



SCIENCE

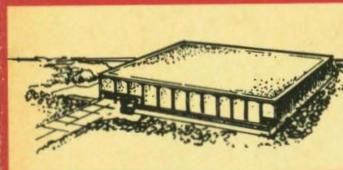
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FINE ARTS



MUSIC



PHYSICAL EDUCATION



CAFETERIA



Catalog

CALIFORNIA STATE COLLEGE
AT HAYWARD

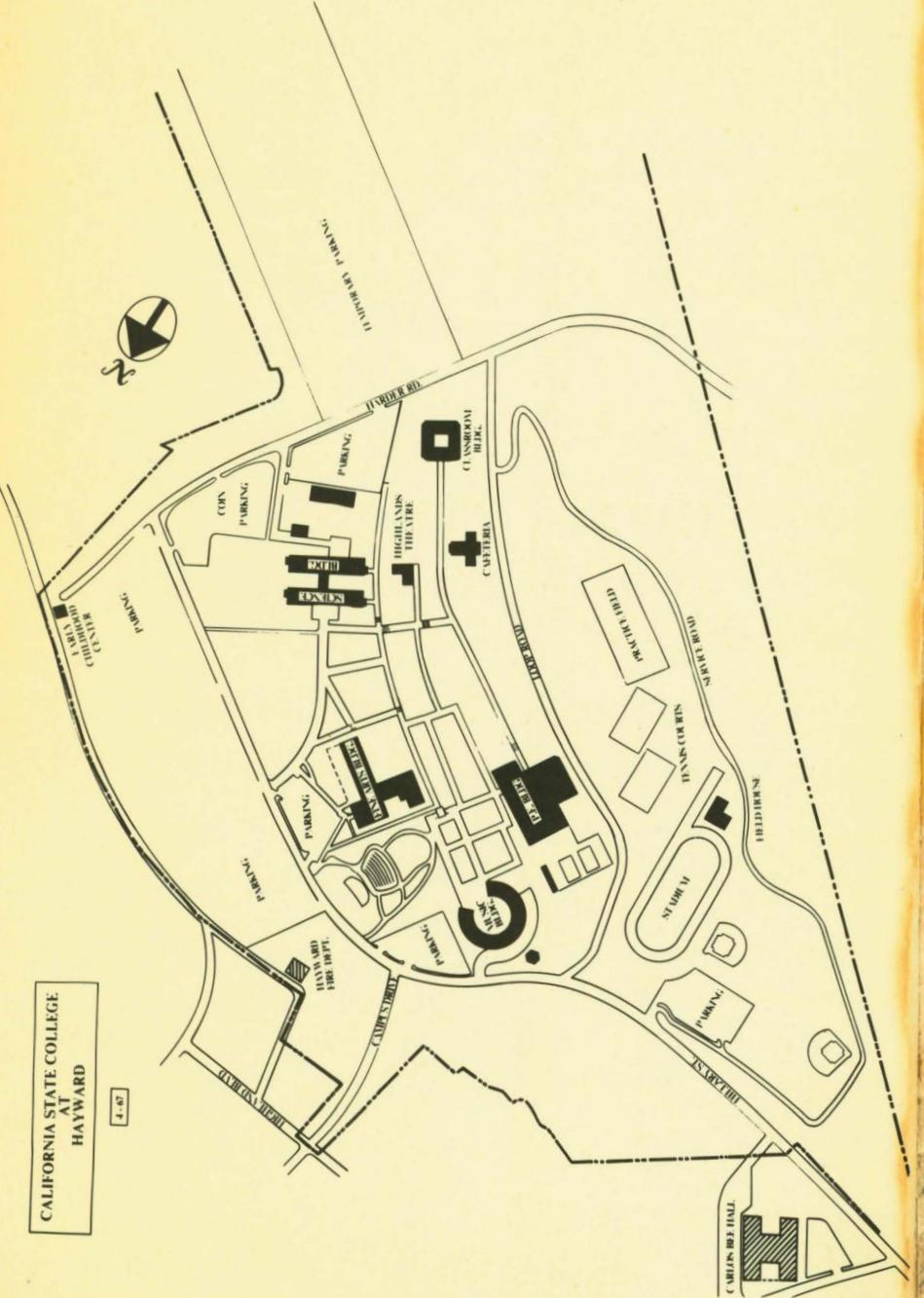
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AT HARVARD
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1868

Catalog

1967-1968

CALIFORNIA STATE COLLEGE AT HAYWARD

25800 Hillary Street, Hayward, California



CALIFORNIA STATE COLLEGE
AT HAYWARD

4-63

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Cover by Harry Hyman

ACADEMIC CALENDAR 1967-68

Summer Quarter 1967

June 17	Orientation for freshmen
June 19	Registration and payment of fees
June 20	Classes begin
June 20-27	Late registration period
June 23-27	Add-drop period
June 27	Last day to drop a class without a grade
July 3	Last day for Fall Quarter graduates to request graduation checks
July 4	Independence Day (all college holiday)
July 14	Last day for Summer Quarter graduates to return application for graduation
July 28	Last day to drop a class with a grade of "W" or "WF"
August 25	Last day of classes
Aug. 28-Sept. 1	Final examinations
Sept. 1	End of quarter
Sept. 5	Grades due in Records Office 12 noon
Sept. 2-17	Academic recess

Fall Quarter 1967

Sept. 18-22	Testing, orientation and academic advisement
Sept. 25-26	Registration and payment of fees
Sept. 27	Classes begin
Sept. 27-Oct. 4	Late registration period
Oct. 2-4	Add-drop period
Oct. 4	Last day to drop a class without a grade
Oct. 10	Last day for Winter Quarter graduates to request graduation checks
Oct. 12	Columbus Day (all college holiday)
Nov. 3	Last day to drop a class with a grade of "W" or "WF"
Nov. 4	Homecoming Day
Nov. 14	Last day for Fall Quarter graduates to return application for graduation
Nov. 23	Thanksgiving Day (all college holiday)
Nov. 23-24	Thanksgiving recess
Dec. 8	Last day of classes
Dec. 11-15	Final examinations
Dec. 15	End of quarter
Dec. 18	Grades due in Records Office 12 noon
Dec. 16-Jan. 1	Academic recess

Winter Quarter 1968

Jan. 2	Registration and payment of fees
Jan. 3	Classes begin
Jan. 3-10	Late registration period
Jan. 8-10	Add-drop period
Jan. 10	Last day to drop a class without a grade

Jan. 17	Last day for Spring Quarter graduates to request graduation checks
Feb. 9	Last day to drop a class with a grade of "W" or "WF"
Feb. 12	Lincoln's birthday (all college holiday)
Feb. 19	Last day for Winter Quarter graduates to return application for graduation
Feb. 22	Washington's birthday (all college holiday)
March 8	Last day of classes
March 11-15	Final examinations
March 15	End of quarter
March 18	Grades due in Records Office 12 noon
March 16-24	Academic recess

Spring Quarter 1968

March 25	Registration and payment of fees
March 26	Classes begin
March 26-April 2	Late registration period
March 29-April 2	Add-drop period
April 2	Last day to drop a class without a grade
April 10	Last day for Summer Quarter graduates, and Fall Quarter graduates not intending to enroll Summer Quarter 1968 to request graduation checks
April 15	Last day for Spring Quarter graduates to return application for graduation
May 1	Dedication Day
May 3	Last day to drop a class with a grade of "W" or "WF"
May 30	Memorial Day (all college holiday)
May 31	Last day of classes.
June 3-7	Final examinations
June 8	Commencement
June 8	End of quarter
June 10	Grades due in Records Office 12 noon

Other Important Dates for Students

I. Application Deadlines for Admission or Readmission to the College	
Undergraduates	Graduates
Summer Quarter 1967	May 15
Fall Quarter 1967	July 28
Winter Quarter 1968	November 10
Spring Quarter 1968	March 8

II. Special Tests

American Institutions, U.S. Constitution, California Government Examinations	
Summer Quarter 1967	July 20, 21
Fall Quarter 1967	Nov. 30, Dec. 1
Winter Quarter 1968	Feb. 15, 16
Spring Quarter 1968	April 11, 12

III. Application Deadlines for Admission to the Teacher Education Program

For Summer Quarter 1967

Admission to teacher credential programs (Dept. Office) June 9
 Submission of transcripts to Dept. Office June 9

For Fall Quarter 1967

Admission to teacher credential programs (Dept. Office) Sept. 14
 Submission of transcripts to Dept. Office Sept. 14

For Winter Quarter 1968

Admission to teacher credential programs (Dept. Office) Dec. 26
 Submission of transcripts to Dept. Office Dec. 26

For Spring Quarter 1968

Admission to teacher credential programs (Dept. Office) March 19
 Submission of transcripts to Dept. Office March 19

For Summer Quarter 1968

Admission to teacher credential programs (Dept. Office) June 10
 Submission of transcripts to Dept. Office June 10

IV. Applications Deadlines for Student Teaching—Phase I and Phase II

For Fall Quarter 1967 June 30
 For Winter Quarter 1968 Nov. 22
 For Spring Quarter 1968 Feb. 16

NOTE: For information regarding screening tests for admission to the teacher education program, check with the Teacher Education Department Office.

JUNE							JULY							AUGUST							SEPTEMBER							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
—	—	—	—	—	—	—	1	2	3	—	—	—	—	1	—	—	1	2	3	4	5	—	—	—	—	—	1	2
4	5	6	7	8	9	10	2	3	4	5	6	7	8	6	7	8	9	10	11	12	3	4	5	6	7	8	9	
11	12	13	14	15	16	17	9	10	11	12	13	14	15	13	14	15	16	17	18	19	10	11	12	13	14	15	16	
18	19	20	21	22	23	24	16	17	18	19	20	21	22	20	21	22	23	24	25	26	17	18	19	20	21	22	23	
25	26	27	28	29	30	—	23	24	25	26	27	28	29	27	28	29	30	31	—	—	24	25	26	27	28	29	30	
—	—	—	—	—	—	—	30	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
OCTOBER							NOVEMBER							DECEMBER							JANUARY							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
1	2	3	4	5	6	7	—	—	1	2	3	4	—	—	—	—	—	1	2	—	—	—	—	—	—	—	—	
8	9	10	11	12	13	14	5	6	7	8	9	10	11	3	4	5	6	7	8	9	7	8	9	10	11	12	13	
15	16	17	18	19	20	21	12	13	14	15	16	17	18	10	11	12	13	14	15	16	14	15	16	17	18	19	20	
22	23	24	25	26	27	28	19	20	21	22	23	24	25	17	18	19	20	21	22	23	21	22	23	24	25	26	27	
29	30	31	—	—	—	—	26	27	28	29	30	—	—	24	25	26	27	28	29	30	28	29	30	31	—	—	—	
—	—	—	—	—	—	—	—	—	—	—	—	—	—	31	—	—	—	—	—	—	—	—	—	—	—	—	—	—
FEBRUARY							MARCH							APRIL							MAY							
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	
—	—	—	—	—	—	—	1	2	3	—	—	—	—	1	2	3	4	5	6	—	—	1	2	3	4	5	6	
4	5	6	7	8	9	10	3	4	5	6	7	8	9	7	8	9	10	11	12	13	5	6	7	8	9	10	11	
11	12	13	14	15	16	17	10	11	12	13	14	15	16	14	15	16	17	18	19	20	12	13	14	15	16	17	18	
18	19	20	21	22	23	24	17	18	19	20	21	22	23	21	22	23	24	25	26	27	19	20	21	22	23	24	25	
25	26	27	28	29	—	—	24	25	26	27	28	29	30	28	29	30	—	—	—	—	26	27	28	29	30	31	—	
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THE CALIFORNIA STATE COLLEGE SYSTEM

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E. Guy Warren, B.A. (1973) P.O. Box 59, Hayward 94541
Daniel H. Ridder, B.A. (1967) 604 Pine St., Long Beach 90801
George D. Hart, A.B. (1967) 111 Sutter St., San Francisco 94104
Gregson E. Bautzer, B.A., LL.B. (1968) 190 N. Cañon Drive, Beverly Hills 90210
James F. Thacher, A.B., LL.B. (1970) 310 Sansome St., San Francisco 94104
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THE CALIFORNIA STATE COLLEGES

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800 North State College Boulevard, Fullerton, California 92631 Tel. 714 871-3300
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5500 State College Parkway, San Bernardino, California 92407 Tel. 714 887-6311
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San Fernando Valley State College _____ Ralph Prator, President
18111 Nordhoff Street, Northridge, California 91326 Tel. 213 349-1200
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125 South Seventh Street, San Jose, California 95114 Tel. 408 294-6414
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Rohnert Park, California 94928 Tel. 707 795-2011
Stanislaus State College _____ Alexander Capurso, President
800 Monte Vista Avenue, Turlock, California 95380 Tel. 209 634-9101

THE STATE COLLEGE SYSTEM

The California State Colleges are a unique development of the democratic concept of tax-supported public higher education for all qualified students.

Spanning the state from Humboldt County in the north to San Diego in the south, the 18 campuses of the California State Colleges (with another campus soon to be constructed) represent the largest system of public higher education in the Western Hemisphere and one of the largest in the world. Current enrollment exceeds 170,000 full and part-time students. The faculty and administrative staff numbers more than 9,000.

The individual colleges, each with a geographic, curricular and academic character of its own, offer a solid basic program in the liberal arts. Beyond this, each college is noted for its individuality in academic emphasis which makes for a diversified system. Course offerings leading to the bachelor's and master's degree are designed to satisfy existing student interests and to serve the technical and professional manpower requirements of the state.

The California State Colleges are dedicated to rigorous academic standards. Constant striving for academic excellence is at the heart of the system. The primary responsibility of each faculty within the system is the instructional process on the teacher-student level, with appropriate recognition of the necessary and constructive role of research in any institution of higher education.

Responsibility for the California State Colleges is vested in the Board of Trustees, which is appointed by the Governor, and the Board's administrative arm, the Chancellor. The Trustees and the Chancellor set broad policy for the colleges while delegating considerable independent responsibility for implementation at the college level. A Statewide Academic Senate, made up of representatives elected by the faculty at each college, acts as a consultative body to the Chancellor in the area of academic affairs.

Although the oldest of the colleges, San Jose State College, dates back a century, the California State College system under an independent Board of Trustees was created by the Donahoe Act of 1960. Formerly, the colleges were under the jurisdiction of the State Board of Education.

Today, the California State Colleges are in a particularly dynamic period of their development. Prior to World War II, there were seven State Colleges with a peak total enrollment of some 13,000. Since 1947, eleven new colleges have been established and a site has been selected for a new college in Kern County. Enrollment in the system is expected to reach 225,000 by 1970.

International Programs

The California State Colleges offer academic year programs of study at a number of distinguished universities abroad. In 1967-68 the cooperating universities are: University of Aix-Marseille, France; Free University of Berlin and University of Heidelberg, Germany; Waseda University, Tokyo, Japan; University of Granada and University of Madrid, Spain; University of Stockholm and University of Uppsala, Sweden; National University, Taiwan; and the University of Florence, Italy. Academic work successfully completed at the cooperating universities abroad may be applied toward the degree requirements of the College in accordance with college regulations.

A selection among applicants from all California State Colleges is made on the basis of academic, linguistic and personal qualifications. The criteria are:

- a) Upper division or graduate standing by the beginning of the academic year abroad,
- b) Academic achievement,
- c) Proficiency in the language of instruction,
- d) Faculty recommendations.

Cost to the student includes round trip transportation from San Francisco to the host university, room and board for the academic year, and medical insurance. In 1967-68 these costs are: France, Germany, Spain, \$1,970; Italy, Japan, \$2,070; Sweden, \$2,270; Taiwan, \$1,770. Payments may be scheduled throughout the year.

Programs in Japan, Sweden and Taiwan do not require previous linguistic preparation; applicants for all other programs must demonstrate adequate facility in the language of instruction at the host university.

Application for the 1968-69 academic year should be made early in the fall term, 1967. Detailed information may be obtained from the Chairman of the Committee on International Education Programs or by writing to the Office of International Programs, the California State Colleges, 1600 Holloway Avenue, San Francisco, California 94132.

COLLEGE ADMINISTRATION

Executive

President	Fred F. Harclerode
Assistant to the President	Vincent K. Shaudys
Dean of the College	Albert R. Lepore
Executive Dean, Administrative Services	William G. Vandenburg
Dean of Student Services	Lyle D. Edmison
Business Manager	Earle W. Nordstrom
Director of Public Affairs and College Relations	Dean W. Detweiler
Administrative Assistant to the President	Alfred D. Kilmartin

Academic Affairs

Dean of the College	Albert R. Lepore
Dean of Instruction	Arnold P. Biella
Dean of Educational Services	Forrest L. Mayer
Associate Dean of Instruction	George H. Peterson
Associate Dean and Dean of Admissions and Records	Myron F. Pollack
Director of Admissions	Charles A. Stone
Registrar	Richard B. Cunningham
Head, Division of Biological and Health Sciences	Harvey L. Scudder
Head, Division of Business and Economics	William M. Morgenroth
Head, Division of Creative Arts	Karl D. Ernst
Head, Division of Education	Lewie W. Burnett
Head, Division of Humanities	Rodney G. Minott
Head, Division of Science and Mathematics	P. Victor Peterson, Jr.
Head, Division of Social and Behavioral Sciences	Charles W. Merrifield
Head, Division of Learning Resources	Robert O. Hall
Head, Division of Libraries	Floyd R. Erickson

Administrative Services

Executive Dean, Administrative Services	William G. Vandenburg
Coordinator of Building Program	David W. Mahaney
Chief of Plant Operation	Allen P. Rodda

Student Services

Dean of Student Services	Lyle D. Edmison
Administrative Assistant to the Dean	Robert E. Cannon
Associate Dean and Dean of Men	Howard A. Slatoff
Associate Dean and Dean of Women	Joan M. Seavey
Medical Officers	Fred D. Fisher, Howard B. Flanders
Director of Counseling Services	Donald J. Strong
Director of Testing Services	Frank F. Groves
Director of Placement Services	Eugene W. Clark

College Administration

Business Services

Business Manager	Earle W. Nordstrom
Administrative Assistant to the Business Manager	Gary Ervin
Accounting Officer	Fred Okamoto
Personnel Coordinator	Richard Quey
Purchasing Coordinator	
Foundation Manager	Stan Clark

Institutional Studies

Director of Institutional Studies	Robert E. Bates
Supervisor, Data Processing Service	Terry B. Clark
Director, Office of Institutional Studies	Robert E. Bates
Director, Instructional Computation Center	Thomas H. Southard

Public Affairs and College Relations

Director of Public Affairs and College Relations	Dean W. Detweiler
Publicity Assistant	Darrell M. Gray

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A view of the Fine Arts Building

PART I

GENERAL INFORMATION

and

REGULATIONS

GENERAL INFORMATION

For a listing of degree and credential programs offered by the College, see Part II, page 61.

History and Physical Facilities

In a period of several years, California State College at Hayward has undergone a remarkable growth and laid a solid base for its future development. The College was established by the State Legislature in 1957 and opened its doors for the first time in September 1959, using temporary quarters in Hayward. It was at that time called State College for Alameda County.

From an initial enrollment of 400 students, 100 full-time, the College has more than matched the growth of the area it was planned to serve. As of Spring 1967, there were 5,300 students—more than 13 times as many—and enrollment is expected to soar to 11,000 by 1970.

The College took formal possession of its present 354-acre campus in 1963, which was the year its name changed to California State College at Hayward. Classroom instruction here is offered in four multi-storied buildings—an H-shaped Science Building, a patio-fringed Fine Arts Building, a large Physical Education Building, and a distinctive Music Building of circular design. By October 1967 the physical plant will include a cafeteria and by May 1968 a general classroom building to be called Meiklejohn Hall. A privately financed dormitory is located on property adjacent to the campus.

Cal State shares with four other State Colleges the facilities of the Moss Landing Marine Laboratories at Monterey Bay, which provide a seaside site for year-round course work in marine biology, oceanography, and other marine sciences.

An Ideal Location

Located among the rolling foothills that rim San Francisco Bay, the Cal State campus provides the faculty and students with many advantages of environment.

The climate of the area is moderate and usually delightful. The ocean to the West and the Sierras to the East are within easy reach by automobile. Oakland is 15 miles northward by freeway, cosmopolitan San Francisco lies 28 miles away via the Bay Bridge, and the Peninsula can be reached by the San Mateo Bridge. The location affords excellent opportunities to visit museums, libraries, art galleries, aquariums, and

General Information

parks as well as to attend plays, concerts, musicals, and other types of entertainment for which the San Francisco area is famous.

Quarter System

California State College at Hayward is on the Quarter System, with each quarter approximately 12 weeks in length. The Summer Quarter is an optional quarter and constitutes the fourth quarter.

Accreditation

The College is accredited by the Western Association of Schools and Colleges.

Programs relating to the Standard Credential-Elementary, Standard Credential-Secondary, and Standard Credential-Junior College are accredited by the California State Board of Education.

Extension Division

In addition to the courses described in the Catalog, California State College at Hayward has established an Extension Division, which offers courses off campus within the geographical region served by the College. These courses are planned for in-service teachers, business men and women and various civic, lay and professional groups. The offerings include regularly established college courses as well as courses and workshops designed to meet the needs of particular groups and communities.

Summer Session

The summer session is designed to meet the needs of regularly enrolled students and of teachers and other professionals who wish to improve their professional competence. Regular catalog courses are offered in a six-week term; there are also short-term classes covering a wide range of topics in seminars, workshops and institutes of special interest to teachers, supervisors and school administrators. A maximum of nine units of credit may be earned during the six-week session.

It is *not* necessary for students enrolled in the summer session to make formal application for admission to the College.

For a Summer Session Catalog or information regarding course offerings, the student may write to the Dean of Educational Services.

Selective Service Regulations

In order to qualify for a deferment or postponement of military service under Selective Service procedures, a student must be registered for 12 or more units per term.* (Graduate students must be regis-

* Students should be aware that student deferments require normal progress toward a degree. Some Selective Service Boards interpret this requirement to mean that a student must be enrolled for a minimum of 15 units each quarter.

General Information

tered for eight or more units per term). The College serves as a reporting agency only, and any decisions affecting the student's Selective Service status will be made by students' local boards. Certification of registration and attendance is made to the Selective Service Boards by the Records Office upon request.

Reserve Officers Training Corps

California State College at Hayward participates in a plan which allows selected and qualified students to enroll in the U. S. Army ROTC unit at the University of California at Berkeley.

Under the General Military Science curriculum, a student is given army training without specialization in any one branch. The Federal Government furnishes all necessary textbooks, uniforms and supplies, and arranges draft deferment.

Alumni Association

A strong enthusiastic Alumni Association works closely with the students of Cal State Hayward to promote and foster good relationships between the students of the College and the graduates. Funds of the Alumni Association from dues and other sources are used to grant awards to students of the College.

Veterans Information

Any student attending college under provisions of the Veterans Administration or the Cal-Vet program is expected to clarify his status with the Records Office at the beginning of each quarter during the registration period. Information about Veterans Administration or Cal-Vet regulations is available in the Records Office through the Veterans Affairs representative.

STUDENT RESPONSIBILITIES

Each student must assume responsibility for his progress by keeping an up-to-date record of the courses he has taken and by checking periodically with his adviser. Responsibility for errors in program or in interpretation of regulations of the College rests with the student. Advice is always available on request.

Students are expected to attend all meetings of their classes. Excessive unexcused absences will be sufficient reason for lowering a grade or refusing to allow a student to take final examinations. The Dean of Students will issue excuses for college-authorized absences.

Student Conduct

Students of California State College at Hayward are to conduct themselves at all times according to standards expected of responsible persons.

General Information

A Standard Code of Conduct has been adopted by the Student Association. Copies of this code are available at the Office of the Dean of Women.

Change of Objective

A student who wishes to change his objective—that is, the curriculum in which he is enrolled—should obtain required forms in the Office of Admissions and Records. The student must then obtain permission from the advisers and division heads affected by the change of objective. No change is official until the appropriate forms are signed and filed with the Office of Admissions and Records.

Change of Status

A student who has changed his name or address must file a formal change of status card in the Admissions Office. The College will not be responsible for mailing correspondence to the correct name or address without such changes formally filed.

Catalog Requirements

A student at Cal State Hayward will follow the catalog in effect at the time of admission for all requirements as long as he remains in continuous attendance and pursues the originally specified objective. The student will be held responsible, however, for complying with changes in requirements which may be effected by the Trustees of the State Colleges and/or by the State Legislature.

SERVICES AND FACILITIES

SPECIAL STUDENT SERVICES

Various offices in the College provide special services to individual students and groups of students while serving in a consultant capacity to academic advisers and academic departments of the College. Students with questions relative to academic programs should consult their advisers.

Counseling

Counseling services provide no-fee assistance regarding personal problems of an academic, vocational, or emotional nature for all students who are officially enrolled at the College. Consultation with a professional counselor is voluntary and all counseling interviews are treated in a confidential manner. Initial appointments are arranged promptly and may be extended to include several regular individual interviews on a weekly basis (limited in number), but priority is given to emergency and initial contacts. Psychological testing is provided upon recommendation of a counselor. When indicated, a student may be given a referral to a community mental health clinic, social agency, or private therapist. In every respect, the counseling staff attempts to assist the student to obtain more from available educational opportunities, to improve interpersonal and social relationships, to set and achieve appropriate vocational goals, and to increase personal satisfaction and self-worth.

Student Health Services

In conformity with the Education Code of the State of California, the objective of our Student Health Services is to protect and preserve the physical and mental health of our students. This encompasses health education, the prevention and treatment of illnesses and injuries, and the provision of a safe and healthful environment.

The Student Health Services Office, 160 Fine Arts Building, is open from 8 a.m. to 5 p.m., Monday through Friday. Requests for service should be on an appointment basis, if possible. Emergency care will be rendered immediately at any time on the campus. The facilities are available to all currently enrolled students.

Student Insurance

Voluntary insurance plans covering sickness and accidents are available to students. Further information may be obtained from the student business manager or the Student Personnel Office or the Office of the Dean of Students.

Services and Facilities

Placement and Employment Services

The College offers occupational counseling and assistance in finding suitable employment opportunities for graduates and part-time work for students. The major objectives of the Placement Service include providing teachers for public school work; assisting graduates to find employment which best fits their needs and training; and finding part-time work for students to aid in financing their education. There is no fee for placement service.

Students and graduates seeking full-time career placement must have completed, or be in the process of completing, degree and/or credential requirements in order to be eligible for placement. Students who have completed 24 units of work at the College are eligible for limited service.

Students seeking part-time employment may register with the Placement Service at the beginning of each quarter.

Transcripts

A student's transcript of work accomplished at California State College at Hayward (including Summer Session and Extension) may be requested by the student in the Records Office. There is a fee of \$1.00, charged after the initial request is made. A work-in-progress report is also made following the same procedure.

The College reserves the right to withhold a transcript of record from a student who fails to meet his financial obligations to the College.

Scholarships

Scholarships ranging from \$50 to \$400 are granted to qualified students attending California State College at Hayward. Each applicant will be considered for every scholarship for which he is eligible. Recipients will be selected by the respective committees on the basis of scholarship, financial need, leadership, and promise of success in their chosen fields, or by the criteria established by the donor.

Applications and information concerning scholarships are available in the Financial Aids Office.

Student Financial Aids

California State College at Hayward participates in the National Defense Act Student Loan Program, the United Student Aid Loan Program, the California State Guaranteed Loan Program, the Educational Opportunity Grant Program, and the College Work Study Program. These long range loans are available to students who are in need of financial assistance, and information concerning these loans is available from the Financial Aids Office. The Parents' Confidential Statement is a prerequisite for these student aids.

Services and Facilities

The College maintains a short term emergency loan program for students in temporary financial need. Loans are available at no interest for periods up to 30 days and may be obtained through the Financial Aids Office.

Housing

The Student Personnel Office assists students in finding suitable housing within the college community. Women students under 21 years of age must have written approval from parents for any off-campus residence away from home.

The Carlos Bee Residence Hall, adjacent to the campus, is a college approved residence hall, accommodating 308 men and women students. For information concerning housing, contact the Dean of Men's Office.

Foreign Students

Students from other countries must consult with the Foreign Student Adviser on matters affecting their visas, eligibility for employment, financial aid, travel program, special workshops, and housing. The Foreign Student Adviser also provides information pertaining to the admission of foreign students to the College. (See ADMISSION OF FOREIGN STUDENTS, page 31.)

STUDENT ACTIVITIES

Extracurricular Affiliations

The Dean of Women's Office serves to coordinate the many out-of-class educational activities sponsored by the College or by campus organizations. Calendar clearance and petition assistance are available in that office.

Associated Students: Every registered student becomes a member of the Associated Students and is entitled to participate in its activities and to vote in all special and general elections. The executive officers (elected annually) are the president, vice president, secretary, and two representatives at large. The Student Council is composed of the executive officers and a representative from each of the seven Academic Division Councils of the College.

The Student Council, serving as the executive and legislative branch of the student government, appoints standing committees, charters clubs and organizations, prepares and supervises the budget of the Associated Students, and works with the College in the planning, executing, and evaluating of many college programs and projects.

Clubs and Organizations: The College encourages the establishment of a great variety of clubs and organizations. Students and faculty meet together in religious, professional, service, recreational, educational, and cultural organizations. Membership in all organizations depends solely

Services and Facilities

upon individual qualifications without regard for race, color, religion, or national origin. Recognized organizations are privileged to use the college name and facilities and to plan activities of benefit to their membership or to the total College.

Student Publications: The Associated Students sponsor the *Pioneer*, the student newspaper, and the *Elan*, the student yearbook, both of which are published in cooperation with the journalism staff, and the *Amaranth*, published by the Humanities Division.

Intercollegiate Athletics

The College is a member of the Far Western Athletic Conference and competes on the varsity level in baseball, basketball, cross country, football, golf, swimming, tennis, track, and wrestling. Junior varsity teams represent the College, also, in football and basketball.

SPECIAL FACILITIES

Moss Landing Marine Laboratories

Instruction in marine biology, oceanography and other marine sciences is offered at the Moss Landing Marine Laboratories in conjunction with four other cooperating State Colleges. Full time course offerings are available for resident credit, and the facilities are used to implement biology courses taught on the Hayward campus.

The Library

The library now has over 165,000 catalogued volumes and subscriptions to 1,800 periodicals to meet the needs of the growing student body. For students in the teacher-education program, the College has developed a curriculum library consisting of a wide selection of textbooks and other educational materials. The library is designated as a depository for selected federal documents.

Professionally trained librarians are available to assist students and faculty.

Audiovisual Services

Audiovisual facilities include an equipment room, preview room, materials-preparation area, film-storage center and dark rooms. The A-V equipment is modern and adequate for the program of the College. The film library has over 446 films.

Professionally trained audiovisual personnel are available to assist students and faculty.

Center for Independent Study

The Center for Independent Study was established to provide the instructional staff with added resources by which a student could be

Services and Facilities

helped to (1) meet specific requirements within a course being taken for credit, (2) complete selected courses for credit by proficiency examination, or (3) meet the entrance requirements of certain courses.

The work of students in the Center is supervised by a staff selected to provide needed help to students as they progress through the programmed materials and to provide competent proctoring in the administration of necessary examinations.

Since questions of college credit may be involved, all arrangements to remand students to the Center must be made with the Coordinator of the Center.

Instructional Computation Center

Current facilities include an IBM 1620 Digital Computer with Punched Card Input and Output, as well as printing card punches, a reproducer, a sorter and a 407 off-line listing machine. Both formal and informal instruction are available to students and staff interested in instructional or instructionally related projects which make use of the facility.

Parking

Campus parking facilities are available to students with the purchase of parking permits at the cost of \$9 per quarter for regular students and \$4 for part-time students. The stickers may be obtained at the Accounting Office, FA 247, on the day of registration. A coin operated parking lot is available on campus at a cost of 25 cents per entry.

ADMISSION TO THE COLLEGE

PLAN OF ADMISSION

Requirements for admission to California State College at Hayward are in accordance with Title 5, Chapter 5, Subchapter 2 of the California Administrative Code as amended by the Board of Trustees of the California State Colleges on January 21, 1965. A prospective applicant who is unsure of his status under these requirements is encouraged to consult with a school or college counselor or contact the Office of Admissions and Records.

Students with good academic records may qualify for admission to California State College at Hayward with freshman standing, advanced standing, or graduate standing by submitting the required materials showing that they meet the admission standards appropriate to their entrance level.

Undergraduates

Applications for admission and readmission will be accepted until the dates published below. They will be processed in the order of receipt; all supporting documents (transcripts of all previous college work, ACT or SAT test scores and Statement of Residence) must be on hand prior to processing. A Student Health Record must be filed before a student will be allowed to register. Undergraduates transferring with less than 60 semester (90 quarter) units must submit a transcript of high school work. First-time freshmen must have their high school submit a transcript of their work or an eligibility certificate. Only students who file applications and whose records are complete before the deadline for a particular term can be assured of consideration for admission.

Graduates

First-time applications for admission must be submitted with evidence of graduation from an accredited four year institution prior to the date indicated below. Transcripts, diploma, or a regular teaching credential constitute evidence. Graduate students pursuing a basic standard teaching credential, a masters degree, or planning to enter the student teaching or credential program of the College must submit a completed Student Health Record prior to registration.

Declaration of Objective

At the time of applying for admission, each student is required to state an objective to be pursued at this College. After the student has declared a definite objective and been admitted to the College, faculty

advisory services are available to assist the student in the attainment of that particular goal, but the responsibility for meeting the specific requirements rests with the student.

DEADLINES *

FALL QUARTER 1967

July 28.....Last day for undergraduate students to submit applications for admission or readmission
September 14.....Last day for graduate students to submit applications for admission or readmission

WINTER QUARTER 1968

November 10.....Last day for undergraduates to submit applications for admission or readmission
December 26.....Last day for graduate students to submit applications for admission or readmission

SPRING QUARTER 1968

March 8.....Last day for undergraduates to submit applications for admission or readmission
March 19.....Last day for graduate students to submit applications for admission or readmission

SUMMER QUARTER 1968

May 17.....Last day for undergraduates to submit applications for admission or readmission
June 7.....Last day for graduates to submit applications for admission or readmission.

ADMISSION AS A FRESHMAN

An applicant who has had no college work will be considered for admission under one of the following provisions. Submission of the results of the American College Test is required.

California High School Graduates and Residents

An applicant who is a graduate of a California high school or a legal resident for tuition purposes must have a grade point average and composite score on the ACT which provides an eligibility index † placing him among the upper one-third of California high school graduates. The grade point average is based upon the last three years and does not include physical education or military science. The table below does not cover every case, but gives several examples of the test score needed with a given grade point average to be eligible for admission.

* Deadlines will be extended if space is available after the listed closing date.

† For 1967-68 the minimum eligibility index is ACT 750. It is computed by multiplying grade point average by 200 and adding it to 10 times the composite ACT score. (A complete table is available in the Admissions and Records Office.)

<i>Grade point average</i>	<i>ACT score needed</i>
3.21 and above	Eligible with any score
2.80	19
2.40	27
2.00	35
1.99 and below	Not eligible

Non-Residents Graduating From High Schools in Other States or Possessions

An applicant who is a non-resident for tuition purposes and who is a graduate of a high school in another state or a U.S. possession must have an eligibility index which would place him among the upper one-sixth of California high school graduates for 1966-67. The minimum required eligibility index is ACT—830 and is calculated as in the previous section.

Graduates of High Schools in a Foreign Country

An applicant who is a graduate of a foreign high school must have preparation equivalent to that required of eligible California high school graduates. The College will carefully review the previous record of all such applicants and only those with promise of academic success equivalent to that of eligible California high school graduates will be admitted. Such applicants are not required to take the ACT.

Non-High School Graduates

An applicant who is over 21 years of age but has not graduated from high school will be considered for admission only when his preparation in all other ways is such that the College believes his promise of academic success is equivalent to that of eligible California high school graduates.

High School Students

A student currently enrolled in high school will be considered for enrollment in certain special programs if he is recommended by his principal and if his 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.

NOTE: Students are held individually responsible for information contained in these pages. Failure to read and understand these deadlines and regulations will not exempt a student from whatever penalties he may incur.

Other Applicants

An applicant not admissible under one of the above provisions should enroll in a junior college or other appropriate institution. Only under the most unusual circumstances will such applicants be permitted to enroll in the College. Permission is granted only by special action.

Recommended Preparation

Overall excellence of performance in high school subjects and evidence of academic potential provide the basis for admission at California State College at Hayward. The applicant is not required to pursue a particular course pattern, but in order to be adequately prepared to undertake a full program of college studies and particularly the required program in General Education, is strongly encouraged to include the following subjects as minimally adequate background for college work:

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

Certain majors list specific recommended preparation for the major; consult appropriate sections of this catalog for details.

ADMISSION AS AN UNDERGRADUATE TRANSFER

Any applicant who has attempted college work will be considered for admission under one of the following provisions. All undergraduate transfer students are required to take the ACT.

Applicants With 60 or More Semester Units

An applicant who has completed 60 or more semester units or the equivalent will be admitted if he has achieved a grade point average of 2.0 (C) on all acceptable college work attempted and was in good standing at the last college attended.

Applicants With Fewer Than 60 Semester Units

An applicant who has completed fewer than 60 semester units or the equivalent may be admitted if he meets the above requirements as well as requirements currently in effect for first-time freshmen. An applicant who has been in full-time continuous enrollment at a college since his graduation from high school may also be admitted to Cal State provided he meets the requirements of the California State Colleges which were in effect for first-time freshmen at the time of his high school graduation.

Other Applicants

Only under the most unusual circumstances will an applicant not meeting either of the above provisions be considered for admission. Permission is granted by special College action.

Admission Procedures

1. Submit an application for admission, a \$5 application fee (a \$10 fee becomes effective Dec. 1, 1967) and a Statement of Residence form.
2. File two official transcripts from *each* college attended. Students with fewer than 60 semester units (or equivalent quarter units) of acceptable college transfer credit must file two transcripts of all course work completed and one official transcript showing grades earned during the last three years of high school.
3. Submit results of, or make arrangements to take, the ACT exam through the College Testing Office.
4. Complete and file the two-part health form *before* first registration.

ADMISSION WITH GRADUATE STANDING**General Qualifications**

A graduate of an accredited college or university is eligible for admission to this College with graduate standing if he:

1. Holds a baccalaureate degree from an accredited institution, and
2. Is eligible to return to the last college or university attended.

Admission to this College with graduate standing does not constitute admission to a specific graduate program. Inquiries regarding admission to a specific program should be directed to the department offering the program. Students who have not been accepted into a graduate program offered at Cal State will be classified as "non-objective" students.

Students with degrees from unaccredited institutions must meet the requirements for admission as undergraduate students. They must earn a degree from this College or other accredited institution to be permitted to earn graduate credit here.

SPECIAL TYPES OF ADMISSION**Admission of Summer Session Students**

Adult students who wish to enroll for Summer Session courses only are not required to file an application or transcripts. (Such students should contact the Summer Session Office before registration.) Students, however, must satisfy the prerequisites for the particular courses in which they enroll.

Admission of Foreign Students

Foreign students seeking admission to the College from their native country must forward the completed application for admission, a financial statement, a transcript from each high school attended, and two transcripts from each college previously attended. Passing the Test of English as a Foreign Language (TOEFL) is a requirement for all foreign students. The College is a member of the Institute of International Education and requires all foreign applicants to be interviewed at one of the Institute offices in their native country.

Transfer foreign students who have attended educational institutions in the United States must file a financial certificate and take the TOEFL examination. They must otherwise follow the regular admission procedures as directed under ADMISSION AS AN UNDERGRADUATE TRANSFER, page 29.

Students who come to this country on a student visa are required by the Immigration Department to carry a minimum study load of 12 quarter (8 semester) units per term. When enrolled at this College, they are expected to comply with all the regulations of the Immigration Department as well as those of the College.

Special counseling and further information can be obtained from the Dean of Men or Foreign Students' Adviser.

Admission of Nonresident Students

Admission requirements for nonresident students, excepting those in the lower division, are the same as for resident students. (See ADMISSION AS A FRESHMAN, page 27.) A nonresident tuition fee is payable by all regular and part-time students who have not been legal residents of the State of California for one year immediately preceding the date of enrollment. (See STATEMENT OF RESIDENCE, page 33.)

Admission of Veterans

Veterans who meet the admission requirements outlined above and who present certificates of eligibility for curricula offered by this College, may attend under full benefits extended to veterans. Information concerning veterans' programs can be obtained from the Veterans Affairs representative in the Admissions and Records Office.

Admission to Public School Service Credential Programs

Admission to the College does not guarantee that the student will be admitted to credential programs in teacher education, school administration and supervision, and pupil personnel services. See Division of Education section for criteria which will be used in admitting students to programs.

ADMISSION POLICIES AND PROCEDURES

Application for Admission or Readmission

1. All new students planning to enroll at this College must submit a formal application for admission.

2. All former students (regular and part-time) who did not enroll for, or who enrolled but withdrew from, residence credit or audit courses in the regular term (excluding Summer Session work) immediately preceding the quarter in which they plan to enroll must file an application for readmission. Two official transcripts from each institution attended since leaving this College must be filed in the Office of Admissions and Records. Students graduating with a baccalaureate degree from Cal State must reapply for admission to take work at the graduate level.

An application form appropriate for each type of student classification may be picked up in person or requested by telephone or letter from: Office of Admissions and Records, California State College at Hayward, 25800 Hillary Street, Hayward, California. The filing dates for each quarter are:

	<i>Undergraduates</i>	<i>Graduates</i>
Fall Term	July 28, 1967	Sept. 14, 1967
Winter Term	Nov. 10, 1967	Dec. 26, 1967
Spring Term	March 8, 1968	March 19, 1968
Summer Term	May 17, 1968	June 7, 1968

Students who file their applications for admission or readmission before the final date for a particular term, and whose records are complete by this date, can be assured of consideration for admission.

More specifically, freshman applicants should follow one of the procedures listed below:

1. A high school student who qualifies for admission at the end of seven semesters of high school work will be granted acceptance. The student must have his high school verify graduation.
2. A student who has graduated from high school may file an application, required transcripts, and an application fee before the deadline dates and be considered for admission to the institution.

Application Fee

All persons applying for admission to this College for the fall quarter, 1967 will be required to pay a \$5 application fee. Effective Dec. 1, 1967, the fee will become \$10. This fee *cannot* be refunded or applied toward any other charges or fees the student may incur. The fee should be enclosed or submitted with the application for admission. Checks or

money orders should be made payable to: *California State College at Hayward*. Please do not send cash.

Transcripts

It is the applicant's responsibility to see that official transcripts required for his type of admission classification be sent directly from the graduating high school attended (one complete copy) and/or colleges attended (two copies from each). The College reserves the right to determine whether a transcript can be accepted as official. All transcripts and records submitted for admission or readmission become the property of the College and cannot be returned to the applicant or forwarded to another institution, except in cases of redirection to another California State College.

Failure to declare enrollment in each school attended (when asked for on the application form) will constitute grounds for denial of admission, readmission, or dismissal from the College for unethical conduct.

Statement of Residence

An official statement of residence must be completed and filed by each student with his application for admission. These statements may not be completed by another person. Final decision relative to residence status will be made by the college attorney and will be based upon the residence laws of the State of California. Students will be held responsible for reporting any changes which affect their residence classification.

Health Data

An entrance physical examination is a matriculation requirement *prior to registration* for all students, except non-objective graduate students enrolled for fewer than seven units. The examination is to be performed by a private physician at the student's own expense and is to be recorded on a Student Health Record supplied by the College. This form also includes a health history to be completed by the student. When finished, the form is to be returned to the Student Health Services.

Notification of Acceptance or Denial

After completing a review of a student's application materials, the Office of Admissions and Records will notify the student that he has been accepted or denied admission to this College, and under what conditions.

An official evaluation of the student's previous college work will be completed and sent to the student not later than his first term of attendance at this College. This latter document will remain valid as long as the

Admission

student remains in continuous attendance. Such students will not be held to additional requirements unless such requirements are the result of changes made by the Trustees of the California State Colleges and/or by the State Legislature.

Cancellation of Admission

A student who is accepted for admission to the College for a given term, but does not register, must reapply for admission. A subsequent application for admission must be in accordance with current admission requirements. Transcripts, test scores, and evaluations on file may be used with the new application. An application fee must be submitted with each new application for admission.

EVALUATION OF TRANSFER CREDITS

General Policy

Credits earned in accredited colleges and universities by undergraduate students will be evaluated not later than the first quarter of attendance by the Office of Admissions and Records, and advanced standing will be allowed on the basis of the evidence submitted. Credits toward the fulfillment of graduation requirements will be allowed only insofar as the courses satisfactorily completed meet the standards and the requirements of the basic course pattern of the College. Credit for certain vocational and remedial courses cannot be transferred.

Credits earned in nonaccredited colleges may be accepted as a basis for advanced standing; however, they may not be counted toward graduation requirements until completion at this College of 36 quarter units of course work with at least a "C" average. Certain credits earned in colleges accredited as professional schools receive no transfer credit for admissions purposes. (See CREDIT BY EXAMINATION, page 43.)

Credits for Junior College Work

Credits earned in accredited junior colleges will be evaluated by the Office of Admissions and Records in accordance with the following provisions:

1. Not more than 105 quarter (70 semester) units of credit may be allowed for junior college work. Junior college credit earned after the student has attained 105 quarter units will be used for determining grade point average and *may be* used to satisfy subject requirements, but *may not* be applied toward the total units required for the bachelor's degree.
2. Introduction to Education credit of 3 quarter (2 semester) units of credit may be transferred from the junior college. No other credit is allowed for professional courses in education.

Admission

3. California State College at Hayward and California junior colleges have written agreements relative to equivalency of courses. Students planning to transfer to this College should consult their counselors if they have questions about transfer courses.

Credit for Extension and Correspondence Work

A maximum of 36 quarter (24 semester) units of extension and correspondence work may be counted toward graduation at California State College at Hayward, but of the total units accepted no more than half or 18 quarter (12 semester) units may be transferred from other institutions. Within this latter total, no more than 9 quarter (6 semester) units of correspondence credit can be accepted for a degree at this College.

No extension or correspondence credit may be applied toward the residency requirement. All extension and correspondence work will be used for determination of the grade point average.

Credit for Experience

A maximum of 12 quarter (8 semester) units in student teaching may be allowed toward the bachelor of education degree upon verification of sufficient and satisfactory teaching experience, provided the student has not received that amount of credit for student teaching in an accredited college.

No unit credit is allowed toward other bachelor's or master's degrees for teaching or other practical experience. An exemption allowed for experience will not carry units of advanced standing nor diminish the number of units required for graduation.

Credit for Military Training

The College grants credit for military training in accordance with the American Council on Education Guide to the Evaluation of Educational Experiences in the Armed Forces. To receive such credit, the student must present evidence, by written certification from a recognized military authority, such as papers from a military separation center or an official copy of a diploma from a service school.

ADVISING

Consulting With Adviser

First-time freshmen during their first quarter of attendance at the College must develop a program with their advisers which will satisfy all requirements (general education, major, and minor if required) for the degree.

Undergraduate transfer students must develop, in conjunction with their academic advisers, a complete program of courses leading to the baccalaureate degree following receipt of Cal State's evaluation of previous college credit (but in no case later than the end of the second quarter of enrollment). To satisfy degree requirements, this program must serve as a guide to the student throughout his college career, and no changes in it will be made without written approval of the adviser. The Evaluations Office will receive written notification of any changes.

These programs will give evidence of a student's agreement to fulfill the requirements of a degree program that were in effect at the time of entrance into this College. As long as the student maintains continuous enrollment in the College, the agreement shall be binding. Should curricular changes occur in the program, the student has the option of completing his original program or incorporating the changes. Should a course essential to the program be discontinued, the adviser and the student shall select an appropriate substitute course and treat it as a change in program.

Honors Program

The College provides a program in general honors, both lower and upper division, which is open to superior students in all majors. The lower division program includes special sections in general education courses; the upper division program offers colloquia which can be taken as electives or to satisfy the upper division general education requirements. All students have the privilege of applying for admission to the program, but admission is normally gained through invitation of the College Honors Committee, based on recommendation of the student's previous institution and screening by the committee, or nomination by a member of the faculty of Cal State Hayward. Inquiries should be addressed to the Dean of Instruction.

The divisional and departmental honors programs, offered presently in the Departments of English and History, are upper-division programs designed to provide special courses and advanced, independent reading and research for superior students in the individual majors. Several departments are now considering the development of programs. Inquiries should be addressed to the chairman of the department.

