of arts program in English language and literature assumes preparation equivalent to a baccalaureate degree major in English or a related field in the liberal arts. To achieve classified standing as a graduate student in English, both English and non-English majors must have maintained a GPA of 3.0 or better in their major fields and passed the verbal section of the GRE with a score of 450 or better.

Admission to the option in creative writing is by approval of the creative writing staff following submission and evaluation of the candidate's writing.

(See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements, Foreign Language Requirements,* and *Thesis and Thesis Alternatives.*)

MASTER OF ARTS DEGREE REQUIREMENTS

Under the direction of a graduate adviser, each student prepares and submits a coherent program individually designed within the following framework:

	Units
Courses in English (See *specific requirements*)	18
Approved electives in English or other fields	12
Total	30

Specific Requirements: (All students except those in the creative writing option.) Engl 250T (8 units); 299 (2–6 units) or 12 units of 250T for students electing the non-thesis program. The following areas must be covered by graduate or undergraduate courses (may be satisfied in the undergraduate preparation): English literature (2 courses); American literature, world literature, Shakespeare, and Chaucer (1 course each). Students not writing a thesis must submit to the graduate adviser seminar papers, with grades no lower than B, from three 250T courses taken from at least two different instructors.

In addition to the general Graduate School requirements, advancement to candidacy requires a reading knowledge of one foreign language, to be demonstrated by examination; the completion of at least one graduate seminar (250T) with a grade of B or above, and submission of one seminar paper to the graduate committee of the English department; a score of 590 or better on the advanced section of the GRE, and a review by the graduate adviser of the work already completed.

An interdisciplinary English major may be constructed in consultation with the graduate adviser in which up to 12 units may be taken in departments other than English when such a program demonstrates a coherent program of study.

Creative Writing Option. Engl. 250T (8 units); 261 and/or 263 (8 units); 299 (2 units); approved electives (12 units).

In addition to the general Graduate School requirements, advancement to candidacy requires a reading knowledge of one foreign language, which may be demonstrated either by passing an examination or by submitting to the creative writing staff acceptable translations of foreign poetry and/or prose, and a review by the graduate committee of the work already completed.

COURSES

ENGLISH (Engl)

Note: Engl 20 is a prerequisite for all upper division English courses except Engl 160, 175T and 176T.

A. Fundamental Writing Skills (1–5)
Instruction and supervised practice in fundamental problems of writing. Intended primarily for students who need more elementary composition work before attempting English 1 or more advanced courses. Must be taken for CR–NC grade only and is not applicable to the major requirements for the baccalaureate degree.

1. Composition (3)
Theory and practice of composition for students with college-level competence in written English. Themes, chiefly expository or analytical. (English 1 is a graduation requirement of the university.)

2. Writing Workshop (1–4; max total 4) (Former Engl 60)
Practical assignments and individual coaching on specific writing problems. For selected students this workshop may be required to be taken concurrently with, or as prerequisite to, other courses.

20. Literature and Composition (4)
Prerequisite: English 1. Reading and analysis of short stories, novels, drama, and poetry. Development of critical thinking and expression through individual projects and extensive writing under close supervision.

30. Masterpieces (4)
Discussion and written analyses of widely influential poetic, dramatic, and fictional works by British, American, and world authors.

41. Poetry Writing (4)
Prerequisite: Engl 20. Beginning workshop in the writing of poetry; appropriate reading and analyses.

43. Fiction Writing (4)
Prerequisite: Engl 20. Beginning workshop in the writing of fiction; appropriate reading and analyses.

44. Nonfiction Prose Writing (4)
Prerequisite: Engl 20. Beginning workshop in nonfiction prose writing; appropriate reading and analyses.

50T. Studies in Literature (4; max total 8 if no topic repeated) (Same as W S 50T)
Sections designated as emphasizing certain writers, types, or themes, (for example, Shakespeare, The Poem, Literature of Protest, Women in Novels). Appropriate readings and analyses.

76. Programs in Film Genres (2)
Not open to students with credit in English 176T. Film as literary form; viewing and analyses of selected examples from comedy, musical, horror, science-fiction, and other genres.

101. Masterpieces of World Literature (4)
Discussion and written analyses of widely influential poetic, dramatic, and fictional works studied in translation.

102. Masterpieces of English Literature (4)
Discussion and written analyses of widely influential poetic, dramatic, and fictional works by British authors.

103. Masterpieces of American Literature (4)
Discussion and written analyses of widely influential poetic, dramatic, and fictional works by American authors.

112. World Literature: Ancient (4)
Selected works in translation surveying from the beginnings of literature to early centuries A.D. Examination of relationships among myth, legend, ritual, folklore, belief and literature. Readings primarily from selected Greek, Roman, Norse, Indian, Anglo-Saxon and Biblical authors.

113. World Literature: Medieval and Renaissance (4)
Authors and works (in translation) may include Dante, Rabelais, Cervantes, Murasaki, Boccaccio, the Petrarchan tradition, Tu Fu, Basho, troubadour poetry, epic, romance, fabliau, No morality plays, Lope de Vega, Erasmus, Montaigne, Castiglione.

114. World Literature: Modern (4)
Major movements in world literature from the Renaissance to the present. Writers such as Voltaire, Goethe, Dostoyevsky, Ibsen, Mann, Kafka, and Camus will be read in translation. Writers outside the Western tradition like Ts' ao Hsüeh-Ch'in, Mishima, and Achebe may also be studied.

115. Literature of the New Testament (3) (See Phil 133)

116. Literature of the Old Testament (3) (See Phil 134)

146. Beowulf to Malory (4)
The literature of Medieval England, including Malory, Chaucer and other narrative poetry (*Beowulf, Piers Plowman, Sir Gawain and the Green Knight*), drama, and lyric poetry.

147. Renaissance (4)
Discussion and written analyses of works by selected playwrights (Webster, Dekker, Jonson) and poets (Spenser, Donne, Herbert, Marvell, Milton) from the 16th and 17th centuries.

150. The Age of Wit (4)
Major writers and topics include Dryden, Swift, Pope, Johnson, Restoration Comedy, and the rise of the novel; the literature will be read in the context of 18th century civilization, with attention to political and intellectual history, and the other arts.

151. 19th Century Romantics (4)
Study of the conjunction of a literary period (19th Century) and a literary movement identified with it (Romanticism) by examining the works of figures who exemplify the conjunction such as William and Dorothy Wordsworth, Coleridge, Blake, Byron, Keats, Shelley, Wollstonecraft.

152. Dickens to Hardy (4)
The literature of Industrial England including the poetry from Tennyson to Yeats, the novel from Dickens to Hardy, and the essay from Carlyle to Huxley. May include such topics as the Pre-Raphaelites, the Decadents, Darwinism, and the New Woman.

153. American Literature to Whitman (4)
Discussion and close written analyses of major works and their backgrounds in American literature to the Civil War. Includes Puritanism, Emerson, Thoreau, Hawthorne, Melville, Poe, and Whitman.

154. American Literature 1865 to WWI (4)
Discussion and written analyses of major works and their cultural backgrounds within this period of change. Topics include the rise of realism and naturalism. Writers discussed include Whitman, Twain, Howells, James, Crane, Dickinson, and others.

155. 20th Century American Literature (4)
Discussion and written analyses of selected poems, plays, and fiction from WWI to the present by such authors as Frost, Eliot, Anderson, Hemingway, O'Neill, Faulkner, Fitzgerald, Steinbeck, Stevens, Williams, and post-WWII writers.

156. 20th Century British Literature (4)
Discussion and written analyses of selected poems, plays, and fiction from 1900 to the present by such authors as Forster, Yeats, Woolf, Lawrence, Joyce, Greene, Auden, Thomas, and post-WWII writers.

160. Writing Workshop (1–4; max total 8)
Practical assignments in writing, directed according to each student's individual needs. May be elected as preparation for special composition requirements. Does not apply to the English major.

161. Advanced Writing of Poetry (4; max total 8)
Prerequisite: Engl 41. Intensive workshop in the writing of poetry; appropriate readings and analyses.

163. Advanced Writing of Fiction (4; max total 8)
Prerequisite: Engl 43. Intensive workshop in the writing of fiction; appropriate readings and analyses.

164. Advanced Writing: Non-Fiction Prose (4; max total 8)
Intensive workshop in expository writings; appropriate readings and analyses.

167. Studies in Folklore and Folk Song (4)
Studies in aural and historical sources of folk tradition, including regional and ethnic styles gathered from primary and secondary materials.

168T. Women and Literature (4) (Same as W S 168T)
Prerequisite: Engl 20. Discussion and written analysis of literature by and about women. Special emphasis on 19th and 20th Century authors including the Brontes, George Eliot, Emily Dickinson, Edith Wharton, Virginia Woolf, and contemporary writers.

169T. Forms of Literature (1–4; repeatable with different topics)
No more than 12 units of Engl 168T-169T may be applied on the English major. Prerequisite: Engl 20. Sections designated as emphasizing poetry, drama, novel, short story, perhaps limited to a specific period or subclass; for example, 18th Century English Novel, 20th Century British and American Poetry, Modern Short Stories, 20th Century Drama, Tragedy, Folklore, Mythology. Reading and close written analysis with particular attention to form.

175T. Lectures in Literature (1–4; max total 8, in 175T and 176T, if no topic repeated)
No more than 4 units of 175T and 176T may apply to the English major. Lectures in a selected topic in literature or related fields by the regular faculty and/or visiting lecturers.

176T. Genre Film: Form and Function (1–4; max total 8 in 175T and 176T, if no topic repeated) (Same as W S 176T)
Concurrent enrollment in English 76 not permitted. Discussion and close written analyses of selected topics, including such types as comedies, musicals, horror films, westerns, etc.

181. Research Methods (4)
Prerequisite: English major. Introduction to research methods, documentation, biographical research, questions of authorship, problems of establishing accurate texts, historical bibliography, editing of texts, and the academic profession of English. Research assignments, reports, written examination.

182. English Workshop (1–4; max total 8) (Former 183T section, EXP 184)
Seminar in composition and learning. Discussion and practical exercises concerning theory, evaluation, and improvement of language learning and composition.

183T. Seminar in Literature (1–4; max total 8)
Prerequisite: appropriate upper division literature course. Designed for students interested in in-depth study of a literary topic; recommended for liberal studies major. Seminar in an aspect of literary history, type, period, movement, individual author.

189. Shakespeare (4) (Same as Drama 194)
Reading and written analyses of the major works of Shakespeare.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

191T. Supervised Independent Reading (1–4; max total 4, if no topic repeated)
The student reads works from a literary period (for example, Beowulf to Marlowe, American Literature to Whitman, World Literature: Ancient and Medieval) and discusses them in individual conferences.

192. Projects in English (1–3; max total 3)
Not applicable to English major. Prerequisite: English major. Individual projects in problems related to teaching English composition and literature; for example, tutoring minority students, investigating the effectiveness of programs in English composition and literature, devising new approaches to teaching English.

193T. Seminar in Literary Studies (4; repeatable with different topics)
No more than 12 units of 193T–194T may be applied on the English major. Sections designated by topic. Individual projects. Reading, discussion, and writing of papers centered on individual writers (for example, Milton, D.H. Lawrence), short periods of literary history (for example, Romantic Poets, Modern Novel), literary themes and traditions (for example, Transcendental Vein in American Literature, Arthurian Tradition) literary criticism (for example, Problems in Modern Criticism, Archetype and Myth), and other special topics.

194T. Seminar in Women and Literature (4; repeatable with different topics) (Former Engl 193T section. Same as W S 194T)
May be substituted for Engl 193T in the English major; no more than 12 units of Engl 193T–194T applicable to the major. Sections designated by topic. Individual projects. Reading, discussion, and writing papers on individual women writers or some aspect of women in literature; for example, Doris Lessing, Myth and Archtypes of Women.

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

250T. Seminar in Literature (4; max total 12 if no topic repeated)
Prerequisite: major or minor in English; permission of instructor. Seminar in an aspect of literary history, type, period, movement, or an individual author (for example, Fiction, Seventeenth Century Lyric Poetry, The Irish, Dickens).

261. Advanced Writing: Poetry (4; max total 12)
Prerequisite: permission of instructor. Advanced individual projects in the writing of poetry.

263. Advanced Writing: Fiction (4; max total 12)
Prerequisite: permission of instructor. Advanced individual projects in the writing of fiction.

265. Advanced Writing: Expository (4; max total 12)
Prerequisite: permission of instructor. Advanced individual projects in expository writing.

280T. Seminar in Critical Theory (4; max total 12 if no topic repeated)
Prerequisite: major or minor in English; permission of instructor. Seminar in literary criticism (for example, Literary Critics).

290. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

291T. Supervised Independent Reading (1; max total 4 if no topic repeated)
The student reads works from a literary period (for example, More to Milton, 20th Century American Literature, World Literature, Renaissance-Modern) and discusses them in individual conferences.

299. Thesis or Project (2–6; max total 6)
Prerequisite: see *Master's Degrees—Thesis Requirement.* Preparation, completion, and submission of an acceptable thesis or project for the master's degree.

IN-SERVICE COURSES

(See *Course Numbering System*)

300. English Colloquium (2; max total 6)

FOREIGN LANGUAGE DEPARTMENT

FACULTY

Jose A. Elgorriaga, Department Chairman

John M. Barta, Frank Benitez, Wayne S. Bowen, Carmen P. Clough, Helen L. Dmitriew, Walter Ensslin, G. Ronald Freeman, Maurice C. Gendron, June M. Gill, Cordelia Jasutis, Paul F. Kinzel, Leta J. Lewis, Edgar A. List, M. Margarita Lopez-Urrutia, Vance Y. McConnell, Elemer J. Nagy, Ransom H. Poythress, Alexander Pronin, David A. Ross, Howard C. Roth, Keith Sauer, Adriana N. Slaniceanu, Edith H. Stock

DEGREES OFFERED: BA—French, German, Russian, Spanish
MA—Spanish

Minor in Armenian, French, German, Latin, Russian and Spanish

DEPARTMENTAL PROGRAMS

The Foreign Language Department aims to teach students to understand, speak, read, and write the foreign languages offered, with varying degrees of emphasis upon those objectives according to their needs and interests; to promote an interest in and an understanding of foreign civilizations and of the problems of foreign nations as they arise day by day; to contribute to students' knowledge of English through comparative study of a foreign language; to prepare students to teach foreign languages in the elementary and secondary schools; and to give specialized professional training for positions such as interpreter, translator, consular representative, and foreign trade specialist. For students majoring or minoring in foreign language, the department recommends an overseas experience of academic and cultural studies. See *Special and Interdisciplinary Programs—International Programs.*

CREDIT ALLOWANCE IN FOREIGN LANGUAGE

Students who wish to continue in a language taken in high school should consult an adviser for placement. Students having two or more years of a given language should take courses beyond 1A. College credit may be earned in any class in which the student is placed, but a student may not receive credit by examination for any course work taken in high school. See also *Degrees and Credentials—Foreign Language Requirement.*

Credit will not be awarded for a lower division foreign language course if the student has received credit for a higher numbered course in that language.

GENERAL EDUCATION FOREIGN LANGUAGE CREDIT

Up to two semesters of basic course work from any one foreign language (not to exceed eight units) may be applied to Area IV of the General Education requirements. The following courses are applicable: Armenian 1A–B, 2A–B; French 1A–B, 1AI, 2A, 2B; German 1A–B, 2A–B; Greek 1A–B, 2A–B; Italian 1A–B; Latin 1A–B, 2A–B; Portuguese 1A–B; Russian 1A–B, 2A–B and Spanish 1A–B, 1A–I, 2A–B, 2A–I. See also the Linguistics Department.

CREDENTIAL PROGRAM

For Bilingual/Cross-Cultural Credentials, see School of Education—Elementary Education Department—Bilingual/Cross-Cultural Emphasis in Liberal Studies and Bilingual/Cross-Cultural Specialist Credential.

The single subject waiver program in French consists of Fren 101, 102, 109, 120T, 132, 150, and 9 units from Fren 110, 111, 112, 113, 148T, 160T, 190, and FL 131.

The single subject waiver program in German consists of Germ 50A–B, 101A–B, 103T, 150 and 12 units from Germ 102, 112, 114, 116, 118A–B, 135, 137, 146T, 160T.

The single subject waiver program in Spanish consists of 3 units in Span 113, 118, or 120; Span 122, 123, 125T, 130, 137; 3 units in Span 142 or 143; 9 units of electives.

BACHELOR OF ARTS DEGREE REQUIREMENTS

MAJORS AND MINORS

All majors, except Russian, require upper division units only.

MAJORS

French	*Units*
Fren 101, 102, 109	9
Elect from Fren 110, 111, 112, 113	9
Elect from Fren 120T, 132, 148T, 150, 160T	12
	30

German	
Germ 101A-B	6
German electives, upper division	21
	27

Russian	
Russ 2A-B	8
Russ 101 (9 units), 110, 118A-B, 148A-B	21
	29

Spanish	
Span 118 or 120, 122, 140, 170	12
Spanish electives, upper division	18
	30

Depending upon the specific major, the student is responsible for 27–30 units. In addition to these units, the General Education requirement, special course requirements, and electives, which may include a minor, complete the 94–97 units, totaling at least 124 units required for the BA degree.

MINORS

Armenian	*Units*
Arm 1A-B	8
Arm 2A-B or Art Hist 109T	6
Arm 190 or Hist 108, 109T, 124T	7
	21

French	
Lower Division Courses	6–9
Upper Division Courses	12–15
	21

German	
Germ 2A-B	0–6
Germ 50A-B, 20 (any combination)	6
German electives, upper division	9–15
	21

Latin	
Elect from Latin 1A-B, 2A-B, 131T	15
Latin electives, upper division	6
	21

Russian	
Russ 1A-B, 2A-B	16
Russian electives, upper division	6
	22

FOREIGN LANGUAGE

Spanish

Span 2A-B or 4A-B, 5, 110T	9
Elec from Span 113, 118 or 120, 122, 123	6
Electives, upper division	6
	21

Students interested in careers in translation are advised to take the following courses: Spanish 115, 116A–B, and 117. Those interested in interpreting should contact the Department.