PRE-PROFESSIONAL TRAINING

Courses and programs offered in the various departments of the College are appropriate for entry into professional programs. Any student commencing work at Cal State Hayward with the intent of completing his training at another college or professional school should work closely with his adviser so that his pattern of courses meets the general pattern requirements of the profession, the specific requirements of the professional school of his choice, and the CSCH requirements for his major and baccalaureate degree.

Pre-law

The study of law is a post-graduate professional program, usually requiring three years of full-time study beyond the completion of the bachelor's degree. No specific pre-law undergraduate program is required for admission to law schools.

Students intending to enter law school commonly complete undergraduate majors in political science, economics, history, philosophy, English or business administration. However, any recognized non-vocational major is acceptable to law schools. The pre-law student's undergraduate plan of study should include among its objectives a facility in the proper use of written and spoken English, a familiarity with at least the outlines of English history, and a thorough knowledge of United States history. A sound knowledge of the elements of social science, including the principles of economics, political science, psychology, and sociology, is normally recommended. Many law schools highly recommend or require that students complete a college sequence in accounting and advise that they acquire the ability to use a typewriter.

A cultural and social organization, the Blackstone Pre-Law Society, is open to all students interested in the law or in problems relating to law and society. Students planning to enter law school should consult the Department of Political Science about their major and baccalaureate degree.

Pre-theological Studies

The American Association of Theological Schools recommends that students anticipating graduate theological education take a broad liberal arts program leading to the B.A. degree. No major field is stipulated, but it is essential that students learn to speak and write English correctly and effectively. A reading knowledge of at least one language other than English must be acquired. Students should elect courses which will sharpen their conceptual process (logic, scientific method, literary or historical research) and should have more than an introduction to the world of men and ideas, the world of nature, and the world of human affairs. The majors most frequently recommended are English,

Advising

history, and philosophy. Students planning to enter theological schools should consult the Department of Philosophy about their major and baccalaureate degree.

The Health Sciences (Medicine, Dentistry, and the Paramedical Sciences)

Students intending to enter the medical or dental professions should plan on completing a baccalaureate degree in an appropriate academic major. Many pre-medical and pre-dental students major in biological sciences or chemistry, but majors in the social sciences and the humanities are acceptable to medical and dental schools, provided the specified courses in science have been completed.

Admission to medical and dental schools is restricted to those students who have developed a facility in the use of English and in quantitative thinking, who have mastered the fundamentals of the physical and biological sciences, and who have studied in depth one of the major fields of knowledge. Most schools therefore require completion of the following courses during the undergraduate year: one year of English composition or literature, one year of general chemistry and one semester each of organic chemistry and quantitative analysis, one year of physics, one year of biology or zoology, one semester of vertebrate embryology, and one semester of college mathematics. In addition, some medical schools require work in foreign language, social sciences, and humanities.

Students interested in entering medicine, dentistry or one of the paramedical professions (nursing, physical therapy, medical technology, etc.) should consult with the preprofessional adviser in the Department of Biological Sciences early in their college careers to plan their major and baccalaureate degree. The preprofessional adviser has information about the requirements for admission to professional school.

FEES AND EXPENSES

Tuition is not charged to legal residents of California. The following reflects the fees of the College, subject to change without prior notice, by the Trustees of the California State Colleges. The fees for auditors of courses are the same as for those receiving credit for courses.

I. Registration Fees (payable at time of registration)

A. Quarters

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>	<i>Summer</i>
Material and service fee	\$30.00	\$30.00	\$30.00	\$30.00
Student body fee	7.00	7.00	6.00	6.00*

Totals \$37.00 \$37.00 \$36.00 \$36.00

2. Limited students (6 or fewer units):

Material and service fee	\$15.00	\$15.00	\$15.00	\$15.00
Student body fee	2.00	2.00	2.00	2.00*

Totals \$17.00 \$17.00 \$17.00 \$17.00

3. Nonresident tuition, per quarter (in addition to above fees):

1 to 14 units	\$16.00 per unit
15 or more units	\$240.00 total

4. Foreign student tuition, per quarter (in addition

to fees in 1 or 2 above):	\$5.75 per unit
1 to 14 units	\$85.00 total

15 or more units	\$10.00 per unit
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B. Extension Division

C. Summer session

Material and service fee	\$13.25 per unit
Student body fees*	3.00 only

There is no nonresident tuition for Summer Session.

II. Other Costs (payable when service is rendered)

A. Application fee

\$5.00+

5.00

1.00

B. Late registration fee

2.00

C. Change of program after final filing date

3.00

D. Failure to meet administratively-required appointment or time limit

3.00

E. Graduation (not State fees)

5.00

1. Diploma fee

3.00

2. Graduation fee

3.00

F. Check returned

5.00

1. Registration check

2.00

2. Any other check

G. Parking fee ‡

9.00/qtr.

1. Regular student

4.00/qtr.

2. Part-time student

1.00

H. Official transcript of record (no charge for first copy)

* No student body fees are necessary for Summer Session or Summer Quarter if the student paid \$20 during the previous academic year.

† The application fee will be \$10.00, effective Dec. 1, 1967.

‡ 25% of the amounts listed are charged for 2-wheel vehicles.

Fees and Expenses

I. Items lost or broken	Cost
J. Field trips	Cost
K. Test fees	Cost

III. Refund Regulations

- A. Any student who finds it necessary to withdraw officially from the College is eligible for a refund of a portion of the material and service fee provided the application is filed in the Records Office not later than two weeks (14 calendar days) after the term begins.
- B. Any student who reduces his academic load from a regular to a limited category during the period for adding and dropping classes is eligible for a partial refund of the material and service fee and should apply to the Records Office not later than two weeks (14 calendar days) after the term begins.
- C. Partial refunds may be granted to students receiving administrative suspension provided a request is filed by the student in the Records Office.
- D. After withdrawal from college or reduction of academic load, *nonresident or foreign student tuition* will be refunded upon formal application according to the following schedule:
Before or during the first week of the quarter 100%
During the second week of the quarter 75%
During the third week of the quarter 50%
During the fourth week of the quarter 25%
- E. Students who have been drafted into military service or called to active duty and, as a result, find it necessary to withdraw from the College are eligible for a refund of a portion of their material and service fees.

ESTIMATED EXPENSES OTHER THAN FEES

FOR AN ACADEMIC YEAR (FALL, WINTER AND SPRING QUARTERS)

Item	Amount
Books and supplies	\$150
Room and board	
Carlos Bee Residence Hall	\$1,175-\$1,260*
Shared apartment off campus	\$100 per month
Lunches on campus at approximately 75¢ per day	\$112
Supplementary health insurance (not compulsory)	\$25

Commuting costs vary, but because of the College's location a car is a considerable convenience. Public transportation is available but not at all hours of the day. Students commuting in their own cars should consider the cost of auto insurance as part of their budget.

Other variable expenses include clothing, laundry, dry cleaning, clubs and organizations, church contributions, recreation and personal expenses.

* The exact amount depends upon the number of installments used to complete three-quarter payment.

REGISTRATION

GENERAL POLICIES

1. All students who register at Cal State must have been properly admitted to the College by the Office of Admissions and Records prior to such registration.
2. Registration by proxy is not permitted.
3. Registration is complete only when registration cards have been properly filed and all fees, deposits, and charges are paid. All fees *must* be paid at the time of registration.
4. Students are given credit only for those courses in which they are officially registered at the conclusion of the late registration period.
5. Students will be held responsible for completing all courses for which they initially register, excepting those courses which are officially dropped by filing a "Drop Card" in person in the Office of Admissions and Records.

CLASSIFICATION OF STUDENTS

The following classifications apply to students enrolled in the fall, winter, spring, or summer terms (excluding summer sessions).

1. Regular (full-time) undergraduate students are those enrolled for 12 or more units of course work in any regular term.
2. Regular (full-time) graduate students are those enrolled for 8 or more units of course work in any regular term.
3. Regular (part-time) undergraduate or graduate students are those enrolled for more than 6 but less than 12 (undergraduate) or 8 (graduate) units of course work in any regular term.
4. Part-time undergraduate or graduate students are those enrolled for 6 units or less in any regular term.

Students are assigned class rank according to the following plan:

1. Lower Division—

	Quarter units
Freshmen	fewer than 45
Sophomores	45 but fewer than 90
2. Upper Division—

Juniors	90 but fewer than 135
Seniors	135 or more
3. Graduate—
Possession of a baccalaureate degree from an accredited institution.

PLACEMENT EXAMINATIONS

Placement examinations are given to place students at appropriate levels of achievement as follows:

Mathematics Placement Test. Students enrolling in either Math. 1301 or Math. 1302 without first having had Math. 1301 must take the Mathematics Placement Test. Arrangements must be made through the Mathematics Department.

Foreign Languages Placement Tests. First-time students at Cal State Hayward must take a Foreign Language Proficiency Examination prior to enrolling in foreign language courses (French, German, Spanish). Dates for the examinations are announced each quarter. Arrangements must be made through the Foreign Language Department.

Music Placement Tests. First-time students at Cal State Hayward must take Music Proficiency Examinations prior to enrolling in music courses. Examinations are given by the Music Department before registration each quarter. Arrangements must be made through the Music Department.

Advanced Placement

The Advanced Placement Examinations referred to below are prepared and offered by the College Entrance Examination Board. Unit credit will be granted to those passing the exams, but no letter grade will be assigned or computed in a student's grade point average.

Students who wish to secure Advanced Placement credit must obtain and complete the appropriate form from the Dean of Instruction's Office prior to registration for the first quarter of attendance. The form, accompanied by official notification of the Advanced Placement Examination score(s), must then be submitted to the Registrar's Office within the first two weeks of the first quarter of attendance.

Biology. A biology student who has successfully completed an advanced placement course in biology in high school and has earned a score of "4" or "5" on the Advanced Placement Examination will be granted unit credit for Biol. 1000 (five units).

Chemistry. A chemistry student who has successfully completed the advanced placement course in chemistry in high school and has earned a score of "4" or "5" in the Advanced Placement Examination will be granted unit credit for Chem. 1101 (five units).

Mathematics. A mathematics student who has successfully completed an advanced placement course in calculus in high school and has earned a score of "4" on the Advanced Placement Examination will be granted unit credit for Math. 1302 (four units). (No letter grade will be assigned or computed in the student's grade point average.) A student

who scores "5" on the Advanced Placement Examination will receive unit credit for Math. 1302 (four units) and Math. 1303 (four units).

English. An English student who has successfully completed the advanced placement course in English in high school and has earned a score of "4" or "5" on the Advanced Placement Examination will be granted unit credit for Eng. 1813 (five units).

An English student who has taken the Writing Sample Test and whose progress is judged adequate by the members of the English Department who have examined the test will receive unit credit for either Eng. 1001 (three units) or Eng. 1002 (three units) as appropriate.

Foreign Languages. A foreign language student who has successfully completed the advanced placement course in a foreign language in high school and has earned a score of "4" or "5" on the Advanced Placement Examination will be granted credit for three courses of foreign language (12 units).

History. A history student who has successfully completed the advanced placement course in U.S. history in high school and has earned a score of "4" or "5" on the Advanced Placement Examination will be granted unit credit for Hist. 1101 (four units), Hist. 1102 (four units). If he has completed the advanced placement course in European history in high school and has earned a score of "4" or "5" on the Advanced Placement Examination, he will be granted unit credit for Hist. 2001 (four units), Hist. 2002 (four units).

Students receiving a grade of "3" on the Advanced Placement Examination in history may receive credit in Hist. 1101-1102 or Hist. 2001-2002 upon approval of the History Department Committee on Advanced Placement.

Credit by Examination

The College recognizes that exceptional students, by reason of special studies or experiences, may already have achieved the objectives of certain courses in the basic program; therefore, students with this background can make arrangements to obtain credit in selected courses by special examination. Such an examination is normally from three to six hours in length and may be oral as well as written. Each course may be challenged only once.

Students wishing to secure credit under this plan must register during regular registration for the units to be earned by the examination. The class being challenged for credit must be listed in the class schedule for the particular quarter. An application for credit by examination should be secured from the departmental office of the student's major. The examination must be administered *during the first two weeks of the quarter* and the results, in grade form, must be submitted to the Admis-

Registration

sions and Records Office by the end of the fifth week. The instructor is responsible for notifying the student of the results of the examination.

If the exam is passed (a grade of "C" or better is required), the Admissions and Records Office will indicate "credit by examination" on the student's permanent record. If the student fails the examination, he must either continue taking the course formally or officially withdraw from it in the Admissions and Records Office within one week after completing the examination.*

The instructor may arrange a course of study with the Center for Independent Study so that a student may prepare for the examination during the quarter prior to that in which the examination is to be taken. For details, students should consult the department offering the course to be challenged.

Not more than 36 quarter units of credit obtained by examination may be applied toward the baccalaureate degree. No credit earned by examination may be used to satisfy the 36 quarter units of residence requirements of the College.

PLANNING A PROGRAM

Schedule of Classes

A Schedule of Classes is prepared by the Dean of Instruction each term for publication. This schedule includes a listing of general registration information, courses offered, hours, and rooms. The schedule is available prior to registration each term and can be purchased in the College Bookstore.

Quarter Unit

A quarter unit of credit represents three or more hours of classwork and outside study per week for one quarter. One and one-half (1½) quarter units are equivalent to one (1) semester unit of credit.

Academic Load

1. *Undergraduate Students.* The normal academic load for full-time undergraduate students is assumed to be 15 units of course work per term. Generally two hours of preparation for each hour of regular class work can be expected. Any student desiring to enroll for more than 18 units of credit per term must have the written approval of his academic adviser and the Dean of Instruction. At least 60 of the units required for graduation with the bachelor's degree must be in courses numbered 3000 and above and must be earned in the junior and senior years.

2. *Graduate Students.* The normal academic load for a full-time graduate student is assumed to be 12 units of course work per term. Higher standards of performance and more intensive preparation for class

* The instructor need not inform the Admissions and Records Office of the grades "D" or "F".

Registration

work are expected of graduate level students. Courses numbered 3000 or higher, when appropriate to the student's objective at Cal State, may be taken for graduate credit.

Auditing Courses

A student who wishes to "audit" a course instead of enrolling for credit must meet all admission requirements and secure the permission of the instructor of the course. An auditor pays the same fees and has the same privileges as do students who take equivalent work for credit, but is not held for final examinations and does not receive final grades or credit. Auditors may not apply for credit in a course after the last day to add classes.

Students enrolled in classes for credit may not change to audit status after the last day to add classes. Only students who register to audit a course and who attend the class are eligible to receive the audit ("AU") grade mark.

Pass—No Pass Courses

Any undergraduate student above the sophomore level may enroll in any elective or upper division General Education course not in his major on a Pass—No Pass basis. Such enrollment shall be determined at the time of registration and may not be changed. The instructor shall be informed of such status by registration machinery.

A student may enroll in no more than one Pass—No Pass course each quarter and for no more than eight such courses among the 186 units required for graduation. Neither designation shall be computed in the student's grade point average, but "Pass" shall count toward graduation credits earned.

A student cannot enroll for a course on a Pass—No Pass basis if he has twice failed any Pass—No Pass courses.

Individual Study Programs

An Individual Study, as defined at this institution, is a course which is listed in the College Catalog but is not being offered during the term in which a student must gain course credit to complete a specified objective. Hence, permission to take such a course should be granted only in cases of necessity. Students are responsible for securing and completing the Application for Individual Study from the division secretary. Distribution of the application is given on the form itself. The original is to be surrendered in registration and a class card secured.

Independent Study Programs

An Independent Study, as defined at this institution, is a program of study which is above and beyond the regular offerings of a depart-

ment. The number of such a course will be 4900, 5900, or 6900, depending on the level and content of the work. Such a course should be considered as elective credit in the program of a student working for a specified objective.

The privilege of Independent Study is limited to students who have at least a 2.0 (C) grade average in all courses in the field or department in which the independent study is to be taken, both at this institution and in work which may have been attempted at other institutions. Students who are on academic probation are ineligible for Independent Study.

Students are responsible for securing and completing the Application for Independent Study from the division secretary. Distribution of the application is given on the form itself. The original is to be surrendered in registration and a class card secured.

Dual Matriculation

Simultaneous registration in two academic institutions is not recommended. In exceptional cases, an academic program involving dual matriculation can be planned, for which information is available at the Admissions and Records Office.

Late Registration

A late registration period of six instructional days is available to previously admitted or continuing students who were unable to be present during the regular registration period. Students completing the registration process during this late registration period will be assessed a late registration fee of \$5. Requests to register after the last day of late registration will not be considered.

Cancellation of Enrollment

Any student who fails to fulfill matriculation requirements or who otherwise fails to adhere to academic or College regulations is subject to being placed on immediate probation or having his enrollment for that term cancelled. Application for readmission in a subsequent term may be considered provided the deficiency which resulted in the cancellation has been removed.

CHANGES IN ENROLLMENT

Adding and Dropping Courses

From the third through the sixth day of instruction, students may add and drop courses by securing add and drop cards, which are available from department secretaries. These cards must then be returned to the appropriate department secretaries for entry or deletion on class

rosters. Adding a course is not permitted after the sixth day of instruction. A grade of "AF" will be entered on a student's permanent record if he registers for a course and drops out without filing an official drop card.

Students who find it necessary to drop a course between the seventh day and the end of the sixth week of instruction must secure the proper drop card from the Admissions and Records Office, obtain necessary signatures, pay a dollar fee at the Accounting Office, and file the card in the Admissions and Records Office. Students withdrawing during this period will receive a "W" if they were passing the course or a "WF" if they were failing the course. The units of credit for a course in which a "WF" is received will be included in the computation of the student's grade-point average. A student who drops a course without filing the required card in the Admissions and Records Office will be automatically assigned a grade of "AF" in the course. Students may not withdraw from individual courses after the end of the sixth week of instruction. Exceptions to this regulation can be found under GRADING SYSTEM, page 49.

Withdrawal From College

Medical Withdrawal: A student who finds it necessary to withdraw from college for medical reasons must report to the Student Health Services with written verification of illness or incapacity from a physician. Upon approval of the verification, Student Health Services will initiate the withdrawal.

A student who is given a medical withdrawal during a quarter may return to college as a continuing student (application for readmission is not necessary) if no more than one full quarter has lapsed. However, it will be necessary for the student to notify the Admissions and Records Office of his intent to return. Notification must be made before application deadline for that quarter.

The student must apply for readmission according to regular admission procedures, if he is not enrolled for more than one quarter.

Military Service Withdrawal: Any student who presents evidence of entering the armed forces may petition the Admissions and Records Office for an honorable dismissal. No academic penalties will be assessed under these conditions, and a mark of "W" will be entered on the student's permanent record.

A student who withdraws to enter military service may, upon application for readmission, be considered as a continuing student for purposes of graduation only.

Other Withdrawals: A student contemplating withdrawal from college because of personal or academic problems is encouraged to consult with the Counseling Office before taking official steps to withdraw.

Registration

If withdrawal from the College is necessary, official withdrawal forms from the Admissions and Records Office must be filled out and approved by the student's adviser, the Accounting Office, and the Dean of Students. The grading policy for students who withdraw from the College after the sixth day of instruction is the same as for students who withdraw from individual courses after this date.

Medical Leave of Absence: A student may apply for a medical leave of absence if he has completed one quarter in residence. The leave normally is approved for one quarter only.

GRADING AND ACADEMIC STANDARDS

Course Examinations

It is general policy in most courses to have several examinations during the term and a comprehensive final examination. No final examinations will be given to individual students before the regular scheduled examination period. Any student who finds it impossible to take a final examination on the date scheduled must make *advanced* arrangements with the instructor to have an "Incomplete" mark reported and must then follow the regulations concerning makeups of "Incomplete" marks. No exceptions will be made to these rules without the written approval of the instructor, the division head, and the Dean of Instruction.

Repeated Courses

A student may repeat a course in which he has received a grade of "D" or "F", but cannot receive credit for the course more than once. A repeated course is counted as units attempted and is credited with the grade-points earned, the effect being an averaging of the grades. If a student repeats a course in which he has received a grade higher than "D", the repeated course will not be counted as units attempted nor will the grade points be counted in the student's record.

Grading System

Symbol	Explanation	Grade Points
A	Outstanding	4
B	Commendable	3
C	Satisfactory	2
D	Passing	1
F	Failure	0
H	Hold	0
P	Passed	0
W	Withdrawn Passing	0
WF	Withdrawn Failing	0
AF	Administrative Failure	0
IN	Incomplete	0
AU	Auditor	0

Withdrawals ("W" and "WF" marks)

The withdrawal mark "W" is reserved for students who, after the last day to drop classes without a grade mark (the sixth day of classes) and prior to the end of the sixth week of the quarter, find it impossible to complete all or a part of their program of courses; who are passing the course(s) and who follow the appropriate procedure as stated under CHANGES IN ENROLLMENT, page 46. Students who withdraw from a

course without a grade mark after the last day to drop classes and prior to the end of the sixth week of the quarter will receive the mark "WF" when withdrawing from the course if they are failing the course at the time of withdrawal. A mark of "WF" is counted as units attempted and figured in the grade-point average.

Students who withdraw after the end of the sixth week will receive a grade of "F," unless they are eligible to receive an "Incomplete" grade under the policy as explained in this catalog or unless they have filed a successful petition for late dropping of a course. The form is available in the Admissions and Records Office.

Students who do not properly withdraw from courses will be assigned a grade of "F" or "AF".

Incomplete ("IN" marks)

A student may be considered for a grade of "Incomplete" only if he has attended class and completed course requirements up to at least the beginning of the seventh week of the quarter. The "Incomplete" grade may be received by a student only for reasons beyond the control of the student. Normally such reasons are:

- a. Extended absence for health problems.
- b. Failure to complete term assignments or final examination because of ill health or family emergencies. A statement from the doctor should be presented to the instructor at the time the student returns to class and before the Incomplete is recorded. An Incomplete must be cleared during the next quarter of attendance unless specially deferred by the instructor. Incomplete courses automatically revert to grades of "F" if not completed *within* the next calendar year. Students do not register to make up an Incomplete grade.

Hold ("H" marks)

"Hold" signifies that the grade is being withheld until final completion of a study. This mark is assigned only to theses, special studies and research, and field studies at the graduate level.

Grade Reports

At the end of each quarter notification of the student's academic standing and report of the grades achieved while in attendance at this College are mailed to each student. Grades are normally mailed within one week following the last day of the term. If there are unpaid charges or other penalties recorded against any student, transcripts of the student's work while at Cal State will be withheld.

Questions regarding grade reports, academic credit, or transcripts should be referred to the Admissions and Records Office.

Honors List

Students pursuing a full-time program of 12 or more units who achieve academic distinction as evidenced by a grade-point average of 3.50 or better are eligible for inclusion on the Honors List. Students enrolled on a regular full-time basis who achieve a grade-point average of 3.75 or better for any academic quarter will be included on the Dean's List. To determine eligibility to graduate with honors, see GRADUATION WITH HONORS, page 58.

Satisfactory Scholarship

Satisfactory scholarship means the maintenance of at least a "C" average (2.0 grade-point average or twice as many grade points as units attempted). A student is considered in good standing scholastically if he is not on probation or disqualified. To be eligible for a bachelor's degree, a student must have a grade-point average of at least 2.0 in the courses taken at Cal State, as well as a grade-point average of 2.0 or better on his entire collegiate record and in his major field.

POLICY ON PROBATION AND DISQUALIFICATION

The following local standards for probation and disqualification are "demonstrably equivalent" to those established by the Chancellor of the California State Colleges on August 19, 1964.

I. UNDERGRADUATE STUDENTS**A. Probation**

1. A student who, by special action, is admitted to Cal State Hayward with a cumulative grade point average of less than "C" in all previous work attempted, shall be placed on probation.
2. Any undergraduate student (regular or limited) will be placed on probation when he fails to achieve or maintain a cumulative grade point average of "C" (2.0) in (a) all work at this College and (b) all college work attempted.
3. A student shall be placed on probation if reinstated following disqualification.
4. Probationary standing is cleared when a student achieves a cumulative grade point average of "C" (2.0) in all work at this College, and in all college work attempted.
5. Students on probation are required to discuss their status with their advisers before registering for the new term.

B. Disqualification

Disqualification will be preceded by a quarter of probation status, except that a student earning a grade point average of less than "D" (1.0) in any quarter may be disqualified without previous warning. A student is subject to disqualification by action of the appropriate college authority under any one of the following conditions:

1. As a lower division student (less than 90 quarter hours of college work completed), if he falls 22 or more grade points below a 2.0 (C) average on total units attempted or in all units attempted at CSCH.

Grading and Academic Standards

2. As a junior (90-134 quarter hours of college work completed), if he falls 14 or more grade points below a 2.0 (C) average on total units attempted or in all units attempted at CSCH.
3. As a senior (135 or more quarter hours of college work completed), if he falls 9 or more grade points below a 2.0 (C) average on total units attempted or in all units attempted at CSCH.
4. As a probationary student, if he has failed to earn a cumulative grade point average of "C" (2.0) in (a) all college work and (b) all CSCH work at the end of three quarters of residence.
5. As a student who is admitted to the College on probationary status, if he has failed to earn a cumulative grade point average of "C" (2.0) in (a) all college work and (b) all CSCH work at the end of two quarters of residence.

II. POST BACCALAUREATE STUDENTS

At the discretion of appropriate college authorities any post-baccalaureate student is subject to disqualification:

1. If he earns a grade point average of less than "C" (2.0) during any quarter.
2. If he fails to earn a cumulative grade point average of "C" (2.0) or better on (a) all post-baccalaureate work at Cal State Hayward and also (b) all post-baccalaureate college work attempted. A student whose performance in a graduate degree curriculum is judged to be unsatisfactory by authorities of the College may be required to withdraw from all graduate degree curricula offered by the College.

III. REINSTATEMENT

A disqualified student may appeal to the Committee on Academic Appeals. The committee may make exceptions to the above provisions whenever such action seems justified on individual petition. A petition for readmission will be received in the Admissions and Records Office for a five-day period after formal notification of his disqualification has been made. In case of disqualification and denial of appeal, no immediate reinstatement is granted.

GRADUATION REQUIREMENTS

General Education

The general education program is a planned sequence of courses outside the student's field of specialization. These experiences are designed to assure that each student who graduates with a baccalaureate degree possesses, in the major fields of human knowledge, the understandings, skills, and appreciations necessary for informed citizenship and continued growth and effectiveness as an educated person. The flexible design of the program allows the student, in most of the areas of knowledge, to select according to his needs and goals one of several paths which satisfy specific requirements.

For graduation with a baccalaureate degree, each student must complete a minimum of 76 quarter units of general education work. At least 36 units should be completed before attaining upper-division standing. A minimum of 14 units must be completed in the junior and senior years.

Courses that are normally applied in meeting general education requirements are those that are broad in scope. Courses designed specifically to meet the needs of particular majors may not be appropriate for meeting G.E. requirements. For a major in any of the fields listed under general education requirements below, the total program will be interpreted as satisfying the general education requirements in that field provided (1) the major includes sufficient units in excess of 36 B.A. or 54 B.S. units and (2) all specific course requirements are met.

The minimum of 14 units of upper-division courses in general education includes courses¹ in two of the three fields of humanities, social and behavioral science, and science. (Students majoring in one of these fields take courses in the other two.)

Students from California junior colleges who have been in continuous full-time attendance at the junior college are evaluated for graduation from the California State College at Hayward in terms of the catalog in effect at the time they were entering freshmen. This is particularly important for students who entered a California junior college prior to September, 1963 and who have been in continuous regular full-time attendance in the junior college since their date of entrance. Consult the office of the Dean of Instruction if there are any questions about this. Students may not mix general education requirements of different years.

¹ A current list of these courses is obtained from academic advisers, and such courses are indicated on class schedules.

GENERAL EDUCATION

Requirements		Courses Which Meet Requirement	Information
Area	Units		
Oral and Written Expression	6	Option I: Eng 1001 (3) and Sp/Dr 1000 (3) Option II: HWC 1001-2-3 (5-5-5) and Sp/Dr 1000 (3)	
U.S. History		Hist 1101-2 (4-4), Hist 3400 (4), or Pol Sci 1201-2 (4-4)	1. Course credit or examination is required. 2. If requirement is satisfied by history courses, units are counted towards humanities requirement. 3. If requirement is satisfied by political science courses, units are counted towards social science requirement.
Local, State, National Government		Hist 1101-2 (4-4), Pol Sci 1201-2 (4-4), or Pol Sci 3100 (4)	Same as above.
Social Science Includes courses in two of four fields: anthropology, economics, geography, and sociology.	12	Any course in anthropology, economics, geography, political science, sociology, or social science. The sequence, HWC 1001-2-3, satisfies one of the "two of four" and meets 4 units of the social science requirement. The sequence Asia 2001-3-5, satisfies one of the "two of four" and meets 4 units of the social science requirement.	1. Additional units to satisfy this requirement may be taken in anthropology, economics, geography, political science, social science, or sociology. 2. Approved upper division course is required if major is outside this area.

Humanities Includes 5 units in literature and/or philosophy.	16	Any course in history, philosophy (except Phil 1001, 1002), literature, languages, and the history of the arts. Literature and/or philosophy—Any literature and/or philosophy course (except Phil 1001, 1002). The sequence, HWC 1001-2-3, satisfies 8 units of humanities (5 literature and 3 philosophy). The sequence, Asia 2001-3-5, satisfies 5 units of humanities.	1. A maximum of 9 units of foreign languages may be applied to this requirement. 2. Additional units to satisfy the requirement may be taken in history, philosophy, literature, languages, and the history of the arts. 3. Approved upper division course is required if major is outside this area.
Psychology	4	Psych 2000 (4)	
Health and Physical Education	5	Option I: P.E. 1100 (3) and P.E. 1010-11-12 ($\frac{3}{4}$ for each activity chosen) Option II: P.E. 1000 ($\frac{3}{4}$), P.E. 1010-11-12 ($\frac{3}{4}$ for each activity chosen) and H. Ed. 1000 (3)	See page 115.
Creative Arts	3	CA 4800 (4); Art 1110 (4), Art 3311 (4), Art 3511 (3), Art 3211 (3); Music 2111 (3); Music 3500 (1), Sp/Dr 1010 (5), 2310 (4), 4050 (3), Asia 2001-3-5 (4-4-4)	History of the arts courses count in the humanities area.
Science Includes a basic course in biological science and a basic course in physical science.	14	Basic Biological Science—Biol 1000 (5) Basic Physical Science Chem 1100 (5), 1101 (5); Astr. 1000 (5), Geol 2101 (5), Physics 2001 (5), Physics 1000 (4), Physical Science 1340 (5)	Introductory courses in anatomy, physiology, botany and zoology may meet requirement. 1. The remainder of the units in this requirement can be satisfied by any science course. 2. Approved upper division course is required if major is outside this area.

GENERAL EDUCATION—Continued

Requirements	Area	Units	Courses Which Meet Requirement	Information
Mathematics, Logic or Statistics		4-5	Math 1110 (4), 1301 (5), 1302 (4), 1700 (4), 3000 (5) Phil 1001 (4) Stat 1000 (5)	Any course designated as interdisciplinary can be taken by any upper division student in the College. Other courses will be taken outside the division housing the student's major.
Upper Division Courses		6	The list of courses satisfying this requirement is in the hands of advisers. Some lower division courses may apply to this requirement.	
Electives		5-6	Any course outside the major or related field.	
Total		76		

Baccalaureate Degree

For graduation with the bachelor of arts or science degree, a student must:

1. Satisfy the college general education requirements as described in this section of the catalog.
2. Complete a major as described in this catalog.
3. Complete a minimum of 36 quarter units in residence (not extension or Credit by Examination) at this College. At least 18 of these units must be among the last 30 quarter units counted toward the degree. Units earned in summer sessions apply.
4. Complete a minimum of 186-198 quarter units of acceptable college credit, at least 60 quarter units of which must be in courses numbered 3000 or above and taken after attaining upper division standing. Units earned in Summer Session may be substituted for regular session unit requirements.
5. Attain a grade point average of "C" (2.0) or better on:
 - (a) All units attempted at California State College at Hayward.
 - (b) All units in the major.
 - (c) All units attempted, including those accepted by transfer from other colleges and universities.
6. Be in residence during the last two quarters before graduation.

Second Baccalaureate Degree

To qualify for an additional baccalaureate degree at the College, a student must:

1. Complete a minimum of 36 quarter units in residence at the College after fulfilling the requirements for his first degree; at least 18 of these units must be in the subject field of the student's current (second) major.
2. Comply with all graduation requirements of the College, including the General Education requirement.
3. Complete the requirements for a major in a discipline other than that in which a previous degree was earned.
4. Receive the approval of his major adviser, the department chairman of his major field, and the head or dean of the division involved.
5. Maintain at least a 2.0 (C) grade point average for all course work taken while pursuing the additional degree.

Double Major

Though a student may not work toward or receive two degrees concurrently at California State College at Hayward, he may complete the

requirements for a second major and have this fact noted on his transcript (e.g. B.A. in History with a second major in Political Science).

Applying for Graduation

1. Students must complete a Candidate for a Degree Card at the registration for the quarter prior to the quarter in which they intend to graduate. Failure to do so will result in the assessment of a late fee of \$2.00.
2. An Application for Graduation will then be prepared by the Admissions and Records Office and mailed to the student along with a letter of instruction. The student is responsible for following these instructions and returning the completed Application for Graduation to the Admissions and Records Office by the deadline date indicated. The fee for failure to meet the deadline is \$2.00.
3. If a student does not graduate in the term for which he files, he must notify the Admissions and Records Office of the new term in which he plans to graduate. If more than one regular quarter lapses, the student must prepare another Candidate for a Degree Card.
4. Graduating students must reapply for admission to take work at the graduate level.

Graduation With Honors

Any student who has achieved exceptional academic performance and who has maintained an academic average of 3.50 in all college work taken for the degree may be considered for graduation Magna Cum Laude. Any student who has maintained an academic average of 3.75 or better in all college work taken for the degree is eligible for graduation with honors and may be graduated Summa Cum Laude.

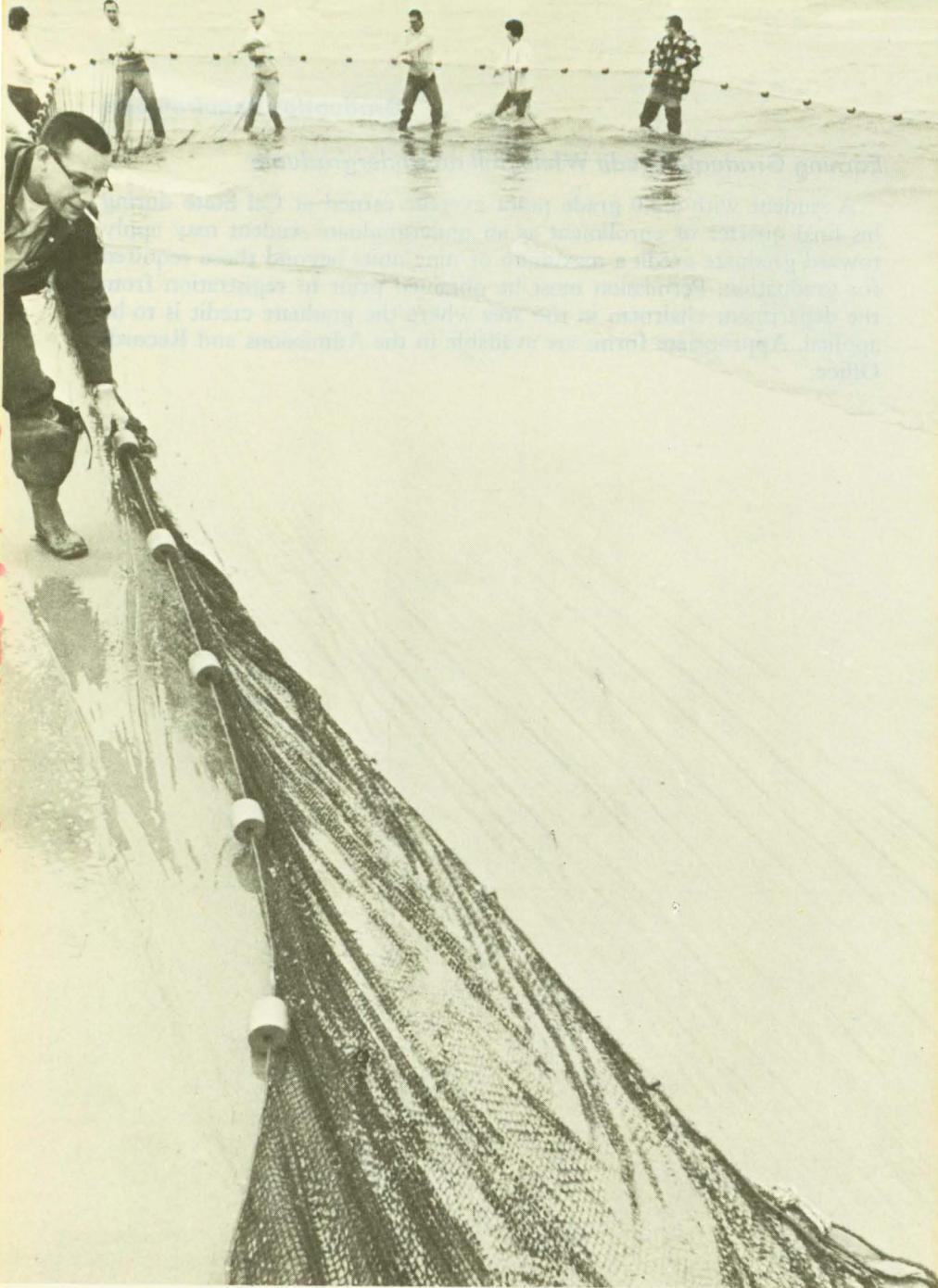
Master's Degree

To earn a master's degree at California State College at Hayward the candidate must:

1. Be admitted to graduate standing.
2. Be admitted to a graduate degree curricula.
3. Be advanced to candidacy.
4. Complete within seven years a minimum of 45 quarter units of approved work, at least 36 of which must be in residence.
5. Attain a grade-point average of 3.0 (grade of B on a five-point scale) or better in all courses taken to satisfy the degree requirements.
6. Complete specific requirements relative to theses, foreign languages, required courses, and grade point averages as specified in departmental sections of this catalog.

Earning Graduate Credit While Still an Undergraduate

A student with a 2.0 grade point average earned at Cal State during his final quarter of enrollment as an undergraduate student may apply toward graduate credit a maximum of nine units beyond those required for graduation. Permission must be obtained prior to registration from the department chairman in the area where the graduate credit is to be applied. Appropriate forms are available in the Admissions and Records Office.



Seeking marine specimens with the help of a seine net at the Moss Landing Marine Laboratories.

PART II

PROGRAMS OF STUDY

CURRICULA AND DEGREES

The College offers programs leading to the baccalaureate degree in 29 majors and the master's degree in ten fields of study. Other programs lead to teaching, pupil personnel services, and supervisory credentials. The quarter system is used.

Baccalaureate Degrees With Major In:

Anthropology (BA)	Music (BA)
Art (BA)	Philosophy (BA)
Biological Science (BS)	Physical Education (BS)
Business Administration (BS)	Physical Science (BS)
Business Education (BS)	Physics (BA)
Chemistry (BA, BS)	Political Science (BA)
Economics (BA)	Psychology (BA)
Early Childhood Education (BS)	Recreation (BS)
English (BA)	Social Science (BA)
French (BA)	Sociology (BA)
Geography (BA)	Spanish (BA)
German (BA)	Speech & Drama (BA)
History (BA)	Special Major (BA) or (BS) *
Language Arts (BA)	Statistics (BS)
Mathematics (BS)	

Master's Degrees With Major In:

Biological Science (MA)	Music (MA)
Education (MS)	Physical Education (MS)
English (MA)	Political Science (MA)
History (MA)—(Not offered 1967-68)	Public Administration (MPA)
Mathematics (MS)	Sociology (MA)

Credential Programs:

- The Standard Teaching Credential with Specialization in Elementary School Teaching.
- The Standard Teaching Credential with Specialization in Secondary School Teaching.
- The Standard Teaching Credential with Specialization in Junior College Teaching.
- The Standard Designated Services Credential with Specialization in Pupil Personnel Services.
- The Standard Supervision Credential.

* An acceptable combination of course work from existing majors, designed to satisfy special objectives. Advised through the Dean of Instruction.

INTERDIVISIONAL OFFERINGS

Asian Cultures, Comparative Studies

Professors: Anil Sarkar, Vincent Shaudys, William Thomas

Associate Professors: Glenn Glasow, Joseph Pugliese, Ved Vatuk

Assistant Professor: Edward J. Jay (chairman)

History of Western Culture

Professors: Robert Larsen, Morton Rosenbaum

Associate Professor: Theodore Roszak (chairman)

Assistant Professors: Ernest J. Carter, Scott Edwards, Frauke Gries, William Hartman, J. Thomas Johnson, Arthur Kimmel, Eugenia Nomikas

Journalism-Mass Communications

Professor: Reuben Mehling (chairman)

Associate Professor: John A. Gothberg

Assistant Professor: H. Westbrook Peterson

Language Arts (a baccalaureate major)

Professors: Robert Martin (chairman), Ruth Carlson, Jack Conner

Associate Professor: John A. Gothberg

Latin American Studies

Professors: Mark Van Aken (chairman), Virgil Salera

Associate Professor: Lejeune Cummins

Assistant Professors: N. Ross Crumrine, Sherman Lewis, Zoila E. Nelken

Social Science (a baccalaureate major)

Professors: C. W. Merrifield (chairman), Hilary Fry, Herman V. Yeager

Associate Professor: G. Philip Curti

Assistant Professors: Robert L. Forbes, John Ziegler

South Asia Studies (a concentration)

Committee is the same as for *Asian Cultures, Comparative Studies*, listed above.

Symposia

Professors: Arnold Biella (acting chairman), H. Duane Heath, Robert Whitney, Herman Yeager

Associate Professors: Clarence E. Smith, John Thompson

Assistant Professors: Jean Harrell, Marianne Smith

ASIAN CULTURES, COMPARATIVE STUDIES

This integrated, interdivisional general education sequence (Asia 2001, 2003, 2005) is one way to meet (1) three units of creative arts, (2) five units of humanities (philosophy-literature), (3) four units of social science, exclusive of code requirements in U.S. history and institutions. The basic general education sequence is Asia 2001, 2003, 2005 for a total of 12 units. Completion of Asia 2001-2003-2005 earns credit for five units of humanities (philosophy-literature), three units of creative

arts and four units of social science, including one course of the "two of four" courses requirement (anthropology, economics, geography, sociology).

For a description of courses in Asian Cultures, see ASIAN CULTURES in Part III of the catalog.

HISTORY OF WESTERN CULTURE

This undergraduate, interdivisional general education sequence is one way to meet (1) three units of written expression, (2) eight units of humanities which are to be assigned as five units of literature and philosophy and three units of humanities electives, and (3) four units of social science exclusive of code requirements in United States History and Institutions.

Completion of HWC 1001 earns credit for three units of humanities, one unit of social science, and one unit of written expression. Completion of HWC 1002 adds credit for three units of humanities, one unit of social science, and one unit of written expression. Completion of HWC 1003 adds two units of humanities, two units of social science, and one unit of written expression. The total of three units of written expression in HWC is the equivalent of English 1001. The four social science units can be counted as one course of the "two of four" courses requirement (anthropology, economics, geography, sociology) in the social science general education requirement.

For a description of courses in the History of Western Culture, see HISTORY OF WESTERN CULTURE in Part III of the catalog.

JOURNALISM-MASS COMMUNICATIONS

PURPOSES

The social science area major with a core-concentration in journalism offers students pre-professional preparation for such fields as the press, industrial publications, public relations and teaching. The program affords opportunities for an organized approach to the role, functions and responsibilities of some of the mass media in the free society. A major in mass communications is now under consideration at the College.

Illustrative Program for the Social Science Area Major

(Core concentration: Journalism-Mass Communications)

	Units		
	Fall	Wint.	Spr.
<i>First Year</i>			
HWC 1001-2-3—History of Western Culture	5	5	5
Biol. 1000—Principles of Biology	5		
Pol. Sci. 1201-2—American Political Institutions	4	4	
Eng. 1002/Sp Dr 1002—Exposition and Rhetoric/Oral and Written Expression	3		

Interdivisional Offerings

	Units		
	Fall	Wint.	Spr.
P.E. 1101—Health and Physical Activity			3
Art 1110—Introduction to Art		3	
P.E. 1010, 1011—Physical Education Activity	½		½
Journ. 2000, 2400, 2410—Intro. to Mass Communications News			
Writing and Reporting/News Feature Writing	4	3	3
	16½	15	16½
Second Year			
Journ. 3700—Development of Mass Media in the U.S.	4		
Asia 2001-3-5—Comparative Studies in Asian Cultures	4	4	4
P.E. 2010-11—Physical Education Activity	½		½
Stat. 1000—Elements of Probability and Statistics	4		
Journ. 3211—College News Lab		3	3
Phys. Sci. 1340—Principles of Physical Science		5	
Psych. 2000—General Psychology		4	
Eng. 2700-01—World Literature I-II	4		4
Pol. Sci. 3520—International Relations			4
	16½	16	15½
Third Year			
Eng. 4040—Modern English Grammar	4		
Anth. 3000—Anthropology in the Modern World	4		
Journ. 3500—Editing		4	
Journ. 4550—Law of Mass Communications			4
Pol. Sci. 3210—Comparative Government		4	
Soc. Sci. 3001—Social Science I	4		
Econ. 3150—Economic History of the U.S.			4
Journ. 3212—Pictorial Journalism	3		
Anth. 3460—Culture and Personality		4	
Econ. 2301—Principles of Economics			4
Pol. Sci. 4241 or 4242—Governments of Asia		4	
Symp. 3801—Junior Symposium			3
	15	16	15
Fourth Year			
Journ. 4700—Public Opinion and the Mass Media	4		
Anth. 4330—Problems of Culture Change	4		
Journ. 4650—Publications Internship		5	
Electives	4	4	7
Soc. Sci. 4000—Senior Seminar			4
Cons. 4380—Conservation of Natural Resources		5	
Symp. 4801—Senior Symposium	3		
Journ. 3211			3
	15	14	14

Interdivisional Offerings

LANGUAGE ARTS MAJOR

A candidate for the degree of Bachelor of Arts with a major in language arts must:

1. Complete 76 units of general education, as prescribed by the College.
2. Complete course work as follows:
 - A. Courses in English: 2070, 3010, 3020, 3603
 - B. Courses in Speech and Drama: 1007, 2110, 2310, 3410, 3510, 3650.
 - C. Either a twelve-unit block in English selected from 3710, 3720, 3730, 3740, 3750, 3760, 4710, 4720, 4730, 4735; or a twelve-unit block in Speech and Drama selected from 3012, 3916, 4050, 4315, 4450, 4650.
 - D. Journ. 3400 or 5200.
 - E. Educ. 5240.
 - F. Sufficient additional courses in either English or Speech and Drama to make up a total of not less than 36 units of upper division work in that department. The additional courses are to be chosen as follows:

English: further courses from "C" above or Eng. 3202, 3303, 3404, 3601, 3602, 3259, 4150, 4836.

Speech and Drama: further courses from "C" above or Sp/Dr 3201, 3202, 3203, 3515, 4350, 4420, 5201, 5202, 5203.

LATIN AMERICAN STUDIES

A baccalaureate major in Latin American Studies is being developed as a possible offering in the fall of 1967. Information about the program can be obtained from Prof. Mark Van Aken, chairman of the Latin American Studies Committee.

For a description of courses in Latin American Studies, see SPANISH in Part III of the catalog.

SOCIAL SCIENCE AREA MAJOR

The social science area major provides a flexible pattern of study of a liberal arts character for such professionally-oriented fields as teaching, pre-law, government service, pre-business, journalism, foreign service and social services, as well as graduate work in selected fields.

Requirements

- I. Complete the 76-unit requirement in general education, which applies for all degrees.

Interdivisional Offerings

- II. Complete the following:
- A. A concentration of 32-36 quarter units, of which 28 must be upper division work in *one* of the following eight fields: anthropology, economics,* geography, history,† journalism-mass communications, political science, psychology or sociology
 - B. 12 quarter hours in each of two supporting fields, selected from history, economics, the social sciences, and psychology
 - C. The remaining courses (normally 8-12 quarter hours), to be distributed among social science, one or more of the fields named in (A) above, or related fields, with the consent of adviser
 - D. Not over five fields within the social sciences may be applied to the major.
 - E. It is recommended that a course in statistics be included in the program; certain core areas may require such a course.
 - F. It is recommended that a senior seminar (Soc. Sci. 4000) be included in the program.
- III. Language requirements for a concentration (core) field are identical with requirements set forth for the baccalaureate major in that field. (For example: a student in the social science area major with a concentration in sociology is bound by the requirements set forth by the Department of Sociology for the baccalaureate major in sociology.)
- IV. The total program of not less than 68 quarter hours, of which at least 40 units must be at the upper division levels, should display careful planning, scholarly balance among related fields, and internal coherence leading toward the student's educational purposes. The pattern of studies may be formalized only with the consent of the designated academic adviser. For purposes of program planning, see the illustrative program in Social Science with a core in journalism-mass communications (under JOURNALISM-MASS COMMUNICATIONS).