GRADUATE PROGRAM

The master of arts degree is granted in Spanish. Students interested in graduate study in French and German see the options under the master of arts degree in Linguistics. The master of arts degree program in Spanish language and literature is designed to intensify and extend the knowledge of students desiring further study beyond the baccalaureate degree, students desiring their first graduate degree in anticipation of advanced graduate study, and teachers in secondary schools and colleges. For specific requirements consult the departmental graduate committee chairman; for general requirements, see *School of Graduate Studies.*

MASTER OF ARTS DEGREE (in Spanish) REQUIREMENTS

The master of arts degree program in Spanish assumes preparation equivalent to a CSUF undergraduate major in Spanish.

(See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements,* and *Thesis and Thesis Alternative.*)

Under the direction of a graduate adviser, each student prepares and submits a coherent program individually designed within the following framework:

	Units
200-series courses in Spanish	18–30
Upper division electives in Hispanic Linguistics, Spanish Literature and Spanish American Literature	0–12
Approved electives in related fields	0– 3
Total	30

Specific Requirements: Plan A (Thesis Program), Span 299 (6 units). Plan B (Non-Thesis Program), Span 250 (6 units) and successful completion of a comprehensive examination.

COURSES

ARMENIAN (Arm)

1A-B. Elementary Armenian (4-4)
Not open to students with previous training in Armenian. Beginning course of graded lessons acquainting the student with basic structure and pronunciation of Armenian through practice, reading, and writing.

2A-B. Intermediate Armenian (4-4)
Prerequisite: Arm 1A-B. Grammar review; selected readings; compositions and conversations on assigned topics; pronunciation drill.

111. Composition and Conversation (3)
Prerequisite: Arm 2B. Idioms, written translations in Armenian, compositions on assigned topics, oral exercises. Emphasis on grammar and syntax.

112. Advanced Composition and Conversation (3)
Prerequisite: Arm 111. Style in composition; written and oral reports on assigned topics.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study*

GRADUATE COURSE (Arm)

290. Independent Study (1–3; max total 6)
See *Academic Placement—Independent Study.*

CHINESE (Chin)

See *Linguistics Department*

FOREIGN LANGUAGE (FL)

131. Trends in Foreign Language Teaching (3)
Current trends and issues in foreign language teaching. Evaluation of recent teaching materials. May include on-campus practice in teaching beginning languages.

135. Pronunciation and Phonetics (3)
Intensive practice in the pronunciation, enunciation, and intonation of French, German, Italian, Russian, and Spanish to meet the needs of students in other areas.

139. A Cultural Introduction to Foreign Languages (3)
A study of the effects of language on thought; differing philosophical systems in relation to basic language organization; sexist orientation of language; language and science; language and literature; language and music, art and films of major languages.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

FRENCH (Fren)

1A-B. Elementary French (4-4)
Beginning course of graded lessons acquainting the student with the basic structure and pronunciation of French through practice in speaking, reading, and writing.

1A-I. Intensive French (8)
For students who wish to complete two semesters of elementary French in one. Emphasis on oral communication through small group discussion; two hour sessions allow greater exposure and practice in the language.

2A. Basic Grammar Review (3)
Prerequisite: French 1B. Opportunity to build upon previously acquired knowledge of fundamental structures of French. Course designed for students with one year of college French or high school equivalent.

2B. Reading (3)
Prerequisite: French 1B. Course designed specifically to increase reading skills. Selections from contemporary literary (poetry, prose, theatre) and journalistic expressions. May be taken concurrently with French 4 or French 50.

4. Writing (3)
Prerequisite: French 1B. Opportunity to increase writing skills in preparation for upper division course work in French. May be taken concurrently with French 2B or French 50.

20. Contemporary France: Its Heritage and Influence (3)
Special attention paid to students' interests in formulating topics for this course to include French theatre, music, art, politics, economics, cuisine, education and youth. Guest lecturers. Taught in English.

50. Conversation (3; max total 6)
Prerequisite: Fren 1B. May be taken concurrently with Fren 2A, 2B or 4. Development of listening and speaking skills. Exclusive use of French in an informal class atmosphere. Conversations on assigned topics, extemporaneous discussions.

AREA I. Language and Culture

101. Advanced Composition (3)
Prerequisite: Intermediate French. Written assignments in French on varied topics with emphasis on composition. Written exercises in French on specific points of grammar.

102. Translation (3)
Prerequisite: French 101. Problems and techniques of translation from English into French and French into English. Materials to be translated taken from the fields of science, literature, economics and politics.

120T. Topics in French Civilization (3; max total 6 if no topic repeated)
Prerequisite: Intermediate French. Possible topics: French contributions to Western Civilization (art, music, architecture, history, science). Special emphasis on contemporary France. The history of Anglo-French and Franco-American relations. Linguistic, cultural, intellectual, political, commercial and diplomatic similarities and differences explored. Taught in French.

132. French Phonology and Structural Analysis (3) (Former Fren 130, 137)
Prerequisite: Intermediate French. As a progression toward mastery, an investigation of the French language as a functioning code of verbal communication. Relationships of oral/written aspects and contrasts with American English. Intensive drill on individual pronunciation problems.

150. Advanced Conversation (3)
Prerequisite: Intermediate French. Intensive practice in oral expression in French. Emphasis on current affairs in France.

AREA II. Literature

109. Introduction to French Literature (3) (Former Fren 109A-B)
Prerequisite: Intermediate French. Intellectual background of major literary movements and representative authors from the earliest period to the present. Selected readings. Taught in French.

110. French Theater (3) (Former Fren 142, 144)
Prerequisite: French 109. Drama in France from the Renaissance to the present, with emphasis on the 17th and 20th centuries. Reading and discussion of representative works.

111. The French Novel (3) (Former Fren 143, 146)
Prerequisite: Fren 109. The novel as a reflection of French society. Analysis of major works from various periods.

112. French Prose: Essay and Short Story (3) (Former Fren 141)
Prerequisite: Fren 109. Analysis of prose works by such authors as Montaigne, Voltaire, Maupassant, Camus, Sartre.

113. Masterpieces of French Poetry (3) (Former Fren 145)
Introductory course in poetry as a genre; principles of French versification. Students will be exposed to major contributions of the French in poetry. Thematic and/or chronological presentations (movements, "isms").

148T. Topics of French Literature in Translation (3; max total 9 if no topic repeated)
Three units credit may be applied to French major or minor upon request. Studies of literary movements, genres or major authors; selected readings, discussions, written analyses.

160T. Selected Topics in French Studies (1–3; max total 6)
Topics chosen from French literature (genre, themes, movements) or from French linguistics (History of the Language; Contrastive Analysis: English/French).

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

GRADUATE COURSES (Fren)
(See *Course Numbering System—Definitions and Eligibility*)

204. Literary Theory and Criticism (3)
Prerequisite: undergraduate major in French. Critical approaches to literature; analysis of literary doctrines; techniques of research and bibliography.

211. Historical Linguistics (3)
Prerequisite: 24 upper division units in French. History of the phonological, morphological, syntactical, and lexical development of the French language from its origins to the present, through study of representative texts.

212. Comparative Synchronic Linguistics (3)
Prerequisite: undergraduate major. Language learning problems as seen through comparison of the structure of American English and French.

220T. Seminar in French Literature (3; max total 9 if no topic repeated)
Prerequisite: 24 upper division units in French.

250. Directed Reading (3; max total 6)
Prerequisite: 24 upper division units in French.

290. Independent Study (3; max total 6)
See *Academic Placement—Independent Study.*

299. Thesis or Project (2–6; max total 6)
Prerequisite: *See Master's Degrees-Thesis Requirement.* Preparation, completion, and submission of an acceptable thesis or project for the master's degree.

GERMAN (Germ)

1A-B. Elementary German (4–4)
Beginning course of graded lessons acquainting the student with the basic structure and pronunciation of German through practice in speaking, reading, and writing.

2A-B. Intermediate German (3–3)
Prerequisite: Germ 1B. (A) Grammar review; reading and conversation. (B) Reading and practice in conversation.

20. Germany: Heritage and Influence (3)
The contribution of Germany in education, music, art, and other aspects of German civilization. The uniqueness of its contribution and influence is emphasized. Lectures and short reports. Conducted in English.

50A-B. Oral German (3–3)
Prerequisite: Germ 1B. May be taken concurrently with Germ 2A or 2B. Conversation on assigned topics; brief talks by students; short scenes from plays.

101A-B. Composition (3–3)
Prerequisite: Germ 2B. Idioms; written translations in German; compositions on assigned topics; oral exercises. Emphasis on grammar and syntax.

102. Advanced Composition and Translation (3)
Prerequisite: Germ 101A-B. Emphasis on style in composition and introduction to problems and techniques of translation.

103T. Topics in German Culture (3; max total 6 if no topic repeated)
Prerequisite: Germ 2B. Studies in principal aspects of German culture and civilization, history, thought, customs, institutions.