Teaching Credentials

When the baccalaureate major in social science is used in preparation for the Standard Teaching Credential (at either secondary or elementary levels), coordination between the student's major program, minor program and the Division of Education is essential. Secondary credential candidates normally select history or political science as the field of concentration for the teaching major. Candidates for the four-year elementary credential normally select history or political science as the field of concentration for the teaching major.

* See adviser for applicable courses in Division of Business and Economics.

† See adviser for applicable courses in Division of Humanities.

Interdivisional Offerings

Graduate students using the social science area major for credential purposes will be held, under advisement, to an appropriate balance of subject fields necessary to teaching. For single-subject teaching minors, see appropriate departmental adviser.

All teaching credential candidates must also complete the requirements for admission to teacher education, and the requirements in professional education, including a course in the teaching of social science (Soc. Sci. 5000).

SOUTH ASIA STUDIES (A CONCENTRATION)

The concentration in South Asia Studies is designed to provide a broad background in the understanding of South Asian cultures (India, Pakistan, and Ceylon) and at the same time provide the student with an opportunity to specialize in a traditional academic discipline. The concentration is *not* a major and will not interfere with the student's major. It involves grouping general education courses, free electives, and courses in the major in such a way as to provide an emphasis on South Asia.

The concentration consists of 38 units, arranged in an integrated pattern, as approved by an adviser in South Asia Studies. The student's adviser must be selected from among the members of the Interdivisional Committee on Asian Studies. The year-long course, "Comparative Studies in Asian Cultures," (Asia 2001-3-5) is the basic course in the program and is, therefore, required of all students in the concentration.

Required Courses

1. *General Course.* Twelve units of Comparative Studies in Asian Cultures (Asia 2001-3-5)
2. *Courses in the Student's Major.* At least four units in courses on South Asia must be taken within the student's major field, but not more than 12 units in the major may be counted toward the concentration. In cases where no courses on South Asia are offered within the student's major field, this requirement may be fulfilled by enrollment in courses in other fields, as listed below, subject to approval of the adviser in Asian Studies.
3. *Other Courses.* The remaining units (14-22) must be taken in at least two fields (one of which must be outside the division of the student's major) chosen from among the following courses:
 - Art 4050. Art of India (5 units)
 - Anth. 3560. Peoples of India
 - Econ. 4110. Economic Development (the economics of underdeveloped countries)
 - Geog. 3560. Geography of South Asia
 - Hist. 4330. History of India and Southeast Asia
 - Hist. 4340. The Moslem World

Interdivisional Offerings

- Music 6185. Music of the Orient
Phil. 3701. Classical Indian Philosophy
Phil. 3702. The Six Schools of Later Indian Philosophy
Phil. 3710. Comparative Themes in East-West Philosophy
Pol. Sci. 4241. Governments of Asia: India and Pakistan

This list of courses will be increased as new courses on South Asia are added to the curriculum.

Two to four units must be represented by a "special projects" course or courses (individual or group study) in which the student undertakes a research paper or other systematic research under the supervision of an appropriate faculty member. This course may be taken outside the student's major or within it. If taken within the major, the units may constitute all or part of the minimum number of four required. If the course represents units in excess of the 12 allowed within the major, it will fulfill the "special project" requirement, but the units will not be added to the total number required in the concentration.

Recommended Courses

In addition to the requirements set forth above, it is strongly recommended that a student complete at least one year of a South Asian language and enroll in as many additional courses from the preceding list as possible.

Summary of the Program

Required Courses:	Units
Asia 2001, 2003, 2005	12
Other Courses:	
In major field	4-12
In fields other than the major	14-22
Total	38

ENGLISH AS A FOREIGN LANGUAGE

These courses are offered without credit to foreign students whose knowledge of English is insufficient to enable them to do satisfactory work in the College. Students will be placed in these courses as the result of their grades in the Test of English as a Foreign Language (TOEFL). These courses will be offered as the need arises and staff members are available.

For a description of the courses, see ENGLISH AS A FOREIGN LANGUAGE in Part III of the catalog.

DIVISION OF BIOLOGICAL AND HEALTH SCIENCES

Departments: Biological Science, Health Sciences

Division Head: Prof. Harvey I. Scudder

Department of Biological Science

Professors: Arthur C. Smith (chairman), Tom C. Groody, H. Duane Heath, Carl J. Lutt

Associate Professors: Howard L. Cogswell, Norman N. Goldstein, Phyllis Gross, Robert A. Main, George H. Peterson, Walter K. Schoenholz

Assistant Professors: Lee R. Armstrong, Robert J. Baelman, John C. Belton, Edward B. Lyke, Harold Magarian, Carol McColm, Samuel E. McGinnis, James W. Nybakken, Dennis R. Parnell, Shirley A. Schwanzara

Instructors: Geraldine Alcamo, Carol E. Lyke.

Department of Health Sciences

Professor: Harvey I. Scudder (chairman)

CURRICULA OFFERED

Master's Degree

Biological Science (M.A.) option in Environmental Biology.

Baccalaureate Degree Major

Biological Science (B.S.)

Minor

Biological Science

PURPOSES

The division offers liberal arts, applied and preprofessional programs to prepare students for graduate study and to prepare teachers for the elementary and secondary schools. A standard program in Medical Technology is offered to qualify students for traineeships in Bay Area hospitals which lead to state certification. Also offered are general education and service courses.

ADVANCED PLACEMENT, BIOLOGICAL SCIENCE

A biology student who has successfully completed an advanced placement course in biology in high school and has earned a score of "4" or "5" on the Advanced Placement Examination * will be granted unit credit for Biol. 1000 (five units). (No letter grade will be assigned or computed in the student's grade point average.)

For procedure in obtaining advanced placement credit, see ADVANCED PLACEMENT, page 42.

* This is prepared and offered by the College Entrance Examination Board.

INDEPENDENT STUDY AND DIRECTED GROUP STUDY

Students with special interests not covered in the courses listed may arrange one to four units of work on an independent study basis by registering for Independent Study. Specific requirements for each independent study program must be worked out with the appropriate faculty member, and approved forms must be filed with the registrar and division office prior to registration. Directed Group Studies, carrying from one to six units of credit, are available at all levels in the several disciplines represented in the division. They will be offered as special circumstances warrant.

MOSS LANDING MARINE LABORATORIES

The California State Colleges operate the Moss Landing Marine Laboratories at Moss Landing, California. This marine facility functions as a seaside extension of the campuses of five cooperating State Colleges (Hayward, San Jose, San Francisco, Sacramento and Fresno), and offers full-time course work in marine biology, oceanography, and other marine sciences. The curriculum is designed to fulfill major requirements for qualified students. Such students can plan their academic schedules to provide for one or more terms at the Moss Landing Marine Laboratories and will receive resident credit. Students may also take one or two all-day courses at Moss Landing to supplement their on-campus schedule.

Interested students should make early application because of limited enrollment. Consult biology advisers for further details, or write to Director, Moss Landing Marine Laboratories, P.O. Box 223, Moss Landing, California 95039.

Additional biology courses offered on the Hayward campus will make extensive use of the Moss Landing Marine Laboratories, especially on Saturdays.

The basic curriculum for the Marine Laboratories is as shown below. Other courses may be offered according to staff availability and student needs. These carry an alternate ML number in the course description. For descriptions of the Moss Landing courses see the appropriate listings as shown in parentheses.

	Units
ML 3100. Vertebrate Natural History (Zool. 3100)	5
ML 3400. General Oceanography (Geol. 3400)	5
ML 4130. Literature of the Marine Sciences (Biol. 4130)	1-2
ML 4200. Marine Botany (Bot. 4200)	4
ML 4300. Marine Invertebrate Zoology (Zool. 4300)	4
ML 4480. Marine Ecology (Biol. 4480)	4
ML 4900. Independent Study—undergraduate	1-4
ML 6900. Independent Study—graduate	1-4
ML 6910. Thesis Research	3-9

BIOLOGICAL SCIENCE MAJOR—B.S.

- I. Complete the 76-unit requirement in general education, which is required for all majors. Students completing this major will satisfy the 19-unit general education requirement in science and mathematics. Study of one or more modern foreign languages is highly recommended.
- II. Complete the following requirements in the major:

Preparation for the Major	Units
General Chemistry (Chem. 1101-2-3)	15
Organic Chemistry (Chem. 2301-2 or 3301-2-3)	8-15
College Mathematics, including Basic Analysis (Math. 1301)	5-10 *
General Physics (Phys. 2001-2-3)	12
<hr/>	
General Biological Science Core	Units
Foundations of Biological Science (Biol. 1201-2-3)	15 †
Genetics (Biol. 3500)	5
General Ecology (Biol. 4461-2)	3-6
Senior Seminar (Biol. 4801-2-3)	3
<hr/>	
	66-81

Additional courses insuring breadth in biological science

1. A course in cellular, general, bacterial, plant, or comparative animal physiology (Biol. 4600, Bot. 4400, Micro. 3200, or Zool. 4600 qualify)	4-5
2. An advanced course with taxonomic emphasis (Biol. 4120; Bot. 4300; Ent. 4230; Zool. 3100, 3301, 3302, 4141, 4142, 4143, 4144 qualify)	3-5
3. An advanced course including field experience with free-living plants or animals as an integral part of the work (Biol. 4220, 4270, 4462; Bot. 4300; Ent. 4210, 4230, 4310, 4410; Nat. St. 3391, 4400; Zool. 3100, 3301, 3302, 4141, 4142, 4143, 4144 qualify)	3-5

10-15

* A course in statistics is strongly recommended for certain options in biological science and for anyone contemplating graduate work.

† Transfer students who have taken an introductory college course in biology, botany or zoology will be placed in the appropriate quarter of Biol. 1201-2-3 to complete their background, or be exempted from it on the basis of a placement examination. More advanced transfer students may be exempt from completion of this course on the basis of advanced courses already completed.

Biological Science

	Units
<i>Approved electives in biological science</i>	
These may include a maximum of nine units of approved courses in related sciences pertinent to the student's area of special interest (biochemistry, paleontology, etc.)	9-32
Total Units	105

III. Prospective candidates for the Secondary Teaching Credential must complete (a) the requirements for admission to teacher education, (b) the professional courses in teacher education which are required, (c) the requirements for a minor, six units of which may be taken in the graduate year, and (d) Sci. Ed. 5100, three units.

Recommended Program for the Biological Science Major

	Units	Fall	Wint.	Spr.
First Year				
Biol. 1201—Foundations of Biological Science	5			
Chem. 1101—General Chemistry	5			
Math. 1301—Basic Analysis, or General Education	5-7			
Biol. 1202—Foundations of Biological Science	6			
Chem. 1102—General Chemistry	5			
General Education	5-7			
Biol. 1203—Foundations of Biological Science	4			
Chem. 1103—General Chemistry	5			
General Education	5-7			
	15-17	16-18	14-16	
Second Year				
Phys. 2001—General Physics	4			
Chem. 2301 or 3301—Organic Chemistry	4-5			
Biol. 3500—Genetics	5			
General Education	3			
Phys. 2002—General Physics	4			
Organic Chemistry and/or General Education Course	4-10			
Applicable Biology Electives	3-10			
Phys. 2003—General Physics	4			
Organic Chemistry and/or General Education Course	4-10			
Applicable Biology Electives	3-10			
	16-17	16-18	16-18	

Biological Science

	Units	Fall	Wint.	Spr.
Third Year				
Applicable Biology Electives	3-6			
General Education and/or Elective	8-11			
Applicable Physiology Course	4-5			
Applicable Biology Electives	8-11			
General Education and/or Elective	5			
Applicable Biology Electives	8-11			
General Education and/or Elective	5-7			
	11-17	17-21	13-18	
Fourth Year				
Applicable Course with Taxonomic Emphasis	3-5			
Biol. 4801—Senior Seminar	1			
Applicable Biology Electives	7			
General Education and/or Elective	3-5			
Biol. 4802—Senior Seminar	1			
Applicable Biology Electives	6-8			
General Education and/or Elective	7-8			
Biol. 4803—Senior Seminar	1			
Applicable Biology Field Course	4-5			
Applicable Biology Elective	3-5			
General Education and/or Elective	6-9			
	14-18	14-17	14-20	

MASTER OF ARTS IN BIOLOGICAL SCIENCE

The College offers the Master of Arts degree in Biological Science with, at present, an option of specialization in the field of Environmental Biology (General Ecology, Vertebrate Ecology, Marine Ecology, Insect Ecology or Plant Ecology). Other options for the master's degree are to be implemented as follows: Physiological Biology, 1968-69; Microbiology and Developmental Biology, 1969-70; and Organismic Biology (including systematics), 1970-71.

Admission to the Program

The M.A. program in biological science is open to graduates of accredited institutions with a baccalaureate degree in any field of the biological sciences who have achieved a grade point average of at least 2.75 in all undergraduate work and an average of 3.00 in biological science courses. Students must make application on forms obtainable from the Department of Biological Science for admission to the master's degree programs in biological science. Normally all applicants should have completed undergraduate courses equivalent to those required of all biological science majors at this College. Transcripts of all previous college work and three letters of reference are required. Students with less than the minimum grade point averages stated above or with other

Biological Science

undergraduate majors may petition the Departmental Graduate Committee for special consideration in admission to the program.

Advancement to Candidacy

1. A student in the master's program in biological science is advanced to candidacy after he has:
 - (a) Completed 12 quarter units of work acceptable in the graduate program with a grade-point average of 3.00 or more, including at least 3 quarter units of graduate-level course work in residence at this College.
 - (b) Made up all undergraduate course deficiencies.
 - (c) Completed with satisfactory score the Graduate Record Examination Advanced Area Test in Biology (or a Qualifying Examination designed to reveal strengths and weaknesses in the subject and administered by the department).
2. A Graduate Advisory Committee must be established for each student desiring advancement to candidacy. In his first quarter, the student should arrange for this through one of the available faculty members in the department, who will serve as chairman and normally also as major professor in guiding the student in graduate work. Two other members of the committee will be chosen by the chairman in consultation with the applicant.

The Advisory Committee reviews the student's undergraduate and graduate record, determines what deficiencies, if any, should be made up, and outlines the program to be followed for completion of the degree requirements. The latter include completion of the foreign language requirement and the Qualifying Examination (unless the committee has accepted as satisfactory the student's score on his Graduate Record Examination).

Curricular Requirements for All Options

The MA programs in biological science provide for the degree to be obtained under either PLAN A (with thesis) or PLAN B (without thesis).

PLAN A

A total of 45 units is required beyond the baccalaureate, with a G.P.A. of 3.00 or better and no grade lower than C in courses included in the program. Specific requirements are as follows:

1. A graduate seminar in biological science at this College, preferably in the student's field of specialization 3 units
2. Thesis research (details available from department office) 9 units

Biological Science

3. Other graduate courses in the area of special option, as approved by the Graduate Advisory Committee 8-30 units
4. Elective graduate courses in areas related to special option, as approved by the Graduate Advisory Committee 3-25 units
(May include a maximum of four units of independent study at the graduate level in biological science; in certain circumstances exceptions may be granted by the Departmental Graduate Committee.)
5. Upper division courses taken as a graduate and approved by the Graduate Advisory Committee as appropriate to the individual student's objective 0-18 units
6. *A satisfactory reading proficiency is required in a modern foreign language acceptable to the Advisory Committee.* This can be demonstrated by either:
 - (a) Transcript of the Admissions and Records Office showing completion of the equivalent of 20 quarter units of college work in an acceptable modern foreign language with an over-all grade of "B" or better, with the last course in that language completed within four years prior to the time of entry into graduate school.
or
 - (b) Written examination at a time and place to be arranged through the Advisory Committee. The examination will consist of the translation, with acceptable accuracy, of approximately 300 words of biological material related to the applicant's specialty (dictionary use permitted).
7. A Comprehensive Examination with both written and oral parts, involving subject matter of general biology and of the candidate's major field.

PLAN B

A total of 53 units is required beyond the baccalaureate, with a G.P.A. of 3.00 or better and no grade lower than C in courses included in the program. Specific requirements are as follows:

1. A graduate seminar in biological science at this College, preferably in the student's field of specialization 3 units
2. A satisfactory paper based on intensive study and review of the scientific literature on a topic approved by the major professor, with or without supplemen-

tary field or laboratory work. Not more than four units in Independent Study for preparation of the paper may be included in the program approved by the Advisory Committee for the degree	4 units
3. Other graduate courses in area of special option, as approved by the Graduate Advisory Committee	12-36 units
4. Elective graduate courses in areas related to special option as approved by the Graduate Advisory Committee	10-34 units
5. Same as for PLAN A.	
6. Same as for PLAN A.	
7. Same as for PLAN A.	

A list of courses satisfying these requirements and other information relevant to each option may be obtained from the Department of Biological Science Office.

Recommendation for a Degree

Upon successful completion of the comprehensive examination and satisfactory work in all courses included in the candidate's program for the degree under PLAN A (including completion of the thesis) or under PLAN B, the Department of Biological Science will recommend that the candidate be granted the degree. College-wide requirements include a stipulation that all units included in a program for a master's degree be completed within seven years, and that at least 36 of the total units must be in residence at this College.

DIVISION OF BUSINESS AND ECONOMICS

Departments: Accounting, Economics, Management Sciences, Marketing

Division Head: Prof. William M. Morgenroth

Department of Accounting

Professor: Ching-wen Kwang

Assistant Professors: Carol Inberg, Serge Matulich

Lecturers: Willard H. Austin, Ruth Z. Bejarano, Johnn T. Miller

Department of Economics

Professors: John W. Ashley, Richard E. Jay, Virgil Salera

Associate Professor: Robert S. Ozaki

Assistant Professors: Christopher Douty, H. Roy Elliott

Department of Management Sciences

Professor: L. Glen Strasburg (chairman)

Assistant Professors: Richard B. Hoffman, John H. Sims

Lecturers: Ian I. Mitroff, Russell J. Weber

Department of Marketing

Professor: Harry E. Allison (chairman)

Assistant Professor: Frank R. Finney

Business Education

Professors: Dale P. Wren, Forrest L. Mayer

Lecturer: John C. Newell

CURRICULA OFFERED

Baccalaureate Degree Majors

Business Administration (B.S.)

Business Education (B.S.)

Economics (B.A.)

Minor

Business Education

PURPOSES

This division offers courses designed (1) to equip individuals with the educational background and analytical tools for careers in business, (2) to provide for the development of teachers of business subjects in the secondary schools, and (3) to educate students in the fields of the professional economist. Analytical emphasis is a dominant characteristic of work in the division.

Business and Economics

BUSINESS ADMINISTRATION MAJOR

Lower Division Requirements

Completion of the following courses is a *condition for admission* to the upper division program of the division, and junior standing is a prerequisite for all courses numbered 3000 or above:

	Units
Acctg. 2251-2252. Principles of Accounting I-II	4-4
Econ. 2301-2302. Principles of Economics I-II	4-4
Bus. 2700. Legal Environment of Business	4
Stat. 1000. Elements of Probability and Statistics	5
Math. 1301. Basic Analysis	5
Math. 1302. Analytical Geometry and Calculus	} Choice
Math. 2100. Finite Mathematics	} of one 4-5
One additional mathematics course selected in consultation with adviser	3-5

Upper Division Requirements

A student's major consists of (1) business core requirements and (2) requirements in one field of concentration (accounting, management sciences, marketing).

(1) BUSINESS CORE REQUIREMENTS

Core requirements include the following courses, and should be taken in the order indicated by all business administration majors:

	Units
Early Junior Year	
Econ. 3001. Micro-Economic Analysis I	4
Acctg. 3200. Managerial Accounting	4
Bus. 3100. Intermediate Quantitative Analysis	4
Late Junior Year	
Econ. 3005. Macro-Economic Analysis	4
Mktg. 3400. Macro-Marketing	4
Mgmt. 3600. Principles of Management	4
Mgmt. 3680. Industrial Relations	4
Senior Year	
Mgmt. 4300. Financial Management	4
Bus. 4500. Business & Public Policy	4
Bus. 4700. Multinational Business	4
Total Business Core Requirements	40

Business and Economics

(2) FIELDS OF CONCENTRATION REQUIREMENTS

	Units
Accounting	
Acctg. 3211-12-13. Intermediate Accounting	4-4-4
Acctg. 4231-32. Cost Accounting	4-4
Acctg. 4233. Advanced Cost Accounting	} Choice
Acctg. 4240. Advanced Financial Accounting	} of one 4
Total	24

Management Sciences (Choose one concentration.)

(a) Production and Operations Management	4
Mgmt. 3620. Introduction to Production Operations	4
Mgmt. 3640. Production Systems	4
Mgmt. 3690. Techniques of Operations Research	4
Mgmt. 4630. Organization Theory	4
Mgmt. 4650. Planning & Control Theory	4

Total	20
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(b) Personnel and Industrial Relations

Mgmt. 3611-12. Personnel Management & Human Relations I-II	4-4
Psych. 3710. Personnel Selection	4
Mgmt. 4630. Organization Theory	4
Mgmt. 4650. Planning & Control Theory	4

Total	20
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Marketing

Mktg. 3401. Micro-Marketing	4
Mktg. 3410. Advertising	4
Mktg. 3420. Sales Analysis & Sales Management	} Choice
Mktg. 3430. Problems & Policies of Middlemen	} of two 4-4
Mktg. 4440. Quantitative Methods in Marketing	4
Mktg. 4450. Marketing Seminar	4

Total	16
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Illustrative Program, Business Administration Major

Freshman Year

Stat. 1000—Elements of Probability and Statistics	
Math. 1301—Basic Analysis	
Math. 1302—Analytical Geometry and Calculus, or Math. 2100—Finite Mathematics	
One additional mathematics course selected in consultation with adviser	
Eng. 1001-1002—Expository Writing, Exposition and Rhetoric	
Hist. 1101-1102—History of the United States	

Business and Economics

Psych. 2000—General Psychology
Biol. 1000—Principles of Biology

Sophomore Year

Acctg. 2251-2252—Principles of Accounting I-II
Econ. 2301-2302—Principles of Economics I-II
Bus. 2700—Legal Environment of Business
—General Education courses

Junior Year

Acctg. 3200—Managerial Accounting
Econ. 3001—Micro-Economic Analysis I
Bus. 3100—Intermediate Quantitative Analysis
Econ. 3005—Macro-Economic Analysis
Mktg. 3400—Macro-Marketing
Mgmt. 3600—Principles of Management
Mgmt. 3680—Industrial Relations
Jr. Sym. 3801—Junior Symposium
—One or two concentration courses
—General Education courses

Senior Year

Mgmt. 4300—Financial Management
Bus. 4500—Business & Public Policy
Bus. 4700—Multinational Business
Sr. Sym. 4801—Senior Symposium
—Balance of concentration courses
—Balance of General Education courses
—Electives

BUSINESS EDUCATION MAJOR

Lower Division Requirements

These are identical to the lower division requirements for the business administration major. (See business administration major.) In addition, students must demonstrate competency in basic typing and, for the office management emphasis, shorthand. Students without previous course work or competency in these fields are advised to meet these requirements in a junior college.

Upper Division Requirements

A major in business education consists of (1) business core requirements, (2) area requirements, and (3) business education requirements.

(1) BUSINESS CORE REQUIREMENTS

These are identical to business core requirements for the business administration major. (See business administration major.)

(2) AREA REQUIREMENTS

Complete 12 units, in addition to the business core requirements, in two of these areas: (a) accounting, (b) economics, (c) marketing, and

Business and Economics

(d) office management. Either accounting or office management must be one of the areas, and at least eight units must be in one area.

(3) BUSINESS EDUCATION REQUIREMENTS	Units
Bus. Ed. 3800—Business Office Practices	4
Bus. 3850—Data Processing	4

Post Baccalaureate Requirements for a Secondary Credential

Bus. Ed. 5800—Teaching Business in Secondary Schools	3
Bus. Ed. 5810—Principles of High School Business and Distributive Education	4

A standard credential for secondary teaching with a major in business education requires 45 quarter units of credit beyond the baccalaureate degree. The sequence of professional education courses including student teaching should be undertaken only with the approval of an adviser in the Division of Education. Transfer students may be required to complete additional content-courses in business and/or economics. A teaching minor in an academic subject normally taught in public schools must be developed in consultation with an adviser in the "minor" area and in the Division of Education.

BUSINESS EDUCATION MINOR

A teaching minor in business education consists of at least 30 quarter units of course work in business. Students should complete Acctg. 2251-2252, Mktg. 3400, Bus. Ed. 3800, and additional electives from upper division business courses to complete 30 units. Upper division courses in the minor may be taken during the graduate year. Bus. Ed. 5800, Teaching Business in Secondary Schools (3 units), is required beyond the 30 units for a minor.

ECONOMICS MAJOR

Lower Division Requirements

These are identical to the lower division requirements for the business administration major. (See business administration major.)

Upper Division Requirements

Complete the following 20 units during the junior year:

	Units
Econ. 3001-2. Micro-Economic Analysis I-II	8
Econ. 3005. Macro-Economic Analysis	4
Econ. 3310. Money and Banking	4
Bus. 3100. Intermediate Quantitative Analysis	4
Total	20

PURPOSES

This division currently offers instruction in art, music, and speech-drama in order to provide (1) baccalaureate majors for persons with general vocational and avocational interests in the arts, (2) training for the teaching credentials in art, music, and speech arts, (3) methods and basic skill courses which meet the requirements of the various general teaching credentials, (4) courses designed to broaden the general education pattern through increased knowledge and understanding of the arts, and (5) graduate work in music leading to the M.A. degree.

ART MAJOR**Requirements for the Four-Year Baccalaureate Program**

- I. Complete the 76-unit requirement in general education.
- II. Complete the following requirements in this recommended sequence of art courses, totaling 60 units.

Lower Division

	<i>Units</i>
Art 1010. The Idea of Art History	5
Art 1110. Art I	4
Art 1120. Art II	4
Art 1130. Art III	4
Art 2141. Drawing	3
Art 2142. Drawing	3
Total	23

Upper Division**Concentration in (A) Painting/Graphics or (B) Sculpture/Ceramics****(A) Painting/Graphics**

	<i>Units</i>
Art 3211. Painting	3
Art 3212. Painting	3
Art 3213. Painting	5
Art 4611. Printmaking	3
Art History (two courses)	10
3 units each in Speech/Drama and Music	6
Art Electives	7
Total	37

(B) Sculpture/Ceramics

	<i>Units</i>
Art 3311. Introduction to Sculpture	4
Art 4531. Sculpture	5
Art 4532. Sculpture	3
Art 3511. Ceramics	3
Art History (two courses)	10
Three units each in Sp/Drama and Music	6
Art Electives	6
Total	37

Art majors are required to submit a portfolio during their junior year to a committee of art faculty for evaluation of progress.

- III. For credential purposes concerning the major and minor in art the teaching candidates must complete (a) the requirements for admission to teacher education (see Division of Education section); (b) the upper division professional courses in teacher education, including Art 5350 (see Division of Education section), and (c) the requirements for a teaching minor (see minor adviser). Approval of education adviser and advisers for major and minor study is necessary.

ART MINOR**Requirements**

See Art adviser for approval.

Requirements include a minimum of 30 units in courses selected in general areas of art. Of these, 20 units must be from the six required lower division courses listed above for the art major. The remaining 10 units must be selected from upper division art courses.

MUSIC MAJOR**Requirements**

- I. Complete the 76-unit requirement in general education. It is recommended that all music majors meet the creative arts requirement in the general education program by electing courses in art and/or speech-drama. Study of a foreign language is recommended for non-credential candidates.
- II. Complete the following requirements in the major:

Lower Division

	<i>Units</i>
Theory, History, and Literature	9
Mus. 1001, 1002, 1003—Music Fundamentals	9
Mus. 2021, 2022, 2023—Literature and Materials I, II, III	9
Mus. 2112—Survey of Music Literature	3

	Units
Performance	
Mus. 3210 through 3260—Applied Music (major performance media)	6
Mus. 3500—Music Performance Activities	6
* Mus. 2211, 2212, 2213—Intermediate Class Piano	3
	<hr/> 36
Upper Division	
Theory, History, and Literature	
Mus. 3021, 3022, 3023—Literature and Materials, IV, V, VI	9
Mus. 3050—Instrumental and Vocal Scoring	3
Mus. 4021, 4022—Compositional Techniques and Laboratory	6
Performance	
Mus. 3210 through 3260—Applied Music (major performance media)	6
Mus. 3500—Music Performance Activities	6
† Electives	9
	<hr/> 39

Special Requirements of the Department of Music

- I. Each music major must declare, with the approval of his adviser, a principal performance medium (piano, organ, voice, or orchestral or band instrument) and carry on continuous study of this instrument until reaching a recital standard of excellence. In lieu of this requirement, and with the approval of the department chairman, a student may choose to achieve a high level of performance skill in two or more of these media as measured by his ability to perform acceptably upon each in major activity or small ensemble groups.
- II. Piano majors must perform satisfactorily as accompanists as well as soloists.
- III. Music majors are expected to appear each year in regularly scheduled student recitals as determined by the department. Seniors must appear in a satisfactory joint-recital prior to approval for graduation. All majors are expected to attend student recitals.
- IV. Proficiency tests in piano, voice, sight singing, ear training, theory, and major instrument will be given to all music majors who

* May be met by examination.

† Electives are for non-credential students only. Secondary credential students must follow program outlined in following section.

transfer to California State College at Hayward. Such tests will be given to Cal State Hayward students before they may qualify for upper division courses. If these examinations reveal deficiencies, additional work will be required before upper division status will be confirmed. Credential students must show proficiency in piano, voice, and basic instruments before they begin directed teaching.

- V. Group performance activities are considered to be an integral part of a student's musical growth. Each music major is required to be in one major activity each quarter. In addition it is expected that he will also participate in selected minor activities and that he will plan his activity program to include some experiences outside his major performance field (instrumental majors in vocal groups, and vocal majors in instrumental groups). No more than 12 units in any one activity will count toward graduation.
- VI. Upper division transfer students who have completed most of their music major in other institutions and graduate students are expected to take certain minimal courses at Cal State in each of the principal areas of theory, history and literature, and performance.
- VII. Music majors are expected to plan their activities to include frequent attendance at professional concerts given in the Bay Area.

Teaching Credential Music Major

The Teaching Credential program requires a year of post-graduate study. Candidates must (a) complete the requirements for admission to teacher education (see Division of Education section) and (b) complete, in addition to the requirements for the baccalaureate degree major, the following program:*

	Units
Lower Division	
† Mus. 2231, 2232, 2241, 2242—Basic Orchestral Instruments (strings and woodwinds recommended)	6
Mus. 2221, 2222, 2223—Basic Voice	3
	<hr/> 9

* Teaching credential candidates may elect a teaching minor in addition to the major.

† Students who have had broad secondary school performance background will be able to meet basic performance requirements without taking all of the basic courses. Majors on a particular instrument will not need additional basic course work on that instrument.

Music**Upper Division**

	<i>Units</i>
† Mus. 2251, 2252, 2261—Basic Orchestral Instruments (brass and percussion)	3
The selection of specific courses will depend upon the work on basic instruments taken in the lower division	6
Mus. 3391, 3392—Conducting	1
Mus. 3580—Music Performance Laboratory (3 quarters minimum)	10

Post Graduate Year

Music content course electives recommended are:

Mus. 5005—Counterpoint	
Mus. 5110—Music Literature for Children	
Mus. 5161—History of the Symphony	
Mus. 5391, 5392—Advanced Conducting (Choral I, Instrumental II)	
Mus. 6011, 6012—Analysis of Musical Styles (I, II)	
Mus. 6021—Advanced Composition	
Mus. 6121, 6122—Vocal Literature	
Mus. 6171—History of Chamber Music	

In addition to the nine units of content courses, graduate music credential majors must take either Mus. 5330—Music in the Elementary School or Music 5335—Music in the Secondary School.

For complete details of the Teaching Credential fifth year program, see DIVISION OF EDUCATION.

**Recommended Sequence of Music Courses for
Four-year Baccalaureate Program**

	<i>Units</i>		
	<i>Fall</i>	<i>Wint.</i>	<i>Spr.</i>
First Year			
Music Fundamentals, Mus. 1001	3		
† Survey of Music Literature, Mus. 2112	3		
* Basic Orchestral Instruments—String, Mus. 2231	1		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
Intermediate Class Piano, Mus. 2211	1		
Music Fundamentals, Mus. 1002	3		
* Basic Orchestral Instruments—String, Mus. 2232	1		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
Intermediate Class Piano, Mus. 2212	1		
Music Fundamentals, Mus. 1003	3		
* Basic Orchestral Instruments—String, Mus. 2231	1		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
Intermediate Class Piano, Mus. 2213	1		

* Required only of credential candidates.

† May be taken any quarter of freshman year.

‡ Students who have had broad secondary school performance background will be able to meet basic performance requirements without taking all of the basic courses. Majors on a particular instrument will not need additional basic course work on that instrument.

Music**Second Year**

	<i>Units</i>		
	<i>Fall</i>	<i>Wint.</i>	<i>Spr.</i>
Literature and Materials I, Mus. 2021	3		
* Basic Orchestral Instruments—Woodwinds, Mus. 2241	1		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
* Basic Voice, Mus. 2221	1		
Literature and Materials II, Mus. 2022	3		
* Basic Orchestral Instruments—Woodwinds, Mus. 2242	1		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
* Basic Voice, Mus. 2222	1		
Literature and Materials, Mus. 2023	3		
* Basic Orchestral Instruments—Woodwinds, Mus. 2241	1		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
* Basic Voice, Mus. 2223	1		

Third Year

Literature and Materials IV, Mus. 3021	3		
* Basic Orchestral Instruments—Brass, Mus. 2251	1		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
Literature and Materials V, Mus. 3022	3		
* Basic Orchestral Instruments—Brass, Mus. 2252	1		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
Literature and Materials VI, Mus. 3023	3		
Instrumental and Vocal Scoring, Mus. 3050	3		
* Basic Orchestral Instruments—Percussion, Mus. 2261	1		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		

Fourth Year

Compositional Techniques and Laboratory, Mus. 4021	3		
* Conducting, Mus. 3391	3		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
* Music Performance Laboratory, Mus. 3580	0		
† Music Electives	3		
Compositional Techniques and Laboratory, Mus. 4022	3		
* Conducting, Mus. 3392	3		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
* Music Performance Laboratory, Mus. 3580	0		
† Music Electives	3		
Applied Music—Major Performance Area, Mus. 3210 to 3260	1		
Performance Activities, Mus. 3500	1		
* Music Performance Laboratory, Mus. 3580	1		
† Music Electives	3		

* Required only of credential candidates.

† Required only of non-credential music majors.

Standard Teaching Credential Music Minor

Candidates for either the Elementary or Secondary Teaching Credential may select music as a teaching minor after obtaining the approval of a music department adviser. The following program of courses is recommended:

	<i>Units</i>
Music Literature or History	3-4
Selected from Mus. 2111, 2112, 5110, 5131, 5161, or 4800	
Music Theory	6
Any combination of music theory courses for which the student is eligible	
Conducting (Mus. 3391)	3
¹ Piano, voice, add basic orchestral instruments	9
² Music Activities	9
³ Music electives, with approval of adviser	9
⁴ Major instrument or voice (no unit credit)	9
	30-31

Post Graduate Requirements

All teaching candidates with a music minor should note the following: Elementary credential music minors must take the following methods course:

Mus. 5330—Music in the Elementary School 3 units

Secondary credential music minors must take the following methods course:

Mus. 5335—Music in the Secondary School 3 units

Secondary Credential candidates must also take a minimum of nine quarter units in either the major or minor (or any combination of the major and minor) of appropriate graduate level courses during the post-baccalaureate year. It is recommended that music minors take, as partial fulfillment of this requirement, one course such as:

Mus. 5110—Music Literature for Children

Mus. 5131—History of Keyboard Music

Mus. 5161—History of the Symphony

Mus. 6171—History of Chamber Music

¹ Distribution of these nine units will be determined by adviser after consideration of student's major instrument and his teaching objective.

² All music minors are expected to enroll in one music activity each quarter. Minors are limited to a maximum of three units of individual applied music instruction. Additional units must be approved by the appropriate instructor and the department chairman.

³ With approval of the adviser.

⁴ Music minors must show proficiency on some major instrument (or voice) as determined by a faculty jury.

THE MASTER OF ARTS DEGREE IN MUSIC

Objectives of This Curriculum

To provide an opportunity for advanced study:

- (1) To school and college music teachers who wish to increase their professional effectiveness.
- (2) To those students who plan to continue their graduate study in institutions which grant doctoral degrees.

Requirements for Admission to Program

- (1) Meet general college requirements for graduate standing, including the Graduate Record Examination.
- (2) Possess a bachelor's degree or equivalent with a major in music.

Advancement to Candidacy

- (1) Satisfactory performance in following areas as determined by graduate level music proficiency tests:
 - (a) Jury audition on major instrument or voice with recital standard of excellence (for performance concentration) *or* Performance skill on at least two instruments (voice included) at a level satisfactory for participation in major ensemble groups (for music education, history-literature, or theory concentration).
 - (b) Basic piano proficiency which provides functional use of the keyboard for accompanying, sight reading, and application to needs in areas of music theory and literature.
 - (c) Sight singing and ear training.
- (2) Satisfactory understanding in fields of music literature and theory, and the satisfactory completion of the Graduate Record Examination in music.
- (3) Completion of at least 15 quarter units of residence work in music beyond the baccalaureate degree, with a minimum 3.0 grade point average.

Requirements for the Degree

- (1) Minimum of 45 quarter units of approved upper division and graduate courses. Upper division courses must be post-baccalaureate. Eighteen units must be at the 6000 level. For candidates who select the performance concentration, 6-9 units of advanced applied music (Music 3210 through 3260) may be applied toward meeting this 6000 level requirement.
- (2) 3.0 grade point average in major field in all courses included for degree credit.

- (3) Minimum of 15 quarter units in one of the following areas of concentration: performance, theory, history-literature, music education.
- (4) Completion of a thesis in one of the following forms:
- Standard research type.
 - Master's recital accompanied by an analysis or historical study of the music performed.
 - Original composition in one of the large forms, along with an analysis of the work.
- (5) Both written and oral examinations will be given when course work has been completed.
- (6) Course area requirements
- | | <i>Units</i> |
|---|--------------|
| Music theory | 6 |
| Music history/literature | 6 |
| Music education (including conducting and interpretation) | 6 |
| Concentration (theory, history/literature, performance, music education) | 9 |
| Electives (from departments other than music and following an organized pattern as approved by adviser) | 9 |
| Introduction to graduate studies | 3 |
| Thesis | 6 |
| Ensemble participation (no unit credits) | — |

45

SPEECH-DRAMA MAJOR

The baccalaureate major in speech and drama is offered to the student interested in pursuing one or more of the following goals: (1) the achievement of a liberal education with special emphasis on understanding of and creative activity in speech and drama; (2) experience, knowledge and training in areas important to careers in business and industry; (3) training for teacher credentials in speech and drama, interdivisional major program for the *Elementary Education Credential*; (4) preprofessional training for those interested in careers in the theater and its allied arts, in law or the ministry; (5) preparation for graduate study in speech or drama. The student majors in speech and drama, with emphasis in either aspect of the field, but all students take courses in both.

Requirements are as follows:

- Complete the 76-unit requirement in general education. Speech/drama majors should elect courses in music, art, foreign languages, English, history, and anthropology.

II. Complete the following requirements in the major:

Lower Division

Rhetoric and Public Address, Fundamentals of Speech, Introduction to Theatre, Interpretive Reading, Argumentation and Debate.

Upper Division

Minimum of thirty and maximum of fifty units in upper division speech and drama courses, to be approved by departmental adviser. Various combinations of courses in the upper division may be taken so long as prerequisites are observed, though the student is advised to choose either a Rhetoric and Public Address or Drama emphasis.

- III. Candidates for the *Teaching Credential in Elementary Education* may take the speech/drama major, consisting of at least 36 upper division units in the department. A recommended program for the elementary credential candidate is found in this section. This candidate must also: (a) complete requirements for admission to teacher education (see Division of Education section); (b) take Sp/Dr 4355, Teaching of Speech and Drama; (c) complete the requirements for a teaching minor; and (d) if a transfer candidate, take at least one course (more by advisement) in the department.

- IV. Candidates for the *Teaching Credential in Secondary Education* must (a) take at least 36 units of upper division work in *EITHER General Speech* (called "Rhetoric and Public Address" by the State Credentials Office) *OR* in *Drama*; (b) complete the requirements for admission to teacher education (see Division of Education section); (c) take Sp/Dr 4355, Teaching of Speech and Drama; (d) complete the requirements for a teaching minor, preferably English or social science; (e) if transfer candidates, take at least one course (more by advisement) in either speech or drama at Cal State Hayward.

Recommended Programs for the Speech-Drama Major

SPEECH-DRAMA PROGRAM: APPROVED FOR ELEMENTARY CREDENTIAL

	<i>Units</i>	<i>Fall</i>	<i>Wint.</i>	<i>Spr.</i>
<i>First Year</i>				
Rhetoric and Public Address, 1000	3			
Fundamentals of Speech, 1007		3		
Introduction to Theatre, 1010			5	
<i>Second Year</i>				
Fundamentals of Play Production, 2110			5	
Interpretative Reading, 2310			4	
Argumentation and Debate, 2411			5	

Speech and Drama

	Units		
	Fall	Wint.	Spr.

Third Year

Introduction to Radio and Television, 3310	4		
Creative Dramatics, 3650	3		
Voice in Speech Improvement, 3410		4	
Elective in Speech/Drama	4		

Fourth Year

Public and Group Discussion, 3510	5		
Speech Development in the Classroom, 4610	3		
Children's Theatre, 4650		3	
Elective in Speech/Drama	4		

THEATRE EMPHASIS: APPROVED FOR SECONDARY CREDENTIAL

First Year

Rhetoric and Public Address, 1000	3		
Fundamentals of Speech, 1007		3	
Introduction to Theatre, 1010		5	

Second Year

Interpretative Reading, 2310	4		
Argumentation and Debate, 2411		5	
Acting, 2012	4		

Third Year

Fundamentals of Play Production, 2110	5		
Creative Dramatics, 3650		3	
Development of Dramatic Art I, II, III; 3201, 3202, 3203	3	3	3

Fourth Year

Advanced Acting, 4012		4	
Stagecraft, 3916	3		
Play Directing, 4315		4	
Introduction to Radio and Television, 3310	4		
Scene Design, 4420		4	
Speech/Drama Workshop, 4180	2	2	2

RHETORIC AND PUBLIC ADDRESS EMPHASIS: APPROVED FOR SECONDARY CREDENTIAL

First Year

Rhetoric and Public Address, 1000	3		
Fundamentals of Speech, 1007		3	
Introduction to Theatre, 1010		5	

Second Year

Interpretative Reading, 2310	4		
Argumentation and Debate, 2411		5	
Mass Media of Communication, 2210		5	

Speech and Drama

	Units		
	Fall	Wint.	Spr.

Third Year

Contemporary Public Address, 4450			4
Persuasion, 3515			4
Business and Professional Speech, 3412			4
Public and Group Discussion, 3510		5	
Speech/Drama Workshop, 4180	2	2	2

Fourth Year

Introduction to Radio and Television, 3310		4	
Advanced Public Speaking, 3510			4
History of Rhetoric I, II, III, 5201, 5202, 5303	4	4	4
Speech/Drama Workshop, 4180	2		

SPEECH-DRAMA MINOR

- I. *Elementary credential candidates:* Enroll in a program leading to a minor in speech and drama. Such a program will include a minimum of 30 units in both speech and drama, selected by advisement with a department adviser.
- II. *Secondary credential candidates:* Enroll in a program leading to a minor in speech or drama, either but not both. Students may major in speech and minor in drama or vice versa. Such a program will include a minimum of 30 units of approved courses in either speech or drama.

DIVISION OF EDUCATION

Departments: Teacher Education, Counseling and Pupil Personnel, Health and Physical Education, Recreation, and School Administration and Supervision

Division Head: Prof. Lewie W. Burnett

Department of Teacher Education

Professors: Gerald W. Brown (chairman), Ruth K. Carlson, Gordon F. Davies, Robert O. Hall, John D. Hancock, Fred F. Harclerode, Albert R. Lepore, Jack N. Marsh, Edward G. Olsen, Claire Pederson, Mildred R. Sabath, Sherwin G. Swarthout, Charles W. Worland, Herman V. Yeager, Harry Zeitlin

Associate Professors: Dale Hendrickson, Tudor Jones, William E. Jones, Ruth L. Martin, Esther P. Railton, Joan Seavey, Roger J. Schulte, John M. Stevens, Harvey R. Wall, Eugene D. Whitehorn

Assistant Professors: Evelyn H. Belgum, Pauline Brown, Robert C. Bush, Robert L. Forbes, Helen W. Frederick, Jane Ann Hebler, Warren R. Lett, Victoria C. Mui, Thalia Silverman, James E. Spencer, Mary K. Weir

Department of Counseling and Pupil Personnel

Professors: Robert M. White (chairman), James R. Barclay, Thomas A. Sohldahl

Associate Professors: Anne F. Bradfield, Donald J. Brown, Robert C. Williams

Assistant Professors: Calvin D. Catterall, Dwight L. Goodwin, Frank F. Groves, Laurence J. Horowitz, Douglas G. Sprague

Instructor: Dorlesa B. Ewing

Department of Health and Physical Education

Professors: Robert W. Morford (chairman), James L. Comer, Carl J. Lutt, Neils P. Neilson, William G. Vandenburg, Dale P. Wren

Associate Professors: Margery M. Martin, Alfred Mathews, Richard S. Rivenes, Edward J. Wright

Assistant Professors: Glen Albaugh, Phyllis J. Brock, Keith D. Calkins, Gay E. Cheney, Lester R. Davis, Herbert M. Graw, Loretta J. Hergert, Don R. Hudson, Arlene H. Smith, Adele R. Wenig

Instructors: Ronald F. Bull, James M. Quinn

Department of Recreation

Professor: Edward W. Niepeth (chairman)

Assistant Professor: Morrie Davidson

Department of School Administration and Supervision

Professors: Jon S. Peters (chairman and acting division head), Fred F. Harclerode, Arnold E. Joyal, Walter S. McHugh, William C. Shriner

Associate Professors: T. James Ahern, C. Esmer Clark

Lecturer: Alexander R. Smith

CURRICULA OFFERED *

Graduate Degrees

Master of Science in Education

Areas of Specialization: School Administration and Supervision of Reading; Counseling and Pupil Personnel

Master of Science in Physical Education

Baccalaureate Degree Majors

Early Childhood Education (B.S.)

Physical Education (B.S.)

Recreation (B.S.)

Minors

Physical Education (B.S.)

Recreation (B.S.)

PURPOSES

The Division of Education is concerned with the professional education of teachers and with programs for specialists in selected areas. Programs prepare students for elementary school teaching, for secondary school teaching, for junior college teaching, for recreation leadership, and for specialized work in health and physical education, pupil personnel services, and supervision and school administration.

SPECIAL PROGRAMS

New and experimental programs are being planned, some of which may develop after this catalog has gone to press.

Currently under way is *Operation Fair Chance*, a three-year experiment in preparing candidates to work with students from urban poverty homes. Candidates who successfully complete the OFC program receive standard elementary or secondary teaching credentials. For further information, inquire in the Division of Education Office.

CREDENTIAL PROGRAMS

A program leading to the Standard Teaching Credential with Specialization in Elementary School Teaching.

A program leading to the Standard Teaching Credential with Specialization in Secondary School Teaching.

A program leading to the Standard Teaching Credential with Specialization in Junior College Teaching.

A program leading to the Standard Designated Services Credential with a Specialization in Pupil Personnel Services.

A program leading to the Standard Supervision Credential.

* Descriptions of programs in this division are given by department.

THE DEPARTMENT OF TEACHER EDUCATION

The Department of Teacher Education offers graduate programs and graduate-level courses primarily concerned with the Standard Teaching Credentials and the in-service education of teachers.

Students who plan to apply for admission to graduate teacher education programs are encouraged to acquire experience with children and youth by participating in community agencies, youth-serving organizations, or in camp counseling during the years while they are completing work leading to the bachelor's degree. They are also encouraged to consult with an adviser in the Department of Teacher Education and participate in the co-curricular activities in the department and its student organizations.

The department sponsors a student club (Student California Teachers Association) for students who wish to become acquainted with professional issues and become involved with the department during their undergraduate years as well as during their graduate year.

The professional courses in the program are taken at the graduate level. Undergraduates who intend to apply for admission to a credential program following their graduation will be assigned an education adviser to assist in program planning.

ADMISSION TO THE TEACHER EDUCATION PROGRAM

There are four program-admission steps for graduate students working toward the Standard Elementary and Secondary Teaching Credentials: (1) admission to course work, (2) preliminary candidacy, (3) full candidacy, and (4) recommendation for the credential.

(1) *Admission to course work*

Students of senior standing who intend to apply for candidacy in the Elementary Credential program may enroll in Educ. 4021 and the appropriate public school laboratory.

Students admitted by the College on graduate standing, but who have not been admitted to preliminary candidacy in one of the credential programs, may be admitted to selected course work in professional education but only upon approval of their education adviser.

(2) *Admission to preliminary candidacy*

Students admitted by the College to graduate standing are eligible to apply for preliminary candidacy standing. Preliminary candidacy may be attained only after these steps have been completed:

- Application for admission to the College on graduate standing.
- Application for admission to professional course work and preliminary candidacy, filed with the Credentials Office of the

Department of Teacher Education along with transcripts of all college work.

Deadlines for Filing of Application and Transcripts in Credentials Office

For preliminary candidacy in Summer Quarter, 1967: June 17, 1967

For preliminary candidacy in Fall Quarter, 1967: September 9, 1967

For preliminary candidacy in Spring Quarter, 1968: March 3, 1968

- Preliminary programming interview with education adviser (and, for secondary and junior college credential candidates, with an adviser in the teaching major and teaching minor departments). These interviews can be arranged through the department office.
- Successful completion of screening examination. Check in the department office for date.
- Achieving a "C" average throughout previous college work.

(3) *Admission to full candidacy*

a. Full candidacy constitutes acceptance into Phase I of student teaching. Approval is given only by the College Credentials Board. Students are eligible to apply for full candidacy following preliminary candidacy, during which they must have completed successfully a minimum of 12 units of work at the College, including a field laboratory experience.

Deadlines for applications for student teaching phase I or II (full candidacy):

For Fall Quarter 1967: June 30, 1967

For Winter Quarter 1968: November 22, 1967

For Spring Quarter 1968: February 16, 1968

Secondary and junior college candidates must receive the approval of their appropriate teaching major and teaching minor departments, in addition to their education adviser, before admission to Phase I of student teaching.

Moreover, a candidate must: demonstrate adequate intellectual ability; give evidence of breadth of aptitudes and personal characteristics appropriate to teaching as a profession and for adjustment to public school conditions; rate satisfactorily on a health examination.

- The candidate must have earned at least a "C" average to be eligible for full candidacy, and he must maintain that average in both his overall college and professional work in order to retain full candidacy status. He must also maintain a high level

Education

- of performance in the skills of writing, spelling, speaking, and language usage.
- c. Students who plan to teach in California must meet citizenship requirements.
- d. Students are responsible for observing all deadlines in filing applications. Application forms for admission to credential programs and teaching are available at the Office of the Credentials Secretary of the Education Division. For detailed information about steps in candidacy, students should consult an education adviser.

(4) Recommendation for the Credential

Successful completion of the program depends upon the candidate's maintenance of high levels of performance as outlined under (3) above, as assessed by the College supervisory staff and those faculty members whose assignments include responsibilities in teacher education. Students may be removed from the teacher education programs at any time upon the action of an appropriate college committee and concurrence by the chairman of the Department of Teacher Education and the head of the Division of Education. Upon successful completion of the program, the College recommends to the State Department of Education that the student be granted a credential.

I. The Early Childhood Education Program

Early childhood education is an interdisciplinary major drawing courses from the social and behavioral sciences, creative arts, health education and education, and is offered in the Department of Teacher Education. This program leads to a Bachelor of Science degree in Early Childhood Education. The purpose of this program is to prepare students for work with young children in nursery schools, children's centers and residential institutions. The degree may serve as a foundation upon which to build the necessary requirements for admission to candidacy in the Standard Elementary Credential program.

Students pursuing this degree must plan their program with an early childhood education adviser to assure proper selection of courses.

Requirements for the Degree of Bachelor of Science in Childhood Education

1. General Education

Complete the college requirements in general education, stated in GRADUATION REQUIREMENTS, page 53.

Education

2. Major Requirements

Social and Behavioral Sciences

	<i>Units Totals</i>
Anth. 4420. Cross Cultural Studies in Child Rearing Practices	4
Soc. 3500. Social Psychology	4
Soc. 3410. Sociology of the Family	4
Soc. 4450. Urban Sociology	4
Psych. 2010. General Psychology II	4
	—

20

(Anth. 1000 or 2300, Soc. 2000, Soc. 2400, and Psych. 2000 are prerequisites to the above listed courses of the major.)

Creative Arts

Art 3310. Art Experiences for Young Children	3
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Health Education

Health 5420. Health Appraisal and Guidance Education	3
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Education

Educ. 3010. Principles of Early Childhood Education	4
Educ. 3060. Practicum in Early Childhood Education I	1
Educ. 4021. Child Growth and Development	3
Educ. 4061. Practicum in Early Childhood Education II	1
Educ. 4161. Practicum in Early Childhood Education III	2
Educ. 4221. Learning in Education for Early Childhood	4
Educ. 4231. Language Development and Introduction to Reading	4
Educ. 4262. Practicum in Early Childhood Education IV	2
Educ. 4390. Teaching the Culturally Different	4
	—

25

Students select, in addition, one elective course from each block:

Social and Behavioral Science—Block I

Soc. 3430. Social Stratification	4
Soc. 3520. Minority Groups	4
Anth. 3400. Social Anthropology	4

Creative Arts—Block II

Sp/Dr 3650. Creative Dramatics	3
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Creative Arts—Block II—Continued

	Units	Totals
Sp/Dr 4650. Children's Theatre	3	
Art 3320. Arts and Crafts for Children	3	
Mus. 4100. Music Literature for Children	3	
		10-11
GRAND TOTAL		61-62

Education—Block III

Educ. 4510. Administering the Nursery School	4
Educ. 5240. Children's Literature	3
	—

GRAND TOTAL**II. The Elementary Teacher Education Program**

The Department of Teacher Education offers a program at the graduate level which includes the State requirements for the Standard Teaching Credential with a Specialization in Elementary Teaching.

1. General Requirements

- Satisfactory compliance with graduate standing admission standards of the College, which include a baccalaureate or higher degree from an approved institution.
- Successful completion of a program of studies including a teaching major and general education curricula as defined in the California Certification requirements, Certificated Personnel Law of 1961, and as required by the College.
- Successful completion of a program of post-baccalaureate studies in professional education as defined in the California Certification Requirements and as required by the College.
- Successful completion of a year of post-baccalaureate work as stipulated by the College.
- Successful completion of a course on the U.S. Constitution or passing a test.
- Completion or near completion of an academic major.
- A course in music, art, or speech.
- The course in Child Growth and Development and the course in Structure of Arithmetic, Algebra, and Geometry (Math. 4021), which may be taken as an undergraduate.

The *undergraduate* student is asked to consult with both his baccalaureate adviser AND AN ADVISER IN THE DEPARTMENT OF TEACHER EDUCATION concerning the practicability of specific baccalaureate majors to be used as teaching majors. Details of these major programs may be found outlined in this catalog under the appropriate divisions and departments. *Transfer* graduate students who hold

a baccalaureate degree completed at another institution must consult an adviser in education.

2. The Teaching Minor Requirement

A teaching minor is not required of Elementary Credential candidates if the major is in an academic subject area commonly taught in the public elementary schools. If the major is not commonly taught in the public elementary schools, two minors in subject areas commonly taught in the public elementary schools are required.

3. The English and Composition Requirement

It is necessary to show verification of appropriate work in English (nine quarter units, including completion of the communications requirement, and a course in literature or the equivalent).

III. The Secondary Teacher Education Program

The Department of Teacher Education offers a professional graduate program which leads to the Standard Teaching Credential with a Specialization in Secondary Teaching.

Undergraduate students who plan eventually to enroll in the graduate secondary program are encouraged to acquire experience with children and youth by participating in community agencies, youth-serving organizations, or in camp counseling during the years while they are completing work leading to the baccalaureate degree. They are also encouraged to consult with an adviser in the Department of Teacher Education and participate in the co-curricular activities in the department and in its clubs.

1. General Requirements

Meet graduate admission standards of the College. Hold a baccalaureate or higher degree from an approved institution.

2. Pre-professional Education Requirements

Applicants for preliminary acceptance and full acceptance into the secondary program must have completed the steps outlined in **ADMISSION TO THE TEACHER EDUCATION PROGRAM**, page 100.

An applicant must complete an application form and be interviewed by an education adviser and by advisers of the divisions appropriate to his teaching major and teaching minor prior to admission into preliminary candidacy. He must submit a transcript which shows work leading toward, or fulfilling, the credential requirements for general education and requirements for a teaching major. A teaching minor is not required but may be elected.

The teaching major and teaching minor must be approved by advisers from the appropriate College divisions. The student is to consult

with advisers from his major and minor teaching fields and with an adviser from the Department of Teacher Education concerning the appropriateness of majors, minors, and major-minor combinations.

3. Minimum Teaching Major and Teaching Minor Requirements

A teaching major consists of a minimum of 36 quarter units of upper division or graduate work. There are two kinds of teaching majors:

- (1) The interdepartmental major, which consists of at least 36 quarter units of upper division or graduate level course work and which includes a single academic subject consisting of at least 23 quarter units of upper division or graduate work.
- (2) The single subject major, which consists of at least 36 quarter units of course work in a single academic subject.

A minimum of 9 quarter units of graduate level work in either the major or minor fields must be taken after the granting of the baccalaureate degree.

Business education and physical education teaching majors are subject to different credential requirements from those outlined above. Students with teaching majors in those fields should consult an adviser in the appropriate College division or department.

Before full candidacy is attained (acceptance into Student Teaching, Phase I), the candidate's teaching major and teaching minor must have been approved by the appropriate departments. The acceptability of a candidate's teaching field preparation will be judged against the quality and balance of his course work, as these relate to teaching in the secondary schools.

A teaching minor, not a baccalaureate requirement at the College, consists of a minimum of 30 quarter units of undergraduate and/or graduate work. At least 9 quarter units must be taken at the upper division or graduate level. There are two kinds of teaching minors:

- (1) The interdepartmental minor. The student should consult his education adviser for details related to this minor.
- (2) The single subject minor.

4. The Professional Graduate Secondary Teaching Program

General prerequisite: baccalaureate degree; satisfactory completion or partial completion of a teaching major as determined by the appropriate College division or departments; and preliminary acceptance into the Secondary Credential program.

Acceptance by the College as a graduate student does not constitute acceptance into the secondary credential program.

The following specific course requirements for the program are minimum post-graduate course work in content courses in the teaching major or teaching minor:

<i>Fall Quarter</i>	<i>Units</i>
Educ. 5035. Social Foundations	4
Educ. 5264. Observation, Seminar, and Lab	3
Educ. 5260. Classroom Problems of Beginning Teachers	3
Courses in Major or Minor	6-8
	16-18

<i>Winter Quarter</i>	<i>Units</i>
Educ. 5022. Psychology Foundations	4
Educ. 5653. Student Teaching	3
* Teaching Methods	3
Educ. 5661-72. Seminars in Secondary Student Teaching, Phase I (one only required)	2
Courses in Major or Minor	3-5
	15-17

<i>Spring Quarter</i>	<i>Units</i>
Educ. 5270. Secondary School Curriculum	4
Educ. 5655. Student Teaching	7
Educ. 5681-92. Seminars in Secondary Student Teaching, Phase II (one only required)	3
	14
Minimum Total Units Required	45

IV. The Junior College Education Program

The Department of Teacher Education offers a professional graduate program which leads to a Standard Teaching Credential with a Specialization in Junior College Teaching. Applicants for preliminary acceptance and full acceptance into the junior college program must have completed the steps outlined in ADMISSION TO THE TEACHER EDUCATION PROGRAM, page 100.

1. General Requirements

Meet graduate admissions standards of the College. Hold a post graduate degree from an approved institution.

2. Minimum Teaching Major and Teaching Minor Requirements

The teaching major consists of a post graduate degree secured from an approved institution. The teaching minor consists of 20 semester

* See appropriate department.

Counseling and Pupil Personnel

hours of course work in a single subject area (when the major is not in an academic subject, 12 semester hours must be completed at upper division or graduate level). An interdepartmental minor consists of 20 semester hours, of which 12 are upper division semester hours in one department.

3. The Professional Graduate Junior College Program

General prerequisite: A master's degree, doctor's degree, or other post graduate degree approved by the State Board of Education requiring not less than five years, or its equivalent, of college or university education secured in an approved institution. The degree shall be in a subject matter area.

Acceptance by the College as a graduate student does not constitute acceptance into the junior college credential program.

Requirements: Educ. 6001, The American Junior College in Higher Education Student teaching. Five units.

THE DEPARTMENT OF COUNSELING AND PUPIL PERSONNEL

The Department of Counseling and Pupil Personnel offers a series of program options for persons interested in various professional specialties of the helping relationships. These include preparation for work in the schools, in various social agencies, in employment service offices and in other governmental agencies which emphasize interaction with children and adults. Among the options are sequences specifically designed for persons desiring to work in the schools and who need to meet the requirements for the Designated Services Credential with a Specialization in Pupil Personnel Services. Within this specialization, students may follow concentrations to prepare for work in the areas of counseling, child welfare and attendance, psychometry, and psychology.

The department also offers the degree of Master of Science in Education with a concentration in pupil personnel services. It may be pursued in conjunction with, or independently of, a credential program. The concentration area will be worked out with an adviser to reflect the specialized goals of the student, whether these be in counseling, psychometry, school psychology, or related areas.

For those persons seeking certification under the Designated Services Credential, this master's degree will meet the requirement stated in Section 6402 (a)(4) as a master's degree in counseling. The degree may be of interest also to persons who have completed the General Pupil Services Credential and to persons working or preparing for employment in related fields which do not require a credential.

Persons earning or holding a Designated Services Credential who wish to qualify themselves to become directors of guidance (or fill similar supervisory positions in pupil personnel) may do so by completing

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the requirements of the Supervision Credential. This program is offered by the College in conjunction with the Department of School Administration and Supervision, from which some course work will be taken.

Both the credential and master's degree programs are entirely post-baccalaureate. They may be based upon either a teaching credential or an approved bachelor's degree program. Adviser approval is required for all courses numbered in the 6000 series.

Application and Admission

A person holding a bachelor's degree from an accredited institution may begin post-baccalaureate study in either of two ways. He may be admitted to the College for graduate study as a non-objective student and may enroll in those courses for which he has the necessary prerequisites. Non-objective status means that a student has not yet applied to and been admitted by a particular department to work toward a specific program or degree. In contrast, a person may apply for direct admission to a departmental program as an objective graduate student working toward a declared objective, such as the credential or master's degree programs. Enrollment as a non-objective student is normally undertaken primarily by persons wishing to continue professional study and growth and not be restricted in their choice of courses by credential or degree requirements. It may also be appropriate as a temporary measure either when time does not allow completion of the procedures required for admission to an objective status, or when prerequisites or other deficiencies exist.

Although the credential and master's degree programs are not identical, the former is conducted at the same level of graduate school standards as the latter; consequently, admission standards and requirements are common to the two programs except for prerequisites.

Admission to the College to study as a non-objective graduate student is granted upon the submission of evidence of completion of a bachelor's degree from an accredited institution. Normally, before course work within the Department of Counseling and Pupil Personnel may be taken, prerequisite study must have been completed in the following areas: general psychology, learning measurement, and child growth and development.

To be accepted directly by the Department of Counseling and Pupil Personnel for work toward either the credential or degree objective, applicants must have a 2.5 overall undergraduate average or better, and have completed the prerequisite course work. Upper division course work related to the area of pupil personnel must average 3.0 or better whether taken as part of the baccalaureate program or as graduate work. In addition, the total post-baccalaureate grade point average must be 3.0 or better.

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Transfer from non-objective to objective status should be accomplished as soon as one qualifies to do so, since normally not more than twelve units of work taken in non-objective status may be applied toward a program contract. Transfer is possible when prerequisites and grade point average requirements have been met.

For advancement to "Credential Candidacy", i.e., to developing a contract for a credential program, a person must complete three or more of the following courses, maintaining a 3.0 average on all work counting toward the credential: Coun. 5750, Coun. 6901, Coun. 6735, Educ. 5021, Psych. 4410, and Psych. 4610. Supporting recommendations from faculty members of the department will be required. Any required standardized testing will also be completed prior to advancement to candidacy.

Advancement to "Degree Candidacy", i.e., completion of a contract for and acceptance as a master's degree candidate, requires the same general steps as for "Credential Candidacy" except that some differences will occur in the courses required as part of the prerequisite group.

Admission to the College to enroll in classes as a non-objective student will be granted as late as approximately one week before the opening registration date (See class schedules for exact dates), provided the student presents an official transcript meeting the requirements previously stated. To avoid delay, however, students are encouraged to seek admission earlier.

Application for admission as an objective student with a declared credential or degree objective is to be made to the department at least six weeks prior to the opening of a term. Two official transcripts of all collegiate work should accompany two copies of the completed application blank at this time. Satisfactory performance on standardized tests prescribed by the department and completion of an interview with a member of the department faculty must be accomplished before advancement to candidacy. It is recommended that the tests and interview be completed prior to being admitted if such is feasible for the student.

Admission to field work or internship assignments requires maintenance of a 3.0 average on the contract program, supported by recommendations from faculty and present or previous employers, and the development of an agreement for placement in selected districts. Application for field placement is to be filed at least six weeks before the start of the term for which placement is desired. Most field placements begin in the fall quarter and run through the year.

The Standard Designated Services Credential With a Specialization in Pupil Personnel Services

As of January 1, 1964, this credential has replaced the General Pupil Personnel Services Credential. Persons commencing training after that

Counseling and Pupil Personnel

date must meet the requirements of these new regulations if they wish certification to work in schools in the following areas: child welfare and attendance, psychometry and psychology, pupil counseling (including rehabilitation counseling) and social work.

A copy of the credential requirements may be obtained from either the Counseling and Pupil Personnel Department Office or the State Department of Education. A summary statement of the requirements for the various specializations and the Cal State programs to meet them follows:

Three general requirements must be met.

1. A master's degree in counseling, psychology, or an academic subject. [See details in credential code section 6402(a).]
2. Forty-five or ninety quarter hours of post-baccalaureate course work in pupil personnel, depending upon the candidate's teaching experience and credential goal. [See details in code section 6402(b) and 6402(d).]
3. Field work or internship. [See details in code section 6402(c).]

The program of a student will depend upon which duties he wishes authorization to perform; whether or not he has three years of successful teaching experience, and whether or not he already holds a master's degree in counseling, psychology, or an academic subject area, or needs to earn one.

Descriptions of the college program concentrations leading to the various duty authorizations follow. Within each, the requirements for persons with and without teaching experience are separately stated. Consult with an adviser to determine the sequence of courses to follow. Neither course numbers nor order of listing indicates the order in which courses should be taken.

1. Authorization limited to pupil counseling and child welfare and attendance.
 - (a) Applicant *with* 3 years successful teaching experience and 45 quarter hours of other post-baccalaureate work (such as the 5th year teaching credential work) will complete Course Groups 1 and 2. (See code number 6402(b) regarding explanation of the credit and experience substitution possibilities.)
 - (b) Applicant *without* teaching experience will complete Course Groups 1, 2, and 3, except that they may substitute electives for Psych. 6720, Coun. 6911, Coun. 6912, and Coun. 6025.
2. Authorization for administration of individual examinations under supervision for purposes of placing pupils in special classes (psychometry).
 - (a) Applicant *with* 3 years teaching experience will complete Course Groups 1, 2, and starred courses of Group 3.

Counseling and Pupil Personnel

- (b) Applicant *without* teaching experience will complete Course Groups 1, 2, starred courses of Group 3, and approved electives to reach a total of at least 90 quarter hours.
3. Authorization as a competent psychologist.
(a) All applicants will complete Course Groups 1, 2, and 3.
4. Authorization as a school social worker.
(a) The College does not presently offer a social work specialization as such.

Course Group 1

Code Requirements * and Cal State Courses

6402(a)(4)

- (A) Pupil personnel services, concepts, and procedures
Coun. 5750. Pupil Personnel Work (4)
- (B) Dynamics of individual behavior
Psych. 4410. Behavior Pathology (4)
Psych. 4610. Psychology of Personality (4)
- (C) Counseling theory and procedures
Coun. 6750. Counseling Theory (4)
- (D) Measurement theory and procedures
Coun. 6901. Appraisal Procedures (4)
- (E) Group process-theory and procedures
Coun. 6902. Group Theory and Procedures (4)
- (F) Educational and career planning
Coun. 6735. Educational and Vocational Planning (4)
- (G) Research methodology
Educ. 6020. Research in Education (4)
- (H) Remedial and special education
Educ. 5021. The Exceptional Child (3)
- (I) Laws relating to children
Coun. 5570. Organization and Administration of Pupil Personnel Services (4)
- (J) Organization of Pupil Personnel Services
Coun. 5570. Organization and Administration of Pupil Personnel Services (4)

Course Group 2

6402(c)

- Coun. 6610. Pupil Personnel Seminar (2)
- Coun. 6660. Field Work in Pupil Personnel Services (2)
or Coun. 6770, Pupil Personnel Internship (2-6)
- Coun. 6620. Pupil Personnel Seminar (2)

* From the California Administrative Code, Title 5.

Counseling and Pupil Personnel

- Coun. 6661. Field Work in Pupil Personnel Services (2)
or Coun. 6770, Pupil Personnel Internship (2-6)
- Coun. 6630. Pupil Personnel Seminar (2)
- Coun. 6662. Field Work in Pupil Personnel Services (2)
or Coun. 6770, Pupil Personnel Internship (2-6)

6402(d)(1)

Course Group 3

- * Coun. 6810. Advanced Pupil Personnel Seminar (2)
- * Coun. 6860. Advanced Field Work in Pupil Personnel Services (2)
- (A) Diagnostic tests of learning difficulties
* Coun. 6746. Learning Difficulties (4)
- (B) Individual tests of intelligence
* Psych. 6720. Individual Mental Tests (4)
* Coun. 6911. Individual Mental Testing Practicum (4)
- (C) Tests for determining whether and to what extent a minor varies from the normal with respect to mental or emotional characteristics
* Coun. 6912. Projective Techniques (4)
- (D) Case studies of children who vary from the normal with respect to mental or emotional characteristics and preparation of reports thereon
* Coun. 6025. Clinical Study of Atypical Children (4)

6402(d)(2)

To complete the required number of hours and provide the basis for College verification of competency as a psychologist, the following additional courses as part of Group III will normally complete the program for the psychologist authorization. The department may require additional educational experiences if such is deemed essential to develop the competency level needed for this verification.

- Coun. 6751. Advanced Counseling Seminar (4)
- Psych. 6700. Advanced Education Psychology (4)
- Statistics. Approved Elective (4)
- Coun. 6820. Advanced Pupil Personnel Seminar (2)
- Coun. 6830. Advanced Pupil Personnel Seminar (2)
- Coun. 6861. Advanced Field Work in Pupil Personnel Services (2)
- Coun. 6862. Advanced Field Work in Pupil Personnel Services (2)
- Coun. 6880. Advanced Pupil Personnel Internship (2-6)

* Refer to 2.(a) and (b) in the preceding text, page 111.

**MASTER OF SCIENCE IN EDUCATION
CONCENTRATION IN PUPIL PERSONNEL**

The program consists of three parts:

General Professional Education**12 quarter units**

The content of the required work in general professional education is based on the disciplines of philosophy, psychology, sociology, history of education, and comparative education.

The work will give the student an understanding, at an advanced level, of public and private education and the major functions, responsibilities, and goals of each.

Concentration**20-30 quarter units**

A concentration will include an approved program of upper division and graduate courses selected to advance the student in his field of specialization.

A Thesis**3-6 quarter units**

This terminal work is to be conducted under the supervision of the staff in the area of a student's specialization for the integration of theory, practice, and research.

Degree requirements include the following:

1. Completion of an approved program of study involving a minimum of 45 quarter units of approved course work, 36 of which must be residence credits and 18 of which must be numbered in the 6000 series. A maximum of 9 quarter units of transfer credit may be applied toward the degree.
2. Maintenance of a 3.0 (B) average or higher on work taken toward the degree.
3. Successful completion and presentation of a thesis.
4. All work toward the master's degree program must be completed within the seven years immediately preceding the date on which the degree is to be awarded.

Within the general plan of the degree, a student's program will be worked out with an adviser. Correspondence or extension credits are not applicable to the master's program.

Supervision Credential for Pupil Personnel Services

Requirements for this credential are met by Cal State's four-point program listed below. A full statement of the credential regulations may be found in Sections 6550-6555 inclusive, Article I, Group 9 of the California Certification Requirements.

1. Completion of the Master of Science in Education degree with a Specialization in Pupil Personnel.

2. Completion of General Pupil Personnel Services Credential or Designated Services Credential with a Specialization in Pupil Personnel.
3. Completion of five years experience as a teacher, pupil personnel, health, or library worker in the public elementary or secondary schools or private schools of equivalent status.
4. Completion of an internship in supervision, Coun. 6990—Supervision Internship (12), plus six elective hours or completion of 18 hours of professional education including:
 - (a) SAS 6000—Leadership and School Organization (4)
 - (b) Coun. 5570—Organization and Administration of Pupil Personnel Services (4)
 - Coun. 6670—Supervision of Pupil Personnel Services (4)
 - Coun. 6915, 6920, 6930—Supervision Seminar (2-2-2)
 - (c) Coun. 6960, 6961, 6962—Supervision of Field Work (2-2-2)

THE DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

The Department of Health and Physical Education offers courses leading to the bachelor of science degree with a major in physical education. The purpose of this major is the study of man as an individual engaging in the motor performance of his daily life and in other motor performances yielding aesthetic values or serving as an expression of his physical and competitive nature. This major is basic to the professional field of physical education and to advanced study at the graduate level. The department also offers course work enabling a student to obtain a professional credential and a minor in physical education.

In addition, the department offers a wide selection of physical education activity courses open to all interested students and sponsors programs in intramural, extramural and intercollegiate athletics.

General Education Requirements in Health and Physical Education

All students are required to complete a total of five units in health and physical education in the general education pattern. Either P.E. 1100 or H.Ed. 1000 will satisfy three units of this requirement. Any P.E. course numbered in the 1000-2000 series will satisfy the remaining two units.

No more than one physical education activity course per quarter will count toward the satisfaction of this requirement. Students are encouraged to elect physical education activity courses beyond the general education requirement. Up to a maximum of six units credit for general activity courses may be granted toward graduation. This limitation does not apply to units earned for participation in the intercollegiate athletic program or in the professional activity laboratory sequence.

Health and Physical Education

PHYSICAL EDUCATION MAJOR (B.S. DEGREE)

General Requirements

- I. Complete the 76-unit requirement in general education.
 - II. Complete the following requirements in the major:
- Lower division*—Zool. 3601, 3602, P.E. 1030, 1031, Psych. 2010, and Soc. 2400.
- Upper division*—Total of 36 units completed in the following areas:

Core courses	Units
P.E. 3420. Measurement in Physical Education	3
P.E. 3100. History of Physical Education	4
P.E. 3400. Kinesiology	5
P.E. 3410. Physiology of Exercise	5
P.E. 4400. Motor Learning and Skilled Performance	4
	—
	21

One course selected from:

P.E. 4410. Motor Development	3
P.E. 3500. History of Dance	3
P.E. 4420. Sport and Society	3
	—
	3

Electives from appropriate upper division courses in the bio-social science area; i.e. biology, anthropology, psychology. Students specializing in dance may also select appropriate upper division courses in the Division of Creative Arts. These courses must be selected in consultation with the department adviser

12

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36

Minimum total

- III. Students planning a teaching career in physical education must also complete a minimum of 20 units in professional courses selected in consultation with the departmental adviser.

Required:

P.E. 4030-31. Professional Field Experience	2
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Electives:

P.E. 3000-09. Theory of Sport	Max. of	8
P.E. 3241. Theory of Modern Dance		3
P.E. 3242-43. Composition	Max. of	6
P.E. 3244. Dance Production		3
P.E. 4210. Childrens Creative Dance		3
P.E. 4600. Organization & Administration of P.E.	4	
P.E. 5230. Dance Seminar		3

Health and Physical Education

- | | Units |
|--|-------|
| P.E. 5400. Rehabilitation of Athletic Injuries | 3 |
| P.E. 5500. Test Evaluation in Physical Education | 3 |
| P.E. 5440. Adaptive Physical Education | 4 |
- IV. In addition to the course work specified, all teaching candidates majoring in physical education must complete (a) a series of skill competency tests, (b) the requirements for admission to teacher education, (c) the professional courses in teacher education, including either P.E. 5200 or P.E. 5210, and (d) the requirements for a minor.

Special Requirements

- I. Each major planning to enter the professional field of physical education must:
 - (a) Participate at the competitive level (for one season) in each of two sports. For men majors one of these must be in either football, baseball, track and field or basketball.
 - (b) Demonstrate satisfactory skill in the performance of a minimum of any six individual activities, dance or sports. This requirement may be met by the satisfactory demonstration of skill in a proficiency test. Students are encouraged to obtain proficiency in as many activities as possible beyond the minimum of six. Students are advised to enroll in at least one activity course per quarter, in addition to any major or minor sport participation. Students will not be permitted to enroll in P.E. 4030 unless all these requirements have been met.
- II. Proficiency screening tests in the area described under Section I(b) above will be given to all physical education students who transfer to California State College at Hayward, except where activity credit has been obtained prior to transfer. Deficiencies must be remedied before enrolling in professional courses in which specific skill prerequisites must be met.
- III. Specific details of these requirements may be obtained from the department office.
- IV. Fifth year transfer students: Major and minor students who transfer to the physical education program must satisfy all departmental requirements before they will be permitted to enroll in Phase I of student teaching. These requirements include the satisfaction of the content requirements of all courses in the degree program and the professional program and the fulfillment of the proficiency requirements.

PHYSICAL EDUCATION MINOR

Requirements

See physical education adviser for approval.

A minimum of 30 units in courses selected from the following areas:

	Units
One course selected from either P.E. 3400, 3410, or 4400	4-5
P.E. 2030-2031, P.E. 4030-4031	4
Minimum of two courses selected from either the P.E. 3000 or the P.E. 3200 series	6
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	12-15
P.E. electives selected in consultation with adviser	Min. of 18
	<hr/>
	30

In addition to the course work specified, all teaching candidates minoring in physical education must complete (a) a series of competency tests in a variety of physical education activities, (b) the requirements for admission to teacher education, and (c) the professional courses in teacher education.

MASTER OF SCIENCE DEGREE IN PHYSICAL EDUCATION

Objectives of This Curriculum

To provide an opportunity for advanced study in physical education.

Plan A: Master of Science degree (M.S.) with specialization in the bio-social science subject field of physical education.

Plan B: Master of Science degree (M.S.) with specialization in the professional education area of physical education.

Admission to the Program

Plan A: (1) General requirements of the College for graduate standing.

(2) A bachelor's degree or equivalent with a major in physical education or an appropriate minor and a minimum grade point average of 3.0 in those courses taken in the science areas of physical education and in courses taken in the related bio-social sciences.

Plan B: (1) General requirements of the College for graduate standing.

(2) A bachelor's degree with a major or minor in physical education and a grade point average of 3.0 in courses considered appropriate to a professional background.

(3) A teaching credential and some related teaching experience.

Advancement to Candidacy

1. Completion of not less than 16 quarter units of course work beyond the bachelor's degree with a minimum 3.0 grade point average.
2. Recommendation by a department committee.

Requirements for the Degree

1. Minimum of 45 quarter units of upper division and graduate courses. Upper division courses must be post-baccalaureate. Eighteen units must be at the 6000 level.
2. 3.0 grade point average in all courses included for degree credit.
3. Completion of a Thesis.
4. An oral examination to be given when the Thesis has been completed.
5. Course area requirements.

Plan A	Units
Elective courses selected from the physical education science concentration	20
Electives (from departments offering courses in related bio-social science fields)	15
Research in Physical Education (P.E. 6800)	4
Thesis	6
	<hr/>
	45

Plan B	Min. of
Elective courses selected from physical education professional concentration	8-12
Electives selected from the physical education science concentration	8-12
Electives (from the Departments of School Administration and Supervision, and Teacher Education)	15
Research in Physical Education (P.E. 6800)	4
Thesis	6
	<hr/>
	45

THE DEPARTMENT OF RECREATION

The Department of Recreation offers courses leading to the bachelor of science degree in recreation. The purpose of this program is to prepare students for full-time, professional positions in governmental and private agencies which offer recreation services.

RECREATION MAJOR

Students pursuing this degree must plan their program with a recreation adviser to assure proper selection of courses.

Requirements for the degree are as follows:

I. GENERAL EDUCATION. Complete the 76-unit requirement in general education.

II. MAJOR REQUIREMENTS.

- A. *Foundation Area:* Upper division courses in psychology and sociology, selected from an approved list and including at least two courses in each area. The psychology area may include courses in education that deal primarily with concepts related to growth and development or learning, and/or anatomy and physiology 18 units
- B. *Professional Area:* Rec. 1000, 3500, 3750, 4000, 4500, 5000, 5001, 5002 40 units
- C. *Elective or Minor Area:* Distributed elective units (including such areas as art, nature study, physical education, etc.) selected from an approved list, or completion of an approved minor 28 units
- D. *Additional Requirements:* Students must demonstrate competency in speech or must have completed satisfactorily a basic course in speech. A valid American Red Cross Standard First Aid Certificate is required of all recreation majors. 86 units

RECREATION MINOR

The Department of Recreation also offers courses leading to a recreation minor. Students should check with a departmental adviser for details.

Illustrative Program for the Recreation Major

Freshman Year

- Eng. 1001. Expository Writing 3
- Sp/Dr 1000. Rhetoric and Public Address 3
- Biol. 1000. Principles of Biology 5
- P.E. 1100. Health and Physical Activity 3
- P.E. 1010. Activity 1
- Psych. 2000. General Psychology 4
- Soc. 2000. Introduction to Sociology 4
- Rec. 1000. Nature and Scope of Recreation 4
- Rec. 1500. Social Groups in Recreation 3
- General education requirements and/or electives, including required course in mathematics 18

Units

3

3

5

3

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4

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Sophomore Year

- Phys. Sci. 1340. Principles of Physical Science 5
- Psych. 2010. General Psychology II 4
- Soc. 2400. Introduction to Social Organization 4
- P.E. 1011. Activity 1
- Rec. 2000. Principles and Practices in Organized Camping 3
- Distributed elective courses, selected from approved list, or courses in minor area * 12
- General education requirements and/or electives 19

Units

5

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4

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3

12

19

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Junior Year

- Rec. 3500. The Recreation Program 6
- Rec. 3750. The Recreation Setting 6
- Jr. Sym. 3801. Junior Symposium 3
- Courses in psychology and sociology, selected from an approved list * 12
- Distributed elective courses, selected from approved list, or courses in minor area * 12
- General education requirements and/or electives † 9

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Senior Year

- Rec. 4000. Structure of Recreation 5
- Rec. 4500. Trends and Problems in Recreation 3
- Rec. 5000-2. Internship I, II 14
- Rec. 5001. Internship Seminar 2
- Sr. Sym. 4801. Senior Symposium 3
- Courses in psychology and sociology, selected from an approved list * 8
- Distributed elective courses, selected from approved list, or courses in minor area * 4
- General education requirements and/or electives † 9

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THE DEPARTMENT OF SCHOOL ADMINISTRATION AND SUPERVISION

The Department of School Administration and Supervision offers a program that combines the requirements for the Standard Supervision Credential and the Degree of Master of Science in School Administration. Persons who already hold a master's degree may complete a program for the Standard Supervision Credential only. These programs are designed to meet the needs of graduate students who have had successful school experience as teachers and who are seeking the authorization to serve in administrative or supervisory positions in the California public schools. This credential authorizes holders to serve as

* Check with major adviser for details.

† Upper division G.E. electives must include one course each in science and humanities, selected from approved list.

general supervisors, curriculum consultants, supervisors of special subjects, supervisors of pupil personnel services, elementary school principals, or secondary school principals. The legal requirements under which the credential program is offered are set forth in the California Education Code, Sections 13197-1 and 13197-15, and the California Administrative Code, Title V, Sections 6554-6558. Note that five years of teaching experience are required in addition to the specified academic requirements before the credential or degree can be issued.

MASTER OF SCIENCE IN EDUCATION CONCENTRATION IN SCHOOL ADMINISTRATION AND SUPERVISION

PROCEDURES TO BE FOLLOWED

This program is open to graduates of accredited institutions who hold standard teaching credentials and who have completed a minimum of two years of successful teaching.

I. Preliminary Steps

1. Obtain formal admission to the College.
2. Submit departmental applications for degree and credential.
3. Submit official transcripts to the department.
4. Complete the Graduate Record Examination.
5. Submit a personal data statement to the department.
6. Complete, under advisement, at least 12 and not more than 24 units of post-baccalaureate work at this College, including SAS 6000 and at least one upper division or graduate course outside the division.
7. Be interviewed by the Credential and Degree Committee.

II. Advancement to Candidacy

Submit formal request for advancement to candidacy.

(The adviser will present transcripts, grades at this College, score on the Graduate Record Examination, recommendations, interview results, and other appropriate information for departmental consideration.)

III. Completion of Requirements

1. Complete a minimum of 45 quarter units of approved graduate credit.
2. Maintain a minimum grade point average of 3.0.
3. Complete at least 36 quarter units in residence.
4. Complete all work for the degree, including field work and thesis, within a seven-year period.

IV. Course Requirements for the Degree and Credential

	<i>Units</i>
1. <i>Credential Requirements</i>	
SAS 6000—Leadership and School Organization	4
SAS 6300—Foundations of Curriculum Development	4
SAS 6400—Public School Supervision	4
SAS 6550—The Public School Principalship	4
Educ. 6020—Research in Education	4
SAS 6801, 6802—Field Work I, II	6
<i>or</i>	
SAS 6851, 6852, 6853—Internship	6
2. <i>Other Degree Requirements</i>	
Two of the following three courses:	
Educ. 5010—Contemporary American Education	8
Coun. 5750—Pupil Personnel Work	4
Educ. 6700—Advanced Education Psychology	4
SAS 6910—Thesis	3-6
SAS 6330—Procedures for Curriculum Change	4
SAS 6600—Business and Legal Aspects of School Administration	4
	45-48

3. Alternate Program with Specialization in Reading Instruction

The Department of School Administration and Supervision also offers a specialized program in the area of reading instruction specialist. It is designed for teachers, principals, supervisors, consultants, curriculum coordinators, directors of developmental reading programs, and remedial reading specialists. It allows students to develop broad understanding and competency in reading within the framework of the standard supervision credential.

FOR ALL CANDIDATES:

- SAS 6000 (4)
- SAS 6250—Seminar in Reading (3)
- SAS 6300 (4)
- SAS 6400 (4)
- SAS 6801, 6802 (3-3)
- Educ. 6020—Research in Education (4)
- SAS 6910—Thesis (3-6)

School Administration and Supervision

FOR ELEMENTARY READING CANDIDATES:

- SAS 6230—Improving Reading in the Elementary Schools (3)
SAS 6231—Analysis of Reading Problems (Elementary section) (3)
SAS 6232—Correction of Reading Difficulties (Elementary section) (3)
SAS 6233—Laboratory Practice in Correction of Reading Difficulties (6)

FOR SECONDARY READING CANDIDATES:

- SAS 6240—Teaching Reading and Study Skills in Secondary Schools (3)
SAS 6231—Analysis of Reading Problems (Secondary section) (3)
SAS 6232—Correction of Reading Difficulties (Secondary section) (3)
SAS 6233—Laboratory Practice in Correction of Reading Difficulties (6)

V. Requirements for the New Standard Supervision Credential

1. Two years of postgraduate education.
2. A master's degree in an academic subject area. If the degree is not in an academic subject area, the two years of postgraduate study must include 18 quarter units of course work in an academic area or areas.
3. The possession of a valid basic teaching credential.
4. Five years of successful full-time classroom teaching experience.

Students must work out their total program, including the 18 units in an academic area or areas, with their adviser.

- Students holding a master's degree and wishing to meet requirements for the Standard Supervision Credential should consult with their adviser about a specific program.
- Students seeking authorization to supervise pupil personnel services should consult with the chairman of the Department of Counseling and Pupil Personnel.

DIVISION OF HUMANITIES

Departments: English, Foreign Languages and Literatures, History, Philosophy

Division Head: Prof. Rodney G. Minott

Department of English

Professors: Jack Conner (chairman), Arnold Biella, George Cuomo, Douglas L. Peterson, Marc L. Ratner, Morton Rosenbaum, Robert V. Williams

Associate Professor: Jerry Bryant

Assistant Professors: Sylvia P. Bank, Steven Beven, Edward Clay, Arlen Collier, Leo C. Dodson, Jean E. Kennard, Marcelline Krafchick, Donald Markos, Gwendolyn Staniforth

Instructors: Janice Albert, Barbara Hofacker, Sheila M. Martinsen, M. Richard Matthews, Sterne McMullen, Billy G. Pemberton, LuJuana W. Treadwell, Joanna Wilcock

Department of Foreign Languages and Literatures

Professor: Elie Vidal (chairman)

Associate Professors: Galia Ham, Ved Vatuk, Marilyn Yalom

Assistant Professors: Frances Beck, Philip Cranston, Gregson Davis, Elsa Garcia, Frauke Gries, Arthur Kimmel, Zoila Nelken, José O'Valle, Yolanda Patterson, David W. Pike, Rosa Reeves, Enrique Rodriguez-Cepeda, Earl Walpole, Roy Watson, Winifred Weiss

Instructor: Joseph Vargas Hernandez

Department of History

Professors: David B. Chan (chairman), Richard B. Rice, Mark J. Van Aken

Associate Professors: Lejeune Cummins, Eugenia Nomikos, Richard C. Raack, Theodore Roszak

Assistant Professors: Richard E. Beringer, John W. Chambers, Peter Frederick, Frank D. Gilliard, James A. Lott, David C. Purcell, William C. Reuter, Alan M. Smith, Daniel J. Toft, John D. Walz, Douglas K. Wood

Instructor: Judith M. Stanley

Lecturer: Allen R. Reiff

Department of Philosophy

Professors: Eugene D. Mayers (chairman), Robert E. Larsen, Anil K. Sarkar, John B. Thompson

Associate Professor: Jean G. Harrell

Assistant Professors: J. Thomas Johnson, Peter F. Limper, Thomas A. Vician

CURRICULA OFFERED

Graduate Degrees

English (M.A.)

History (M.A.) (not offered in 1967-68)

Baccalaureate Degree Majors

English (B.A.)

French (B.A.)

German (B.A.)

History (B.A.)

English

Language Arts (B.A.) (An interdivisional major; see INTERDIVISIONAL OFFERINGS)

Philosophy (B.A.)

Social Science (B.A.) (An interdivisional major; see INTERDIVISIONAL OFFERINGS)

Spanish (B.A.)

Minors

English

French

German

History

Philosophy

Spanish

PURPOSES

This division offers instruction in English, history, foreign languages, and philosophy. The courses lead to liberal arts degrees in English, French, German, history, philosophy, and Spanish and to teaching majors and minors for the standard teaching credentials. Candidates for the master's degree in English and history may take courses leading to junior college teaching. Some of the offerings satisfy part of the general education requirements of the College.

ADVANCED PLACEMENT, ENGLISH

An English student who has successfully completed the advanced placement course in English in high school and has earned a score of "4" or "5" on the Advanced Placement Examination* will be granted unit credit for Eng. 1813 (5 units). (No letter grade will be assigned or computed in the student's grade point average.)

An English student who has taken the Writing Sample Test and whose progress is judged adequate by the members of the English Department who have examined the test will receive unit credit for either Eng. 1001 (3 units) or Eng. 1002 (3 units), as appropriate.

ENGLISH MAJOR

A candidate for the degree of Bachelor of Arts with a major in English must:

1. Complete 76 units in general education, as prescribed by the College.
2. Take at least one course in a foreign language, in which he will read entire works in the foreign language. Typically this will require 24 units of foreign language study. Acceptable foreign languages include French, German, Latin, Greek, Italian, Russian, Spanish.
3. Complete Eng. 2010 and 2020 in the lower division. A transferring student who offers other sophomore-level courses in English lan-

* This is prepared and offered by the College Entrance Examination Board.

English

guage and literature will be deemed to have satisfied all or part of this requirement.

	Units
A. Courses in language, grammar, and composition: Eng. 3010, 3020, and 3040	12
B. History of English literature: Eng. 3202, 3303, and 3404	12
C. History of American literature: Eng. 3602 and 3603	8
D. Major figures: Eng. 4150 and 4250	8
E. One of these courses in a literary genre: Eng. 4810, 4813, 4816, 4820, 4822, 4826, 4830, 4833, 4836, 4870, 4875	4
F. Upper division electives amounting to 16 units including course work outside the Department of English; see adviser	16
Total upper division courses	60

Note: Eng. 4900 or 4901 can be substituted for any part of the course requirements. Consult an adviser in the Department of English.

THE STANDARD TEACHING CREDENTIAL

With Specialization in Secondary Teaching

A candidate for the Standard Teaching Credential with specialization in secondary teaching, whose MAJOR is in English, must complete:

1. A baccalaureate degree.
2. A major in English, amounting to not less than 36 quarter units of upper division course work. Upper division course work must include Eng. 3010, 3020, and 3259 or 4250; it should include Eng. 3040 and a selection of Eng. 3202, 3303, 3404, 3602, 3603; it may include any of Eng. 3710, 3720, 3730, 3740, 3750, 3760, 4710, 4720, 4730, 4735. A student who earns his degree, with a major in English, at this College will have a suitable preparation of course work.
3. The required professional courses in teacher education, including Eng. 5950. Consult with advisers in the Departments of English and Teacher Education.
4. Student teaching. Consult with advisers in the Departments of English and Teacher Education.

A candidate for the Standard Teaching Credential with specialization in secondary teaching, whose MINOR is in English, must complete:

1. A baccalaureate degree.
2. A major in (a) an "academic" subject or (b) a "non-academic" subject.

3. Course work in English amounting to 30 quarter units. If the major is "non-academic," the course work in English must include 18 quarter units of upper division course work. In any case, the course work in English must include Eng. 3010, 3020, and 3259 or 4250.
4. Additional courses chosen from Eng. 3040, 3404, 3602, 3603, 3710, 3720, 3730, 3740, 3750, 3760, 4710, 4720, 4730, 4735. Consult with an adviser in the Department of English.
5. The required professional courses in teacher education; Eng. 5950 may be included. Consult with advisers in the major department and in the Departments of English and Teacher Education.
6. Student teaching. Consult with advisers in the major department and in the Departments of English and Teacher Education.

With Specialization in Elementary Education

A candidate for the Standard Teaching Credential with specialization in elementary education, whose MAJOR or MINOR is in English, must complete requirements parallel to those for specialization in secondary education, except that Eng. 5950 is not required. Consult with an adviser in the Department of Teacher Education.

HONORS IN ENGLISH

The English honors program is open to juniors and seniors in English who have a grade average of 3.0 or above. The aim of the program is to give academically superior students an opportunity to graduate with *Honors in English* by partly fulfilling degree requirements through a series of courses in English literary backgrounds which will emphasize independent and tutorial study.

To graduate with *Honors in English*, a student must (1) take three quarters of Eng. 4990, (2) write a senior thesis under the supervision of one of his honors instructors, and (3) maintain a minimum grade average of 3.0 in all of his college work. A list of requirements and enrollment procedures is available in the English Department Office. (Individual courses in the program are open to graduate students in English and high school teachers who have majored in English.) Students who complete the course successfully will receive the citation, *Honors in English*, upon graduation.

MASTER OF ARTS IN ENGLISH

For admission to the program leading to the M.A. in English, the student must hold a baccalaureate degree from an accredited college, with a major in English or equivalent, with a grade point average in English courses of at least 3.0. He must achieve a satisfactory score on

a qualifying examination and must read in areas in which the qualifying examination shows him to be deficient. A student who does not meet any of these requirements may petition the Department of English.