112. German Literature to 1750 (3) (Former Germ 112A-B)
Not open to students with credit in 112A. Prerequisite: Germ 2B. Lectures and discussions; selected readings.

114. Classical Age of German Literature (3)
Prerequisite: Germ 2B. Reading and discussion of representative writings of Lessing, Goethe, and Schiller.

116. Nineteenth Century Literature (3) (Former 116A-B)
Not open to students with credit in 116A-B. Prerequisite: Germ 2B. Reading and discussion of representative selections from major 19th Century German authors.

118A-B. Twentieth Century Literature (3–3)
Prerequisite: Germ 2B. Analytical and critical study of twentieth century literary production of Germany. Discussion and short reports.

135. History of the German Language (3)
Prerequisite: Germ 2B. Development of the German Language from earliest times to the present.

137. Applied Linguistics (3)
Prerequisite: Germ 2B. Analysis of the phonological, morphological, syntactical, and lexical structure of German; conflicts with English structure; linguistic problems.

146T. Germanic Literature in Translation (3; max total 12 if no topic repeated)
Major Germanic authors, movements, and genre. Selected readings, lectures and discussions in English. Only 3 units of credit may be applied to German major.

150. Advanced Conversation (3)
Prerequisite: Germ 2B. Intensive practice in oral expression in German. Emphasis on current affairs in Germany.

160T. Selected Literary Topics (1–3; max total 12)
Prerequisite: Germ 2B. Intensive study of significant topics through selected literary texts; analysis, discussion, and evaluation of specific genres, themes, movements, and literary problems.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

GRADUATE COURSES (Germ)
(See *Course Numbering System—Definitions and Eligibility*)

220T. Seminar in Literature (3; max total 12 if no topic repeated)
Prerequisite: completion of an undergraduate major in German. Study of an aspect of literary history: genre, period, movement, or individual author.

240T. Seminar in Germanic Languages (3; max total 12 if no topic repeated)
Study of older Germanic languages and special linguistic problems.

290. Independent Study (1–3)
See *Academic Placement—Independent Study.*

GREEK (Grk)

1A-B. Elementary Greek (3–3)
Fundamentals of Classical and New Testament Greek with practice in the reading and writing of the Greek language.

2A-B. Intermediate Greek (3–3)
Prerequisite: Grk 1B. Intensive study of grammar and syntax. Readings of intermediate difficulty with selections from Classical and New Testament writers.

148. Greek Literature in English Translation (3)
Analysis of selected works of major Greek poets, writers and thinkers from Homer to Lucian. Lectures, discussions, reports on readings.

HEBREW (Hebr)

See *Linguistics Department.*

ITALIAN (Ital)

1A-B. Elementary Italian (3–3)
Beginning course of graded lessons acquainting the student with the basic structure and pronunciation of Italian through practice in speaking, reading, and writing.

20. Italian Literature and Culture (3)
Major themes of Italian culture; the myth of the Renaissance man, the heritage of the Mafiosi, Catholicism and culture, family Italian style as seen through Italian literature and cinema. Taught in English.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

JAPANESE (Japn)

See *Linguistics Department.*

LATIN (Latin)

1A-B. Elementary Latin (3–3)
Elements of Latin grammar with its practical relation to Romance languages and English. Background study: Roman culture and its relevancy to the Western world.

2A-B. Intermediate Latin (3–3)
Prerequisite: Latin 1B. Intensive study of grammar and syntax; use of the subjunctive mood in clause construction. Selected readings from Latin authors.

31. Latin and Greek for English Vocabulary (3)
Previous knowledge of Latin and Greek unnecessary. Analysis of Latin and Greek elements in English words; emphasis on practical use.

131T. Classical, Medieval, Renaissance Latin (3; max total 9 if no topic repeated)
Prerequisite: Latin 2B. Readings in prose and poetry of representative writers in Classical, Medieval, and Renaissance Latin literature.

132. Classical Mythology (3)
Greco-Roman myths, emphasis on their impact on the fine arts and literatures of the Western World. Illustrated lectures.

148. Roman Literature in English Translation (3)
Analysis of selected works of major Roman authors from Plautus to St. Augustine. Lectures, discussions, readings.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

PORTUGUESE (Port)

1A-B. Elementary Portuguese (3–3)
Beginning course of graded lessons acquainting the student with the basic structure and pronunciation of Portuguese through practice in speaking, reading, and writing.

RUSSIAN (Russ)

1A-B. Elementary Russian (4–4)
Beginning course of graded lessons acquainting the student with the basic structure and pronunciation of Russian through practice in speaking, reading, and writing.

2A-B. Intermediate Russian (4–4)
Prerequisite: Russ 1B as determined by examination. (A) Review of grammar and syntax; composition; oral practice; reading of short stories. (B) Oral and written composition. Conducted in Russian.

50. Oral Russian (2) (Former Russ 50A-B)
Prerequisite: Russ 1B, 2A, or 2B. Oral drill for intonation and pronunciation; conversation on assigned topics, brief talks; extemporaneous discussions.

101. Composition and Conversation (3; max total 9)
Prerequisite: Russ 2B. Continuation of prose composition and oral-aural practice for mastery of the finer points in grammar and syntax.

103T. Topics in Russian Culture (3; max total 9 if no topic repeated)
Credit may not be applied to Russian major and minor requirements. Sections designated as emphasizing Russian-Soviet culture and Socialist realism, Russian folk arts and folklore. Lectures illustrated with films and other audio-visual media. Taught in English.

110. Landmarks in Russian Literature (3) (Former Russ 110A-B-C)
Chronicles, Byliny, Tales, Kievan Literature, Moscovite Literature, the Petrine Epoch, the Epoch of Catherine II, and the rise of the 19th century literary Giants.

118A-B. Twentieth Century Literature (3–3)
Prerequisite: Russ 2B. Analytical and critical study of the twentieth century literary production of Russia. Outside readings.

127T. Soviet Russian Topics (3; max total 9 if no topic repeated)
Sections designated as emphasizing landmarks in Russian literature. Russian underground, protest, and emigre works. Lectures illustrated with films and other audio-visual media. Taught in English.

148A-B. Russian Literature in Translation (3–3)
Prerequisite: upper division standing. Selective readings of major Russian literary works. Lecture, discussion. (A) Pushkin, Tolstoy, Dostoyevski. (B) Nobel prize winners: Solzhenitzyn, Pasternak, Sholokhov.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study*

SPANISH (Span)

1A-B. Elementary Spanish (4–4)
Beginning course to acquaint the student with the basic structures through practice in listening, speaking, reading, and writing.

2A-B. Reading and Speaking Spanish (3–3) (Former Span 20A–B)
Not open to students with credit in Span 4A-B. Prerequisite: Span 1B or permission of instructor. Development of the student's ability to understand, speak, read, and write Spanish.

2A-I. Intensive Reading and Speaking Spanish (6) (Former Span 20A–I)
Not open to students with credit in Span 4A-B. Prerequisite: Span 1B. For students who wish to complete two semesters of second year Spanish in one. Emphasis on reading, conversation, and writing. Two hour sessions allow for the rapid development of these skills.

4A-B. Spanish for the Bilingual Student (3–3) (Former Span 40A-B) (Same as La R 4A-B)
Not open to students with credit in Span 2A-B. For students with a bilingual background. Emphasis on reading and conversation; some grammar review and writing.

5. Spanish for Conversation (3) (Former Span 50)
Not open to students with credit in Span 50A-B. Prerequisite: Span 1B. Emphasis on spoken Spanish; development of oral fluency through panel discussions, short talks, small group conversations. Readings secondary to conversation; oral examinations.

AREA I. Bilingual Studies

100. Bilingual Studies (3) (See Ling 100)

102. The Bilingual Child (3) (Former Span 132)
Understanding of the linguistic, social, psychological, and cultural components of bilingual programs at the elementary level. Educational considerations for teachers of Spanish as a native language and as a second language.

104. Spanish in Bilingual Schools (3) (Former Span 134)
Emphasis on the specialized Spanish vocabulary required in teaching elementary courses or working in related fields, including science, social sciences and art. Development and evaluation of bilingual teaching materials.

106T. Children's Literature in Spanish (3) (Former Span 144 and 145)
Examination of children's stories, poems, rhymes and songs written, composed or available in Spanish. Practice in the techniques of story-telling. Dramatizations of children's stories in Spanish. Presentation of puppet plays.

AREA II. Language and Translation

110T. Practical Spanish for Professions (3; max total 12 if no topic repeated) (Former Span 100T)
Applicable for minor. Preparation of professionals and paraprofessionals in California Spanish to work with the Spanish speaking in the following fields: health, education, social work, business, law, agriculture, and psychology.

111T. Advanced Practical Spanish for Professions (3; max total 12 if no topic repeated)
Applicable for minor and major. The variety of structures and fluency to be acquired by interpreters in any specific field. Training in the simplification of technical language.

113. Patterns of Spanish (3)
Recommended for majors and minors. Verb synonyms. Quantitative and qualitative usage of verbs. Acquisition of the following skills: narration, description, argumentation and expression of feelings through syntactical variations and substitution of verbs. Attention is focused on the formation of a sentence not on the composition of a paragraph.