To qualify for candidacy for the M.A. in English the student must: (1) complete a Graduate Record Examination; (2) demonstrate, no later than the end of the second full quarter of residency, a proficiency in French, German, Latin, Greek, Italian, Russian, or Spanish; and (3) complete at least 16 quarter units of graduate work acceptable for the M.A.

The program leading to the M.A. in English requires the completion, with grades of A or B, of at least 45 quarter units of credit beyond the baccalaureate degree, including:

- (1) Eng. 6000, 6010, and 6910 (thesis or equivalent; must be approved by the departmental executive committee).
- (2) Not more than 16 quarter units of course work in the Eng. 3000 and 4000 series, approved by adviser.
- (3) Elective courses in the Eng. 6000 series.

FOREIGN LANGUAGES AND LITERATURES

ADVANCED PLACEMENT, FOREIGN LANGUAGE

A foreign language student who has successfully completed the advanced placement course in a foreign language in high school and has earned a score of "4" or "5" on the Advanced Placement Examination* will be granted unit credit for three courses of foreign language (12 units). (No letter grade will be assigned or computed in the student's grade point average.)

FRENCH MAJOR

Candidates for the degree of bachelor of arts with a major in French must:

1. Take a proficiency examination in language competence given for the placement of students in appropriate French language and literature courses.
2. Complete the 76-unit requirement in general education. Acquisition of a reading knowledge in a second language (e.g., by completion of a relevant minor) is strongly recommended.
3. In lower division, complete the units provided by Fren. 1001 through 2003 or equivalent. (Fren. 2100 is strongly recommended for the French majors.)
4. In upper division, complete Fren. 3001, 3002, 3101, 3102 and 28 units from among the literature courses.

* This is prepared and offered by the College Entrance Examination Board.

Foreign Languages

Candidates for the Standard Teaching Credential with specialization in secondary teaching must complete (a) a baccalaureate degree with a major in French, (b) the requirements for admission to teacher education, and (c) the required professional courses in teacher education, including For. Lang. 5950. Consult with advisers in French and the Division of Education for details.

Candidates for the Standard Teaching Credential with specialization in elementary teaching must complete (a) a baccalaureate degree with a major in French, (b) the requirements for admission to teacher education, and (c) the required professional courses in teacher education. Consult with advisers in French and the Division of Education for details, particularly concerning recommended patterns of general education courses.

FRENCH MINOR

1. In lower division, complete requirement (3) under French major.
 2. In upper division, complete Fren. 3001-2, Fren. 3102 and two courses from the following sequence: Fren. 3201-2-3.
 3. Candidates for the Standard Teaching Credential with specialization in secondary teaching must complete For. Lang. 5950 unless the adviser in French makes a specific exemption. Consult the Division of Education for requirements in professional education.
 4. Candidates for the Standard Teaching Credential with specialization in elementary teaching must consult advisers in French and the Division of Education for details concerning professional education courses and recommended patterns of general education courses.

GERMAN MAJOR

A candidate for the degree of bachelor of arts with a major in German will:

1. Complete the 76-unit requirement in general education. Acquisition of a reading knowledge of French and Latin is highly recommended.
 2. In lower division, complete the 24 units provided by Ger. 1001 through Ger. 2003 (or equivalent).
 3. In upper division, complete Ger. 3001-2-3 and 33 units from among the literature courses.

GERMAN MINOR

1. In lower division, complete requirement (1) under German major.
 2. In lower division, complete the 24 units provided by Ger. 1001 through 2003 (or equivalent).
 3. In upper division, complete Ger. 3001-2-3 and 12 units from among the literature courses.

Foreign Languages

Illustrative Program for the German Major

FALL		WINTER		SPRING	
<i>Freshman</i>		<i>WINTER</i>		<i>SPRING</i>	
German 1001	4	German 1002	4	German 1003	4
English 1001	3	Social Science	4	Elective	4
History 1101	4	History 1102	4	Life Science	5
Physical Education	1100	Physical Education	1010	Physical Education	1010
	3		$\frac{1}{2}$		$\frac{1}{2}$
	14		16 $\frac{1}{2}$		14 $\frac{1}{2}$
<i>Sophomore</i>					
German 2001	4	German 2002	4	German 2003	4
Foreign Lang. 1001	4	Foreign Lang. 1002	4	Foreign Lang. 1003	4
Psychology 2000	4	Physical Science	5	Social Science	4
Creative Arts	3	English 2002	3	Sophomore Elective	3
Physical Education	2010	Physical Education	2010		
	$\frac{1}{2}$		$\frac{1}{2}$		
	15 $\frac{1}{2}$		16 $\frac{1}{2}$		15
<i>Junior</i>					
German 3001	4	German 3002	4	German 3003	4
German 3201	4	German 3202	4	German 3203	4
Foreign Lang. 2001	4	Foreign Lang. 2002	4	Foreign Lang. 2003	4
Junior Symposium	3	Life or Physical Science	4	English	4
	15		16		16
<i>Senior</i>					
German 3501	4	German 3503	4	German 3602	4
German 3601	4	German 4101	4	German 4102	4
Senior Symposium	3	Senior Elective	4	Senior Elective	5
Senior Elective	5	Senior Elective	4	Senior Elective	4
	16		16		17

SPANISH MAJOR

1. Proficiency Examination

A proficiency examination designed to place lower division students at appropriate levels of language achievement will be given. Students admitted to a more advanced level through this examination will be held responsible for the remaining number of units in the fulfillment of the lower division requirement.

2. General Education

Complete the 76-unit requirement in general education. Proficiency in another foreign language, both audio-lingual and reading, is strongly recommended.

3. Spanish Courses

Lower Division: 24 units including Span. 1001-2-3, Span. 2001-2-3 or equivalent. (Span. 2100 is strongly recommended for Spanish majors.)

(Upper Division: 45 units including Span. 3001-2-3, Span. 3101, Span. 3102. Majors concentrating in Spanish literature must take Spanish 3601-2-3. Majors concentrating in Latin American literature must take Span. 3201-2-3 and 13 units from among the Spanish literature courses or Latin American literature courses.)

Foreign Languages

4. Candidates for the Standard Teaching Credential with specialization in secondary teaching must complete (a) a baccalaureate degree with a major in Spanish and (b) the required professional courses in teacher education, including For. Lang. 5950. Consult with advisers in Spanish and the Division of Education for details.
5. Candidates for the Standard Teaching Credential with specialization in elementary teaching must complete (a) a baccalaureate degree with a major in Spanish, (b) the requirements for admission to teacher education, and (c) the required professional courses in teacher education, including Span. 5101. Consult with advisers in Spanish and the Division of Education for details, particularly concerning recommended patterns of general education courses.

SPANISH MINOR

1. Lower Division: As outlined above for the Spanish major.
2. Upper Division: 18 units, including Span. 3001-2-3, Span. 3102 and one course from either of the following sequences: Span. 3201-2-3 or Span. 3601-2-3.
3. Candidates for the Standard Teaching Credential with specialization in secondary teaching must complete For. Lang. 5950. Consult advisers in Spanish and the Division of Education for requirements in professional education.
4. Candidates for the Standard Teaching Credential with specialization in elementary education must complete Span. 5101. Consult advisers in Spanish and the Division of Education for details concerning professional education courses and recommended patterns of general education courses.

ADVANCED PLACEMENT, HISTORY

A history student who has successfully completed the advanced placement course in U.S. history in high school and has earned a score of "4" or "5" on the Advanced Placement Examination* will be granted unit credit for Hist. 1101 (4 units) and Hist. 1102 (4 units). If he has completed the advanced placement course in European history in high school and has earned a score of "4" or "5" on the Advanced Placement Examination,* he will be granted unit credit for Hist. 2001 (4 units) and Hist. 2002 (4 units). (No letter grade will be assigned or computed in the student's grade point average.)

HISTORY MAJOR

1. Complete the 76-unit requirement in general education. A minimum of 4 quarter units in political science and 4 quarter units in eco-

* This is prepared and offered by the College Entrance Examination Board.

History

- nomics is strongly recommended as a part of the social and behavioral science requirement in general education.
2. Demonstrate a reading knowledge of one foreign language. Proficiency may be demonstrated either by two years of college level course work or by examination.
 3. Complete the following requirements in the major:
Lower Division: A minimum of 8 quarter units in either European history or history of the Americas.
Upper Division: A minimum of 40 quarter units in history, to include Hist. 4030 and Hist. 4031. Each student must take a minimum of 8 units in *each of three* of the following fields, preferably chronologically: (a) ancient and medieval, (b) modern Europe, (c) Asia, (d) United States, and (e) Latin America. A comprehensive examination must be passed in the senior year. Hist. 3400 may not be counted toward completion of the 40-unit requirement.

MASTER OF ARTS IN HISTORY

A master's degree in history is now authorized. Contact the History Department Office for additional information.

HISTORY MINOR

A minor in history requires a minimum of 30 quarter units, at least 20 of which must be in upper division courses, including one two-course sequence. The History of Western Culture course sequence will fulfill six of the lower division unit requirements.

TEACHER CREDENTIAL CANDIDATES

History may be offered as an academic major or minor by candidates for standard teaching credentials. Candidates must complete (a) a baccalaureate major (or minor) in history, (b) the requirements for admission to teacher education, and (c) the required professional courses in teacher education. Students should consult with advisers in history and the Division of Education for details.

HONORS IN HISTORY

Students may graduate with *Honors in History*. A student who wishes to enter the Honors Program should make application through the chairman of the department. A screening committee will review such applications and recommend a program for students accepted.

Philosophy

PHILOSOPHY MAJOR

A candidate for the Degree of Bachelor of Arts with a major in philosophy will:

1. Complete 76 units in general education, as prescribed by the faculty of the College.
2. Demonstrate a reading knowledge of a foreign language.
3. Complete these requirements in the major:
 - A. Phil. 1001, Introduction to Logic (4 units)
 - B. Phil. 2100, Ethics (5 units)
 - C. History of Western Philosophy: Phil. 3601, Ancient and Medieval Periods (4 units); Phil. 3602, Later Medieval, Renaissance and Early Modern Periods (4 units); Phil. 3603, 18th and 19th Centuries (4 units).
 - D. Eight units of course work from the following: Phil. 4951, Senior Seminar in Philosophy (4 units, 8 units maximum); Phil. 4952, Senior Project (4 units)
 - E. One from among the following courses: Phil. 4801, Contemporary American Philosophy (4 units); Phil. 4802, Contemporary British Philosophy (4 units); Phil. 4803, Contemporary Continental Philosophy (4 units)
 - F. One from among the following courses: Phil. 1002, Inductive Logic and Scientific Method (4 units); Phil. 3000, Modern Logic (4 units); Phil. 3011, Philosophy of Science (4 units); Phil. 3300, Epistemology (4 units)
 - G. Any three other courses (12 units)

PHILOSOPHY MINOR

A minor in philosophy requires 32 units of philosophy courses including the following:

Phil. 1001, 2100

Three of these courses—Phil. 2000, 3601, 3602, 3603

Any three additional upper division philosophy courses

DIVISION OF SCIENCE AND MATHEMATICS

**Departments: Chemistry, Earth and Physical Science Department
Mathematics, Physics, Psychology, Statistics**

Division Head: Prof. P. V. Peterson

Department of Chemistry

Professors: Marion C. Woods (chairman), John E. DeVries

Associate Professors: Richard E. Bozak, Milton E. Fuller, Richard S. Monson, Donald L. Peterson, Milka R. Zhivadinovich

Assistant Professors: Douglas M. Flynn, John B. Mooney, Charles Perrino, Marvin Ross, John C. Shelton

Department of Earth and Physical Science

Professor: Robert C. Whitney (chairman)

Associate Professor: Jon C. Cummings

Assistant Professors: Paul E. Beckett, Elwood R. Brooks, Harold Bulk, Neil R. Coley, Leigh W. Mintz

Instructor: Thomas Frost

Department of Mathematics

Professors: Thomas H. Southard (chairman), John D. Hancock, C. Richard Purdy, Colbert T. Purvis, George J. Resnikoff, John W. Summers

Associate Professors: Frances C. Amemiya, Allen K. Charnow, Ulysses Hunter, Peter H. Jessner, Marianne Smith, Theodore N. Tracewell, John E. Weidlich

Assistant Professors: Marvin L. Chachere, Delvis A. Fernandez, Jeanne C. Gardner, Archie G. Gibson, Mary W. Gray, George S. Kimeldorf, Charles M. Marut, David M. Minor, Cornelius W. Onneweer, Vilnis Ozols, Harold O. Palmer, Michael H. Rothkopf, Benjamin B. Wells, Jr., Jack S. Zelver

Instructors: Carroll G. Kerns, Robert K. Remple, H. Luana Schrader, Carol A. Ziegler

Lecturer: Wynand J. Pretorius

Department of Physics

Professors: Andrew Guthrie (chairman), Marian Whitehead

Associate Professors: Ann Chamberlin Birge, John C. Giles, Robert H. Good

Assistant Professors: Richard K. Cooper, Robert H. Dickerson

Department of Psychology

Professors: Norman Livson (chairman), Cletus J. Burke, William L. Sawrey, Donald J. Strong

Associate Professors: Georgia Babladelis, Arnold Mechanic, Lawrence Wheeler

Assistant Professors: Richard L. Floyd, Judith Ann Hunt, Roy T. Matsumoto, Kenneth B. Pool, Arthur E. Whimbey

Department of Statistics

Professors: George J. Resnikoff (chairman), William L. Sawrey

Associate Professors: William L. Harkness, Heebok Park, Bruce E. Trumbo, John W. Summers

Assistant Professor: Mary Lou Harkness

Instructors: Mauricio Adler, Kenneth R. Eberhard, Neil T. Wanamaker

Physical Science and Mathematics

Chemistry

Master's Degree

Mathematics (M.S.)

Baccalaureate Degree Majors

Chemistry (B.A., B.S.)

Mathematics (B.S.)

Physics (B.A.)

Physical Science (B.S.) *

Psychology (B.A.)

Statistics (B.S.)

Minors (See adviser for requirements)

Mathematics

Physical Science (Chemistry, Physics or Physical Science)

Psychology

Statistics

PURPOSES

To offer liberal arts, applied and preprofessional programs, to prepare teachers for the elementary and secondary schools and to offer general education and service courses.

INDIVIDUAL STUDY AND DIRECTED GROUP STUDY

Students with special interests not covered in the courses listed may arrange from one to five units of work on an individual study basis by registering for Individual Study. Specific requirements for each individual study program must be worked out with the appropriate faculty member, and approved forms must be filed with the registrar and division office prior to registration. Directed Group Studies, carrying from one to six units of credit, are available at all levels in the several disciplines represented in the division. They will be offered as special circumstances warrant.

HIGH SCHOOL MATHEMATICS PREPARATION

Four years of college preparatory mathematics is strongly recommended for students expecting to major or minor in mathematics or sciences. In any case, such students should have completed at least two years of algebra and one year of geometry, or one and one-half years of algebra, trigonometry and one year of geometry. A student not having this minimum preparation should consult his adviser.

ADVANCED PLACEMENT, CHEMISTRY

A chemistry student who has successfully completed the advanced placement course in chemistry in high school and has earned a score of "4" or "5" in the Advanced Placement Examination † will be granted

* See section, *Physical Science Major*, for optional areas of concentration in chemistry, geology or physics in the physical science major.

† This is prepared and offered by the College Entrance Examination Board.

CURRICULA OFFERED

unit credit for Chem. 1101 (5 units). (No letter grade will be assigned or computed in the student's grade point average.)

CHEMISTRY MAJOR

- I. Complete the 76-unit requirement in general education, which applied to all majors. Students completing this major will have satisfied 14 of the 19-unit general education requirement in physical science and mathematics.
- II. Complete the following requirements:

	B.S.	B.A.
General Chemistry	15	15
Quantitative Analysis	6	6
Mathematics		
Basic Analysis *	—	5
Analytic Geometry-Calculus	20	12
Physics	20	16
Physical Science Electives	—	15-19
General Education	33	23-27
<i>Upper Division</i>		
Organic Chemistry	15	15
Physical Chemistry	15	5
Advanced Inorganic	5	—
Instrumental Analysis	3	—
Advanced Chemistry Electives	9-26	—
Minor Electives	0-17	—
Physical Science or Free Electives †	—	38-42
Foreign Language ‡	16-20	—
General Education (other than for. lang.)	20	35-39
Total	194-198	193

Illustrative Program for the Chemistry Major—B.S.

	Units		
	Fall	Wint.	Spr.
<i>First Year</i>			
General Chemistry, 1101	5		
Analytical Geometry-Calculus, 1302	4		
General Education	8		
General Chemistry, 1102	5		

* May be waived by examination. The candidate who is qualified to have this requirement waived will be expected to take an equivalent number of units in upper division major or minor electives.

† Maximum of 25 free electives units.

‡ Reading knowledge of scientific German is required for the B.S. degree. Credit requirement may be waived on demonstration of this ability. French is recommended as a second language.

Chemistry

	Units		
	Fall	Wint.	Spr.
Analytical Geometry-Calculus, 1303		4	
Physics, 1011		4	
General Education		4	
General Chemistry, 1103		5	
Analytical Geometry-Calculus, 2301		4	
Physics, 1012		4	
General Education		4	
Second Year			
Quantitative Analysis, 2201	3		
Analytical Geometry-Calculus, 2302	4		
Physics, 2011	4		
General Education	5		
Analytical Geometry-Calculus, 2303		4	
Quantitative Analysis, 2202	3		
Physics, 2012	4		
General Education	5		
Physics, 2013		4	
General Education		12	
Third Year			
Organic Chemistry, 3301	5		
Physical Chemistry, 4501	5		
German, 1001	4		
Other General Education	3		
Organic Chemistry, 3302		5	
Physical Chemistry, 4502	5		
German, 1002	4		
Other General Education	3		
Organic Chemistry, 3303		5	
Physical Chemistry, 4503	5		
German, 1003	4		
Other General Education	3		
Fourth Year			
Instrumental Analysis, 4240	3		
Advanced Chemistry Electives	5		
German, 2001	4		
General Education	4		
Advanced Inorganic Chemistry, 4151		5	
Advanced Chemistry Electives	4		
German, 2002	4		
General Education	3		
Advanced Chemistry Electives		12	
General Education		4	

ADVANCED PLACEMENT, MATHEMATICS

A mathematics student who has successfully completed an advanced placement course in calculus in high school and has earned a score of "4" on the Advanced Placement Examination * will be granted unit

* This is prepared and offered by the College Entrance Examination Board.

Mathematics

credit for Math. 1302 (4 units). (No letter grade will be assigned or computed in the student's grade point average.) A student who scores "5" on the Advanced Placement Examination * will receive unit credit for Math. 1302 (4 units) and Math. 1303 (4 units). (No letter grade will either be assigned or computed in the student's grade point average.)

MATHEMATICS MAJOR

- I. Complete the 76-unit requirement in general education, which applies to all majors. Students completing this major will have satisfied the general education requirement in mathematics. Chemistry and physics taken as preparation for the major will apply toward the general education requirement in natural science. Study of one or more modern foreign languages is highly recommended.
- II. Complete the following requirements in the major:

	Units
Lower Division	
Recommended preparation for the major:	
College chemistry and physics	15-25
Math. 1302-3 and Math. 2301-3 or equivalent	20

Upper Division

Upper Division Core

Math. 3101, 3111	8
Math. 3201	4
	12

Liberal Arts Option

Math. 3320 or equivalent	5
Math. 4331, 4332	10
Electives selected with aid of adviser	13

Teaching Option

Math. 4040	4
A second course in geometry	4
Math. 3600	4
Electives selected with aid of adviser	16
	28

Total upper division mathematics 40

- III. Pre-secondary teaching candidates should consult the Mathematics Department Office for additional credential requirements in mathematics.

* This is prepared and offered by the College Entrance Examination Board.

THE DEGREE, MASTER OF SCIENCE IN MATHEMATICS

The College offers the degree, Master of Science in Mathematics, with a choice of three options:

1. Teaching Option
2. Applied Mathematics Option
3. Pure Mathematics Option

The interested student should contact the Mathematics Department, where he can consult with a member of the staff and obtain literature which describes the detailed requirements of the various options.

REQUIREMENTS FOR THE DEGREE**A. Admission to the Program**

The program is open to graduates of accredited institutions who have completed at least 20 quarter units of approved upper division mathematics courses, including, in general, courses in linear algebra and differential equations, and who meet the requirements for admission specified in the California Administrative Code, Title V. Students who pursue either Option 2 (applied mathematics) or Option 3 (pure mathematics) will be expected, in general, to have completed at least 36 quarter hours of upper division mathematics as part of their undergraduate training. Students having less than the prescribed preparation may take the remaining courses at Cal State Hayward.

B. Advancement to Candidacy

Before a formal "contract" program for the degree is approved and the person advanced to candidacy, he must:

- (1) Complete at least 15 quarter units of work beyond the baccalaureate degree, with average grades of B or better, including at least two courses in mathematics (one of them at 6000 level).
- (2) Pass a departmental examination designed to test his mastery of the fundamental concepts in elementary mathematics through the calculus.

C. Length of Curriculum

In accordance with Code requirements, the program for the degree consists of at least 45 quarter units, of which at least 18 are purely graduate (6000 level) courses. Mathematics courses are integral parts of several teaching credential programs and of several science and related majors. Thus, a mathematics major may shift goals in the early stages of his work without a significant loss of time.

D. Details of Curricular Requirements for All Options

- (1) At least 45 quarter units of B-average work must be completed in approved upper division and graduate courses.

- (2) At least 30 quarter units of the above must be in approved upper division and graduate mathematics courses.
- (3) At least 18 quarter units of 6000-level course work must be taken (with at least 12 of these in mathematics).
- (4) All programs must include, either as part of the undergraduate prerequisite or as part of the above 45 units:
 - (a) A course in modern higher algebra or a more advanced course; (this does not include Math. 4101); e.g., Math. 4102—Introduction to Modern Algebra II or a higher numbered course in modern algebra.
 - (b) A course in advanced calculus or a higher level analysis course (this does NOT include vector analysis or differential equations); e.g., Math. 4331—Advanced Calculus or Math. 6350—Advanced Real Analysis or equivalent.
 - (c) A course in Modern Higher Geometry (non-Euclidean Geometry, Projective Geometry, or the Foundations of Geometry); e.g., Math. 3202—Non-Euclidean Geometry or Math. 3203—Synthetic and Analytic Projective Geometry or equivalent.

PHYSICAL SCIENCE MAJOR

The physical science major is designed to give a student breadth in the physical sciences. It serves as a liberal arts option or can be combined with the general Secondary Teaching Credential program. The secondary credential is required of those planning to teach at the junior high school and high school levels. Electives within the program permit a student to concentrate in either chemistry, geology or physics at the upper division level.

The physical science courses available as electives are: astronomy, chemistry, Conservation 4380 (a five-unit course of which two units apply toward a physical science major), geology, mathematics, meteorology and physics.

A major in the physical sciences prepares a student for further study in both technical and non-technical fields as well as for the teaching of science or for employment in a variety of occupations in which a good science background is needed.

REQUIREMENTS

- I. Complete the 76-unit requirement in general education, which applies to all majors. Students completing this major will have satisfied the 19-unit general education requirement in science and mathematics. Study of one or more modern foreign languages is highly recommended.

Physical Science

II. Complete the following requirements in the major:

Lower Division

	Units
Mathematics	20-25
General Chemistry	15
Quantitative Analysis	6-9
General Physics	20
Biology	5-10
Physical Science Electives	5-10

Upper Division

Approved electives for options in chemistry, geology or physics	21-39
Total	110

III. Secondary teaching candidates must complete (a) the requirements for admission to teacher education, (b) the required professional courses in teacher education, (c) the requirements for a minor, 6 units of which may be taken in the graduate year, (d) the course, Sci. Ed. 5100, 3 units.

Illustrative Program for the Physical Science Major (Geology Option)

	Units		
	Fall	Wint.	Spr.

First Year

Math. 1301. Basic Analysis	5
Chem. 1101. General Chemistry	5
General Education and/or electives	6
Math. 1302. Analytical Geometry and Calculus	4
Chem. 1102. General Chemistry	5
Phys. 1011. General Physics	4
General Education and/or electives	3
Math. 1303. Analytical Geometry and Calculus	4
Chem. 1103. General Chemistry	5
Phys. 1012. General Physics	4
General Education and/or electives	3

Second Year

Math. 2301. Analytical Geometry and Calculus	4
Chem. 2201. Quantitative Analysis	3
Phys. 2011. General Physics	4
Biol. 1000. Principles	5
Math. 2302. Analytical Geometry and Calculus	4
Chem. 2202. Quantitative Analysis	3
Phys. 2012. General Physics	4
Geol. 2101. Physical	5
Math. 2303. Analytical Geometry and Calculus	4
Phys. 2013. General Physics	4
Geol. 2201. Historical	5
General Education and/or electives	3

Physics

Third Year

	Units		
	Fall	Wint.	Spr.
Geol. 3610. Crystallography and Mineralogy	5		
General Education and/or electives	11		
Geol. 3710. Petrology	5		
General Education and/or electives	11		
Geol. 3810. Structural	5		
General Education and/or electives	11		

Fourth Year

	Units		
	Fall	Wint.	Spr.
Geol. 3510. Paleontology	5		
Earth Science Elective	5		
General Education and/or electives	5		
Earth Science Elective	5		
General Education and/or electives	10		
Earth Science Elective	5		
General Education and/or electives	10		

PHYSICS MAJOR

A student completing the physics program is prepared to assume a position in industry or with governmental agencies, including those in the areas of nuclear energy and the space program, to complete the professional training needed for a Secondary Teaching Credential and to enter a more advanced study program in physics, geophysics and biophysics.

Requirements

- I. Complete the 76-unit requirement in general education, which applies to all majors. Students completing this major will have satisfied 14 of the 19-unit general education requirements in science and mathematics. Study of one or more modern foreign languages is highly recommended.
- II. Complete the following requirements in the major:

	B.A.
General Physics	20
General Chemistry	15
Mathematics (Analytical Geometry and Calculus, Differential Equations)	25

Upper Division

Analytic Mechanics	9
Electricity and Magnetism	9
Quantum Physics	12
Mathematical Physics	4
Junior and Senior Physics Laboratories *	5
Electives †	15

* Three units in the senior physics laboratory.
† Check with adviser.

	B.A.
Vector Analysis	5
Complex Variables	5
General Education	62
 Total	 186

Illustrative Program for the Physics Major

	Units		
	Fall	Wint.	Spr.
First Year			
Math. 1302, 1303, 2301	4	4	4
Chem. 1101, 1102, 1103	5	5	5
Phys. 1011, 1012		4	4
General Education Electives (e.g., Biol. 1000 in Fall)	5½	3½	3
 Second Year			
Math. 2302, 2303, 3320	4	4	5
Phys. 2011, 2012, 2013	4	4	4
General Education Electives (e.g., HWC 1001-2-3)	8	8	8
 Third Year			
Math. 4320, 4340	5	5	
Phys. 3311, 3312, 3313	3	3	3
Phys. 3331, 3332, 3333	3	3	3
Phys. 3182, 3183		1	1
General Education or other Electives	3	9	4
 Fourth Year			
Phys. 4321, 4322, 4323	4	4	4
Phys. 4611, 4612	2	2	
Phys. 4181, 4182, 4183	1	1	1
Phys. Electives (e.g., Phys. 4210, 4320, 4410, 4170)		4	4
General Education or other Electives	9	5	6

PSYCHOLOGY MAJOR

Requirements

- I. Complete the 76-unit requirement in general education, which applies for all degrees.
- II. The major consists of not less than 38 nor more than 56 units of *upper division* psychology courses. All major students will choose a special area from among the following: experimental psychology; personality and social psychology; tests and measurement. The following departmental requirements are in addition to the College's basic requirements for the B.A. degree.
 1. a. Psych. 2000,* 2010, 3100 and 4390.
 - b. Two courses from the following: Psych. 4801, 4802, 4803, 4804.
 - c. Two courses from the following: Psych. 4200, 4210, 4300.

* May be used to discharge general education requirement.

- d. One course from the following: Psych. 4220, 4310, 4320, 4340, 4350.
- e. One course from the following: Psych. 3500, 4403, 4410, 4610.
- f. Two courses from the following: Psych. 4401, 4402, 4730, 4700, 4790, Stat. 4000.
2. Stat. 1000,* 2000; Biol. 1000 * or equivalent.
3. An additional course from one of the three following options, depending upon the student's special area:
 - a. A course from either (c) or (d) above (experimental psychology).
 - b. A course from (e) above (personality and social psychology).
 - c. A course from (f) above (tests and measurement).
4. One approved course in physiology;* or two approved courses in anthropology * and/or sociology;* or one approved course in mathematics. The choice under this requirement will be determined by the student's special area.
5. Three approved courses from other departments, depending upon the student's special area.

The completion of the major program for graduation requires at least a C average in the courses included in the major.

STATISTICS MAJOR

- I. Complete the 76-unit requirement in general education, which applies for all majors. Students completing this major will have satisfied the general education requirement in mathematics. As specified below, students are required to take courses in two fields outside of mathematics and statistics (usually, but not necessarily, sciences) in which statistical methods are applicable. Students completing this requirement will have satisfied general education requirements in the fields elected.

- II. Complete the following requirements in the major:

Lower Division	Units
<i>Mathematics Courses:</i>	
Math. 1302. Analytical Geometry and Calculus	
Math. 1303. Analytical Geometry and Calculus	4
Math. 2301. Analytical Geometry and Calculus	4
Math. 2302. Analytical Geometry and Calculus	4
Math. 2303. Analytical Geometry and Calculus	4
Approved Electives in First Field	
Approved Electives in Second Field	12

* May be used to discharge general education requirement.

Statistics**Upper Division****Mathematics Courses:**

	<i>Units</i>
Math. 4101. Intro. to Modern Algebra I	4
Twelve units to be chosen from the following:	12
Math. 3320. Differential Equations (5)	
Math. 3700. Computer Programming (3)	
Math. 3750. Numerical Analysis (4)	
Math. 3801. Operations Research I (3)	
Math. 3802. Operations Research II (3)	
Math. 3850. Linear Programming (3)	
Math. 4102. Intro. to Modern Algebra II (4)	
Math. 4103. Intro. to Modern Algebra III (4)	
Math. 4331. Advanced Calculus I (5)	
Math. 4332. Advanced Calculus II (5)	
Math. 4340. Complex Variables (5)	
Math. 4700. Advanced Computer Programming (4)	

Statistics Courses:

	<i>Units</i>
Stat. 3500. Statistical Methods in Science and Engineering	4
Stat. 3401. Introduction to Probability Theory	4
Stat. 3502. Statistical Inference I	4
Stat. 3503. Statistical Inference II	4
Stat. 4501. Linear Methods in Statistics I	4
Stat. 4502. Linear Methods in Statistics II	4
Stat. 4410. Introduction to Stochastic Processes	4
Stat. 3601. Applied Statistics	4
Approved Electives in First or Second Field	6
Total	98

Illustrative Program for Statistics Major

	<i>Units</i>		
	<i>Fall</i>	<i>Wint.</i>	<i>Spr.</i>
Math. 1301. Basic Analysis	5		
Biol. 1000. Principles of Biology	5		
Electives or General Education	5		
Math. 1302. Analytic Geometry and Calculus I	4		
Zool. 1001. General Zoology	4		
Electives or General Education	7		
Math. 1303. Analytic Geometry and Calculus II	4		
Electives or General Education	11		

Statistics**Units**

Fall Wint. Spr.

Second Year	
Math. 2301. Analytic Geometry and Calculus III	4
Stat. 3500. Statistical Methods in Science and Engineering	4
Biol. 2500. Genetics	5
Electives or General Education	3
Math. 2302. Analytic Geometry and Calculus IV	4
Phys. 1011. General Physics, Mechanics	4
Electives or General Education	7
Math. 2303. Analytic Geometry and Calculus V	4
Phys. 1012. General Physics, Heat and Sound	4
Electives or General Education	7

Third Year

Math. 4101. Introduction to Modern Algebra I	4
Stat. 3401. Introduction to Probability Theory	4
Phys. 2011. General Physics, Electricity and Magnetism	4
Electives or General Education	3
Math. 3320. Differential Equations	5
Stat. 3502. Statistical Inference I	4
Electives or General Education	7
Stat. 3503. Statistical Inference II	4
Biol. 4420. Marine Biology	3
Electives or General Education	9

Fourth Year

Stat. 3601. Applied Statistics	4
Math. 4331. Advanced Calculus I	5
Stat. 4501. Linear Methods in Statistics I	4
Ent. 4210. General Entomology	4
Math. 4332. Advanced Calculus II	5
Stat. 4502. Linear Methods in Statistics II	4
Electives or General Education	7
Stat. 4410. Stochastic Processes	4
Electives or General Education	11

186 units

DIVISION OF SOCIAL AND BEHAVIORAL SCIENCES

Departments: Geography-Anthropology, Political Science, Sociology

Division Head: Prof. C. W. Merrifield

Department of Geography-Anthropology

Professors: Vincent K. Shaudys, William L. Thomas, Jr.

Associate Professors: Clarence E. Smith (chairman), Barbara G. Anderson, Francis H. Bauer, G. Phillip Curti, Edward J. Jay, Robert K. McKnight

Assistant Professors: Lowell J. Bean, William C. Clarke, N. Ross Crumrine, Mary L. Foster, Anne M. MacPherson, Thomas H. Pagenhart, Robert E. Winter

Instructors: Elizabeth B. Myers, George V. Shkurkyn

Department of Political Science

Professors: J. Malcolm Smith (chairman), Marilyn-June Blawie, Otto F. Freitag

Associate Professors: Jackson H. Crowell, Horst G. Duhnke

Assistant Professors: Scott E. Edwards, William R. Hartman, Jane Banfield Haynes, Suzanne S. Klein, Sherman L. Lewis, James L. Nichols, Gene S. Poschman, Klaus H. Pringsheim, Lillian L. Randolph, John A. Zeigler

Lecturers: James L. Blawie, Herbert M. Fasteau, Richard VrMeer

Department of Sociology

Professors: Peter Geiser (chairman), Norman Jackman, William C. Lawton

Associate Professors: Dawn I. Brett, Malcolm McAfee, Lorenzo H. Snow

Assistant Professors: Thelma F. Batten, Werner J. Einstadter, Robert L. Forbes, Pulin K. Garg, Elizabeth D. Huttman, Robert F. Nicholson, H. Byford Scott, Fred Sklar, Paul T. Takagi

CURRICULA OFFERED

Master's Degree

Political Science (M.A.)

Sociology (M.A.)

Baccalaureate Degree Majors

Anthropology (B.A.)

Geography (B.A.)

Language Arts (B.A.) (An interdivisional major; see INTERDIVISIONAL OFFERINGS.)

Political Science (B.A.)

Social Science (B.A.) (An interdivisional major; see INTERDIVISIONAL OFFERINGS.)

Sociology (B.A.)

Minors (See advisers for requirements)

Anthropology

Economics

Geography

Political Science

Sociology

PURPOSES

The division offers instruction in anthropology, geography, journalism-mass communications, political science, public administration, sociology and social science, leading to the baccalaureate and master's degrees listed above.

In addition, the division offers upper and lower division courses for general education purposes and cooperates with other divisions in the offering of courses in History of Western Culture, in Comparative Studies in Asian Cultures, and in Junior and Senior Symposia. Majors in this division are referred to these interdivisional courses under Part III of the catalog.

DEPARTMENT OF GEOGRAPHY-ANTHROPOLOGY

PURPOSES

Instruction is offered in two subject fields: anthropology and geography. Anthropology is the study of man as the product of both biological and cultural evolution, with emphasis upon analyses and explanatory descriptions of human similarities and variations in the full range of societies around the world. Geography is the study of spatial distributions and space relations on the earth's surface considered as the environment of man. The department's attention is focused upon the points of contact between the two fields: (1) the development of man as the dominant species and agent for change on the earth's surface and (2) the effects of man's changes in his physical, biotic, and cultural habitat in determining the course of human development. The result of such a focus in a combined department of anthropology and geography is that emphasis is placed upon the viewpoint of cultural ecology—the articulation of technology and physical-biotic environment within the scope of sociocultural systems.

Programs are offered for baccalaureate degrees in anthropology (B.A.) and in geography (B.A.), as well as in two core fields in the social science area major; namely, anthropology and geography. These core fields offer variations in recommended electives for students: (1) desiring a general liberal arts education; (2) preparing for a teaching credential; or (3) intending to pursue additional professional training in a graduate school. Study of anthropology prepares for positions in overseas business, government, diplomacy, technical assistance programs, Peace Corps, teaching, and research. Study of geography prepares for

positions in regional planning, resource management, map design, business, government, Peace Corps, teaching, and research. Courses are offered for the teaching minor in both anthropology and geography. Scheduled field work or field trips are required in some courses, as indicated in the course descriptions (Part III of the catalog).

ANTHROPOLOGY MAJOR

I. General Requirements

Complete the 76-unit requirement in general education, which must be satisfied for the B.A. degree.

Recommended Courses: History of Western Culture (HWC 1001-1002-1003) or Comparative Studies in Asian Cultures (Asia 2001-2003-2005).

Required Courses: Biology 1000, Stat. 1000, Geol. 1101, Eng. 2060, For. Lang. 1001-1002-1003 or a demonstrated reading competence.

II. The Major

The major consists of not less than 49 nor more than 64 units of *upper division* anthropology courses. All major students will choose a two-course (8 unit) regional option and a three-course (13 unit) systematic option, as approved by adviser. The following departmental requirements are in addition to the College's general education requirements (I, above):

Required Courses

1. Anth. 2100 and 2300 (Anth. 1000 or 3000, if previously completed, may be substituted for Anth. 2300)
2. Anth. 3100, 3200, 3400, 4410, 4600, and 4910
3. One course from the following: Anth. 3300, 3330
4. One course from the following: Anth. 4720, 4730
5. Two courses from one of the following two groups (Regional Option):
 - a. *New World* regional courses: Anth. 3500, 3505, 3510
 - b. *Old World* regional courses: Anth. 3530, 3540, 3550, 3560, 3570, 3575, 3590
6. Three courses from one of the following three groups (Systematic Option):
 - a. *Archeology and Prehistory:* Anth. 3210 and two of Anth. 3220, 3240, 4210, and 4430
 - b. *Socio-Cultural Anthropology:* Anth. 4310 and two of Anth. 3430, 3460, 4210, 4320, 4330, 4430, 4450, and 4460
 - c. *Biological Anthropology:* Anth. 3210, 4120, 4130

III. Recommended Courses in Supporting Fields

1. Biological Anthropology Option

Biol. 2500, 3500; Geol. 3201, 3510; Zool. 3600, 3610

2. Archeology and Prehistory Option

Hist. 3100 or 3300; Hist. 4030; Geol. 3201; Geog. 2100, 2300; Photo. 4500

3. Socio-Cultural Anthropology Option

One upper division history course (regional); one upper division course in philosophy or literature; Psych. 3500; two upper division courses in geography, political science, sociology, or social science

ANTHROPOLOGY CORE IN SOCIAL SCIENCE AREA MAJOR

A considerable breadth of academic subjects is to be noted in the spectrum of physical and biological sciences, geology, the social sciences and the humanities.

Requirements

- I. Complete the 76-unit requirement in general education, which must be satisfied for the B.A. degree.

Required Course:

For. Lang. 1001-1002-1003 or a demonstrated reading competence.

Recommended Courses

Lower Division:

History of Western Culture (HWC 1001-1002-1003) or Comparative Studies in Asian Cultures (Asia 2001-2003-2005)
Biol. 1000, 2500; Geol. 1101
Stat. 1000; Psych. 2000, 2010
Geog. 2100, 2300; Soc. 2000
Eng. 2060

Upper Division:

Biol. 3500, Geol. 3201
Hist. 4030 and/or regional courses on U.S., Asia, or Latin America
Phil. 3400, 3501, 3502

- II. Complete the following required courses for the social science area major:

Lower Division Prerequisites (2 courses, totaling 8 units)

Anth. 2100 and 2300 (Anth. 1000 or 3000, if previously completed, may be substituted for Anth. 2300)

Upper Division Core (7 courses, totaling 28 units in anthropology)

Anth. 3100 and 3400

Anthropology

- One course from the following: Anth. 3200, 3210, 3220, 3240
 One course from the following: Anth. 3300, 3330
 One course from the following: Anth. 3430, 3460, 4410, 4420, 4430, 4450, 4460
 One course from the following: Anth. 3500, 3505, 3510, 3530, 3540, 3550, 3560, 3570, 3575, 3590
 One course from the following: Anth. 4330, 4720, 4730

Supporting Fields

- a) Three courses in each of two subject fields (24 units), must be selected from economics, geography, history, journalism-mass communications, political science, psychology and sociology.
 b) Two remaining courses (8 units), must be selected from social science, one or more of the fields in (a) above, or related fields, with consent of adviser.
 c) Not over five fields within the social sciences may be applied to the major.
 d) The above 32 units must include a minimum of 12 upper division units.

ANTHROPOLOGY TEACHING MINOR

Requirement: Thirty (30) quarter units, hence 8 courses

Recommended Courses: Anth. 2100, 2300 (Anth. 1000 or 3000 may be substituted), 3100, 3200, 3300, 3400, 3500, or 3505, and one other in the 3500 series, or 4910

GENERAL EDUCATION COURSES IN ANTHROPOLOGY

Lower Division (one of "two of four" in social sciences): Anth. 1000

Upper Division (upper division social science course): Anth. 3000

Illustrative Program for the Anthropology Major

	Units		
	Fall	Wint.	Spr.
First Year			
HWC 1001-2-3—History of Western Culture	5	5	5
Pol. Sci. 1201-1202—American Political Institutions	4	4	
For. Lang. 1001-1002-1003—French, German or Russian	4	4	4
P.E. 1010-1011—Physical Education Activity	½	½	
P.E. 1101—Health and Physical Activity		3	
Biol. 1000—Principles of Biology		5	
Eng. 1002 or Sp/Dr 1002—Expos. & Rhetoric/Oral & Writ. Exp.		3	
Total	13½	16½	17

Geography

	Units		
	Fall	Wint.	Spr.
Second Year			
Asia 2001-2003-2005—Comparative Studies in Asian Cultures	4	4	4
Anth. 2100—Principles of Biological Anthropology	4		
Geol. 1101—Physical Geology	5		
Psych. 2000—General Psychology I	4		
P.E. 2010-2011—Physical Education Activity		½	½
Anth. 2300—Principles of Cultural Anthropology		4	
Biol. 2500—Genetics		5	
Geog. 2300—Principles of Cultural Geography		4	
Soc. 2000—Introduction to Sociology			4
Eng. 2060—Introduction to Linguistics		4	
Stat. 1000—Elements of Probability and Statistics			5
Total	17	17½	17½
Third Year			
Anth. 3100—Human Evolution		4	
Anth. 3200—Human Prehistory		4	
Anth. 3300 Series (one of two choices)			4
Anth. 3400—Social Anthropology			4
Anth. 3500 Series—Regional option			4
Anth. 3210 or 4310—Field Course (Systematic Option)		5	
Recommended courses in supporting fields for option	4	4	4
Elective (or teaching minor)	4	4	
Symp. 3801—Junior Symposium			3
Total	16	16	16
Fourth Year			
Anth. 3500 Series—Regional Option		4	
Anth.—Systematic Option	4	4	
Anth. 4410—Language in Culture			4
Anth. 4600—Growth of Anthropological Thought			4
Anth. 4700 Series (one of two choices)			4
Recommended courses in supporting fields for option (incl. upper division General Education)	4	4	
Symp. 4801—Senior Symposium			3
Electives (or teaching minor)	4	4	4
Total	16	16	15

GEOGRAPHY MAJOR

I. General Requirements

Complete the 76-unit requirement in general education, which must be satisfied for the B.A. degree.

Recommended Courses: History of Western Culture (HWC 1001-1002-1003) or Comparative Studies in Asian Cultures (Asia 2001-2003-2005).

Required Courses: Biol. 1000 and 4450; Geol. 1101; Phys. Sci. 1340; Meteorology 1400; Stat. 1000; and For. Lang. 1001-1002-1003 or demonstrated reading competence (with approval of adviser, Math. 1301 and 2100 and Stat. 2000 and 2510 may be substituted for For. Lang. 1001-1002-1003.)

II. The Major

The major consists of not less than 54 nor more than 66 units of *upper division* geography courses. All major students will choose a two-course (8 unit) regional option and a three-course (12 to 14 unit) systematic option, as approved by adviser. The following departmental requirements are in addition to the College's general education requirements (I, above):

Required Courses:

1. Geog. 2100, 2300 and 2310 (Geog. 1000 or 3000, if previously completed, may be substituted for 2300)
2. Geog. 3100, 3400, 3410, 3420, 3600, 4600, 4910
3. Two courses from the following (Regional Option): Geog. 3500, 3505, 3510, 3515, 3530, 3540, 3550, 3560, 3575
4. Three courses from one of the following five groups (Systematic Option):
 - a. *Physical-Biotic Geography*: Geog. 4100, 4110, 4130, 4210
 - b. *Cultural Geography*: Geog. 4310 and two of Geog. 3300, 3320, 3330, 3340, 4300
 - c. *Historical-Theoretical Geography*: Geog. 4400, 4430, 4450, 4500, 4510, 4610
 - d. *Cartographical Geography*: Geog. 3610, 3620, 4400, 4610
 - e. *Resources Management*: Geog. 4110 or 4210; two of Geog. 4300, 4320, 4350

III. Recommended Courses in Supporting Fields

1. Physical-Biotic Geography Option:

Math. 1301-1303, Geol. 3201, 3810, 4310, Biol. 3500; Botany 2000, 4600, Zool. 2000, 4142; Biol. 4461-4462

2. Cultural Geography and Historical-Theoretical Geography Options:

Upper division courses in at least three of the following subject fields: anthropology, economics, history, political science, sociology, social science, in an integrated program approved by the department

3. Cartographical Geography Option:

Art 1110, 2141, 4611, 4630; Stat. 2000 and 2510; Math. 1301 and 2100; Photo. 4500; and one or more upper division courses in European history

4. Resources Management Option:

Upper division courses in at least four of the following subject fields: biology, botany, economics, geology, nature study, political science, recreation, sociology, and zoology, in an integrated program approved by the department

GEOGRAPHY CORE IN SOCIAL SCIENCE AREA MAJOR

A considerable breadth of academic subjects is to be noted in the spectrum of physical and biological sciences and the social sciences. The geography core in social science area major is recommended for prospective elementary and secondary school teachers.

Requirements

- I. Complete the 76-unit requirement in general education, which applies for all degrees.

Required Course:

For. Lang. 1001-1002-1003 or a demonstrated reading competence

Recommended Courses:

Lower Division

History of Western Culture (HWC 1001-1002-1003) or Comparative Studies in Asian Cultures (Asia 2001-2003-2005)
Biol. 1000; Geol. 1101
Math. 3000; Psych. 2000
Anth. 1000; Soc. 2000

Upper Division

Geol. 3201
Electives in music, art, speech, education

- II. Complete the following required courses for the social science area major:

Lower Division Prerequisites (2 courses, totaling 8 units)

Geog. 2100 and 2300 or 2310 (Geog. 1000, if previously completed, may be substituted for Geog. 2300)

Upper Division Core (7 courses, totaling 28 units in geography)

Geog. 3000, 3300 or 4500, and 4300
One course from the following: Geog. 3400, 3410, 3600
One course from the following: Geog. 3500, 3505
One course from the following: Geog. 3510, 3515, 3530, 3540, 3550, 3560, 3575
One course from the following: Geog. 3320, 3330, 3340, 4400, 4450, 4600, 4610, 4910

Geography

Supporting Fields

- a) Three courses in each of two subject fields (24 units) must be selected from anthropology, economics, history, journalism-mass communications, political science, psychology and sociology.
- b) Two remaining courses (8 units) must be selected from social science, one or more of the fields in (a) above, or related fields, with consent of adviser.
- c) Not over five fields within the social sciences may be applied to the major.
- d) The above 32 units must include a minimum of 12 upper division units.