115. Basic Principles of Translation (3) (Former Span 105)
Specific problems of Spanish to English and English to Spanish translation, with emphasis on idiomatic expressions. Some attention to specialized vocabulary. Use of bilingual dictionaries.

116A-B. The Art of Translation (3-3)
116A not open to students with credit in Span 116. Mini-projects dealing with the differences between oral and written styles, idioms, metaphors, slang, technical vocabulary, as well as structural and semantic factors. (A) From Spanish into English. (B) From English into Spanish.

117. Problems in Translating from English into Spanish (3) (Former Span 185)
Open only to students with credit in Span 116B. Advanced work in translating a variety of materials into Spanish. Analysis of the special problems encountered in different fields. Emphasis on the translation of public documents.

118. Spanish Composition for Bilinguals (3)
Not open to students with credit in Span 120. Refinement of writing skills through vocabulary development, spelling exercises and composition. Special emphasis on problems created by differences between the spoken and written language.

120. Composition and Reading (3)
Not open to students with credit in Span 118. Development and refinement of writing skills. Intensive practice in expository and imaginative composition. Analysis of original compositions with attention to common problems of accentuation, spelling and grammar.

122. Grammar and Composition (3)
Special emphasis on grammar review and development of writing skills. Analysis of grammatical constructions.

123. Advanced Conversation and Reading (3)
Reading and discussion of current periodicals, newspapers, and magazines that reflect the cultural patterns of the Spanish-speaking countries.

AREA III. Hispanic Culture

125T. Hispanic Culture (3) (Former Span 125, 126, 129)
Examination of the cultural patterns of Spain and Spanish America through readings, lectures, films and other media. Frequent written and oral reports by students.

AREA IV. Spanish Linguistics

130. Phonetics and Pronunciation (3)
Analysis of the Spanish sound system. Practice in pronunciation and discussion of problems encountered by English speakers.

137. Applied Spanish Linguistics (3) (Former Span 133, 137A-B)
Analysis of the Spanish language with emphasis on areas which cause the greatest problems in learning and teaching of the language. Readings, discussion and practice in the development of instructional strategies and materials.

139. Spanish of the Southwest (3)
Research on dialect differences in California and the Southwest, including the linguistic, social, and cultural determinants. Emphasis on the Spanish of the San Joaquin Valley.

AREA V. Hispanic Literature

140. Hispanic Fiction and Poetry (3)
Readings and appreciation of Hispanic literature to familiarize the student with the fiction and poetry as art forms.

142. Introduction to Spanish Literature (3) (Former Span 150–151)
Selected readings from those literary works which have fundamentally affected the development of Spanish civilization, from El Cid to Lorca. Provides an historical framework for the study of Spanish literature.

143. Introduction to Spanish-American Literature (3) (Former Span 153–154)
Selected readings from those literary works which have fundamentally affected the development of Spanish American civilization, from Hernán Cortés to Octavio Paz. Provides an historical framework for the study of Spanish American literature.

145. Mexican Literature (3) (Former Span 173)
Study of the works of such major Mexican literary figures as Sor Juana, Gutiérrez Nájera, Azuela, and Fuentes.

147. Twentieth Century Spanish-American Literature (3) (Former Span 176T)
Intensive study of selected Spanish-American works including writings of Azuela, Fuentes, Carpentier, Vargas Llosa; outstanding poets such as Neruda, Vallejo, and Paz.

148T. Major Figures in Hispanic Literature (3; max total 6 if no topic repeated)
Reading and analysis of the works of one major Hispanic author such as Cervantes, Unamuno, Neruda.

149T. The Golden Age (3) (Former Span 163T section, Span 182)
A study of Spanish Renaissance Man and his environment. His socio-politico, esthetic and literary ideas will be studied through readings in Garcilaso, San Juan de la Cruz and other authors.

150T. Twentieth Century Spanish Literature (3) (Former Span 165, 166T section, Span 184)
A study of Spanish Existential Man. His socio-politico, esthetic and literary ideas will be studied through readings in Unamuno, Ortega y Gassett, Lorca, José Hierro and other authors.

170. Senior Seminar in Spanish Studies (3)
Prerequisite: Twenty upper division units of Spanish course work or graduate standing. Designed to meet the individual needs of students about to graduate. Diagnostic testing in language, linguistic, cultural and literary proficiency. Readings, research projects and assignments.

190. Independent Study (1-3; max see reference)
See *Academic Placement—Independent Study.*

GRADUATE COURSES (Span)

(See *Course Numbering System—Definitions and Eligibility*)

215T. Hispanic Culture (3; max total 6)
Selected topics on the elements of Spanish and Spanish American culture, the expression of culture at different social levels, and differences between Anglo-Saxon and Hispanic values.

220. Hispanic Linguistics (3; max total 9 if no topic repeated)
In-depth analysis of the Spanish language through the study of the following areas: diachronic linguistics, synchronic linguistics, and dialectology.

230. Spanish Literature (3; max total 9 if no topic repeated)
Seminar in critique and analytical study of selected topics, genres or specific literary figures in each of the following areas: Medieval Period, Renaissance Period, Golden Age, 18th-19th Century, and 20th Century.

240. Spanish-American Literature (3; max total 9 if no topic repeated)
Seminar in critique and analytical study of selected topics, genres or specific literary figures in each of the following areas: Colonial Period to 1810, 19th Century to 1910, 20th Century.

250. Directed Reading (3; max total 6)
Prerequisite: Approval of the MA student's graduate committee chairman. Reading from a selected reading list in preparation for comprehensive master's degree examination.

290. Independent Study (2-3; max see reference)
See *Academic Placement—Independent Study.*

299. Thesis or Project (3-6; max total 6)
Prerequisite: See *Master's Degrees-Thesis Requirement.* Preparation, completion and submission of an acceptable thesis or project for the completion of the Master's degree.

IN-SERVICE COURSES (Span)

(See *Course Numbering System.*)

301. Conversation and Composition Review (2; max total 8 if no language repeated)

304. Theory and Practice (2; max total 8)

LINGUISTICS DEPARTMENT

FACULTY

P. J. Mistry, Department Chairman

Frederick H. Brengelman, Charles E. DeBose, Edward R. Gammon, George W. Raney, Raymond S. Weitzman, Milton Wohl, Jack B. Zeldis

DEGREES OFFERED: BA, MA

Minor
Option (Graduate)
Bilingual-Bicultural Studies

DEPARTMENTAL PROGRAMS

Linguistics is a branch of humanistic science concerned with understanding the nature of human language as a system of communication, its social functions in human society, its historical development, its diverse manifestations in the form of individual languages and dialects, and its role in human thought.

In explaining how people *talk,* linguistics offers basic language theories and provides a framework for the description and analysis of any of the world's 4,000–5,000 different languages, including, but not limited to, modern English.

The Linguistics Department offers programs leading to a bachelor of arts degree, a master of arts degree, and a minor in linguistics. Courses in General Linguistics, English Linguistics, and Applied Linguistics are offered. Specific areas covered include analysis of the structure of human language; linguistic history; structure, history and varieties of the English language; principles and strategies for teaching English as a second language; linguistic approaches to spelling and reading, etc. Courses in several non-Western languages are also offered.

BACHELOR OF ARTS DEGREE REQUIREMENTS

To complete the major for the BA degree, students must complete 30 units in one of the patterns outlined below, the General Education requirement, special course requirements, and electives, (94 units) totaling at least 124 units required for the BA degree.

The BA program in linguistics is diversified but integrated. It prepares the student for a variety of careers in such fields as bilingual-bicultural education and the teaching of English as a Second Language.

At present, three options are available to linguistics majors: 1) English as a Second Language, 2) Spanish-English Bilingualism, and 3) Black Dialectology. In each of these options the student receives a basic grounding in the nature and structure of human language.

English as a Second Language	*Units*
Ling 10 or 135, 134, 141	9
Elect from Ling 132, 136, 138, 171	6
Approved electives	15
	30

Spanish-English Bilingualism	
Ling 10 or 135, 134, 141	9
Elect from Ling 132, 136, 147, 148	6–9
Electives from La Raza, Spanish, Linguistics	12–15
	30

Black Dialectology	
Ling 10 or 135, 134, 141	9
Elect from Ling 132, 136, 147, 148	6–9
Electives from Ethnic Studies and Linguistics	12–15
	30

LINGUISTICS MINOR

A minor in linguistics consists of at least 20 units.

	Units
Ling 135, 137	6
Elect from Ling 138, 140T, 142, 143, 144	8–9
Approved electives in related fields	6
	20–21

GENERAL EDUCATION FOREIGN LANGUAGE CREDIT

Up to two semesters of basic course work from any one foreign language (not to exceed eight units) may be applied to Area IV of the General Education requirements. The following courses are applicable: Chinese 1A–B, 2A–B; Hebrew 1A–B; and Japanese 1A–B, 2A–B; Sanskrit 10A–B. See also the Foreign Language Department.

BILINGUAL/CROSS-CULTURAL CREDENTIALS

See School of Education—Elementary Education Department—Bilingual/Cross-Cultural Emphasis in Liberal Studies and Bilingual/Cross-Cultural Specialist Credential.