GEOGRAPHY TEACHING MINOR

Requirement: Thirty (30) quarter units, hence 8 courses

Recommended Courses: Geog. 2100, 2300 (Geog. 1000 may be substituted), 2310 or 4300, 3000, 3100, 3410, 3500 or 3505, 4910

GENERAL EDUCATION COURSES IN GEOGRAPHY

Lower Division (one of "two of four" in social sciences): Geog. 1000

Upper Division (upper division social science course): Geog. 3000

Illustrative Program for the Geography Major

Units
Fall **Wint.** **Spr.**

First Year

HWC 1001-2-3—History of Western Culture	5	5	5
Pol. Sci. 1201-1202—American Political Institutions	4	4	
For. Lang. 1001-1002-1003—French, German or Russian	4	4	4
P.E. 1010-1011—Physical Education Activity	½	½	
P.E. 1101—Health and Physical Activity		3	
Biol. 1000—Principles of Biology		5	
Eng. 1002/Sp. Dr. 1002—Expos. & Rhetoric/Oral & Writ. Exp.		3	
Total	13½	16½	17

Second Year

Asia 2001-2003-2005—Comparative Studies in Asian Cultures	4	4	4
Geog. 2100—Principles of Physical Geography	4		
Geol. 1101—Physical Geology	5		
Phys. Sci. 1340—Principles of Physical Science	5		
Psych. 2000—General Psychology	4		
P.E. 2010-2011—Physical Education Activity	½	½	
Geog. 2300—Principles of Cultural Geography	4		
Met. 1400—Weather and Climate	5		
Anth. 2300—Principles of Cultural Anthropology	4		
Stat. 1000—Elements of Probability and Statistics	5		
Elective	4		
Total	18	17½	17½

Political Science

Units
Fall **Wint.** **Spr.**

Third Year			
Geog. 3100—Descriptive and Regional Climatology		4	
Geog. 3400—Field Instruments and Graphic Methods		5	
Geog. 3410—Map and Aerial Photo Reading and Interpretation		4	
Geog. 3420—Field Observation and Report Writing			5
Geog. 3600—Cartographic Instruments and Graphic Methods		4	
Geog. 2310—Economic Geography		4	
Biol. 4450—Biogeography		3	
Recommended courses in supporting fields for option		4	4
Electives (or Teaching Minor)		4	4
Symp. 3801—Junior Symposium			3
Total	16	16	16

Fourth Year

Fourth Year			
Geog. 3500 series—Regional Option	4	4	
Geog.—Systematic Option	4	4	5
Geog. 4600—Growth of Geographic Thought			4
Geog. 4910—Proseminar in Geography		4	
Recommended courses in supporting fields for option (incl. upper division General Education)	4		
Symp. 4801—Senior Symposium		3	
Electives (or Teaching Minor)	4		4
Total	16	15	13

DEPARTMENT OF POLITICAL SCIENCE

PURPOSES

The College offers a major in political science which leads to the bachelor of arts degree. The objective of this program is to educate at the baccalaureate degree level those students seeking a liberal education with a concentration in political science. The political science curriculum affords the student the opportunity to acquire an organized body of knowledge about political and social affairs, to obtain an understanding of the relationship of political science to other major areas of study, to develop the ability of critical and coherent thinking, and to be qualified to enter various fields of employment, such as government service, teaching and private agencies.

THE BACHELOR OF ARTS DEGREE IN POLITICAL SCIENCE

- I. Complete the 76-unit requirement in general education, which must be satisfied for the B.A. degree.
- II. Complete the following requirements in the major:
 - A. 48 quarter units in political science, including: Pol. Sci. 2010, *Introduction to Government*; Pol. Sci. 2020, *National Government in the United States*, for those students who have not

- completed Pol. Sci. 1201-2, *American Political Institutions*; and Pol. Sci. 5910, *Political Science Seminar*.
- B. Courses in at least four of the following fields: American government and politics; comparative government; international relations; political theory; public law; or public administration, as approved by adviser.
- C. A minimum of 28 upper division units in political science. For credential purposes 36 upper division units in political science are required; consult with an adviser regarding a credential program.
- D. The completion of 20 quarter units of appropriate upper division courses in anthropology, economics, geography, history, journalism, philosophy, psychology, social science, sociology and statistics selected with the approval of the student's adviser. A proficiency in a modern language will be required. Proficiency may be demonstrated either by the completion of the second year of college course work in an approved foreign language or by examination.

Graduation Requirement for American Institutions

The graduation requirement in American institutions, to include competency in U. S. History, U. S. Constitution, and California Government, may be met by satisfactory completion of appropriate tests or courses listed in one of the following groups:

1. Pol. Sci. 1201-1202. May not apply toward the major.
2. Hist. 1101-1102. May not apply toward the major.
3. Pol. Sci. 3100 or Pol. Sci. 2020 and Hist. 4540 or approved tests. Pol. Sci. 3100 may not apply toward the major.

POLITICAL SCIENCE CORE IN THE SOCIAL SCIENCE AREA MAJOR

- I. Complete the 76-unit requirement in general education, which applies for all degrees.
- II. Complete the following required courses for the social science major (core in political science):

Lower Division

Pol. Sci. 1201-1202 or History 1101-1102, and Pol. Sci. 2010.

Upper Division Core

(7 courses totaling 28 units in political science)

One upper division course selected from each of four of the following areas:

American Government and Politics

Comparative Government

Public Law

International Relations

Political Theory

Public Administration

Supporting Fields

(8 courses totaling 32 units, at least 12 units of which must be upper division)

1. Three courses in each of two subject fields, selected from anthropology, economics, geography, history, journalism-mass communications, psychology, and sociology.
2. Two additional courses to be distributed among one or two of the above-named fields, social science, or related fields, with consent of adviser.
3. Not over five fields may be applied to the major.

Foreign Language

Two years of collegiate foreign language courses or a demonstrated reading competence.

Illustrative Program for the Political Science Major

	<i>Units</i>	<i>Fall</i>	<i>Wint.</i>	<i>Spr.</i>
First Year				
Pol. Sci. 1201—American Political Institutions	4			
HWC 1001—The Ancient and Medieval World	5			
P.E. 1100—Health and Physical Act	3			
Mus. 2111—Music Listening	3			
Pol. Sci. 1202—American Political Institutions	4			
HWC 1002—The Renaissance and Early Modern Times	5			
P.E. 1010—Fund. of Physical Activity	½			
Biol. 1000—Principles of Biology	5			
HWC 1003—The Modern Western World	5			
Phys. Sci. 1340—Intro. to Physical Science	5			
P.E. 1011—Fund. of Physical Education	½			
General Education elective	4			
	15	14½	14½	
Second Year				
Pol. Sci. 2010—Introduction to Government	4			
Phil. 1000—Symbolic Logic	4			
P.E. 1020—Fundamentals of Physical Education	½			
Asia 2001—Patterns of Asian Cultures	4			
Psych. 2000—General Psychology	4			
Pol. Sci. 3112—American Legislatures and Legislation	4			
Eng. 1010—Introduction to Literature	5			
P.E. 1012—Fund. of Physical Education	½			
Asia 2003—Development of Traditional Asian Cultures	4			
Econ. 2301—Principles of Economics	4			
Pol. Sci. 3210—Comparative Government	4			

Second Year—Continued

	Units		
	Fall	Wint.	Spr.
Geog. 2300—Principles of Cultural Geography	4		
Asia 2005—Asian Societies in the Modern World		4	
Eng. 1202—Expository Writing		4	
	16½	17½	16

Third Year

Pol. Sci. 3410—Law and Society	4
Pol. Sci. 3520—International Relations	4
Jr. Symp. 3801—Junior Symposium	3
Soc. 2010—Social Problems	4
Pol. Sci. 4130—Urban Governments	4
Soc. 4450—Urban Sociology	4
Hist. 4530—Diplomatic History of U.S. to 1898	4
Elective	4
Geog. 4300—Political Geography	4
Pol. Sci. 4248—Government and Politics of China or	
Pol. Sci. 4249—Government and Politics of Japan	4
Elective	4
Cons. 4380—Conservation of Natural Resources	5
	15
	16
	17

Fourth Year

Sr. Symp. 4801—Sr. Symposium	3
Pol. Sci. 4711—History of Pol. and Social Thought	5
Econ. 4100—International Economics	4
Elective	4
Pol. Sci. 4730—American Political Thought	4
Elective	12
Pol. Sci. 5910—Seminar	4
Elective	10
	16
	16
	14

THE MASTER OF ARTS DEGREE IN POLITICAL SCIENCE

The College offers the degree of Master of Arts in Political Science. In general, the program is open to graduates of accredited institutions who (1) have an undergraduate program of 40 quarter units in political science and such additional upper division units in related fields of political science as to total 60 quarter units, (2) have earned not less than a 2.5 grade point average in all undergraduate work attempted, (3) have at least a 3.0 grade point average in the undergraduate major, and (4) obtain a score at or above the national norm on the Graduate Record Examination. If a student does not qualify in (2), (3) or (4) above, he may continue postgraduate work as an unclassified graduate for the purpose of removing deficiencies and otherwise demonstrating ability to succeed in a master's degree program.

Requirements for the Degree

A. Advancement to Candidacy.

A student who holds classified graduate standing may be considered for advancement to candidacy when he: (1) has filed an official program of study approved by the appropriate graduate adviser, (2) has completed all undergraduate deficiencies and, (3) has been recommended for advancement to candidacy by the department. Advancement to candidacy is recommended by the department after the student has satisfactorily completed 12 quarter units of work beyond the baccalaureate degree.

B. Examinations.

Before a student may register for Pol. Sci. 6990, *Master's Thesis*, the student must: (1) demonstrate a satisfactory knowledge of an approved foreign language and, (2) pass a written qualifying examination in methodology and theory in two of the following areas: American government and politics, comparative government, international relations, public law.

Upon completion of the thesis the student must pass an oral examination defending his thesis.

C. Curricular Requirements.

1. 45 quarter units of approved courses earned in graduate standing, of which at least 36 must be completed in residence.

2. Course Requirements.

All students in the program must take Pol. Sci. 6000, *Graduate Seminar in Political Science Methodology* (4 units), and Pol. Sci. 6990, *Master's Thesis* (5 units).

All students must choose four of the following five courses:

	Units
Pol. Sci. 6180. Graduate Seminar in American Government and Politics	4
Pol. Sci. 6280. Graduate Seminar in Comparative Government	4
Pol. Sci. 6480. Graduate Seminar in Public Law	4
Pol. Sci. 6580. Graduate Seminar in International Relations	4
Pol. Sci. 6780. Graduate Seminar in Political Theory	4

A typical program will, therefore, be as follows:

Required courses	20
Additional courses at 4000 level and above, as approved	20
Thesis Research	5
Total	45

3. Grade Point Averages.

- Grade point averages of at least 3.0 must be maintained on:
- All programmed courses required for the removal of undergraduate deficiencies
 - All courses accepted for transfer credit
 - All courses taken at California State College at Hayward concurrently or subsequently to the earliest course listed on the official master's degree program.

MASTER OF PUBLIC ADMINISTRATION

The College offers the degree of Master of Public Administration within the Political Science Department. Objectives of the M.P.A. degree program are to provide an opportunity (a) to those students who have earned a bachelor's degree and wish to prepare for a career in governmental administration and (b) for more advanced public servants who wish to supplement knowledge already obtained and increase their level of competence in theoretical and practical aspects of public administration.

Requirements for Admission to the Program**1. Undergraduate training.**

The student must have an A.B. or its equivalent from an accredited college or university. No specific undergraduate major is required.

Although no specific undergraduate major is required, the student will benefit from undergraduate work in any of the following fields: anthropology, economics, geography, history, political science, psychology and sociology. If the student has not had a course in statistics or accounting, he should complete one course in statistics for the behavioral sciences and one course in accounting. These courses may be taken concurrently with work for the M.P.A. or before entering the program; they are not counted as part of the graduate work.

2. Undergraduate grades.

The student must have an overall average of 2.5 for all courses attempted at the undergraduate level.

3. Graduate Record Aptitude Examination

The student must complete this exam with a score at or above the national norm.

Requirements for M.P.A. Degree

- Maintain a grade point average of 3.0 in all work taken at Hayward while in graduate standing and a grade point average of 3.0 in all work meeting requirements for the M.P.A. degree.

- Pass the qualifying examination. Students not passing the examination may take the examination again upon recommendation of the examining committee. No student may be allowed to take the examination more than twice.
- Pass the Final Oral Examination.

Curricular Requirements

Courses required for a major under the M.P.A. degree program:

<i>A. Required:</i>	<i>Units</i>	<i>Totals</i>
Pub. Ad. 6800. Graduate Seminar in the Principles and Practices of Public Administration, including Bibliography and Research Methods	4	
Pub. Ad. 6810. Graduate Seminar in Administrative Theory	4	
Pub. Ad. 6820. Graduate Seminar in Administrative Behavior	4	12
<i>B. Two of the Following:</i>		
Pub. Ad. 6830. Data Processing and Administrative Analysis	4	
Pub. Ad. 6840. Graduate Seminar in Public Financial Administration	4	
Pub. Ad. 6850. Graduate Seminar in Public Personnel Administration	4	8
<i>C. One of the Following:</i>		
Pub. Ad. 6860. Graduate Seminar in Administrative Law	4	
Pub. Ad. 6870. Graduate Seminar in Comparative Administration *	4	
Pol Sci. 6680. Graduate Seminar in State and Local Government	4	
Pol. Sci. 6180. Graduate Seminar in American Government and Politics	4	4
<i>D. Pub. Ad. 6880. Administrative Practicum.</i>		
To be taken concurrently with Seminar and Project	6	6
Practicum and Seminar are offered at two levels:		
(a) An intern program for those beginning careers		

* To be offered in the second years.

(b) Advanced program for experienced administrators. Practicum and Seminar may be taken in one quarter or in two consecutive quarters.

Total quarter units required _____ 30
 Electives _____ 15

 Total quarter units for M.P.A. degree _____ 45

*Units***DEPARTMENT OF SOCIOLOGY****PURPOSES**

The College offers a major in sociology which leads to the bachelor of arts degree. The objectives of the curriculum are to provide undergraduate preparation for continuing graduate study in sociology, social work or teaching at the secondary, junior college and university levels. The area major in social science with a core in sociology is designed for students who wish to become acquainted with sociology in some depth but who also desire to have a broader background in the related social sciences.

SOCIOLOGY MAJOR

and

SOCIAL SCIENCE MAJOR (Core in Sociology)

I. Complete the 76-unit requirement in general education, which must be satisfied for the B.A. degree.

II. The Major:**A. Sociology**

This consists of 61 to 63 units of course work, depending upon the area of concentration, and at least 12 units of upper division course work selected under advisement from related fields.

B. Social Science Area Major (Core in Sociology)

This consists of 68 units of course work, including at least 40 units of upper and lower division course work selected under advisement from related fields.

III. The following departmental requirements are in addition to the College's basic requirements for the B.A. degree:

A. Lower Division—17 units

Soc. 2000. Introduction to Sociology
 Soc. 2400. Introduction to Social Organization
 Stat. 1000. Introduction to Probability and Statistics †
 Stat. 3010. Statistics for Social Sciences

B. Upper Division—16 units

Soc. 3300. History of Social Thought
 Soc. 3310. Current Sociological Theory
 Soc. 4111. Social Research Methods I
 Soc. 4112. Social Research Methods II

C. Area of Concentration (Elect one area of concentration from 1, 2, 3 or 4 in this group)**1. Social Organization and Social Psychology****• From the following—8 units:**

Soc. 3500. Social Psychology
 Soc. 3420. Comparative Society

• From upper division sociology courses—8 units**2. Population and Demography****• From the following—4 units:**

Soc. 3200. Introduction to Population and Demography

• From the following—4 units:

Soc. 3430. Social Stratification
 Soc. 4450. Urban Sociology

• From upper division sociology courses:

Math. 3700. Introduction to Digital Computer Programming
 Bus. 3850. Data Processing (8 units)

3. Social Services**• From the following—18 units:**

Soc. 3700. Introduction to Social Services
 Soc. 3710. Social Legislation and Public Policy
 Soc. 4121-22. Field Investigation
 Soc. 4711-12. Pro Seminar in Social Processes

4. Social Science Major (Core in Sociology)**• From the following—12 units:**

One course from each of C-1, 2 and 3 above

D. Collateral Requirements for Sociology Major**1. Courses in related fields**

Each student in the sociology major must successfully complete at least 12 units (8 units in one field) in upper division courses approved by the adviser from the following fields: anthropology, economics, geography, history, journalism, philosophy, political science, psychology and social science.

2. Foreign Language

Each student in the sociology major must give satisfactory evidence of a reading ability in at least one modern foreign language.

† This also satisfies the general education code requirement in mathematics.

Sociology

E. Collateral Requirements for Social Science Major (core in Sociology)

1. Supporting fields (8 courses totalling 32 units, at least 20 units of which must be in the upper division)
 - Three courses in each of two subject fields, selected from anthropology, economics, geography, history, journalism-mass communications, political science, and psychology.
 - Two additional courses to be distributed among one or two of the above named fields, social science, or related fields, with consent of adviser.
 - Not over five fields may be applied to the major.
2. Foreign Language

Each student in the Social Science Major (core in Sociology) must give satisfactory evidence of a reading ability in at least one modern foreign language.

SOCIOLOGY TEACHING MINOR

	Units
Soc. 2000. Introduction to Sociology	4
Soc. 2400. Introduction to Social Organization	4
Stat. 1000. Introduction to Probability and Statistics	5
Stat. 3010. Statistics for Social Science	4
Soc. 3310. Current Sociological Theory	4
Soc. 4111. Social Research Methods I	4
Soc. 4112. Social Research Methods II	4
Soc. 4900. Individual Study	1-4
 Total	 30-33

Illustrative Program for the Sociology Major (CONCENTRATION IN THE SOCIAL SERVICES)

	Units		
	Fall	Wint.	Spr.
First Year			
HWC 1001-2-3—History of Western Culture	5	5	5
Biol. 1000—Principles of Biology	5		
P.E. 1010—Physical Education Activity	½		½
Pol. Sci. 1201-1202—American Political Institutions	4	4	
Phys. Sci. 1340—Principles of Physical Science	5		
Eng. 1002/Sp. 1002—Expos. & Rhetoric/Oral and Written Expression	3		
P.E. 1101—Health & Physical Activity	3		
Soc. 2000—Introduction to Sociology		4	
	15	14	14½

Sociology

	Units		
	Fall	Wint.	Spr.
Second Year			
Asia 2001-3-5—Comparative Studies of Asian Cultures	4	4	4
Soc. 2400—Introduction to Social Organization	4		
P.E. 2010, 2011—Physical Education Activity	½		½
Eng. 3650—Contemporary American Literature	4		
Art 1110—Introduction to Art	3		
Phil. 1000—Symbolic Logic	4		
Anth. 2300—Principles of Cultural Anthropology	4		
Psych. 2000-2010—General Psychology	4	4	
Stat. 1000—Elements of Probability and Statistics	5		
Sp/Dr 1003—Fundamentals of Speech	3		
	15½	16	16½

Third Year

Soc. 3300—History of Social Thought	4
Soc. 3700—Introduction to Social Services	4
Jr. Symp. 3801—Junior Symposium	3
Soc. 3500/Psych. 3500—Social Psychology	4
Soc. 3310—Current Social Theory	4
Soc. 3710—Social Legislation and Public Policy	4
Anth. 3300—World Ethnography	4
Soc. Sci. 3001—Social Science I	4
Psych. 4410—Behavior Pathology	4
Pol. Sci. 4130—Urban Government	4
Soc. Sci. 3002—Social Science II	4
Eng. 3252—Shakespeare's Tragedies	4
	15
	16
	16

Fourth Year

Stat. 3010—Statistics for Social Sciences	4
Soc. 4121—Field Investigation	3
Soc. 4711—Pro-seminar in Social Processes	2
Soc. 4460—Occupations and Professions	4
French 1001—Elementary French	4
Soc. 4122—Field Investigation	3
Soc. 4712—Pro-seminar in Social Processes	2
Soc. 4111—Social Research Methods	4
French 1002—Elementary French	4
Sr. Symp. 4801—Senior Symposium	3
Phil. 3400—Philosophy of Science	4
French 1003—Elementary French	4
Cons. 4380—Conservation of Natural Resources	5
Soc. 4112—Social Research Methods	4
	17
	16
	17

THE MASTER OF ARTS DEGREE IN SOCIOLOGY

The College offers the Master of Arts degree in Sociology. In general, the program is open to graduates of accredited institutions who

(1) have completed course work equivalent to that required in the lower and upper division core in sociology at California State College at Hayward; (2) have earned not less than a 2.5 grade point average in all undergraduate work attempted; (3) have at least a 3.0 grade point average in all upper division and graduate courses attempted in sociology; and (4) have obtained a score at or above the national norm on the Graduate Record Examination.

If a student does not qualify in (2), (3), or (4) above, he may continue post-graduate work as an unclassified graduate for the purpose of removing deficiencies and otherwise demonstrating his ability to successfully meet the requirements of the graduate program.

Requirements for the Degree

Advancement to Candidacy

A student who holds classified status may be considered for advancement to candidacy for the master's degree when he has (1) filed an approved program of study with the department and (2) completed all undergraduate deficiencies and (3) been recommended for advancement to candidacy by the department after satisfactorily completing 12 quarter units of work beyond the baccalaureate degree.

Maintenance of Classified Standing

To maintain classified standing, a grade point average of at least 3.0 must be achieved in all courses taken in the approved program, whether taken at California State College at Hayward or at some other accredited institution.

Examinations

Before a student may register for Soc. 6910 (Thesis), the student must: (1) demonstrate a satisfactory reading knowledge of an approved foreign language and (2) pass a written qualifying examination in sociological theory, sociological research methods, and two of the areas of sociological application (population and demography, social psychology, social organization, social policy and deviant behavior).

Curricular Requirements

1. A minimum of 45 quarter units of approved courses earned in graduate standing, of which 36 quarter units must be completed in residence. Units in courses required to remove undergraduate deficiencies are in addition.

2. Course Requirements:
 - (a) Required of all students _____
- Soc. 6111. Advanced Sociological Research Methods I (4)
- Soc. 6112. Advanced Sociological Research Methods II (4)

	<i>Units</i>
Soc. 6311. Seminar in Sociological Theory I (4)	
Soc. 6312. Seminar in Sociological Theory II (4)	
(b) Electives from areas in Sociology _____	8
Soc. 6400. Seminar in Population Studies and Ecology (4)	
Soc. 6500. Seminar in Social Psychology (4)	
Soc. 6600. Seminar in Social Organization (4)	
Soc. 6700. Seminar in Social Policy (4)	
Soc. 6745. Seminar in Deviant Behavior (4)	
(c) Under advisement, electives from upper division and/or graduate level courses _____	16
1. Twelve units from sociology and/or fields closely related to sociology	
2. Four units from statistics	
(d) Soc. 6910. Thesis _____	5
Total _____	45



A play rehearsal for "The Birthday Party,"
contemporary melodrama by Harold Pinter.

PART III

DESCRIPTION OF COURSES

KEY

F—Fall quarter
W—Winter quarter
Sp—Spring quarter
Su—Summer quarter
A—All quarters
Y—At least once a year
()—Unit credits appear in parentheses following title of course
Tent.—Tentatively
Alt.—Alternate

Course Numbering

1000—1999 freshman level.
2000—2999 sophomore level.
3000—3999 junior level.
4000—4999 senior level.
5000—5999 post graduate and professional level; open to qualified seniors.
6000—6999 graduate level. Open only to graduate students.

Accounting

See Business Administration

Anthropology

Offered in the Department of Geography-Anthropology

INTRODUCTORY

1000. Introduction to Anthropology (4)

The holistic study of man: concepts of human evolution, prehistory, culture; comparison in human variation; structure and function in social organization; synthesis of biological, cultural, and social factors. Three hrs. lect., 1 hr. discussion. (A)

2100. Principles of Biological Anthropology (4)

Synthesis of present evidence about human evolution, primates, fossil man, race, and racial differences; the interconnections between biological and cultural aspects in human adaptation and development. Three hrs. lect., 1 hr. discussion. (A)

2300. Principles of Cultural Anthropology (4)

Prehistory and cultural growth, structure and dynamics of culture, cultural invention and diffusion, social organization, status and role, value-systems, an introduction to range of diversity in human ways of life. Not open to students who have taken Anth. 1000 or 3000 or equivalent. Three hrs. lect., 1 hr. discussion. (A)

3000. Anthropology in the Modern World (4)

The relevance of anthropology to contemporary world problems and the great issues of mankind. An advanced level introduction to cultural anthropology; not open for credit to students who have taken Anth. 1000 or 2300 or equivalents. Three hrs. lect., 1 hr. discussion. (A)

INTERMEDIATE—BIOLOGICAL ANTHROPOLOGY**3100. Human Evolution (4)**

The primate-human evolutionary record (fossils, comparative anatomy, physiology) in the light of modern synthetic theory based upon genetics, paleontology, systematics. Prerequisite: Anth. 2100 or Biol. 3500. (W)

INTERMEDIATE—ARCHEOLOGY AND PREHISTORY**3200. Theory in Prehistory (4)**

Theories of culture origin, growth, and evolution; problems of invention, acceptance, and diffusion; meaning of archeological findings for human history; relationship of environment, technology, population size, and cultural complexity. Prerequisite: Anth. 1000 or 2300 or 3000. (F)

3210. Field Course in Archeological Methods (5)

Techniques of prospecting and scientific excavation, with emphasis upon recording and collection of specimens under carefully controlled field conditions. Enrollment limited to 18 students, admitted by consent of instructor. Prerequisite: Anth. 3200. One hr. lect., 8 hrs. activity (field excavation all day Saturday). (Sp)

3220. Prehistory of the Old World (4)

Origin, development, and distribution in space and time of the prehistoric cultures of Africa and Eurasia, with emphasis upon cultural efflorescence; ancient civilizations of southwestern Asia and the eastern Mediterranean. Prerequisite: Anth. 1000 or 2300 or 3000. (W)

3240. Archeology of North America (4)

Prehistory of the Indians of present-day Canada and the United States. Prerequisite: Anth. 1000 or 2300 or 3000. (F)

INTERMEDIATE—ETHNOLOGY**3300. World Ethnography (4)**

Review of selected diversified cultures from various areas of the world, providing a broad general appreciation, for comparative purposes, of the manifold ways in which man responds to and builds upon his differing environments. Prerequisite: Anth. 1000 or 2300 or 3000. (Not offered, 1967-68)

3330. Peasant Societies (4)

Comparative review of selected sedentary farming groups, including discussion of ancient and contemporary populations of Europe, Africa, Asia, the Pacific, and Latin America; the concept of peasantry. Prerequisite: Anth. 1000 or 2300 or 3000. (W)

INTERMEDIATE—SOCIO-CULTURAL ANTHROPOLOGY**3400. Social Anthropology (4)**

Structural-functional approach to the comparative study of human institutions, with emphasis upon kinship and family types throughout the world and their place within the total social structure. Prerequisite: Anth. 1000 or 2300 or 3000, or Soc. 2000. Three hrs. lect., 1 hr. discussion. (F)

3410. Techniques in Anthropological Linguistics (4)

Principles of linguistics as applied to unwritten languages; eliciting and transcribing language materials; grouping and analyzing raw data for linguistic structures in terms of phonemics, morphemics, and syntax. Prerequisite: Eng. 2060. One hr. lect., 6 hrs. activity. (Sp)

3430. Cross-cultural Study of Religion (4)

Origins, forms, elements, and symbolism of religion; the relative roles of magic, religion, and science in selected societies. Prerequisite: Anth. 1000 or 2300 or 3000. (F)

3460. Culture and Personality (4)

The interplay of personality and cultural factors in human development; personality in various cultural settings; the "national character" concept. Prerequisite: Anth. 1000 or 2300 or 3000 or Soc. 3500 or Psych. 3500. (W)

INTERMEDIATE—REGIONAL ANTHROPOLOGY**3440. Folklore (4)**

Introduction to and survey of oral literature, e.g., folktales, myths, legends, proverbs, riddles, etc., especially among non-literate peoples; methods and theories of folklore analysis and the use of folklore in studies of diffusion, social functions, world view, and religion. Prerequisites: Anth. 1000, 2300, or 3000; or Eng. 2060. Four hrs. lect. (Sp)

3500. North American Indians (4)

Native peoples and cultures of present-day Canada and the United States. Prerequisite: Anth. 1000 or 2300 or 3000; or a course in history or geography of North America. (Su)

3505. Indians of California (4)

Habitat, economy, society, arts, and beliefs of the native populations of California; of particular interest and value to prospective elementary teachers. Prerequisite: Anth. 1000 or 2300 or 3000. (W, Su).

3510. Peoples of South America (4)

An analysis of past and present Indian and peasant cultures in the Caribbean and South America. Prerequisite: Anth. 1000, 2300 or 3000; or a history or geography course on region; or residence in region and consent of instructor. (Y)

3515. Peoples of Mexico and Central America (4)

An integrated description of the cultural history and present-day economic, social, political, and religious ways of life of Indian and mestizo groups in rural regions of Mexico and Central America; recent changes and modern trends in cultural development. Four hrs. lect. (Y)

3520. Peoples of the Pacific Islands (4)

Cultural patterns and problems of the Pacific Island world; historical, political, economic background of Polynesia, Micronesia, and Melanesia; the future of these areas in the world scene. Prerequisite: Anth. 1000, 2300 or 3000; or a history or geography course on the area; or residence in the area and consent of instructor. Four hrs. lect.-discussion. (Sp)

3530. Peoples of Island Southeast Asia (4)

Cultural patterns and problems of the Malay world; comparative study of the peoples of Malaysia, Indonesia, and the Philippines, including the Negrito, Chinese, Indian, and European minorities. Prerequisite: Anth. 1000 or 2300 or 3000; or history or geography course on Southeast Asia; or residence in region and consent of instructor. (Su)

3540. Peoples of Eastern Asia (4)

Cultural patterns and problems of China, Korea and Japan; comparative study of native populations, historical and cultural background of the national ethics; role in the contemporary world. Prerequisite: Anth. 1000 or 2300 or 3000; or

Anthropology

a history or geography course on the area; or residence in the region and consent of the instructor (F)

3550. Peoples of Mainland Southeast Asia (4)

The culturally dominant peoples and ethnic minorities in the countries of Burma, Thailand, Cambodia, Laos, and Viet Nam. Prerequisite: Anth. 1000 or 2300 or 3000; or a history or geography course on Southeast Asia; or residence in region and consent of instructor. (Su)

3560. Peoples of India (4)

Development of Indian cultural traditions, with emphasis upon social organization and its relation to the social problems of the peoples inhabiting the India sub-continent. Prerequisite: Anth. 1000 or 2300 or 3000; or a history or geography course on South Asia; or residence in region and consent of instructor. (Sp)

3570. Peoples of Southwest Asia and North Africa (4)

The nomadic and sedentary people of Islamic traditions, from Afghanistan to Morocco, with special consideration to problems of national development in selected countries (Iran, Egypt, Turkey, Saudi Arabia), and Pan-Arabic movements. Prerequisite: Anth. 1000 or 2300 or 3000; or History 4340 or a geography course on Southwest Asia; or residence in region and consent of instructor. (Not offered, 1967-68)

3575. Peoples of Africa South of Sahara (4)

A cultural survey of African peoples and cultures, with emphasis upon the tribal divisions, arts, industry, beliefs, and contemporary problems. Prerequisite: Anth. 1000 or 2300 or 3000; or history or a geography course on Africa; or residence in region and consent of instructor. (Not offered, 1967-68)

3590. Peoples of Europe (4)

Analysis of major cultures of contemporary Europe: origins and evolution, social organization, life styles, value systems, and material culture. Implications of rural-urban differences, national and subnational identification, and culture contact. Prerequisite: Anth. 1000 or 2300 or 3000; or a history or geography course on Europe; or residence in region and consent of instructor. (Not offered, 1967-68)

ADVANCED—BIOLOGICAL ANTHROPOLOGY

4120. Races of Man (4)

Analysis of the processes of race formation in man; origin, evolution distribution, and relationships of extinct and living racial populations; the nature of racial differences and their relationship to man's social and cultural nature. Prerequisite: Anth. 2100 or major in biology. (Not offered, 1967-68)

4130. Fossil Man (4)

Origin and relationships of the fossil hominids; examination and determination of evolutionary trends in the parts and in the whole of the skeletal structure; consideration of functional interrelationships of the parts, with changes leading to the condition of modern man. Prerequisite: Anth. 3100. (Sp)

ADVANCED—SOCIO-CULTURAL ANTHROPOLOGY

4210. Archeology-Ethnology Analysis (5)

Descriptive and analytic methods used in sorting and classifying cultural materials; preparation of materials for illustration and publication; analysis of materials and techniques of manufacture. Prerequisite: Anth. 3210 or 4430. One hour lecture, one hour discussion, six hours activity. (Not offered, 1967-68)

Anthropology

4310. Field Course in Ethnography (5)

Securing, recording, ordering, and analysis of cultural data; problems of participant observation and eliciting information from informants; methods of data collection. Prerequisite: one course in Anth. 3300 or 3400 or 3500 series. One hr. lect., 8 hrs. activity (field work all day Saturday or two afternoons per week). (W)

4320. Problems of Sociocultural Comparisons (4)

Principles of controlled comparison in the study of sociocultural systems; determination of which, if any, forms of behavior are universal and which are restricted in occurrence; development of theories accounting for similarities and variations. Prerequisite: Anth. 2300 or 3000. (Not offered, 1967-68)

4330. Culture Change (4)

Tradition versus the dynamics of change; socio-cultural and psychological barriers to change; stimulants for change; innovation and its acceptance; the ethics of planned change; technical aid and social science. Prerequisite: one 3000-level course in anthropology. (F)

4410. Language in Culture (4)

The study of language in culture; analysis of speech and speech events; meaning, personality, social structure, world view and the speech community; language context in space and time; languages in an evolving cultural world. Prerequisite: Eng. 2060, Introduction to Linguistics. (F)

4420. Cross-Cultural Studies in Child-Rearing (4)

Infancy, childhood, adolescence; the process of enculturation considered cross-culturally. Prerequisite: Anth. 3460. (F)

4430. Invention and Technology (4)

Material artifacts as embodiment of cultural processes: innovation, acceptance, rejection, modification, manufacture, decoration, trade; influence of basic technological inventions. Prerequisite: Anth. 3200. (F)

4450. Cultural Ecology (4)

The articulation of technology and physical-biotic environment within the scope of socio-cultural systems; balance or harmony in man-land relations; growth of ecological thought to include human activity. Prerequisite: Anth. 2300 and Geog. 2300 or equivalents. Cross-listed with Geog. 4450. (W, Su)

4460. Value Systems and World Views (4)

Comparison and analysis of ideology in the cultures of non-literate peoples; socially standardized beliefs about the supernatural, the universe, nature of man, and human relations; beliefs which provide the motivations and guides to behavior. Prerequisite: Anth. 1000 or 2300 or 3000, or major or minor in philosophy. (Sp)

4500. The American Southwest (4)

Examination of reasons for, and processes of, cultural change as these are reflected in ecology, technology, social organization and ideology from antiquity to the present in the American Southwest. Four hrs. lect. (Y)

ADVANCED—REGIONAL ANTHROPOLOGY

4510. Comparative Study of Arid Land Habitats (4)

The varying interpretations and utilizations of arid and semiarid environments by different cultural groups at different times and places; problems of human adaptation to dry lands. Prerequisite: One of Anth. 3510, Geog. 3510, 3515, or 3530. Cross-listed with Geog. 4510. (Not offered 1967-68)

ADVANCED—HISTORY OF ANTHROPOLOGY

4600. Growth of Anthropological Thought (4)

History and philosophy of anthropology; its place among the sciences and the humanities; schools of thought, with emphasis upon the respective contributions and contrasting viewpoints of eminent anthropologists of America, Australasia, and Europe. Prerequisite: senior standing; completion of three upper division anthropology courses, or consent of instructor. (W)

ADVANCED—SPECIAL INTEREST

4720. Anthropology and Medicine (4)

The ecology of health, magical beliefs, and medicine; public health and medical problems as affected by cultural differences; the effects of acculturation upon mental and physical health. Prerequisite: Anth. 1000 or 2300 or 3000. (Sp)

4730. Anthropology and International Technical Aid Programs (4)

The use of anthropological theory, techniques, and data in programs of planned change involving contact of distinct ethnic groups at differing levels of technological skills and land utilization. Prerequisite: Anth. 1000 or 2300 or 3000. (W)

ADVANCED—SPECIAL PROGRAMS

4900. Independent Study (1-4)

Directed reading and/or field research. (A)

4901. Directed Group Study (1-4)

(A)

4910. Pro-Seminar in Anthropology (4)

Seminar in anthropological literature, research aids, and source materials. (Sp)

Art

Offered in the Department of Art

1010.* The Idea of Art History (5)

An examination of style in the visual arts and factors which influence the nature of art in selected salient periods of art history. Four hrs. lect., 1 hr. discussion. (F, Sp)

1110.† Art I (4)

Perception and expression in the visual arts. Required prerequisite for most art courses. Required of all majors. Two hrs. lect., 4 hrs. act. (A)

1120. Art II (4)

Perception and expression in the visual arts, emphasis in two dimensional media. Prerequisite: Art 1110 or approval of instructor. Two hrs. lect., 4 hrs. act. (A)

1130. Art III (4)

Perception and expression in the visual arts, emphasis in three dimensional media. Prerequisite: Art 1120 or approval of instructor. Two hrs. lect., 6 hrs. lab. (F, W, Sp)

2141, 2142. Drawing (3 each)

The concept and practice of drawing. Required of all art majors. One hr. lect., 4 hrs. activity.

* This course satisfies the general education requirement in humanities.

† This course satisfies the general education requirement in creative arts.

3040.* Art of the Ancient World (5)

The evolution of western art from prehistoric cultures to Roman times. Individual study visits to museums required.

3050.* Medieval Art History (5)

The nature of European art from early Christian times to the 15th Century. Individual study trips to museums required.

3060.* Renaissance and Baroque Art History (5)

The nature of renaissance art and the evolution of the baroque. Individual study visits to museums required.

3070.* The Development of Modern Art (5)

A survey of art history from the late 18th Century to the present. Concentration on the revolutionary aspect of modern art. Individual study visits to museums required.

3161. Life Drawing and Anatomy (3)

The development of graphic representation through study of human form. Problems dealing with anatomy and form, emphasizing the skeletal structure. Prerequisite: sophomore standing. Two hrs. lect., 3 hrs. lab.

3162. Life Modeling and Anatomy (3)

The development of graphic representation through study of the human form. Problems dealing with anatomy, emphasizing the muscular structure. Prerequisite: Art 3161 or consent of instructor. Two hrs. lect., 3 hrs. lab.

3211,† 3212. Painting (3 each)

Emphasis on individual expression and critical analysis of the student's own work. Prerequisite: Art 1120 or approval of instructor. One hr. lect., 6 hrs. lab.

3213. Painting (5)

Emphasis on individual expression and critical analysis, including studies in optional media. Prerequisite: Art 3211, 3212. Three hrs. lect., 6 hrs. lab.

3310. Art Experiences for Young Children (3)

Relationship of art experience for young children in intellectual, social and emotional growth through communication and self-expression in varied art media. Emphasis on use of materials and expressive skills designed to encourage and understand the creative expression of young children. One hr. lect., 4 hrs. activity.

3311,† Introduction to Sculpture (4)

Three-dimensional expression through modeling and construction with sculptural media. Prerequisite: approval of instructor. Two hrs. lect., 6 hrs. lab.

3320. Arts and Crafts for Children (3)

Introduction to art materials, tools and equipment necessary in providing art experiences for children. One hr. lect., 4 hrs. activity.

3511,† 3512. Ceramics (3 each)

Development of individual abilities in the various ceramic art processes. One hr. lect., 6 hrs. lab. Prerequisite: approval of instructor. Courses are sequential.

3513. Ceramics (5)

Emphasis on personal direction in ceramic art. Prerequisite: 3511, 3512, approval of staff. Three hrs. lect., 6 hrs. lab.

* This course satisfies the general education requirement in humanities.

† This course satisfies the general education requirement in creative arts.

3521, 3522. General Crafts (3 each)

Experience in the processes of the crafts, utilizing wood, plastic, metal, leather, and fabric. One hr. lect., 6 hrs. lab.

4040.* The Art of China (5)

The evolution of Chinese art from the Shang Dynasty to the Ming Dynasty. Individual study visits to museums required.

4050.* The Art of India (5)

The evolution of art in India from the time of the Indus Valley civilization to the Mughal Dynasty. Individual study visits to museums required.

4231, 4232. Painting, Water Media (3 each)

Continuation of the 3200 series with emphasis on personal direction. Prerequisite: approval of instructor. One hr. lect., 4 hrs. activity.

4521, 4522. Jewelry (3 each)

Design and execution of simple jewelry, flatware, and hollow-ware, involving the use of silver, gold, copper, and brass. Approval of instructor required. One hr. lect., 6 hrs. lab.

4531. Sculpture (5)

Sculpture employing direct modeling and casting with non-ferrous metals and hydraulic materials. Prerequisite: Art 3311. Three hrs. lect., 6 hrs. lab.

4532, 4533. Sculpture (3 each)

Concepts and processes involving clay, wood, stone, plaster, and metal. Approval of instructor. Prerequisite: Art. 3311. One hr. lect., 6 hrs. lab.

4611, 4612. Printmaking (3 each)

Printmaking processes in serigraphy and lithography. Prerequisite: Art 1120 or approval of instructor. One hr. lect., 4 hrs. activity.

4613. Printmaking (5)

Intaglio printmaking processes, with emphasis on personal direction. Prerequisite: approval of instructor. Three hrs. lect., 6 hrs. lab.

4630. Calligraphy (3)

The practice of calligraphy, with a study of historical styles. Prerequisite: approval of instructor. One hr. lect., 4 hrs. activity.

4651. Advertising Design (3)

Graphic motivation and design as applied to advertising. Prerequisite: Art 4630 or approval of instructor. One hr. lect., 4 hrs. activity.

4652. Advertising Design (5)

Advertising design, with emphasis on production techniques. Prerequisite: Art 4630 or approval of instructor. Three hrs. lect., 6 hrs. lab.

4681, 4682. Advanced Studio (2-4 each)

Studies in optional media to clarify the student's attitude, motivation, and personal direction as an artist. Approval of instructor.

4800. The Arts in Contemporary Society (4)

(See course description under CREATIVE ARTS)

4900. Independent Study (1-4)

* This course satisfies the general education requirement in humanities.

5350. Art Methods (3)

Fundamentals of teaching art in the elementary and secondary schools. Study of approved practices of art education at these levels. Audiovisual techniques. Required of all art education students. Prerequisite: consent of instructor. Two hrs. lect., 2 hrs. activity.

5900. Independent Study (1-4)**5901. Directed Group Study (1-5)****Asian Cultures**

Offered as an interdivisional study

2001. Patterns of Asian Cultures (4)

Significance of contemporary Asia with particular reference to South Asia, approached through a study of various disciplines; physical, biotic, and social patterns. Three hrs. lect., 1 hr. discussion. (F)

2003. Development of Traditional Asian Cultures (4)

Major traditions of Asia with particular reference to South Asia, including political, economic, and aesthetic developments. Prerequisite: Asia 2001 or consent of instructor. Three hrs. lect., 1 hr. discussion. (W)

2005. Asian Societies in the Modern World (4)

The European expansion in Asia with particular reference to South Asia; the rise of nation states; problems of modernization. Prerequisite: Asia 2001, 2003 or consent of instructor. Three hrs. lect., 1 hr. discussion. (Sp)

Astronomy

Offered in the Department of Earth and Physical Science

1000. Descriptive Astronomy (5)

A non-mathematical course with emphasis on aspects of interest to the prospective or in-service teacher. Five hrs. lect. (F, Sp)

Biological Science**BIOLOGY**

Offered in the Department of Biological Science

NOTE: Courses offered at Moss Landing are identified by the code *ML* following the title. They are scheduled on a quarter basis in the summer and fall and on a semester basis during winter-spring.

1000. Principles of Biology (5)

Plants and animals and the modern biological concepts that apply to their structure and function on both cellular and organismal levels. Special emphasis on man and his relationships with other living things. Four hrs. lect., 3 hrs. lab. (A)

1201, 1202, 1203. Foundations of Biological Science (5, 6, 4)

Biol. 1201: Introduction to molecular and cellular biology with emphasis on the integration of structure and function in the living cell as a biological system; cellular aspects of inheritance. Prerequisite: one year of high school chemistry or concurrent registration in Chem. 1100 or 1101. Four hrs. lect., 3 hrs. lab. (F)

Biol. 1202: Basic organismic biology with emphasis on integration of structure and function at the tissue and organ system levels in plants and animals; principles

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of classification and brief surveys of plant and animal kingdom to illustrate diversity. Four hrs. lect., 6 hrs. lab. (W)

Biol. 1203: Basic environmental and population biology, including an introduction to ecological and evolutionary processes on the population level for both plants and animals. Prerequisite: Biol. 1201 and 1202 or equivalent. Three hrs. lect., 3 hrs. lab. (Sp)

3500. Genetics (5)

The basic mechanisms of gene transmission, fundamental structure of genes and chromosomes, gene action in relationship to genetically coded information. Prerequisite: Biol. 1000 or Biol. 1201, 1202, 1203 or equivalent. Five hrs. lect. (F, W, Su)

3510. Genetics Laboratory (2)

Analysis of selected problems in transmission genetics, gene action, mutation, biochemical and population genetics, using a variety of organisms. Prerequisites: Genetics (Biol. 3500) or equivalent, previously or concurrently; and General Chemistry. Six hrs. lab. (On demand)

3520. Evolution (4)

The basic genetic principles of evolution, the theory and functioning of natural selection, the origin and maintenance of species, and a survey of the evolution of major physiological and biochemical systems. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Genetics recommended. Four hrs. lect. (Sp)

3620. Basic Physiology of the Cell (4)

The living organism from the molecular and cellular level. Basic concepts of cellular physiology and molecular biology that are mandatory for understanding the functional mechanisms of tissues and the intact individual organism; i.e., photosynthesis, respiration and molecular aspects of genetics. Restricted to biology minors, credential candidates and General Education students. Prerequisites: Biol. 1000 or equivalent, Chem. 1100 or equivalent, Phys. Sci. 1340 or equivalent. Three hrs. lect., 3 hrs. lab. (Tent. F)

4100. Microtechnique (4)

Theory and practice in the preparation of living and fixed organisms and tissues for microscopic study, with emphasis on histochemistry. Prerequisites: Biol. 1201, 1202, 1203 or equivalent, general chemistry and one other course in the biological sciences. Two hrs. lect., 6 hrs. lab. (Sp)

4110. Biological Illustration (3)

Instruction and practice in drawing vertebrates, invertebrates and plants, with emphasis on microscopic and cross-section views, external and internal structure, life cycles and systems. Experience in preparing maps, graphs and charts from scientific data. Prerequisite: Biol. 1000 or equivalent. One hr. lect., 6 hrs. lab. (F, W)

4120. Introduction to Taxonomy (3)

The principles and practice of botanical and zoological classification based on the International Code of Zoological Nomenclature and the International Code of Botanical Nomenclature. Exercises on the determination of availability and validity of scientific names, use of data, evaluation of type designation and other taxonomic determinations. Prerequisite: one upper division course in vertebrates, invertebrates or plants. One hr. lect., 6 hrs. lab. (Tent. W)

4130. Literature of the Marine Sciences (ML 4130) (1-2)

Pertinent literature including selections from standard works, discussed in small group colloquia; papers in current journals used as a basis for student seminar

presentations. Prerequisites: consent of instructor and junior or senior standing as a biology major. Seminar discussion, 2 hrs. (F, Su quarter, Sp semester)

4140. Principles of Biological Instrumentation (3)

Basics of electronics and instrument systems; applications of physical measuring devices to biological preparations and laboratory work with basic circuits, systems and applications to study of live organisms. Prerequisites: introductory physics, introductory biology. One hr. lect., six hrs. lab. (Tent. Sp)

4220. Marine Biology (ML 4220) (4)

Local marine organisms, with emphasis on structural and functional adaptations to the sea as a specialized environment. Prerequisites: one year of college biological science which includes a survey of the animal kingdom. Two hrs. lect., 6 hrs. lab., field trips. (Su)

4270. Limnology (4)

Principles of fresh-water biology; techniques and practice in the study of fresh-water organisms and their habitats; field work in local streams and ponds. Prerequisites: Biol. 1201, 1202, 1203 or equivalent, and general chemistry. Two hrs. lect., 6 hrs. lab., field trips. (Tent. F, Sp)

4450. Biogeography (4)

Principles of the distribution of plants and animals; dispersal, change in geographic range, differentiation of local biotas, and relationships among adjacent and disjunct ecological communities. Prerequisites: Biol. 1000 or Biol. 1201, 1202, 1203 or equivalent. Four hrs. lect. (W, Su)

4461, 4462. General Ecology (3 each)

The relationship of plants and animals to each other and their environment. Prerequisites: Biol. 1201, 1202, 1203, or equivalent; chemistry and physics recommended; 4461 prerequisite to 4462, 4461, 3 hrs. lect.; 4462, 1 hr. lect., 6 hrs. lab. and/or field trips. (4461-W, Su; 4462-Sp, Su)

4480. Marine Ecology (ML 4480) (4)

Exploration of the physical and chemical parameters of marine, estuarine, and related freshwater environments, with emphasis upon ecological and physiological responses by plants and animals to limiting factors of those environments. Prerequisites: one year of biology, one year of chemistry and consent of instructor; physics recommended. Two hrs. lect., 6 hrs. lab., field trips (F quarter, Sp semester)

4500. Developmental Biology (4)

Experimental analysis of morphogenetic processes, molecular and cellular differentiation, current theories on developmental control in microorganisms, plants and animals. Prerequisites: general embryology and cell physiology, or consent of instructor. Four hrs. lect. (Tent. Sp, alt. years)

4600. Cellular Physiology (5)

Living activities of cells and tissues, including nutrition, response, growth and reproduction; unique problems in different groups of organisms. Prerequisites: Biol. 1201, 1202, 1203 or equivalent; general chemistry and organic chemistry. Three hrs. lect., 6 hrs. lab. (F, Sp)

4700. Cytology (5)

Structure, physics and chemistry of components of cells; behavior of chromosomes; problems of differentiation. Prerequisites: Biol. 1201, 1202, 1203 or equivalent and at least two quarters of upper division biological science. Five hrs. lect. (W, alt. yrs.)

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4750. Radiation Biology (4)

Effect of ionizing and other radiations on living organisms at the molecular, cellular and organismic levels. Radioisotopes as tools in biological investigations. Prerequisites: cellular physiology, organic chemistry, general physics. Two hrs. lect., 6 hrs. lab. (On demand)

4800. Development of Biological Concepts (3)

The development of the major concepts in biology, using original writings of key figures from the Greeks to contemporary biologists. Prerequisite: senior or graduate standing as a biology major, or consent of the instructor. Two hrs. lect., 2 hrs. discussion. (Tent. F, Sp)

4801, 4802, 4803. Senior Seminar (1 each)

Major areas of current biological research, with emphasis on theoretical and practical research as carried on in university, industrial and governmental laboratories. Prerequisite: senior standing as a biology major or permission of instructor. One hr. lecture-discussion and/or field trips. (4801-F, Su; 4802-W, Su; 4803-Sp, Su)

4900. Independent Study (1-4)

6200. Desert Biology (4)

Study, observation, collection, identification and preservation of desert plants and animals. Physiological measurements on desert insects, amphibians, reptiles and mammals, with the physical and climatic state of the environment to be recorded. Prerequisite: consent of instructor. Two hrs. lect., 6 hrs. lab. and field trips. (Sp or Su)

6410. Wildlife Ecology (4)

The major principles of wildlife ecology as applied in mammalian and avian game species, with practical work to include field application of some of these principles. Prerequisites: Zool. 3100 or Biol. 4461, 4462. Three hrs. lect., 3 hrs. lab and/or field trips. (F)

6600. Community and Ecosystem Ecology (4)

Structure, dynamics and distributional aspects of ecological communities and energy flow relationships in whole ecosystems. Lectures and intensive field work in selected communities, with emphasis on those of central California. Prerequisites: Biol. 4461, 4462. Recommended: Bot. 4300, Ent. 4230 and advanced taxonomic courses in zoology. Two hrs. lect., 6 hrs. field (or lab). (Tent. Sp. or Su, alt. yrs.)

6700. Population Ecology (4)

Factors affecting reproduction, age composition, turnover, density and dispersion, and their fluctuations in time among populations of animals, with brief comparisons from studies of plants. Prerequisite: Biol. 4461. Genetics, statistics and advanced zoology courses recommended. Three hrs. lect., 3 hrs. lab., field trips. (W)

6810. Graduate Seminar-Ecology (3)

A seminar in ecology, with a different theme or subject area to be chosen each year based on papers presented by students enrolled. Prerequisites: graduate standing in biology or senior standing and consent of instructor. Four hrs. seminar, discussion. (F)

6900. Independent Study (1-4)

6910. Thesis Research (1-9)

Biological Science

BOTANY

Offered in the Department of Biological Science

2000. Survey of the Plant Kingdom (4)

General biology of the major plant groups, other than bacteria, stressing the fundamentals of classification, morphology, physiology and reproduction. Prerequisite: Biol. 1000 or equivalent. Not open to students who have completed the Biol. 1201-2-3 sequence. Three hrs. lect., 3 hrs. lab. (A)

3101. Morphology of the Non-vascular Plants (4)

A comparative study of the structure, development and phylogeny of the algae, fungi, lichens and bryophytes. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Three hrs. lect., 3 hrs. lab. (F, alt. yrs.)

3102. Morphology of the Vascular Plants (4)

A comparative study of the structure, development and phylogeny of the club mosses, horsetails, ferns and seed plants. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Three hrs. lect., 3 hrs. lab. (W, alt. yrs.)

4200. Marine Botany (ML 4200) (4)

Systematics, morphology, ecology, physiology, and life histories of marine plants. Prerequisites: general biology, general chemistry and consent of instructor. Two hrs. lect., 6 hrs. lab., field trips. (F quarter, Sp semester)

4300. Plant Taxonomy (4)

Principles of plant taxonomy. Field and laboratory studies of native seed plants. Prerequisite: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab., field trips. (Sp or Su)

4400. Principles of Plant Physiology (5)

The life processes of the higher plants: soil and water relations, photosynthesis, metabolic activities, growth regulators, development and reproduction. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Three hrs. lect., 6 hrs. lab. (Sp)

4600. Economic Plants (4)

The significance of plants in the development of human culture. Prerequisites: Biol. 1000 or Biol. 1201, 1202, 1203 or equivalent. Three hrs. lect., 3 hrs. lab. and/or field trips. (F or Su)

4900. Independent Study (1-4)

5100. Plant Ecology (4)

The relationships of plants to climate, soil and other organisms. Prerequisites: Biol. 1201, 1202, 1203 or equivalent and General Ecology. Plant physiology is strongly recommended. Two hrs. lect., 6 hrs. lab., field trips. (F or Sp)

5200. Plant Anatomy (4)

A microscopic study of the structure and development of plant tissues, with major emphasis upon the anatomy of the seed plants. Prerequisites: Biol. 1201, 1202, 1203 or equivalent and Bot. 3102 or equivalent. Three hrs. lect., 3 hrs. lab. (Sp, alt. yrs.)

5310. Mycology (4)

The identification, ecology, and study of representative groups of fungi. Prerequisites: Biol. 1201, 1202, 1203 or equivalent and Bot. 3101. Three hrs. lect., 3 hrs. lab., field trips. (W, alt. yrs.)

6900. Independent Study (1-4)

6910. Thesis Research (1-9)

ENTOMOLOGY**Offered in the Department of Biological Science****4100. Insects and Man (3)**

Beneficial and harmful insects and related arthropods as important factors in human welfare. Field trips to selected entomological activities and industries in the Bay Area. Three hrs. lect. (W)

4210. General Entomology (4)

Introduction to the anatomy, biology, ecology and identification of western insects; emphasis on local forms. Techniques of collecting, rearing and preserving insects. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab., field trips. (F)

4230. Insect Identification (4)

Collection and preparation of specimens, classification of insects, principles of taxonomy, and entomological literature. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab., field trips. (Sp, alt. yrs.)

4310. Medical Entomology (4)

Insects and related arthropods as transmitters of disease; public health problems arising from insects not transmitting disease. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab., field trips. (Sp, alt. yrs.)

4410. Agricultural Entomology (4)

The biology, ecology, identification, distribution and control of insects attacking agricultural crops and stored products. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab., field trips. (Su, alt. yrs.)

4900. Independent Study (1-4)**6200. Insect Ecology (4)**

Insects in relation to their environment: insect development, distribution, dispersal, behavior and abundance. Prerequisites: Biol. 4461, Ent. 4210 and one of the following: Ent. 4230, 4310 or 4410. Biol. 4462 recommended. Two hrs. lect., 6 hrs. lab., and/or field trips. (On demand)

MICROBIOLOGY**Offered in the Department of Biological Science****3000. Microbiology (6)**

The general biology of major groups of microorganisms, including their morphology, metabolism, reproduction, genetics and ecology. Prerequisites: Biol. 1201, 1202, 1203 or equivalent, general chemistry, organic chemistry. Four hrs. lect., 6 hrs. lab. (W)

3200. Bacterial Physiology (5)

Growth, nutrition, metabolism and genetics of bacteria. Emphasis in the laboratory on basic principles and techniques for studying physiological problems. Prerequisites: microbiology, organic chemistry. Three hrs. lect., 6 hrs. lab. (F)

3400. Hematology (3)

Morphology, function and composition of mammalian blood fluids and cells, both normal and diseased. Prerequisites: Biol. 1201, 1202, 1203 or equivalent; general chemistry; physiology and organic chemistry are recommended. Two hrs. lect., 3 hrs. lab. (Sp)

4201, 4202. Medical Microbiology (5 each)

The pathogenesis and mechanisms of infection of bacterial and mycotic diseases of man; isolation and identification of selected groups of microorganisms. Prerequisites: Micr. 3000; Micr. 4201 is prerequisite to 4202. Three hrs. lect., 6 hrs. lab. (F, W)

4300. Virology (5)

General survey of plant and animal viruses, including pathogenesis, virus-host relationships, physical and chemical characteristics. Emphasis in the laboratory on biological activities of viruses. Prerequisites: microbiology, organic chemistry. Three hrs. lect., 6 hrs. lab. (Tent. Sp)

4400. Immunology and Serology (5)

Specific and nonspecific reactions in immunity; manifestations of antigen-antibody reactions, hypersensitivity and transplantation immunity. Prerequisites: microbiology, organic chemistry. Three hrs. lect., 6 hrs. lab. (Sp)

4500. Molecular Genetics (4)

Analysis of gene structure and theories of gene action. Information coding and transmission in genetic systems. Genetic mechanisms peculiar to microorganisms. Prerequisites: genetics, organic chemistry; microbiology recommended. Four hrs. lect. (Tent. F)

4900. Independent Study (1-4)**6900. Independent Study (1-4)****NATURE STUDY****Offered in the Department of Biological Science**

NOTE: Courses offered at Moss Landing are identified by the code *ML* following the title.

3391. Nature Study (4)

Natural history in the field and laboratory, with topics from trees, weeds, flowers, insects, birds, mammals, reptiles and amphibians. Prerequisite: basic course in biology. Two hrs. lect., 6 hrs. lab. and/or field trips. (F, Sp)

3392. Nature Study (4)

Natural history in the field and laboratory, with topics from rocks and minerals, physiographic land forms, fossils, map reading, meteorology, astronomy, early spring plants and animals. Prerequisite: basic course in physical science. Two hrs. lect., 6 hrs. lab. and/or field trips. (W)

4400. Field Natural History (ML 4400) (4)

A survey of the fauna, flora and natural features of typical coast range biotic communities, followed by practice in conducting nature hikes and directing youth groups in nature activities. Prerequisite: nature study or a biology field course or permission of instructor. Two hrs. lect., 6 hrs. lab. and/or field trips. (Su)

4900. Independent Study (1-4)**SCIENCE EDUCATION****Offered in the Department of Biological Science****4020. Science in the Elementary School (3)**

Discussions, techniques, and projects appropriate to the teaching of science in elementary schools. Prerequisite: completion of general education requirements in science. Two hrs. lect., 3 hrs. lab. (W)

Biological Science**4900. Independent Study (1-4)****5100. Science in the Secondary School (Biological Science) (3)**

Curriculum, materials, audiovisual techniques, content, and inquiry methods for secondary school biological science. A similar course, with emphasis on physical science, is offered periodically. Prerequisite: consent of instructor. Two hrs. lect., 3 hrs. lab. (F, W)

5200. Scientific Inquiry at the Elementary School Level (4)

An approach to studying science, both in the laboratory and in the field, through the use of scientific inquiry. Practice in directed observation, collecting, recording and charting data and interpreting results. Emphasizes the skills of critical thinking as it relates to problem solving in elementary school science. Prerequisite: fulfillment of general education science requirements. Two hrs. lect., 6 hrs. lab. (Su)

ZOOLOGY**Offered in the Department of Biological Science**

NOTE: Courses offered at Moss Landing are identified by the code ML following the title.

2000. Survey of the Animal Kingdom (4)

Introduction to the anatomy, physiology, classification, and evolution of the major animal phyla. Prerequisite: Biol. 1000 or equivalent. Not open to students who have completed the Biol. 1201, 1202, 1203 sequence. Three hrs. lect., 3 hrs. lab. (A)

2200. Evolutionary History of the Vertebrates (3)

A survey of the evolutionary history within the classes of vertebrates and discussion of the relationships between the classes. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Three hrs. lect., field trips. (W)

2601, 2602. Anatomy and Physiology (4 each)

Introduction to structure and function of human systems. Prerequisites: Biol. 1000 and Zool. 2000, or Biol. 1201, 1202, 1203 or equivalent; Biol. 2601 is prerequisite to Biol. 2602. Three hrs. lect., 3 hrs. lab. (2601-Su, W; 2602-F, Sp)

2620. Human Physiology (5)

Functional mechanisms of nutrition, excretion, response and reproduction as demonstrated in man. Prerequisites: vertebrate or human anatomy, or Biol. 1000 and Zool. 2000, or Biol. 1201, 1202, 1203 or equivalent; general chemistry recommended. No credit for the biological science major. Not open to students with credit in Zool. 2601 or 2602 or equivalent. Three hrs. lect., 6 hrs. lab. (Tent. F)

3100. Vertebrate Natural History (ML 3100) (5)

The natural history of fish, amphibians, reptiles, birds, and mammals, including the ecology, behavior and physiology of these forms, plus field and laboratory work in the identification and techniques of study of living vertebrates. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Three hrs. lect., 6 hrs. lab., field trips. (F) Alternate years.

3301, 3302. Invertebrate Zoology (4 each)

The advanced study of the anatomy, embryology, physiology, systematic relationships and evolution of invertebrate groups, excluding insects. Zool. 3301: Protozoa through Mollusca. Zool. 3302: Annelida through Echinodermata. Prerequisites: Biol. 1201, 1202, 1203 or equivalent; Zool. 3301 is prerequisite to Zool. 3302. Two hrs. lect., 6 hrs. lab. and/or field trips. (F, W)

3600. General Embryology (5)

Anatomy and physiology of development, principally as exemplified by the vertebrates, including fertilization, morphogenetic movements, differentiation and organogenesis. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Three hrs. lect., 6 hrs. lab. (W)

3610. Vertebrate Anatomy (5)

Gross and microscopic structure of representative vertebrates, emphasizing the evolutionary history of the major organ systems. Prerequisite: general embryology or consent of instructor. Three hrs. lect., 6 hrs. lab. (F)

3710. Comparative Histology (4)

Microscopic study of major types of tissues and organs. Relationships between structural types and functional abilities. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab. (On demand)

4141. Herpetology (4)

The ecology, physiology, ethology, identification and evolution of amphibians and reptiles with emphasis on western forms. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab., and/or field trips. (Tent. F, alt. yrs.)

4142. Mammalogy (4)

The ecology, physiology, ethology, identification and evolution of mammals with emphasis on western forms. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab., and/or field trips. (Su)

4143. Ornithology (ML 4143) (4)

The major adaptations and habits of birds, including sensory and behavioral limitations, flight, migration, nesting and distributional ecology; identification and taxonomy with field and laboratory practice emphasizing western U.S. forms. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab., field trips. (Sp, Su, alt. yrs.)

4144. Ichthyology (ML 4144) (4)

The ecology, physiology, ethology, identification and evolution of the fishes of California and coastal waters. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab. and/or field trips. (W, Su, alt. yrs.)

4200. Protozoology (4)

The systematics, morphology, differentiation, physiology and genetics of the protozoa with laboratory emphasis on experimental approach to protozoa. Prerequisites: invertebrate zoology, cellular physiology, and organic chemistry, or consent of instructor. Two hrs. lect., 6 hrs. lab. (Sp, alt. yrs.)

4300. Marine Invertebrate Zoology (ML 4300) (4)

The adaptations and responses of invertebrate animals to their marine and estuarine habitats, and the interrelationships of organisms within these environments. Prerequisites: One year of general biology and consent of instructor. One year of chemistry recommended. Two hrs. lect., 6 hrs. lab., field. (F, Sp Semester)

4320. General Parasitology (4)

An introduction to parasitism; emphasis on the structure, physiology, life histories and pathology of parasitic animals other than arthropods. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. Two hrs. lect., 6 hrs. lab. (Sp, alt. yrs.)

4600. Comparative Animal Physiology (4)

Operation of response, nutritional and reproductive systems in animals. Comparison of unique adaptations to specialized environments. Prerequisites: Biol. 1201, 1202, 1203 or equivalent; cellular physiology, organic chemistry. Three hrs. lect., 3 hrs. lab. (W)

Business Administration

4700. Invertebrate Embryology (ML 4700) (4)

Developmental processes in marine invertebrate animals, with emphasis on classical problems of development including fertilization, segregation of morphogenetic substances and regeneration. Prerequisite: general embryology. (Zool. 3600 or equivalent); invertebrate zoology. Two hrs. lect., 6 hrs. lab. (On demand)

4900. Independent Study (1-4)

6210. Analysis of Vertebrate Faunas (4)

Intensive study of vertebrates of selected regions chiefly of western North America. Training in collection and preparation of specimens, in the accurate recording of habitat and behavioral information, and in the discovery of pertinent evolutionary histories. Prerequisites: Biol. 4461-4462 and two upper division courses in the vertebrate series. One hr. lect., 9 hrs. field and lab. (Su)

6400. Animal Behavior (5)

Activity patterns of animals of contrasting habitats and evolutionary levels, both as individuals and in groups; genetic, developmental and environmental influences on behavior. Prerequisites: Biol. 1201, 1202, 1203 or equivalent. General ecology and psychology recommended. Four hrs. lect., 3 hrs. lab. or field trips. (W)

6410. Physiological Ecology (4)

The adaptation of an organism to its environment: osmoregulation and water balance, oxygen intake in different habitats, metabolism and the environment, environmental adaptation of various sense organs, special sensory modalities, cyclic reproductive physiology and its adaptive significance, physiological stress and its role in population control, and thermal physiology and ecology. Laboratories concerned with student projects within the area of study. Prerequisites: Zool. 3301, 3302, and one course in the vertebrate series. Two hrs. lect., 6 hrs. lab., field trips. (Sp, alt. yrs.)

6810. Graduate Seminar—Vertebrate Zoology (3)

A seminar in vertebrate zoology, with a different theme or subject area chosen each quarter. Course based on papers presented by the students enrolled. Prerequisites: graduate standing in biology or senior standing and consent of instructor. Four hrs. seminar, discussion. (W)

6910. Thesis Research (1-9)

Business Administration

Offered in the Departments of Accounting, Management Sciences, and Marketing

2700. Legal Environment of Business (4)

Legal setting in which business operates, with emphasis upon legal reasoning, processes of the law, contracts, agency, partnership, and corporations. (A)

3100. Intermediate Quantitative Analysis (4)

Business and economic applications of quantitative methods: multiple linear regression, linear programming, analysis of variance, Bayesian statistics (including sequential sampling and decision making). Prerequisite: Stat. 1000. (A)

3850. Data Processing (4)

Computer programming, peripheral equipment operation, symbolic coding systems, influence upon the flow and organization of intra-firm communications. (W)

4310. Investments (4)

Angell's theories of investment decision-making, followed by a standard treatment of securities, security markets, and investment management. Prerequisite: Mgmt. 4300 (Sp. alt. yrs.)

Business Administration

4500. Business and Public Policy (4)

An analysis of theory relating to the manager's efforts to deal with competition and public policy, including antitrust policy. Prerequisites: Econ. 3001 and Econ. 3005. (F, W, Sp)

4700. Multinational Business (4)

A study of the leading technical, environmental, and management features peculiar to the operation of U.S. firms in foreign countries. Prerequisites: Econ. 3001, Mgmt. 3600, Mktg. 3400. (F, Sp)

4900. Independent Study (1-4)

ACCOUNTING

Offered in the Department of Accounting

NOTE: Lower division requirements must be completed before upper division courses may be taken.

2251, 2252. Principles of Accounting I, II (4 each)

An introduction to accounting analysis and practice. Courses are sequential. Prerequisite: sophomore standing. (A)

3200. Managerial Accounting (4)

Applied course with emphasis on the use of accounting information in business decisions. Prerequisite: Acctg. 2252, with a grade not lower than C. (A)

3211, 3212, 3213. Intermediate Accounting I, II, III (4 each)

Accounting theory, practice, and problems. Balance sheets, income and other financial statements, working papers, valuation of assets, reserves, correction of statements, and application of funds. Courses are sequential and require a grade not lower than C to continue sequence. Prerequisite: Acctg. 2252, with a grade not lower than C. (F, W, Sp)

3220. Federal Income Tax Accounting (4)

Statutes, regulations, administrative rulings, and court decisions relative to the income taxes of individuals and corporations. (W)

4231, 4232. Cost Accounting I, II (4 each)

Manufacturing accounting theory and problems, records, and financial statements; elements of cost; elements of process, specific job order, and standard cost accounting. Emphasis on managerial use of cost data. Courses are sequential and require a grade not lower than C to continue sequence. Prerequisite: Acctg. 2252, with a grade not lower than C. (F, W)

4233. Advanced Cost Accounting (4)

Advanced cost accounting problems and theory. Selected topics from among the following: preparation and administration of budgets, design and maintenance of managerial control systems, and the quantitative analysis of specific problems. Prerequisite: Acctg. 4232. (Sp)

4240. Advanced Financial Accounting (4)

Advanced accounting problems and theory. Selected topics from among the following: ventures, insurance, statements of affairs, receivership, branch accounts, foreign exchange, estate accounting, and parent and subsidiary accounting. Prerequisite: Acctg. 3213. (Sp)

4250. Auditing (4)

Principles, techniques and procedures in auditing. Prerequisite: Acctg. 3213. (W)

4260. Problems of Financial Reporting (4)

Advanced treatment of the analysis of financial statements. Prerequisite: Acctg. 3213. (Not offered 1967-68)

MANAGEMENT SCIENCES**Offered in the Department of Management Sciences****3600. Principles of Management (4)**

Introduction to the theory of organization and the nature of management processes. (A)

3611, 3612. Personnel Management and Human Relations I, II (4 each)

Principles and methods of personnel work; utilization of human resources within the organization; employee recruitment, selection, training, promotion, transfer, and wage and salary administration. Emphasis on developments in the behavioral sciences. (3611-F, W; 3612-W, Sp)

3620. Introduction to Production Operations (4)

Analysis of production operations in manufacturing and service enterprises. Facilities investment analysis, production line design, materials handling and transportation, field problems. Prerequisites: Math. 1301 and Stat. 1000. (F, W)

3640. Production Systems (4)

Production efficiency, quality assurance, procurement operations, inventory control, nature of production planning and control, and line mechanization, field problems. Prerequisite: Mgmt. 3620. (W, Sp)

3645. Logistics Management (4)

Analysis of physical distribution. Methods of logistics analysis and planning. Prerequisites: Mgmt. 3600 and 3620. (Not offered 1967-68)

3651. Management Information Systems (4)

Design and management of integrated business systems. Applications of manual and unit record and computer methods to problems encountered in the systems function. Prerequisites: Mgmt. 3612, Acctg. 3200, Math. 1301, Stat. 1000. (Not offered 1967-68)

3680. Industrial Relations (4)

Analysis of labor-management relations. (A)

3690. Techniques of Operations Research (4)

Introduction to the use of operations research techniques in the decision making function of the manager. Term project required using at least one technique. Prerequisites: Bus. 3100, Econ. 3001, and Math. 1302. (W, Sp, Su)

4300. Financial Management (4)

An analysis of the principles and practices that underlie the financial manager's decision-making process. Sources, costs and application of enterprise capital. Prerequisites: Bus. 3100, Acctg. 3200. (A)

4600. Technological Innovation and Research Management (4)

An analysis of the process of innovation and its effects on the firm, business, and society. The functions of planning, organizing, staffing, and evaluating an industrial research and engineering development program. Prerequisites: Mgmt. 3600 and 4300. (Sp, alt. yrs.)

4613. Research Methods in Personnel Management (4)

Nature and scope of personnel research; application of appropriate research methods to selected problems in personnel management. Students will construct a research program as a term project. Prerequisites: Mgmt. 3611 and 3612. (Sp)

4620. Theory of Production Systems (4)

Process of designing and implementing production systems; system analysis and evaluation. Students will select a term problem based on the application of operations research, computers or information systems to production operations. Prerequisites: Mgmt. 3620 and 3640. (Not offered 1967-68)

4630. Organization Theory (4)

Classical and modern organization theory; human behavior in organizations and successful leadership patterns. Prerequisites: Mgmt. 3600, 3680, Econ. 3001, and one course in general psychology. (F, W, Sp)

4650. Planning and Control Theory (4)

Application of management theory to complex problems of planning and control. Techniques for the integration of production plans, forecasts, capital expenditures, budgets, product planning, etc., into a corporate plan and the design of a control system for such a plan. Prerequisites: Mgmt. 3600, 4300, Mktg. 3400, Bus. 4500. (F, W, Sp)

4651. Theory of Information Systems (4)

Economic and technical analysis of information systems. Students will select a term project in an application of information systems analysis to a managerial problem. Prerequisites: Mgmt. 3651 and consent of instructor. (Not offered in 1967-68)

4680. Management of Labor Relations (4)

Group dynamics; wage and salary administration; role of unions in personnel management; administrative aspects and structure of collective bargaining; union agreement provisions and their economic impact and political implications; evolution of union-management relations. Prerequisites: Mgmt. 3611, 3612, and 3680. (Not offered 1967-68)

MARKETING**Offered in the Department of Marketing****3400. Macro-Marketing (4)**

Alternative system-level models; channels of distribution; household and industrial consumers; marketing characteristics of goods; government regulations; and appraisal of the performance of the marketing system. (F, W, Sp)

3401. Micro-Marketing (4)

A marketing management study of the major internal and external variables in the design of a marketing program. Prerequisite or concurrent: Mktg. 3400 and Econ. 3001. (F)

3410. Advertising (4)

Marketing and economic functions of advertising with emphasis on psychological and statistical aspects; includes media, copy, layout, and research. Prerequisite: Mktg. 3401. (W)

3420. Sales Analysis and Sales Management (4)

Analytical problems of selling goods and services; management of the sales function. Prerequisite: Mktg. 3401. Recommended: Bus. 3100. (W)

3430. Problems and Policies of Middlemen (4)

Management problems and approaches in wholesale-level and retail-level units. Prerequisite: Mktg. 3401. Recommended: Bus. 3100. (Sp)

Business Education

4440. Quantitative Methods in Marketing (4)

Application of statistical analysis and selected quantitative models to marketing problems. Prerequisites: Mktg. 3401, Bus. 3100, Econ. 3001; calculus and matrix algebra desirable. (Sp)

4450. Marketing Seminar (4)

Selected topics emphasizing the integration of marketing literature with current business practices through seminar discussions and individual field investigations. Prerequisites: Mktg. 3401 and two from Mktg. 3410, 3420, 3430, or 4440. (Not offered 1967-68)

Business Education

Offered in the Business Education Program

3800. Business Office Practices (4)

Principles and techniques, the improvement of skills, operation and procedures in the modern office. Prerequisite: ability to typewrite. Two hrs. lect., 4 hrs. lab. (F)

3820. Office Management (4)

Study of office procedures with major attention to job analysis, equipment, and management problems. (W)

4900. Independent Study (1-4)

5800. Teaching Business in Secondary Schools (3)

Methods and materials for teaching bookkeeping, general business, typewriting, shorthand and other business subjects in the secondary schools, with a study of the content, methodology, and evaluation applicable to each. Open to seniors and graduate students with major or minor in business teacher education. (F)

5810. Principles of High School Business and Distributive Education (4)

Introductory course for those planning to teach business at the junior or senior high school level. The historical development, present status, course content and future problems from the viewpoint of the prospective teacher. (Sp)

Chemistry

Offered in the Department of Chemistry

1100. Introductory Chemistry (5)

Fundamental principles of general chemistry. Primarily a general education course for non-science majors. Does not apply as subject credit for majors and minors in the Division of Science and Mathematics. Prerequisite: satisfactory score on math fundamentals test. Three hrs. lect., 6 hrs. lab., discussion. (F, Sp, Su)

1101, 1102, 1103. General Chemistry and Qualitative Analysis (5 each)

Fundamental principles of chemistry with emphasis on inorganic compounds. Qualitative analysis is begun during the second quarter. Prerequisites: satisfactory performance in high school chemistry, two years of high school math; high school physics recommended. Placement examination covering high school chemistry and algebra to determine eligibility. Chem. 1101 is prerequisite to Chem. 1102; Chem. 1102 is prerequisite to Chem. 1103. Three hrs. lect., 6 hrs. lab., problem session. (1101—F, W, Su; 1102—W, Sp; 1103—Sp, Su)

Chemistry

2200. Quantitative Analysis (5)

Elementary gravimetric and volumetric analysis; instrumental methods of analysis. Three hrs. lect., 6 hrs. lab. (A)

2301, 2302. Survey of Organic Chemistry (4,4)

Classes of organic compounds and reactions emphasizing subjects in biological sciences. For non-chemistry majors not planning other courses in organic chemistry. Prerequisite: Chem. 1103 or equivalent with grade C or better; Chem. 2301 is prerequisite to Chem. 2302. Chem. 2301, 4 hrs. lect.; Chem. 2302, 2 hrs. lect., 6 hrs. lab. (2301-F, W; 2302-W, Sp)

3301, 3302, 3303. Organic Chemistry (5 each)

An introduction to general theory of organic chemistry and the chemistry of aliphatic, aromatic and heterocyclic compounds. Emphasis on basic principles and laboratory experience in basic techniques and syntheses. Prerequisite: Chem. 1103. Chem. 3301 is prerequisite to Chem. 3302, Chem. 3302 is prerequisite to Chem. 3303. Students with previous credit in an introductory survey course receive only 3 units of credit for Chem. 3301. Three hrs. lect., 6 hrs. lab. (3301—F, Sp; 3302—W, Su; 3303—Sp)

4151, 4152. Advanced Inorganic Chemistry (5 each)

Atomic structure, valence and bonding, with laboratory experience in the preparation and properties of selected inorganic compounds. Prerequisite: Physical Chem. 4501 or permission of instructor. Chem. 4151 is prerequisite to Chem. 4152. Chem. 4151, 4 hrs. lect., 3 hrs. lab.; Chem. 4152, 3 hrs. lect., 6 hrs. lab. (4151—W; 4152—Sp)

4210. Analytical Chemistry (4)

Analytical methods using chemical literature. Prerequisites: C or better in Chem. 2200 and Chem. 4503 (or concurrent enrollment). Four hrs. lect./disc. (F, Sp)

4240. Instrumental Methods of Analysis (3)

Theory and application of instrumental methods in chemical analysis. Laboratory experiments in physical and instrumental methods of analysis of inorganic and organic substances. Prerequisites: Chem. 2202, Chem. 3303, Chem. 4502. One hr. lect., 6 hrs. lab. (Sp)

4310. Qualitative Organic Analysis (4)

Identification of unknown organic compounds, with emphasis on the use of microtechniques; discussion of modern qualitative and instrumental methods, with special regard to the identification of natural products. Prerequisite: Chem. 3303 or equivalent. One hr. lect., 9 hrs. lab. (W)

4321. Advanced Organic Chemistry I (3)

Theoretical aspects of organic chemistry based on modern concepts; chemical and physical properties of organic compounds, mechanisms of organic reactions. Prerequisite: Chem. 3303 or equivalent, Chem. 4501 or consent of instructor. Three hrs. lect. (F)

4322. Advanced Organic Chemistry II (3)

Applications of current knowledge of reaction mechanisms to synthetic studies; emphasis on the Grignard reaction and the chemistry of carbonyl compounds. Prerequisite: Chem. 3303 or equivalent, Chem. 4501 or consent of instructor. Three hrs. lect. (W)

Chemistry

4323. Advanced Organic Chemistry III (3)

The chemistry of polycyclic and heterocyclic compounds, with emphasis on those of biological interest or of natural origin. Prerequisite: Chem. 4322 or consent of the instructor. Three hrs. lect. (Sp)

4330. Synthetic Organic Methods (3)

The theory and techniques of organic synthesis. Synthetic problems relating to methods of separation, purification, and verification by spectroscopic means. Prerequisite: Chem. 4310 or equivalent. Nine hrs. lab. (F or Sp)

4401, 4402, 4403. Biochemistry (5 each)

Consideration of the chemical and physical factors in life processes. Chemistry and metabolism in animals, plants and micro-organisms of the carbohydrates, proteins and enzymes, lipids, vitamins, hormones and minerals. Laboratory practice with the more important constituents of living matter. Prerequisite: Chem. 3303, quantitative analysis and a course in biology (may be taken concurrently) or consent of instructor. Chem. 4501 or 4500 is recommended. Chem. 4401 is prerequisite to 4402, Chem. 4402 is prerequisite to Chem. 4403. Three hrs. lect., 6 hrs. lab. (F, W, Sp)

4500. Introductory Physical Chemistry (5)

An introductory study of the principles of physical chemistry. The fundamental physical laws, theoretical principles and mathematical relations in chemistry. Prerequisites: Chem. 2202, Chem. 3301, Phys. 2003 or consent of instructor. Four hrs. lect., 2 hrs. discussion. (F tent., Su)

4501, 4502, 4503. Physical Chemistry (5 each)

A lecture and laboratory course dealing with the elements of physical chemistry, including the physical properties of substances, elementary thermodynamics, electrochemistry, chemical kinetics, atomic structures, with beginning laboratory experience in basic application of physical techniques to chemical investigation. Prerequisites: Chem. 2202, Math 2303 or 2300, Physics 2013. Chem. 4501 is prerequisite to Chem. 4502; Chem. 4502 is prerequisite to Chem. 4503. Chem. 4501 and 4502, 4 hrs. lect., 3 hrs. lab; 4503, 3 hrs. lect., 6 hrs. lab. (4501—F; 4502—W; 4503—Sp)

4521, 4522. Elements of Chemical Thermodynamics (3 each)

A lecture presentation of selected topics in classical and statistical thermodynamics, with emphasis on thermochemical calculations. Prerequisite: Chem. 4503. Chem. 4521 is prerequisite to Chem. 4522. Three hrs. lect. (4521—F tent.; 4522—W tent.)

4610. Industrial Chemistry (5)

Fundamental principles and applications of important chemical processes. Prerequisites: Chem. 3303, quantitative analysis. 3-4 hrs. lect., 4-6 hrs. field trips. (Offered on demand)

4900. Independent Study (1-5)

(Offered on demand)

4910. Special Problems in Chemistry (2-5)

Independent study of a problem acceptable to the instructor. Prerequisite: consent of an instructor to act as sponsor; ability to assume responsibility for independent work and to prepare written and oral research reports.

Counseling and Pupil Personnel

Conservation

Offered in the Department of Earth and Physical Science

4380. Conservation of Natural Resources (5)

Interrelationships of soils, water, minerals, forests, grasslands, and wildlife; applied ecology in the wise use of natural resources. Prerequisite: a basic course in biology and in physical science. Five hrs. lect. (F, W, Sp)

Counseling and Pupil Personnel

Offered in the Department of Counseling and Pupil Personnel

5570. Organization and Administration of Pupil Personnel Services (4)

Organizational patterns; roles, responsibilities, and interrelationships of personnel assigned to further personal, educational, and vocational goals of pupils. Study of relevant laws relating to the education, employment, health, and welfare of school age children. Prerequisite: Coun. 5750. Three hrs. lect., 3 hrs. lab. (F, W, Su)

5641. School and Child Welfare (3)

Application of federal, state, and local laws relating to education, employment, health and welfare of school-age children. Problems of child welfare and attendance. Prerequisite: teaching credential or consent of instructor. (Sp)

5670. Organization and Administration of Pupil Personnel Services (4)

A comprehensive study of pupil personnel services, including community resources. Emphasis on the organization, administration, and evaluation of school services that further personal, educational and vocational goals of pupils. Prerequisites: Coun. 5750. Three hrs. lect., 3 hrs. lab. (Sp)

5750. Pupil Personnel Work (4)

Basic services included in public school pupil personnel programs. Philosophy, rationale, and basic concepts underlying such services, developed as background for study of procedures, techniques, and materials employed by teachers, counselors, and others in the conduct of case studies and in providing guidance and related psychologically oriented personnel services. Prerequisite: senior or graduate standing. Three hrs. lect., 3 hrs. lab. (A)

5901. Directed Group Study (1-4)

6025. Clinical Study of Atypical Children (4)

Advanced case study of children who evidence mental and emotional characteristics such that their placement in the regular school curriculum is questionable. Prerequisites: Projective Techniques and Individual Mental Testing. Three hrs. lect., 3 hrs. lab. (W)

6610, 6620, 6630. Pupil Personnel Seminar I, II, III (2 each)

Analysis and application of theoretical constructs to actual situations through case study methods, review and application of current research and new materials. Prerequisites: concurrent registration in Field Work and department approval. (A)

6660, 6661, 6662. Field Work in Pupil Personnel Services I, II, III (2 each)

Supervised field work in pupil personnel services in an organized program for the various specializations for the Pupil Personnel Services Credential. Prerequisite: approval of department, three months advance application, concurrent registration in Pupil Personnel Seminar. (A)

Counseling and Pupil Personnel

6670. Supervision of Pupil Personnel Services (4)

Study of responsibilities carried by individual serving as supervisor or director of pupil personnel services. Staffing, budget, in-service training programs. Required for supervision credential. Prerequisites: completion of 45 units in pupil personnel, and department approval. Three hrs. lect., 3 hrs. lab. (Sp)

6735. Educational and Vocational Planning (4)

Sources of educational and occupational information; evaluation of such information and its clinical use in the counseling process. Prerequisite: Coun. 5750. Three hrs. lect., 3 hrs. lab. (A)

6746. Learning Difficulties (4)

Diagnosis of learning problems in the major areas of the school curriculum. Identification of resources and programs useful in remediation and in improved techniques of study. Prerequisite: upper division course work in measurement and learning. Three hrs. lect., 3 hrs. lab. (W)

6750. Counseling Theory (4)

Basic concepts, theoretical foundations, and techniques of counseling. Specific types of vocational, educational, and personal counseling problems. Prerequisites: Couns. 5750, Psych. 4610 preferred. Three hrs. lect., 3 hrs. lab. (A)

6751. Advanced Counseling Seminar (4)

Relationship of counseling theory and methodology to theory of learning and personality development. Development of a personal philosophy of counseling. Prerequisite: Coun. 6750. Three hrs. lect., 3 hrs. lab. (W)

6752. Rehabilitation Counseling (4)

Special considerations involved in counseling persons with the more frequently occurring handicaps. Prerequisite: Coun. 6750. Three hrs. lect., 3 hrs. lab. (Sp)

6770. Internship in Pupil Personnel (2-6)

Completion under supervision in appropriate field settings of assigned learning experiences in the area of the student's concentration. Prerequisite: concurrent registration in Pupil Personnel Seminar, departmental approval and three months advance application. Usually three quarters of two units each. (A)

6810, 6820, 6830. Advanced Pupil Personnel Seminar I, II, III (2 each)

Integrative seminar for second year students focusing upon clinical application of advanced counseling, psychometric, and psychological techniques. Prerequisites: concurrent registration in field work, department approval. (6810-F, 6820-W, 6830-Sp)

6860, 6861, 6862. Advanced Field Work in Pupil Personnel Services I, II, III (2 each)

Application in field settings of advanced clinical skills related to the various areas of concentration in the credential. Prerequisites: concurrent registration in Coun. 6810, 6820, or 6830, department approval, three months advance application. (6860-F, 6861-W, 6862-Sp)

6880. Advanced Pupil Personnel Internship (2-6)

Field assignment for second year students completing the requirements for the Pupil Personnel Credential. Prerequisites: concurrent registration in Coun. 6810, 6820, or 6830, department approval, three months advance application. Usually three quarters of two units each. (A)

6900. Independent Study (2-4)

Counseling and Pupil Personnel

6901. Appraisal Procedures (4)

Principles of measurement theory in relation to standardized group tests used in the public schools. Role of descriptive statistics in work with test data. Prerequisite: Ed. 5100, Couns 5750. Three hrs. lect., 3 hrs. lab. (A)

6902. Group Theory and Procedures (4)

Principles of group dynamics and group processes as applied to counseling groups organized for facilitating academic, vocational, or personal growth. Study of selected special group activities. Prerequisite: Coun. 6750. Three hrs. lect., 3 hrs. lab. (F, Sp)

6910. Thesis (3-6)

Supervised thesis. In addition to class sessions, students should plan on devoting substantial blocks of time to laboratory projects, research activities, and intensive periods of group study and independent writing. Prerequisite: Educ. 6020. Students may enroll for one or more units per term to a minimum total of three units and a maximum total of six units. (A)

6911. Individual Mental Testing Practicum (4)

Clinical practice under supervision of individually administered tests. Prerequisite: Psych. 6720. 12 hrs. lab. (F, Sp)

6912. Projective Techniques (4)

Study of instruments and procedures commonly employed in clinical study of emotional and social adjustment. Prerequisite: Psych. 6720. Three hrs. lect., 3 hrs. lab. (F)

6915, 6920, 6930. Supervision Seminar I, II, III (2 each)

Terminal, integrative seminar for persons working toward Pupil Personnel Supervision Credential. Prerequisites: concurrent registration in Coun. 6960, 6961, 6962, department approval, advance application, Coun. 6670. (6915-F, 6920-W, 6930-Sp)

6960, 6961, 6962. Supervision Field Work I, II, III (2 each)

Completion, under college faculty direction, of actual problems involving supervisory duties. Prerequisites: concurrent registration in Coun. 6915, 6920, 6930, department approval, advance application, Coun. 6670. (6960-F, 6961-W, 6962-Sp)

6990. Supervision Internship (2-6)

On-the-job completion of field duties normally carried by directors or supervisors of pupil personnel services. Prerequisites: Coun. 6670, department approval, advance application, concurrent registration in Coun. 6915, 6920, 6930. Usually three quarters of two units each. (A)

For description of the following courses please refer to the listing under the appropriate division or department.

- Educ. 5021. The Exceptional Child
- Educ. 5069. Home and School
- Educ. 6020. Research in Education
- Psych. 4410. Behavior Pathology
- Psych. 4610. Psych. of Personality
- Psych. 6720. Individual Mental Tests
- Psych. 6700. Advanced Educational Psychology

Creative Arts

Offered in the Division of Creative Arts

4800. The Arts in Contemporary Society (4)

A survey of the arts as they function in contemporary life, with special emphasis on the fine arts and music. May be elected to fulfill creative arts requirement in general education. See CURRICULA AND DEGREES, page 63. (A)

Drama

See Speech-Drama

Economics

Offered in the Department of Economics

2301. * Principles of Economics I (4)

Basic economic concepts; introductory analysis of the determination of prices and output in different market structures; public policy. Prerequisite: sophomore standing. (A)

2302. * Principles of Economics II (4)

Introductory analysis of the determination of national income and employment; money and banking; fiscal policy. Prerequisite: Econ. 2301. (A)

3001, 3002. Micro-Economic Analysis I, II (4 each)

Functioning of the free-price system, allocation of resources, income distribution, structure of industry, international economics, public policy. Courses are sequential and require a grade not lower than C to continue sequence. Prerequisite: Econ. 2301, with grade not lower than C. (3001—A, 3002—Sp)

3005. Macro-Economic Analysis (4)

Measurement and analysis of the determination of national income and employment; general price level; stabilization and growth. Prerequisites: Econ. 2302, with grade not lower than C, and Econ. 3001. (A)

3150. Economic History of the United States (4)

A survey of trends in the economic development of principal components of the American economy; emphasis on factors affecting economic growth, problems, and policies. (W)

3160. Economic History of Europe (4)

Forces involved in emergence of modern economic systems. General economic development of Europe from the 16th century to the present. (F)

3303. Controversial Economic Issues (4)

American and Soviet systems of organizing economic resources, monopoly and competition, economic growth rate and inflation, public vs. private sector problems, farm policy, and major international economic issues. Open only to students with majors outside the Division of Business and Economics. No prerequisite. (F)

3310. Money and Banking (4)

Essentials of commercial and central banking; monetary policy. Prerequisite: Econ. 3005 (A)

* Unless otherwise stated, Econ. 2301 and 2302 are automatic prerequisites for all 3000-4000 courses.