GRADUATE PROGRAM

The master of arts degree in linguistics focuses on the nature and structure of language and the methodology of the scientific study of language. It is designed to prepare for advanced graduate study in linguistics, to increase the competence of teachers of English as a foreign language, and for numerous other language-related occupations. The master of arts degree is open to students with undergraduate majors in anthropology, communicative disorders, English, foreign language, mathematics, philosophy, psychology, and other related fields. An option in bilingual-bicultural studies is available for students wishing to emphasize Spanish-English bilingualism or black dialectology. For specific requirements consult the departmental adviser; for general requirements see *School of Graduate Studies*. Students who are interested in the linguistics aspects of the French or German languages may select one of the formal emphases which are offered in cooperation with the Department of Foreign Languages.

The master of arts degree program in linguistics assumes a baccalaureate degree major in an appropriate field and at least two upper division courses in linguistics. Graduate students are required to take a minimum of 12 units of graduate level courses excluding Ling 290 and 299. Students whose native language is not English may use the English language to meet the foreign language requirements.

(See also *Admission to Graduate Standing, Advancement to Candidacy, Program Requirements, and Thesis.*)

One of the requirements for advancement to candidacy for the master of arts degree in linguistics is the passing of an examination demonstrating a reading knowledge of one foreign language.

MASTER OF ARTS DEGREE REQUIREMENTS

Under the direction of a graduate adviser, each student prepares and submits a coherent program individually designed within the following framework:

	Units
Courses in linguistics (See *specific requirements*)	16
Approved upper division or graduate courses in linguistics or related fields	14
Total (at least 15 units in 200-series courses)	30

Specific Requirements: Ling 135 (if not taken as undergraduate preparation); 142 and 143 (or equivalent); 231 and 299. Upon examination of the student's record other courses will be specified to produce a coherent program.

Emphasis in French. Two courses from Fren 211, 212, 220T. Thesis topic should be in French linguistics. The GRE Advanced Test in French should be taken prior to advancement to candidacy.

Emphasis in German. Germ 220T, 240T. Thesis topic should be in German linguistics. The GRE Advanced Test in German should be taken prior to advancement to candidacy.

FRENCH AND GERMAN COURSES

Students wishing master's degrees with concentrations in French or German may select the French or German options in the master's degree in linguistics. (See *Linguistics.*) Graduate courses in French and German are available for use in these options. All have prerequisites of 24 upper division units in the language or permission of the instructor.

COURSES

LINGUISTICS (Ling)

10. Introduction to Language (3)
The nature and study of language. Human and animal language, languages of the world, sound and writing systems, systems of grammar, linguistic change, child language acquisition, role of language in society.

100. Bilingual Studies (3) (Same as La Raza, Span 100)
History, methodology, and bibliography of bilingual studies. Current research in the field; various programs now in operation. Team teaching by areas represented in the program.

132. Linguistics and Reading (3) (Former Ling 1401 section)
Relations between written and spoken language, the English spelling system; regional and social dialects of English; language development and language learning. Analysis of published materials.

134. Structure of English (3)
An introductory survey of the structure of English: sounds, spelling, word formation, and grammar. Applications to language arts teaching and to the development of language skills.

135. General Linguistics (3)
Human language and its characteristics. The nature and description of phonological, grammatical and semantic systems. Procedures for establishing language relationships and investigation of linguistic changes. Relationship between linguistics and allied areas.

136. Varieties of English (3) (Former Ling 131)
The regional, social, and stylistic varieties of modern English. Emphasis on Black dialect and on the English of Mexican-Americans.

137. American English (3)
Prerequisite: Ling 134 or 135. Studies in the linguistic structure of modern English.

138. History of the English Language (3)
Study of the development of the sound system, grammar, vocabulary, and writing system of English.

139. General Phonetics (3) (Former Ling 140T section)
Introduction to the phonetic properties of human languages, descriptive analysis of the speech sounds in a wide variety of languages; articulatory and acoustic aspects of speech; practice in production, perception and transcription of speech sounds, introduction to experimental techniques.

140T. Topics in Linguistics (1-4; max total 12 if no topic repeated)
Topics to be offered at the discretion of the department: historical, contrastive, mathematical, and other areas of linguistics.

141. English as a Foreign Language (3)
Theories, techniques, and procedures in TESOL (Teaching English to Speakers of Other Languages); contrastive analysis of target and native language; the audio-lingual method; ESL (English as a Second Language) as a strand in bilingual education; cognitive vs. behavioristic view of language learning.

142. Phonology (3)
Prerequisite: Ling 135. The sound patterns of human language. Phonemic theory and analytical techniques. Distinctive feature theory and analysis. Major phonological processes and their description.

143. Syntax (3)
Prerequisite: Ling 135. Theory and practice in the description of grammatical systems. Comparison of approaches. Practical experience with data.

144. Field Methods in Linguistics (3)
Prerequisite: Ling 135. First-hand experience in eliciting linguistic data from informants; practice in analyzing and describing a language.

145. Historical Linguistics (3)
Prerequisite: Ling 135. Explanation of similarities among languages; methods of reconstructing past languages and investigating relationship and grouping among languages. Inquiry about the nature and types of linguistic change and their correlation with changes in culture.

147. Bilingualism (3)
An examination of psychological and sociological factors affecting individuals who attempt to function simultaneously in two different cultural environments, employing two separate linguistic codes. Review and comparison of past experience as well as current experimental programs in bilingual education.

148. Sociolinguistics (3)
Methods of investigation and major findings in the study of the relationship between languages of the world and social class, race, age, sex and other social subcategories. Political and educational implications. Interaction between linguistic and social factors in linguistic variation.

171. Practicum in TESL (3)
Prerequisite: Ling 141 or concurrent enrollment in Ling 141. Provides practice in teaching English as a second language; includes class visitations and classroom demonstrations; working with non-native speakers; lesson planning, material preparation, language lab work and evaluation of current ESL texts.

190. Independent Study (1-3; max see reference)
See Academic Placement Independent Study.

FOREIGN LANGUAGE COURSES

CHINESE (Chin)

1A-B. Elementary Chinese (4–4)
Not open to students with previous training. Basic structure and pronunciation of Mandarin Chinese; practice in speaking, reading, and writing.

2A-B. Intermediate Chinese (4–4)
Prerequisite: Chin 1B. Review grammar and syntax; techniques of brush use; speaking and reading.

HEBREW (Hebr)

1A-B. Basic Hebrew (3–3)
Basic structure and pronunciation of Hebrew; practice in reading, writing, speaking, and grammar; suitable introduction to both Biblical and modern Hebrew.

JAPANESE (Japn)

1A-B. Elementary Japanese (4–4)
Beginning course in modern spoken and written Japanese. Covers learning comprehension and oral practice, basic grammar and sentence patterns. Introduction to reading and writing in Kana and Kanji characters.

2A-B. Intermediate Japanese (4–4)
Prerequisite: Japn 1B. Intermediate spoken and written Japanese; reading modern Japanese with emphasis on expository writings; translation and oral and written composition.

SANSKRIT (Skt)

10A-B. Sanskrit (3–3) (Former Exp 161, 168)
Introduction to the Sanskrit language and the Devanagari script. Core grammatical structure and vocabulary. Reading of Sanskrit texts. Literary tradition and life style of the speakers of the language, and relationship with Greek, Latin, and Germanic languages.

GRADUATE COURSES

(See *Course Numbering System—Definitions and Eligibility*)

231T. Seminar in Linguistics (3; max total 12 if no topic repeated) (Former Ling 231)
Prerequisite: Ling 135 and permission of instructor. Topics to be offered at the discretion of the department: philosophy of language, psycholinguistics, dialectology, and other subjects in general linguistics.

232T. Seminar in English Linguistics (3; max total 12 if no topic repeated) (Former Ling 232)
Prerequisite: Ling 135 and permission of instructor. Topics to be offered at the discretion of the department: structure of Old, Middle, or Early Modern English; topics in English phonology, grammar, and lexicon.

241. Seminar in Teaching English as a Second/Foreign Language (3) (Former Ling 232)
Prerequisite: Linguistics 141. Overview of research in the field of ESL/EFL teaching as reflected in current journal articles. Discussion and feedback dealing with points raised in assigned articles. Written reports summarizing ideas propounded in articles and expanded in class discussion.

242. Phonological Analysis (3)
Prerequisite: Ling 142. The nature of phonological analysis, trends and issues in phonological theories, and phonological analysis of data from a variety of languages.

243. Syntactic Analysis (3)
Prerequisite: Ling 143. The nature of syntactic analysis, trends and issues of syntactic theories, and syntactic analysis of data from a variety of languages.

245. Seminar in Historical Linguistics (3) (Former Ling 231T section)
Prerequisite: Ling 145. Contributions of recent work on general linguistics, sociolinguistics, and language acquisition studies to our understanding of diachronic grammar and its reconstruction. Other topics include the insights provided by language variation, language universals and typology, and discourse analysis. The nature, genesis, and directionality of linguistic change.

290. Independent Study (1–3; max see reference)
See Academic Placement—Independent Study.

299. Thesis or Project (2–5, max total 5)
Prerequisite: see *Master's Degrees—Thesis Requirement.* Preparation, completion, and submission of an acceptable thesis or project for the master's degree.

PHILOSOPHY DEPARTMENT

FACULTY

James M. Smith, Department Chairman

A. Wayne Colver, Hague D. Foster, Warren L. Kessler, Jack A. Pitt, James W. Slinger

DEGREE OFFERED: BA

Minor
Option in Religious Studies

DEPARTMENTAL PROGRAMS

Philosophy encompasses the study of fundamental questions that arise insistently in different areas of human experience, thought or practice. Whenever, for example, one reflects on the coherence of our common-sense views, or probes the standards used in some art or science, one is engaging in philosophy. The work of the Philosophy Department aims to make this natural activity of thought both richer and more systematic. Courses are offered which provide broad opportunities for self development, acquaintance with world-views of both East and West, and the building of a coherent outlook and critical reason.

Many of the courses offered will be of general interest to all students, while others are designed to explore issues that arise in selected and special areas. All courses stress the importance of dialogue and discussion as a central feature of philosophical development. The participation of students in the work of the Department is therefore always welcomed and encouraged.

The broad compass of philosophy provides a basis for many kinds of lifework, and people who have majors or minors in philosophy can be found in all areas of endeavour, from medicine, law and the ministry, to teaching, social work, and fine arts.

In addition to the regular philosophy major, the Department provides a special option of the Philosophy major in Religious Studies, and a philosophy concentration for the minor in Classical Studies.

BACHELOR OF ARTS DEGREE REQUIREMENTS

The major in philosophy consists of 32 units, with the following specific requirements:

	Units
(a) Phil 25 or 45 or 145	3–4
(b) Phil 101 or approved 170T	3–4
(c) Phil 103 or approved 170T	3–4
(d) Elect from Phil 146, 150, 151, 156, 157, approved 159T, approved 173T	3–4
(e) Elect from Phil 115, 116, 117, approved 119T, 120, 125, approved 171T	3–4
(f) Independent Study and/or Directed Reading (at least 2 courses)	3
(g) At least one course (from total 32 units) must be a seminar (numbers 170T–174T). This seminar may satisfy one of above requirements at the same time.	
(h) Electives	9–14
	32

Note: Students intending to pursue graduate study in philosophy should seek the adviser's help in planning adequate preparation.

Religious Studies Option

The major in philosophy with a religious studies option consists of 32 units with the following specific requirements:

	Units
(a) Phil 1, 25, or 45	4
(b) Elect from Phil 115, 116, approved 119T, 120	3
(c) Phil 130, 131	6
(d) Elect from Phil 133, 134, 136, 137, 138, 139T	6
(e) Phil 172T (Seminar in Religious Issues)	4

(f) Independent Study and/or Directed Reading (at least 2 courses) 3
(g) Elect from the following: Anth 145, Hist 103A, B, C, 106, 115, 119T, 126, 185, 199T 6

32

The General Education requirement, special course requirements, and electives, which may include a minor, are in addition to the major (32) or Religious Studies option (32), totaling 92 units to complete the 124 units required for the BA degree.

PHILOSOPHY MINOR

The minor in philosophy consists of 16 units in philosophy, of which at least 6 must be upper division.

COURSES

PHILOSOPHY (Phil)

1. Introduction to Philosophy (4)
Introduction to the basic issues, disputes and methods of traditional and contemporary philosophy, including theory of knowledge, ethics, metaphysics, religion and social theory. Development of skills in analysis, logical thinking and self-expression.

10. Self, Religion, and Society (3)
Conceptions of human nature; nature and varieties of religion; personal and social implications and values of religion.

25. Methods of Reasoning (4)
Principles and methods of valid inference. Typical topics: forms of deductive inference, basic types of inductive inference, common pitfalls in moral reasoning, problems in reasoning due to the nature of language, and common fallacies found in arguments in everyday life.

45. Elementary Deductive Logic (4)
Basic concepts and methods of deductive logic with emphasis on truth-functional logic. Development of skills in deductive techniques.

100. Philosophy of Life (3) (Former Phil 135T section)
Survey of principal perspectives and contributions of philosophers to problems and issues concerning the nature and quality of human life. Topics discussed include: meaning of life, examination of life styles, God and the supernatural, death and immortality, nature of morality.

101. Ancient Philosophy (3)
Development of Western Philosophy from its beginning; the emergence of critical theory, doctrines and schools of thought in Greek and Roman culture. Topics considered may include: "pre-Socratic" philosophy; the work of Plato and Aristotle; Epicurus and the Atomists; Stoicism.

102. Medieval Philosophy (3)
Consideration of Western Philosophy—its development, principal figures and schools of thought—from late classical times through the Middle Ages: Neo-Platonism, Augustine to Anselm; Abelard; Theology, "scholastic" thought and revival of Aristotle; Aquinas; the rise of nominalism; William of Ockham.

103. Bacon to Kant (3)
Development of early modern philosophy: the search for new scientific methods—Bacon, Descartes, Spinoza, Newton and Locke; empiricism and skepticism—Berkeley and Hume; rationalist metaphysics—Leibniz; influences on moral and political thought—the Enlightenment; Rousseau; Kant's Critical philosophy.

104. Nineteenth Century Philosophy (3)
Consideration of the principal figures and systems of thought in philosophy after Kant: the development of Idealism; Hegel and his critics; influential concepts of evolution and historical change; Marxism; Comte's positivism; J. S. Mill; irrationalist currents; Kierkegaard and Nietzsche.

105. Twentieth Century Philosophy (3) (Former Phil 107)
Principal developments in philosophy after 1900. Figures and movements include: logical atomism, logical positivism, linguistic analysis, pragmatism, phenomenology, existentialism, G. E. Moore, Russell, Wittgenstein, Whitehead, Dewey, Santayana, Husserl, Heidegger, Sartre, Austin, Ryle, Strawson, Carnap, Ayer.

106T. Topics in History of Philosophy (3; max total 9 if no topic repeated)
Consideration of special historical issues or individual philosophers.

107. Existentialism (3) (Former Phil 106T section)
Examination of roots of existentialism in Kierkegaard and Nietzsche; study of such 20th century existentialists as Sartre, Heidegger, Jaspers, Buber. Typical problems examined: nature of mind, freedom, the self, ethics, existential psychoanalysis.

115. Ethical Theory (3) (Former Phil 115T section)
Introduction to the fundamental concepts and problems of moral theory. Examination of various ethical theories, including relativism, egoism, utilitarianism, intuitionism, and non-cognitivism; the meaning of ethical terms.

116. History of Ethics (3)
Development of the main ethical doctrines of Western Philosophy from Socrates and the Sophists to Hegel and Mill.

117. Philosophy of Art (3)
Investigations of selected topics in the philosophy of art; the nature of the artistic process and the work of art; expression and creativity; aesthetic judgment in criticism and experience; the relation of art to moral and political theory.

119T. Topics in Valuation and Obligation (3; max total 9 if no topic repeated) (Former Phil 115T)
Investigations of selected topics in ethics, value theory, political and social philosophy, aesthetics.

120. Contemporary Conflicts of Morals (3) (Former Phil 115T section)
Introduction to ethical theory and its application to contemporary moral problems. Discussion to include: business ethics, medical ethics, sexual morality, abortion, mercy killing; pot, drugs, and alcohol; crime and punishment, civil disobedience, revolutionary violence, rights of women and minorities.

121. Ethics in Criminal Justice (3) (Former Phil 135T section)
Philosophical issues concerning society's treatment of criminal behavior. Topics discussed include: what types of deviant behavior should be regarded as criminal? morality and law; punishment or rehabilitation; safe vs repressive society.

125. Social and Political Philosophy (3) (Former Phil 115T section)
Representative view of function and value of social and political institutions; analysis of fundamental concepts involved, for example, the common good, authority, justice, natural law, natural rights, the state, power, freedom, equality, responsibility and democracy.

126. Contemporary Conflicts in Political Thought (3) (Former Phil 115T section)
Introduction to political theory and its application to contemporary political problems and issues.

127. Philosophy of Law (3) (Former Phil 135T section)
Nature and functions of law; methods of justifying legal systems; logic of legal reasoning; analysis of fundamental legal concepts.

128. Feminist Theory (3) (Former Phil 135T section) (Same as W S 128)
Philosophical issues pertaining to the life and status of women in contemporary society. Theories of feminism. Topics to include relationships between culture and nature, androgyny and feminism, economic equality, preferential treatment, abortion, sex roles, sexual morality, marriage. Male participation welcome.

129. Marxism (3) (Former Phil 135T section)
Examination of basic ideas of Marx inherent in his writings and a consideration of later developments now called "Marxist."

130. Philosophy of Religion (3) (Former Phil 130T section)
The nature and function of religious faith, belief, and practice; relations between religion and morals; existence of God; problem of evil; nature and significance of religious experience.

131. Comparative Religion (3) (Former Phil 130T section)
Survey of the major religions of mankind, their history and teachings, with emphasis on Hinduism, Buddhism, Confucianism, Taoism, Judaism, Christianity, and Islam.

133. Literature of the New Testament (3) (Same as Engl 115)
Discussion and close written analyses of selected texts from the New Testament.

134. Literature of the Old Testament (3) (Same as Engl 116)
Discussion and close written analyses of selected texts from the Old Testament.

136. Buddhism (3) (Former Phil 132T section)
Introduction to Buddhism. Life and teachings of Gautama Siddhartha Buddha; development of Buddhism after death or mahanirvana of the Buddha.

137. Hinduism (3) (Former Phil 132T section)
Introduction to the development and ideas of Hinduism.

138. Chinese Thought (3) (Former Phil 132T section)
Classical religions, ethical and political thought, in ancient China; probable emphasis on Confucianism and Taoism.

139T. Topics in Religious Issues (3; max total 9 if no topic repeated) (Former Phil 130T)
Investigations of selected topics in philosophy of religion and comparative religion.

145. Symbolic Logic (3) (Former Phil 110)
Prerequisite: Phil 45. Theory of deductive inference; includes propositional logic, predicate logic, relations, identity, definite description, nature of axiom systems.

146. Philosophy of Language (3) (Former Phil 125T section)
Nature and uses of language; theories of meaning; concepts of reference, predication, truth, name, ambiguity, vagueness, definition, metaphor; relationships between methodology in philosophy and theories of language.

150. Foundations of Knowledge (3) (Former Phil 125T section)
Nature, sources, and limits of human knowledge; roles of perception, reason, memory, authority, and intuition in the justification of beliefs in all areas; for example, science, math, ethics, religion, the past, other minds.

151. Philosophy of Science (3) (Former Phil 125T section)
Methods and presuppositions of empirical science; scope and limits of science; logic of scientific explanation and theory construction; inductive inference and probability; clarification of such concepts as causality, law, theory, probability, determinism, teleology.

156. Philosophy of Mind (3) (Former Phil 125T section)
Analysis of problems concerning the nature of mind and mental phenomena: relation between mind and body, nature of the self and personal identity, free will, action and behavior, thinking machines, knowledge of other minds; concepts of mind, intention, desire, emotion.

157. Freedom, Fate, and Choice (3) (Former Phil 125T section)
Nature of human action, free will and determinism, free will and moral responsibility; analysis of basic concepts; for example, will action, freedom, determinism, fatalism, chance, choice, decision, intention, reason, desire, belief; implications for everyday life.

159T. Topics in Logic, Epistemology, and Metaphysics (3; max total 9 if no topic repeated) (Former Phil 125T)
Investigations of selected topics in logic, epistemology, and metaphysics.

160. Philosophy in Literature (3) (Former Phil 135T section)
A study of the philosophical content of important literary works.

161. Philosophy and Psychology (3) (Former Phil 135T section)
Investigation of basic philosophical issues concerning the nature of self and mind, and the relation of the individual to other persons, society and technology. These issues investigated as they emerge in the humanistic, existential, Freudian and behaviorist approaches to psychology.

165T. Special Topics (3; max total 9 if no topic repeated) (Former Phil 135T)
Topics of current or interdisciplinary interest or requiring special background.

170T. Seminar in History of Philosophy (4; max total 12 if no topic repeated) (Former Phil 160T)
Prerequisite: one upper division philosophy course, and one unit of independent study. Intensive investigation of historical periods or figures with extensive writing and supervised research.

171T. Seminar in Valuation and Obligation (4; max total 12 if no topic repeated) (Former Phil 170T)
Prerequisite: one upper division philosophy course, and one unit of independent study. Intensive investigation of problems in ethics, aesthetics, social and political philosophy. Extensive writing and supervised research.

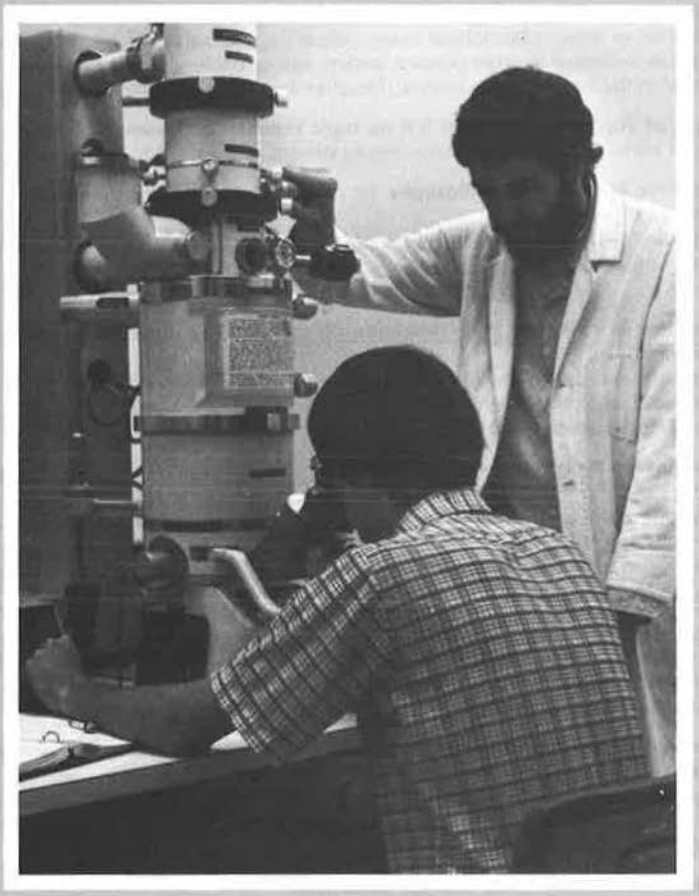
172T. Seminar in Religious Issues (4; max total 12 if no topic repeated) (Former Phil 175T)
Prerequisite: one upper division philosophy course, and one unit of independent study. Intensive investigation of problems in philosophical theology, comparative religion, and culture. Extensive writing and supervised research.

173T. Seminar in Logic, Epistemology, and Metaphysics (4; max total 12 if no topic repeated) (Former Phil 165T)
Prerequisite: one upper division philosophy course, and one unit of independent study. Intensive investigation of selected problems in logic, epistemology, and metaphysics. Extensive writing and supervised research.

174T. Seminar in Special Topics (4; max total 12 if no topic repeated) (Former Phil 180T)
Prerequisite: one upper division philosophy course, and one unit of independent study. Intensive investigation of topics of an interdisciplinary nature or those having special prerequisites.

190. Independent Study (1–3; max see reference)
See *Academic Placement—Independent Study.*

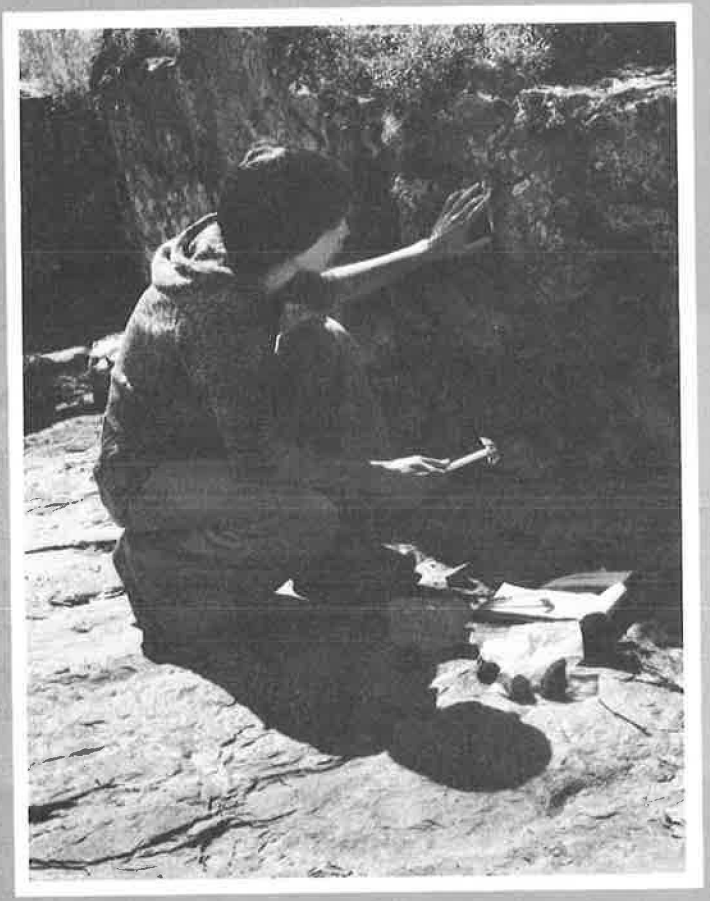
192. Directed Reading (1–3; max total 6)
Prerequisite: permission of instructor. Supervised readings in a selected philosopher or field of philosophy. Combined units of Phil 190 and 192 may not exceed 6 units.



Electron microscope—examining biological specimens for teaching and research.

SCHOOL OF NATURAL SCIENCES 337

Biology Department
Chemistry Department
Geology Department
Mathematics Department
Physical Science
Physics Department
Psychology Department



Geology student identifying and classifying metamorphic rocks in the San Joaquin Valley foothills.