3370. Public Finance (4)

Fiscal theory and policy; incidence of taxation. Prerequisite: Econ. 3001. (F)

3680. Labor Economics (4)

Study of labor markets and wages; development of unions and collective bargaining; labor legislation. Prerequisite: Econ. 3001. (Sp)

4100. International Economics (4)

The basis of trade; foreign exchange; foreign investment; and world economic growth. (W)

4110. Economic Development (4)

The principles of development, with particular emphasis on underdeveloped countries. (Sp)

4130. Inter-American Economic Relations (4)

Major economic problems, issues, and policies in relations between the United States and Latin American countries. (W)

4140. Development of Economic Thought (4)

The history of economic analysis. Prerequisites: Econ. 3001 and 3005. (Sp)

4310. Monetary Theory (4)

Advanced study of monetary theory and policy. Prerequisites: Econ. 3005 and 3310. (Sp)

4320. Business Fluctuations (4)

Nature and significance of business fluctuations; analysis of principal explanations of fluctuations. Prerequisite: Econ. 3005. (Sp)

4510. Comparative Economic Systems (4)

Comparative study of different economic systems proposed or used to deal with the economic organization of society. (W)

4520. Industrial Organization and Public Policy (4)

Factors determining industrial organization and economic behavior; operation of antitrust laws; public regulation. Prerequisite: Econ. 3001. (F)

4590. Senior Seminar in Economic Analysis (4)

Selected topics in economics depending upon the interests of the students and instructor. May be repeated for credit under different instructors. Prerequisite: senior standing. (Sp)

4900. Independent Study (1-4)

Education

Offered in the Department of Teacher Education

3010. Principles of Early Childhood Education (4)

Evolution of programs and philosophic positions guiding the establishment of educational group settings for young children. Exploration of the various patterns of pre-schools and kindergartens in the U.S. The personalities and forces influencing early childhood education. Concurrent registration with Educ. 3060. (F, Sp)

3060. Practicum in Early Childhood Education I (1)

Supervised school laboratory experience (in conjunction with Educ. 3010). (F, Sp)

4021. Child Growth and Development (3)

Growth and development of the child: prenatal through childhood with special attention to the intellectual, social, and personality development in childhood. Influence of the home and school environment. Prerequisite for early childhood majors: basic psychology and Educ. 3060. Early childhood education majors must enroll concurrently in Educ. 4161. Lect. 3 hrs. (A)

4061. Practicum in Early Childhood Education II (1)

Supervised experience in agencies and schools serving young children. To be taken with Educ. 4021 by early childhood education majors. (F, W, Sp)

4161. Practicum in Early Childhood Education III (2)

Supervised public school laboratory experience, in conjunction with Educ. 4221. (F, W, Sp)

4221. Learning in Education for Early Childhood (4)

Analysis of factors contributing to program development for young children. Planning appropriate learning experiences, equipment and materials. Survey of teaching roles in guiding young children in educational group settings. Prerequisites: Educ. 3010 and Educ. 4021 or equivalent. Concurrent registration with Educ. 4161. (F, W, Sp)

4231. Language Development and Introduction to Reading (4)

Factors influencing growth and elaboration of language development in young children. Skills, techniques, methods, and materials for enhancing language and introducing pre-reading experiences. Prerequisite: Educ. 4221. Concurrent registration with Educ. 4262. (W)

4262. Practicum in Early Childhood Education IV (2)

Supervised public school laboratory experience, in conjunction with Educ. 4231. (W, Sp)

4390. Teaching the Culturally Different (4)

Understanding problems of language development, acculturation, community life, and motivation of children from socially and educationally impoverished backgrounds. Introducing innovation and modification of classroom organization and management to increase adaptation to school demands. Prerequisites: Educ. 3010, 4021, 4221 or consent of instructor. (W)

4510. Principles of Administering Nursery Schools (4)

Principles guiding practices in administration and supervision. Patterns of nursery school organization. Problems of staff development, personnel practices, interpretation of school programs to parents and community. Policies governing management of records, purchasing equipment and supplies and general practices. Prerequisites: Educ. 4221 or consent of instructor. (Sp)

4900. Independent Study (2-4)**5000. Philosophy of Education (4)**

Foundational course in philosophy of education. An examination of philosophical issues in contemporary education, aimed at encouraging individual development of a coherent, consistent philosophy by which educational practice may be guided. (Sp)

5001. History of Education (4)

A survey of major developments in western education from the Greeks to the present day; major emphasis is placed upon the implications involved for modern practice. Prerequisite: two courses from Ancient, Medieval, or European History; American History; or permission of the instructor. (W)

5010. Contemporary American Education (4)

A critical analysis of relationships between major social and historical developments and American education, emphasizing goals, purposes, scope and functioning of elementary and secondary education. Meets credential requirements in principles of education. (F)

5021. The Exceptional Child (3)

Characteristics of children who deviate physically, mentally, socially or psychologically from normal children. Methods of identification and suggested educational adjustments. Prerequisite: teaching credential or consent of instructor. (F, W, Sp)

5022. Psychological Foundations of Education (Secondary) (4)

Research and theory in the teaching-learning process specifically applied to adolescent youth; individual differences and their development; learning theory applied to the teaching of specific school subjects; evaluation of classroom learning; problems of adolescence. Lect. 4 hours. (A)

5025. Psychological Foundations of Education (Elementary) (3)

Research and theory in the teaching-learning process; individual differences and their development; learning theory applied to the teaching of specific school subjects; evaluation of classroom learning; mental hygiene. Prerequisite: Basic Psychology and Child Growth and Development or Adolescent Psychology, or Psychological Foundations of Education I. (Concurrent registration in a public school laboratory or student teaching.) Lect. 3 hrs. (A)

5030. Sociological Foundations of Education (Elementary) (3)

Cultural historical development of the public schools in the United States; the changing social, political, and economic forces shaping the changing public school. Prerequisite: admission into the Standard Teaching Credential program; concurrent registration in a public school laboratory or student teaching. Lect., 3 hrs. (A)

5035. Social Foundations of Education (Secondary) (4)

Cultural, historical development of the public schools in United States; the changing social, political, and economic forces shaping the changing public schools; various philosophies of education in the forces shaping the schools. Lect. 4 hrs. (A)

5040. Teaching the Adolescent (3)

Characteristics of adolescents: influences affecting adolescent behavior; analysis of current forces upon junior and senior high school students; application to school procedures. Meets secondary credential requirements for growth and development. Prerequisite: basic educational psychology course. (W)

5060. Human Relations in Teaching (4)

Teaching procedures and content emphasizing human relations in school setting. Analysis of effects of roles, statuses, and purposes upon the individual. Understanding of group processes. Prerequisite: consent of instructor. (F, W)

5069. Home and School (3)

Dynamics of family, pupil-teacher, teacher-parent, and pupil-pupil relationships, including methods and materials of family counseling, working with parent groups, parent conferences, home visits and problems of home and school. Prerequisite: teaching credential or consent of instructor. Lect., 3 hrs. (F, W, Sp)

5100. Evaluation in Education (3)

Principles, techniques, and current practices of evaluation in schools. Relationship to curriculum; current practices in tests and measurements. Prerequisite: basic educational psychology course and Educ. 5800 series or equivalent. Lect. 2 hrs., lab., 3 hrs. (A)

5210. Improving Language Arts in the Elementary Schools (3)

Research in psychology and methods of the teaching-learning process in speaking, listening, spelling, and writing; relation to school curriculum materials and resources. Prerequisite: teaching experience, Educ. 5800 series or equivalent, or permission of instructor. (F, Sp)

5220. Improving Social Studies in Elementary Schools (3)

Study of problems in teaching social studies in elementary schools. Development of plans and materials. Review of state framework for social studies. Prerequisite: teaching experience, Educ. 5800 series or equivalent, or permission of instructor. (W, Sp)

5240. Children's Literature (3)

Examination of values in folk tales, classical myths, and legends. Major attention to body of contemporary writing especially created to satisfy interests and needs of children. Criteria for continuing selection and appreciation of children's literature emphasized. Prerequisite: consent of instructor. (F, Sp)

5241. Literature for Adolescents (3)

Examination of the values to be found in folk tales, classical myths and legends, as well as the body of contemporary writing, especially created to satisfy interests and needs of adolescents. (W)

5250. Teaching Resources in the School (2)

Identification and review of teaching resources and materials used in school teaching; utilization of audiovisual aids and programmed learning developments in specific subjects; introduction to the college curriculum resources laboratory. Prerequisite: admission into the Standard Teaching Credential program; concurrent registration in a public school laboratory course or student teaching. Lect. 1 hr., activity 2 hrs. (A)

5251. Audiovisual Methods and Materials (3)

Selection, utilization and evaluation of audiovisual methods and materials in the teaching-learning process; operation of audiovisual equipment. Fulfills credential requirement. No credit for students with prior audiovisual course. Prerequisite: teaching experience or permission of instructor. One hr. lect., 4 hrs. activity (F, Sp)

5252. Preparation of Instructional Materials (3)

Laboratory experience in the preparation of a variety of visual materials. Techniques of illustration, lettering, mounting, coloring, and duplication of graphic materials used to produce pictures, maps, charts, posters, slides and displays. Prerequisite: Ed. 5251 or equivalent, and teaching experience. Lect. 2 hrs., activity 2 hrs. (W)

5260. Classroom Problems of Beginning Teachers (3)

General methods of teaching with emphasis on the problems teachers encounter during first-year teaching. Instruction in audiovisual methods and materials, classroom organization and management, grouping, lesson planning, reporting to parents, and a preview of professional issues. Lect. 2 hrs., lab. 2 hrs. (A)

5261, 5262, 5263. Public School Lab I, II, III (1, 2, 3)

Three hours supervised participation in public schools and/or youth agencies for each unit of credit. Concurrent registrations as required with specific courses. For early childhood majors, concurrent registration in Ed. 4231 is required. (A)

5264. Observation, Seminar and Lab (Secondary) (3)

Three hours per week supervised participation in public schools, plus an hour per week seminar meeting to discuss and analyze observations. Seminar time may also be devoted to phases of method as needed by students who do some teaching. One hr. lect., 2 hrs. lab. (F, Sp, Su)

5270. Secondary School Curriculum (4)

Analysis of secondary school curriculum: practices, trends, and issues; roles of the secondary teacher, student, parent, administrator, supervisor, and counselor; current practices and techniques in measurement related to curriculum improvement. Prerequisite: graduate standing and acceptance into the Secondary Credential program. (A)

5275. Teaching in the Junior High School (4)

Characteristics of junior high school students; influences affecting junior high school student behavior; analysis of current forces upon junior high school students; study of the junior high schools as a unique intermediate unit. Prerequisite: Growth and Development or permission of instructor. (W)

5281. Curriculum Planning in the Nursery School, Kindergarten and Primary Grades (3)

Selecting, developing, and managing activities for very young children. Special problems in curriculum development for nursery, kindergarten and primary education with emphasis on language development, pre-reading, and initial reading experiences. Prerequisite: Student Teaching Phase I. Open only to students with major interest in primary school education.

5601, 5602. Student Teaching in the Elementary Schools, Phase I, II (4, 6)

Student teaching under the supervision of a public school teacher and a member of the college faculty. Prerequisite: candidacy in the credential program and approval of the Committee on Credentials, concurrent registrations as required by the department. The student teaching sequence will cover two quarters. (F, W, Sp)

5603. Student Teaching Seminar, Elementary School (2)

Conference periods with college supervisors. (W, Sp)

5653, 5655. Student Teaching in the Secondary School, Phase I, II (3, 7)

Student Teaching under the supervision of a public school teacher and a member of the college faculty. Prerequisite: candidacy in the credential program and approval of the Committee on Credentials, concurrent registrations required in Educ. 5654 and 5656 respectively. The student teaching sequence will cover two quarters. (F, W, Sp)

5667-72. Seminars in Secondary Student Teaching, Phase I (2 each)

Conference periods with college supervisors. (F, W)

5661—Art

5662—Biological Science

5663—Business Education

5664—English

5665—Foreign Language

5666—History

5667—Mathematics

5668—Music

5669—Physical Education

5670—Physical Science

5671—Social Science

5672—Speech and Drama

5681-92. Seminars in Secondary Student Teaching, Phase II (3 each)

Conference periods with college supervisors. Prerequisite: any course from Educ. 5661-72. (F, W, Sp)

5681—Art

5682—Biological Science

5683—Business Education

5684—English

5685—Foreign Language

5686—History

5687—Mathematics

5688—Music

5689—Physical Education

5690—Physical Science

5691—Social Science

5692—Speech and Drama

5700. Teaching the Gifted (3)

Problems of curriculum, teaching-learning, and patterns of administration and organization of school programs for the gifted. Emphasis on methods, materials, and resources. Prerequisites: teaching experience or consent of instructor. (W)

5811.* Language Arts in the Elementary School (3)

Curriculum, methods, and resource materials in speaking, listening, spelling, writing. Prerequisite: admission to preliminary candidacy in the Elementary Teaching Credential program, concurrent registration in the series and Public School Lab III, or student teaching. Two hrs. lect., 2 hrs. activity. (A)

5821.* Social Studies in the Elementary School (3)

Curriculum, resource materials, and methods in scope and sequence of social studies in the elementary school. Prerequisite: admission to preliminary candidacy in the Elementary Teaching Credential program, concurrent registration in the series and Public School Lab III, or student teaching. Two hrs. lect., 2 hrs. activity. (F, W, Sp)

5831.* Reading in the Elementary School (3)

Materials and methods of reading development; emphasis on group and individual techniques. Prerequisite: admission to preliminary candidacy in the Elementary Teaching Credential program, concurrent registration in the series and Public School Lab III, or student teaching. Two hrs. lect., 2 hrs. activity. (F, W, Sp)

5900. Individual Study (1-4)**5901. Directed Group Study (2-4)****6001. The American Junior College in Higher Education (5)**

An overview of the community college movement in America. History of junior colleges in higher education, presentation of learning theories, and instructional procedures appropriate to the diverse student bodies and curriculum of the junior college. Pre-student teaching experiences, observation of and participation in classroom activities in a variety of junior colleges. Three hrs. lecture, 2 hrs. lab. (F)

6020. Research in Education (4)

Methods and procedures of research tools in education; sources and uses of data. Critical analysis of published research. Preparation of a research project to include references, rationale, and outline. Educ. 4100 and course in statistics recommended. (F, W, Sp)

* Part of the 5800 series, Elementary School Methods.

6700. Advanced Education Psychology (4)

(See Psych. 6700 for course description.)

6900. Independent Study (2-4)**6901. Group Study (2-4)****English**

Offered in the Department of English

1001.* Expository Writing (3)

The theory and practice of expository writing. Required of all students. A combination of Eng. 1001 and Sp/Dr. 1000 meets general education requirements in oral and written expression. (A)

1813. Introduction to Fiction (4)

Elements of fiction: a study of plot, characterization, language, and theme. Prerequisite: Eng. 1001. (A)

2002. Composition and Literature (3)

Extensive directed reading in fiction, verse, and drama; controlled writing on literary subjects. Prerequisite: Eng. 1001 and sophomore standing. (A)

2010. Introduction to the Study of Literature (4)

Intensive study of literary conventions and literary forms. Prerequisite: Eng. 1001. (A)

2020. Literary Composition (4)

Regular practice in explication, paraphrasing, and discussion of literary texts. Prerequisite: Eng. 1001. (W, Sp, Su)

2060. Introduction to Linguistics (4)

Origin, nature, and philosophy of language; history and comparison of language systems and structures. (Y)

2070.† Introduction to Creative Writing (4)

Introduction to imaginative writing of various types. Two hrs. lect., 6 hrs. lab. Prerequisite: Eng. 1813. May be taken twice for credit. (A)

3003. Composition and the Essay (3)

Close reading of scholarly and contemplative non-fiction; controlled practice in essay-writing. Prerequisite: Eng. 2002 and junior standing. (A)

3010. Modern English Grammar (4)

Review of traditional grammar; overview of modern linguistic theories. Prerequisite: junior standing. Required of English majors. (A)

3020. Advanced Expository Writing (4)

Expository writing and analysis in relation to traditional and contemporary theories of composition. Prerequisite: English 3010. Required of English majors. (A)

3040. History of the English Language (4)

Origin and development of English, and its relations to cognate languages. Prerequisite: junior standing. Required of English majors. (Sp, Su)

* A student who has failed Eng. 1001 must present evidence of satisfactory completion of an independent study course (emphasizing the mechanics of English) or English A or equivalent at an accredited college before registering in Eng. 1001 for a second time. A student who completes the sequence Eng. 1001-2002-3003 will receive credit for 4.5 units of literature, applicable to the general education requirement for the baccalaureate degree and for the teaching credential.

† Before enrolling in this course, consult the instructor.

3071.† Directed Writing I (4)

The student will write regularly and will participate in classroom analysis and criticism of manuscripts submitted. Individual editorial conferences. Prerequisite: Eng. 2070. Two hrs. lect., 6 hrs. lab. (F)

3072.† Directed Writing II (4)

Continuation of Eng. 3071. For the developing beginning writer. Prerequisite: Eng. 3071. Two hrs. lect., 6 hrs. lab. (W)

3073.† Directed Writing III (4)

Continuation of Eng. 3072. For the beginning writer who has shown distinct promise. Prerequisite: Eng. 3072. Two hrs. lect., 6 hrs. lab. (Sp)

3075.† Poetry Writing (4)

Practice in form and technique; weekly manuscripts, class criticism, editorial conferences. Prerequisite: Eng. 2070. (On demand)

3202. English Literature, 1542-1660 (4)

A comprehensive history of Renaissance literature from More to Milton. Prerequisites: Eng. 2010 and 2020. Required of English majors. (F)

3259. Readings in Shakespeare (4)

Major tragedies, comedies, and history plays. Prerequisites: Eng. 1001 and junior standing. The student will not receive credit for both Eng. 3259 and 4250. (On demand)

3303. English Literature, 1660-1837 (4)

A comprehensive history of neo-classical and romantic literature from Dryden to the accession of Victoria. Prerequisite: Eng. 3202. Required of English majors. (W)

3404. English Literature, 1837 to the Present (4)

A comprehensive history of Victorian and contemporary literature. Prerequisite: Eng. 3303. (Sp)

3601. American Literature From the Beginnings to 1835 (4)

A comprehensive history of colonial and early Republican literature. Prerequisites: Eng. 2010 and 2020. (F)

3602. American Literature, 1835-1914 (4)

A comprehensive history of American literature from the emergence of the national literary consciousness to World War I. Prerequisites: Eng. 2010 and 2020. Required of English majors. (W)

3603. American Literature Since 1914 (4)

A comprehensive history of recent and contemporary American literature. Prerequisite: Eng. 3602. Required of English majors. (Sp)

3710. Medieval Literature (4)

Literary patterns in Medieval Europe: the epic, the courtly novel, and lyric poetry, from the troubadours to Chaucer. Prerequisite: Eng. 1001. (On demand)

3720. Renaissance Humanism (4)

The contribution of classical learning to the European renaissance. Prerequisites: Eng. 1001 and junior standing. (F)

3730. The Classical Tradition (4)

The development of the classical spirit in Western literature, from the literature and philosophy of Greece and Rome to neo-classicism in France and England. Prerequisites: Eng. 1001 and junior standing. (W)

† Before enrolling in this course, consult the instructor.

3740. The Romantic Era: 1770-1830 (4)

The dominant themes and styles of romanticism, with readings from major writers. Prerequisites: Eng. 1001 and junior standing. (On demand)

3750. Realism and Naturalism, 1830-1910 (4)

Major movements in the literature of Europe in the 19th and early 20th centuries, with emphasis on a major figure or figures. Prerequisites: Eng. 1001 and junior standing. (On demand)

3760. Literature of the Twentieth Century (4)

Major movements in recent European and American literature, with emphasis on a major figure or figures. Prerequisites: Eng. 1001 and junior standing. (On demand)

4071.† Writing Fiction I (4)

Writing of long and short fiction. For the prospective professional writer. Prerequisite: Eng. 3073. Two hrs. lect., 6 hrs. lab. (F, W, Sp)

4072.† Writing Fiction II (4)

Continuation of Eng. 4071. For the advanced student writer who shows continuing development. Prerequisite: Eng. 4071. Two hrs. lect., 6 hrs. lab. (F, W, Sp)

4073.† Writing Fiction III (4)

Continuation of Eng. 4072. For the student writer who shows distinct professional promise. Prerequisite: Eng. 4072. Two hrs. lect., 6 hrs. lab. (F, W, Sp)

4150. Chaucer and His Milieu (4)

The Canterbury Tales and other poetry; selections from the works of other significant medieval English authors. Prerequisites: Eng. 2010 and 2020. Required of English majors. (W, Sp)

4250. Shakespeare (4)

Techniques and conventions of the Elizabethan theater; Shakespeare's comedies, histories, and tragedies. Prerequisite: Eng. 3202. Required of English majors. The student will not receive credit for both Eng. 4250 and 3259. (F, W, Sp)

4320. The Milieu of Samuel Johnson (4)

The waning of neo-classicism, with emphasis on the social, political, and literary surroundings of the last great English classicist. Prerequisite: Eng. 3303. (W)

4410. British Romantic Literature (4)

Intensive study of literature of the Romantic era, with emphasis on a major figure. Prerequisite: Eng. 3303. (On demand)

4420. Victorian Literature (4)

Intensive study of literature of the Victorian era, with emphasis on a major figure. Prerequisite: Eng. 3404. (On demand)

4510. Recent British Literature (4)

Intensive study of literature since 1914, with emphasis on a major figure. Prerequisite: Eng. 3404. (F)

4630. The Age of Hawthorne and Melville (4)

Intensive study of the works of Hawthorne and Melville, with selected collateral readings. Prerequisite: Eng. 3601. (On demand)

4640. The Age of Mark Twain (4)

Readings in major works of the period. Prerequisite: Eng. 3602. (W)

† Before enrolling in this course, consult the instructor.

4710. Biblical Literature (4)

The stories, poems, parables, sermons, and epistles in the development of monotheism. Prerequisites: Eng. 1001 and junior standing. (On demand)

4720. Mythology (4)

Cosmologies and cosmogonies: readings from literatures of the Orient, the Near East, the Mediterranean, and Europe. Prerequisites: Eng. 1001 and junior standing. (F)

4730. Greek Literature in Translation I (4)

Readings from the culture of Ancient Greece, with emphasis on Homeric epic. Prerequisites: Eng. 1001 and junior standing. (W)

4735. Greek Literature in Translation II (4)

Readings from the culture of Ancient Greece, with emphasis on the drama. Prerequisites: Eng. 1001 and junior standing. (Sp)

4810. English Drama Before 1642 (4)

A history of the drama from its liturgical beginnings to the closing of the theaters. Prerequisite: Eng. 3202. (F)

4813. Restoration and 18th Century Drama (4)

A history of the English drama from 1660 to 1800. Prerequisite: Eng. 3303. (W)

4816. The Revival of Drama (4)

A history of English and American drama since 1890; Shaw, Wilde, and later dramatists. Prerequisites: Eng. 3404 and 3603. (Sp)

4820. The Lyric (4)

The evolution of the short poem from its medieval origins to the present. Prerequisites: Eng. 3404 and 3603. (On demand)

4822. Narrative and Dramatic Poetry (4)

Verse narrative from Chaucer to the present. Prerequisite: Eng. 3603. (On demand)

4826. Recent American Poets (4)

Representative American poets from Pound to the present. Prerequisite: Eng. 3603. (On demand)

4830. The English Novel Before 1900 (4)

Development of the tradition from Fielding and Sterne to Hardy. Prerequisite: Eng. 3404. (On demand)

4833. The English Novel Since 1900 (4)

Readings from the works of Conrad, James, Joyce, and others. Prerequisite: Eng. 3404. (On demand)

4836. The Short Story (4)

Development of the modern short story in America and Europe. Prerequisites: Eng. 3404 and 3603. (On demand)

4870. American Novelists, 1918-1942 (4)

The major works between wars: Lewis, Fitzgerald, Faulkner, Hemingway, Steinbeck. Prerequisite: Eng. 3603. (On demand)

4875. The Current American Novel (4)

Representative works by Jones, Mailer, Shaw, Bellow, Salinger. Prerequisite: Eng. 3603. (F)

4900. Independent Study (1-4)**4901. Directed Group Study (1-4)****4990.† Honors in English (2-3)**

Studies in English literary backgrounds open to selected students only. A lecture and tutorial program to be taken for three of the six quarters prior to the student's graduation. (A)

5950. Teaching English in the Secondary School (2)

Methods and curricula for the teaching of English in the junior high school, the high school, and the junior college. Audiovisual techniques. Prerequisite: consent of instructor. (W)

6000. Seminar in Bibliography and Methods of Research (4)

Introduction to bibliographic aids and materials; textual criticism; preparation of scholarly writing. (F)

6010. Seminar in Theory and Practice of Literary Criticism (4)

Study of important critical works. (W)

6200. Renaissance Rhetoric and Poetics (4)

Seminar in classical and medieval origins of Renaissance literary theory. (Y)

6210. Seminar in Renaissance Drama (4)

Themes and conventions; intensive study of a single dramatist or genre. (Y)

6400. Seminar in Victorian Literature (4)

The poetry and fiction of the Victorian era. Maximum total credit: 8 units. (Y)

6600. Seminar in 19th Century American Literature (4)

Major American writers of the 19th century (Poe, Hawthorne, Melville, Twain, Crane, Whitman, etc.). Maximum total credit: 8 units. (Y)

6650. Seminar in Contemporary American Literature (4)

Proseminar on major trends in fiction, poetry, or drama. (Y)

6900. Independent Study (1-4)**6901. Independent Study (1-4)****6910. Thesis (9)**

Thesis or an equivalent work in fiction, verse, or drama.

English as a Foreign Language**1001. English as a Foreign Language I (no credit)**

Auditory and oral skills in English. Intensive reading and writing for familiarity with English syntax and word forms. Two hrs. lect., 6 hrs. lab. (On demand)

1002. English as a Foreign Language II (no credit)

Reading, writing and listening in English. A continuation of EFL 1001. Prerequisite: EFL 1001 or placement by examination. Two hrs. lect., 6 hrs. lab. (On demand)

Entomology

See Biological Science

† Before enrolling in this course, consult the instructor.

Foreign Languages**Offered in the Department of Foreign Languages****3710. Medieval Literature (4)**

(Same as English 3710) (F)

3720. Renaissance Humanism (4)

(Same as English 3720) (W)

3730. The Classical Tradition (4)

(Same as English 3730) (Sp)

5950. Methods in the Teaching of Foreign Languages (3)

Methods, practice, and techniques in the teaching of modern foreign languages on the secondary level. Particular stress given to the audio-lingual and audiovisual approach. Prerequisites: competence in at least one foreign language and consent of instructor. (F, W, Sp)

French**Offered in the Department of Foreign Languages**

NOTE: Students may be admitted to any of the following courses by consent of instructor.

1001. Elementary French (4)

Introduction to the reading, writing, understanding, and speaking of French. (A)

1002. Elementary French (4)

Continuation of Fren. 1001. Prerequisite: Fren. 1001. (A)

1003. Elementary French (4)

Continuation of Fren. 1002. Prerequisite: Fren. 1002. (W, Sp)

2001. Intermediate French (4)

Continuation of Fren. 1003, with increased emphasis on the reading and writing of French. Prerequisite: Fren. 1003. (F)

2002. Intermediate French (4)

Continuation of Fren. 2001. Prerequisite: Fren. 2001. (W)

2003. Intermediate French (4)

Continuation of Fren. 2002. Prerequisite: Fren. 2002. (Sp)

2100. French Conversation (4)

Emphasis on the spoken language studied through texts. Strongly recommended for majors. Prerequisite: Fren. 2003 or consent of the instructor. (A)

3001. French Composition (4)

Written French and formal grammar. Prerequisite: Fren. 2003.

3002. Advanced French Composition (4)

Continuation of Fren. 3001. Prerequisite: Fren. 3001.

3101. Introduction to French Phonology and Morphology (4)

Scientific analysis of the French language with emphasis on the discovery of formal units and patterns in linguistic behavior. Historical survey of the development of French. The phonemic principle. Morphological structure. Prerequisite: Fren. 3002 or consent of instructor. (W)

3102. French Phonetics (4)

The fundamentals of French pronunciation and intonation through a study of the phonetic structure of the language. Attention given to each student's difficulties. Individual laboratory work. Prerequisite: Fren. 3101 or consent of instructor. Three hrs. classroom, 1 hr. lab. (Sp, F)

3201. Introduction to Literary Studies: Prose (4)

Background and critical appraisal of essential French prose works, from the 16th to the 20th centuries. Prerequisite: Fren. 3002 or consent of instructor. (F)

3202. Introduction to Literary Studies: Poetry (4)

Background and critical appraisal of important poems, from the 12th to the 20th centuries. Prerequisite: Fren. 3002 or consent of instructor. (W)

3203. Introduction to Literary Studies: Drama (4)

Background and critical appraisal of important plays from the 12th to the 20th centuries. Prerequisite: Fren. 3002 or consent of the instructor. (Sp)

3300. Explication de Textes (4)

Reading and interpretation of French texts, according to a method extensively used in French schools and universities. Demonstrations and criticism by the instructor, preparation and oral practice by the students. The texts chosen will extend from the 16th to the 20th centuries. Prerequisite: Fren. 3002 or consent of instructor. (Sp)

3401. Medieval French Literature (4)

Medieval French literature from the 11th through the 15th centuries: *Chanson de Roland*, *Lais* of Marie de France, *Tristan et Yseult*, *Erec et Enide*, *Le Roman de la Rose*. Prerequisite: Fren. 3101 or consent of instructor. (W)

3402. French Renaissance Literature (4)

Sixteenth century French literature with emphasis on Rabelais, Montaigne and the Pleiade. Prerequisite: Fren. 3201 or 3202 or 3203 or consent of instructor. (Sp)

3501. 17th Century French Theatre: The Tragedy (4)

French classical tragedy, with detailed analysis of selected plays of Corneille and Racine. Prerequisite: Fren. 3203 or consent of instructor. (F)

3502. 17th Century French Theatre: The Comedy (4)

The development of comedy, with detailed analysis of selected plays of Moliere, his predecessors and contemporaries. Prerequisite: Fren. 3203 or consent of instructor. (W)

3503. 17th Century French Prose and Poetry (4)

Readings in French prose and poetry from Malherbe to Fenelon, with detailed analysis of selected texts of Descartes, Pascal, La Fontaine, Boileau, Bossuet, La Rochefoucauld, La Bruyere and others. Prerequisite: Fren. 3201 or 3202 or consent of instructor. (Sp)

3601. 18th Century French Literature (1685-1750) (4)

An introduction to 18th century literature through the study of the "philosophes" and their precursors. Particular emphasis on the works of Montesquieu, Voltaire and Diderot. Prerequisite: Fren. 3201 or consent of instructor. (Su, F)

3602. 18th Century French Literature (1750-1789) (4)

Rousseau as political philosopher and pre-romantic. Prerequisite: Fren. 3201 or consent of instructor. (W)

3603. 18th Century French Literature (Theatre and Novel) (4)

The works of Voltaire, Beaumarchais, Diderot, Marivaux, Prevost, Laclos Sade. Prerequisite: Fren. 3201 or 3203 or consent of instructor. (Sp)

3701. Romanticism (4)

The prose, poetry and drama of the early 19th century, with emphasis on Chateaubriand, Lamartine, Hugo, de Vigny and Musset. Prerequisite: Fren. 3201 or 3202 or 3203 or consent of instructor. (F)

3702. Realism (4)

Selected works of Stendhal, Balzac, Merimee, and Flaubert. Prerequisite: Fren. 3201 or consent of instructor. (W)

3703. Naturalism (4)

The works of Zola, Maupassant, the Goncourts, Huysmans and Becque. Prerequisite: Fren. 3201 or consent of instructor. (Sp)

3801. Modern Poetry (4)

French poetry of the 19th and 20th centuries, from Nerval and Baudelaire to the present. Prerequisite: Fren. 3202. (F)

3802. The Modern French Novel (4)

Development of the novel as exemplified by the works of Gide, Proust, Sartre, Camus, and the "nouveau roman." Prerequisite: Fren. 3201 or consent of instructor. (W)

3803. 20th Century French Theatre (4)

The plays of Claudel, Giraudoux, Anouilh, Sartre, Beckett and Ionesco. Prerequisite: Fren. 3203 or consent of instructor. (Sp)

4001. Studies in Medieval French Literature (4)

Intensive study of a specific author, genre or movement. Prerequisite: Fren. 3401 or consent of instructor. (W)

4002. Studies in French Renaissance Literature (4)

Intensive study of a specific author, genre or movement. Prerequisite: Fren. 3402 or consent of instructor. (Sp)

4003. Studies in French Classicism (4)

Intensive study of a specific author, genre or movement. Prerequisite: Fren. 3501 or 3502 or 3503 or consent of instructor. (W)

4004. Studies in 18th Century French Literature (4)

Intensive study of a specific author, genre or movement. Prerequisite: Fren. 3601 or 3602 or 3603 or consent of instructor. (Sp)

4005. Studies in 19th Century French Literature (4)

Intensive study of a specific author, genre or movement. Prerequisite: Fren. 3701 or 3702 or 3703 or consent of instructor. (F)

4006. Studies in 20th Century French Literature (4)

Intensive study of a specific author, genre or movement. Prerequisite: Fren. 3801 or 3802 or 3803 or consent of instructor. (W)

4007. Studies in Individual Authors (3-4)

Intensive study of certain aspects of individual authors (e.g., Villon, Rabelais, Montaigne, Corneille, Racine, Moliere, Voltaire, Diderot, Rousseau). Prerequisite: senior or graduate standing. (Su)

4900. Independent (1-4)**4901. Directed Group Study (1-4)****Geography**

Offered in the Department of Geography-Anthropology

INTRODUCTORY**1000. Introduction to Geography (4)**

The five co-traditions of modern geography: exploration and discovery, earth science, man-land interrelations, regionalism, spatial analysis and space relations, as exemplified in western North America. One half-day field trip required. Three hrs. lect., 1 hr. discussion. (F, W, Sp, tent. Su)

2100. Principles of Physical Geography (4)

Analysis of the major components of the physical environment, including landforms, climate, vegetation, water resources, and soils. Required of geography majors, geography core in social science area major, and for teaching minor. One all-day Saturday field trip required. Three hrs. lect., 2 hrs. activity. (F, W, Sp, tent. Su)

2300. Principles of Cultural Geography (4)

Introduction to varying cultural interpretations of man-environment relationships; spatial analysis of the distribution and diffusion of man and his works. Required for geography majors, geography core in social science area major, and for geography teaching minor. One all-day Saturday field trip required. Three hrs. lect., 1 hr. discussion. (F, W, Sp, tent. Su)

2310. Economic Geography (4)

Consideration of man's resource-converting and space-adjusting techniques; location, extraction, production, exchange, and consumption of raw materials, manufactured products, and services; the development, form, and function of economic regions; concepts of spatial interaction of goods and services. Prerequisite: Geog. 1000 or 2300 or 3000. (F)

2500. Geography of the San Francisco Bay Region (4)

Descriptive approach to geomorphological features; settlement patterns; rural, urban and industrial land utilizations in the San Francisco Bay Region. One all-day field trip. Prerequisite: one course in either Physical or Cultural Geography, or consent of instructor. Four hrs. lect.-discussion. (Y)

3000. World Land Problems (4)

Effects of man's intentional and unintentional modification of his physical environment; the importance of his changing attitudes toward natural resources and landscape; relation of these attitudes to soil, water, and air modification and deterioration. Three hrs. lect., 1 hr. discussion. (A)

INTERMEDIATE-PHYSICAL-BIOTIC GEOGRAPHY**3100. Descriptive and Regional Climatology (4)**

Climates of the continents; comparisons and contrasts among climatic types; the relations between atmospheric processes and phenomena and the problems of climatic classification; Köppen and Thornthwaite systems; microclimatology and applied climatology. Prerequisite: Geog. 2100 and Meteorology 1400. (F)

INTERMEDIATE-CULTURAL GEOGRAPHY**3300. Historical Cultural Geography (4)**

Origin, form and substance, and distribution of the works of man on the earth's surface; relative roles of invention, diffusion, and location in man's gaining cultural control of the land. Prerequisite: Geog. 1000 or 2300 or 3000. (Su)

Geography

3320. Agricultural Land Utilization (4)

Geography of world agriculture: The areal variation of agricultural methods and products; problems of land tenure, soil fertility, improvement of techniques, quantity and quality; the changing patterns of agricultural regions and frontiers. Prerequisite: Geog. 1000 or 2300 or 3000. (F)

3330. Urban Geography (4)

Spatial distribution, principal functions, internal land use structure, and supporting areas of cities, with particular reference emphasis on the locational features of each. Prerequisite: Geog. 1000, 2300 or 3000. (Not offered, 1967-68)

3340. Population and Settlement Geography (4)

Changing distributions and numbers of people in space and time on the earth's surface; kinds of habitation, house-types, residence patterns, and settlement forms, and their functions; comparative study of settlement patterns, Prerequisite: Geog. 1000 or 2300 or 3000. (W)

INTERMEDIATE-BASIC GEOGRAPHIC SKILLS

3400. Field Instruments and Graphic Methods (5)

Tools and methods of field observation and recording; pace and compass, alidade and plane-table, transit, leveling, contouring, analysis of data and organization in graphic form; camera, sketch board, and recorder as research instruments. Prerequisite: Geog. 1000 or 2100 or 3000. One hr. lect., 8 hrs. activity; field work all day Saturday. (F)

3410. Map and Aerial Photo Reading and Interpretation (4)

Principles of recognition, classification, and interpretation of aerial photographs as sources of information and their use in map intelligence; map appreciation, evaluation, and uses; art of map-making and its significance, past and present. Two half-day field trips required. Two hrs. lect. 2 two-hour activity sessions. (F)

3420. Field Observation and Report Writing (5)

Problems in the selection, compilation, and ordering of field observations; the preparation of field reports (writing, sketches, maps, photographs, graphs and charts); principles of generic and genetic classifications. Prerequisite: Geog. 3400 and 3410. One hr. lect., 8 hours activity; field work all day Saturday. (F)

INTERMEDIATE-REGIONAL GEOGRAPHY

3500. Geography of North America (4)

Spatial analysis and space relations of Canada and the United States; the character or personality of their distinctive human-use regions; problems of population growth and resource development. Prerequisite: Geog. 1000 or 2300 or 3000. (W)

3505. Geography of California (4)

Regional variations within the State of California; factors contributing to landscape change; exploration, settlement, economic development, and urban-industrial-transportation patterns on the land. Of particular interest and value to prospective elementary teachers. Prerequisite: Geog. 1000 or 2300 or 3000 (Sp)

3510. Geography of Middle America (4)

Mexico, Central America, and the Caribbean Islands. Prerequisite: Geog. 1000 or 2300 or 3000; or a previous course in history or anthropology on the region; or residence in region and consent of instructor. (F)

Geography

3515. Geography of South America (4)

Distinguishing characteristics among the Andean countries of Spanish heritage, the Guianas, and the largest country—Brazil. Prerequisite: Geog. 1000 or 2300 or 3000; or a previous course in history or anthropology on the region; or residence in region and consent of instructor. (W)

3520. Geography of the Pacific Basin (4)

Changing interpretation and utilization of the Pacific Islands: continental, oceanic, volcanic and atolls; discovery, exploration, and occupancy from Asia, Europe, and America; strategic role of the Pacific Islands in the modern world. Prerequisite: Geog. 1000 or 2300 or 3000; or previous course in anthropology or history of the region; or residence in the region and consent of the instructor. Four hrs. lect.-discussion. (Y)

3530. Geography of Australia and New Zealand (4)

Discovery, exploration, and European settlement of the Southern Continent; coastal urban patterns, and problems of development in the arid interior and tropical north; comparison with Tasmania and New Zealand. Prerequisite: Geog. 1000 or 2300 or 3000; or residence in region and consent of instructor. (Not offered, 1967-68)

3540. Geography of Eastern Asia (4)

Japan, Korea, China, Mongolia, Tibet, Taiwan, and Hong Kong. Prerequisite: Geog. 1000 or 2300 or 3000; or in a previous course in history or political science on the region; or residence in region and consent of instructor. (Sp)

3550. Geography of Southeast Asia (4)

The Philippines, Indonesia, Malaysia, and the mainland countries of Viet Nam, Laos, Cambodia, Thailand, and Burma. Prerequisite: Geog. 1000 or 2300 or 3000; or a previous course in history or anthropology on the region; or residence in region and consent of instructor. (W)

3560. Geography of South Asia (4)

Pakistan, India, Nepal, Sikkim, Bhutan, and Ceylon. Prerequisite: Geog. 1000 or 2300 or 3000; or a previous course in history or anthropology on the region; or residence in region and consent of instructor (Sp)

3575. Geography of Africa South of Sahara (4)

The landforms, climate, vegetation, and cultural geography of Africa, with emphasis upon the derivation and problems of emerging Negro nations and the lands of European settlement. Prerequisite: Geog. 1000 or 2300 or 3000; or history or anthropology course on region; or residence in region and consent of instructor. (Not offered, 1967-68)

3590. Geography of Europe (4)

The geographic conditions in Europe west of the USSR, and their relationship to current economic, social and political problems. Prerequisite: Geog. 1000 or 2100 or 3000 or related course in political science or history or residence in Europe and consent of instructor. Four hrs. lect.-discussion. (Y)

3595. Geography of the Mediterranean Lands (4)

The geographic factors in the circum-Mediterranean lands and their relationship to ancient and modern cultural development. The southern peninsulas of Europe, the Levantine Near East, and Africa, North of the Sahara. Four hrs. lect.-discussion. (Sp)

INTERMEDIATE—CARTOGRAPHIC GEOGRAPHY**3600. Cartographic Instruments and Graphic Methods (4)**

Introduction to the tools, materials, processes, and principles used in the design, compilation, drafting and scribing, and reproduction of maps. Two required half-day field trips to government and commercial map-reproduction organizations. Prerequisite: Geog. 1000 or 2100 or 3000. One hr. lect., 6 hrs. activity. (W)

3610. Map Design, Compilation, and Construction (5)

Problems in map design: qualities of map projections, evaluation of source materials, accuracy of data, choice of scales, selection of symbols and typography, techniques of color separation. Prerequisite or concurrent: Geog. 3410 and 3600. Two hrs. lect., 6 hours activity. (Sp)

3620. Statistical and Experimental Cartography (5)

Map projections: their uses, computation, and construction; calculation and compilation of graphs and special-purpose maps; individual and/or group projects in advanced cartography. Prerequisite: Geog. 3610. One hr. lect., 8 hrs. activity. (F)

ADVANCED—PHYSICAL-BIOTIC GEOGRAPHY**4100. Principles of Geomorphology (5)**

Analysis of landforms; effects of processes of diastrophism, weathering, mass-wasting, erosion, and deposition in shaping the earth's surface, with emphasis upon the western United States. Laboratory interpretation of maps and aerial photographs; two all-day Saturday field trips required. Prerequisite: Geol. 2101. Four hrs. lect., 3 hrs. lab. Cross-listed with Geol. 4100. (W)

4110. Field Course in Physical Geography (5)

Problems and methods in analysis and mapping of landforms, drainage, weathering, soils, climatic elements; deduction of interrelations among physical processes shaping the landscape. Prerequisite: Geog. 3100 or 4100. One hr. lect., 8 hours activity (field work all day Saturday). (Sp)

4130. Hydrogeography (4)

Nature of the water cycle, with emphasis upon meteorological, surface water, and ground water phenomena; the drainage basin as a natural system; the nature and control of floods and water supplies. Prerequisite: Geog. 3100. (Sp)

4210. Field Course in Biotic Geography (5)

Problems and methods in analyzing and mapping vegetation associations, soil types, animal habitats; interrelations among processes determining the distribution of biotic elements in past and present landscapes. Prerequisite: Biol. 4450. One hr. lect., 8 hrs. activity (field work all day Saturday). (Sp)

ADVANCED—CULTURAL GEOGRAPHY**4200. Domestication of Plants and Animals (4)**

Motivations for the domestication of plants and animals; processes and places of domestication; diffusion of domestics from places of origin; historical role of domestics in human affairs. Prerequisites: Biol. 1000 or equivalent; and one of Anth. 1000, Anth. 2300, Geog. 1000, Geog. 2100 or Geog. 2300. Four hrs. lect. (Sp)

4300. Political Geography (4)

Relations of politically-organized units on the earth's surface (nation states, dependent territories, minor civil divisions, special-purpose regions) to their physical and cultural morphology and functions. Prerequisite: Geog. 1000 or 2300 or 3000; or major or minor in history or political science. (W)

4310. Field Course in Cultural Geography (5)

Problems and methods in analysis and mapping of material and non-material features of human origin; recognition of co-variation; cultural change; interrelations of form, function, and movement. Prerequisite: Geog. 2300 and one course in Geog. 3300 series. One hr. lect., 8 hrs. activity (field work two afternoons per week). (Sp)

4320. Geography of Energy Resources (4)

Distribution of sources, production trends, use patterns, and potentials of water, wind, volcanic, tidal, solar, and other sources of power for human utilization, with emphasis upon the fossil fuels (coal, petroleum, oil shale) and nuclear energy. Prerequisite: Geog. 2310. (F)

4350. Water Resources and Their Management (4)

Fresh water resources, especially for the United States. Problems of supply, control, and multiple use for domestic and municipal purposes, waste transportation, manufacturing and processing, irrigation and drainage, power, recreation, navigation, and flood control. Prerequisite: Geog. 2310. (Sp)

ADVANCED—HISTORICAL-THEORETICAL GEOGRAPHY**4400. Location Theory (4)**

Principles underlying the location and distribution of phenomena in a theoretical framework; application of systems analysis to the study of spatial relations; concepts and theories of static structure, functional organization, and simple dynamic systems. Prerequisite: Stat. 1000 and one geography course. (Not offered, 1967-68)

4430. Application of Quantitative Methods in Geography (4)

Application of quantitative methods to the analysis of areal data in the solution of geographic problems. Prerequisite: Stat. 1000 and 2010, or equivalent. Three hrs. lect., 2 hrs. activity. (Not offered, 1967-68)

4450. Cultural Ecology (4)

The articulation of technology and physical-biotic environment within the scope of socio-cultural systems; balance or harmony in man-land relations; growth of ecological thought to include human activity. Prerequisite: Anth. 2300 and Geog. 2300 or equivalent. Cross-listed with Anth. 4450. (W, Su)

4500. Historical Geography of Anglo-America (4)

Exploration, migration, and settlement, with emphasis upon origins of particular cultural features; changing patterns of population and human activity which have characterized different areas during the past four centuries. Prerequisite: Geog. 1000 or 2300 or 3000. (W)

4510. Comparative Study of Arid Land Habitats (4)

The varying interpretations and utilizations of arid and semi-arid environments by different cultural groups at different times and places; problems of human adaptation to dry lands. Prerequisite: One of Anth. 3510, Geog. 3510, 3515, or 3530. Cross-listed with Anth. 4510. (Not offered, 1967-68)

4600. Growth of Geographic Thought (4)

History and philosophy of geography; its place among the sciences and the humanities; works of major contributors to the development of modern scientific geography. Prerequisite: senior standing; completion of three upper division geography courses. (Sp)

Geology

4610. Geographic Exploration and Discovery (4)

Study of man's acquisition of knowledge about the earth's surface, from fortuitous discovery to planned scientific investigations, as exemplified by more accurate and detailed maps, charts, and aerial photographs. Prerequisite: Geog. 3300 or 3410 or one course in Geog. 3500 series. (W)

ADVANCED—SPECIAL PROGRAMS

4700. Educational Geography (4)

Concepts of geography as applied to teaching techniques in the presentation of geographic instruction; coordination with other school curricula. Prerequisite: two courses in geography and acceptance in a teaching credential program or teaching experience or consent of instructor. Four hrs. lect.-discussion. (Y)

4900. Independent Study (1-4)

Directed reading and/or field research. (A)

4901. Directed Group Study (1-4)

(A)

4910. Proseminar in Geography (4)

Seminar in geographical literature, research aids, and source materials. (W)

Geology

Offered in the Department of Earth and Physical Science

2101. Physical Geology (5)

Nature and distribution of earth materials, the processes by which the materials are formed and altered, and the nature and development of the landscape. Four hrs. lect., 3 hrs. lab.; one Saturday or Sunday field trip. (A)

2201. Historical Geology (5)

Principles or interpretation of earth history. Development of continents, oceans, mountains, and other physical features; evolution of life with introduction to paleontology. Prerequisites: Geol. 2101 or equivalent. Four hrs. lect., 3 hrs. lab. One Saturday field trip. (Sp)

3300. Principles of Geology (4)

An introductory survey of current knowledge in physical geology, historical geology, geophysics, geochemistry, geomorphology and oceanography. The appropriate physical and biological principles are introduced and developed as they apply to the above topics. Prerequisites: lower division physical science. Not open to students who have had Geol. 1101 or equivalent. (W, Su)

3400. General Oceanography (5)

Physical, chemical, and biological characteristics of the sea. Ocean currents, geology of the ocean floor. Prerequisites: general chemistry, college physics (Chem. 1101-2-3, Physics 2001-2-3 at CSCH) or consent of instructor. Four hrs. lect., 3 hrs. lab., one all-day Saturday field trip. (Sp)

3510. Paleontology (5)

Morphology, evolution, classification, and geologic history of organisms with emphasis on marine invertebrates. Methods of collection and interpretation of fossils. Prerequisite: permission of instructor. Three hrs. lect., 6 hrs. lab., one Saturday field trip. (F, W)

Geology

3610. Crystallography and Mineralogy (5)

Elements of crystallography, including orthographic and stereographic crystal projection, external crystal symmetry and morphology, and crystal classification; identification of minerals by their physical and chemical properties; chemistry and crystal structure of selected mineral groups. One Saturday field trip. Prerequisite: Geol. 2101 or equivalent and Chem. 1103 or equivalent, or permission of instructor. Two hrs. lect., 9 hrs. lab. (F)

3710. Petrology (5)

Characteristics, occurrence, and genesis of common rocks; classification of rocks based on hand lens determination of their textures and mineralogy. One Saturday or weekend field trip. Prerequisite: Geol. 3610 or equivalent. Three hrs. lect., 6 hrs. lab. (W)

3810. Structural Geology (5)

Structural features of sedimentary and metamorphic rocks and mechanisms of their genesis; review of laboratory work on plastic flow, etc.; solution of problems by descriptive geometry and stereographic projection. Occasional field trips during lab. periods. Prerequisite: Geol. 2101 or equivalent and Phys. 2001 or equivalent or permission of instructor. Three hrs. lect., 6 hrs. lab. (Sp)

4100. Principles of Geomorphology (5)

Analysis of land forms; effects of processes of diastrophism, weathering mass-wasting, erosion and deposition in shaping the earth's surface. Laboratory interpretation of maps and aerial photographs; two or more field trips required. Prerequisite: Geol. 2101. Four hrs. lect., 3 hrs. lab. (Sp)

4201. Sedimentation and Stratigraphy (5)

Classification and composition of sedimentary rocks; sedimentary processes and environments; history, terminology, and problems of stratigraphy with emphasis on biostratigraphy. One or two Saturday field trips. Prerequisites: Geol. 2101 and 2201. Three hrs. lect., 6 hrs. lab.

4310. Geology of California (4)

Study of the stratigraphy, igneous rocks, and structure of California; interpretation of the state's geologic history. Prerequisites: Geol. 2101 or equivalent (Geol. 2201 recommended) and permission of instructor. Two hrs. lect., 6 hrs. lab. Several weekend (overnight) and Saturday field trips required. (F)

4410. Economic Geology (5)

Characteristics, occurrence, and origin of mineral deposits; identification of economic minerals based on their physical properties; selected related topics, such as mineral self-sufficiency, calculation of ore reserves, etc. One Saturday field trip. Prerequisite: Geol. 2101 or equivalent. Three hrs. lect., 6 hrs. lab.

4610. Optical Mineralogy (5)

Elements of optical crystallography. Functions and use of the light polarizing microscope. Identification of minerals and amorphous solids in immersion liquids and thin sections. Prerequisites: Geol. 3610 or equivalent. Phys. 2003 or equivalent. Two hrs. lect., 9 hrs. lab.

4800. Seminar (1)

Critical, in-depth study of selected areas of current and classical research in the earth sciences, including both theoretical and applied aspects. Prerequisite: senior standing as an earth science major or permission of instructor. One hr. lect., discussion.

4810. Geologic Field Methods (3)

Introduction to geologic field methods and instruments, study of aerial photographs and geologic maps, preparation of geologic map and report of local area. Afternoon field trip every Friday. Prerequisite: permission of instructor. One hr. lect., 6 hrs. lab. (Sp)

4900. Independent Study (1-5)**German**

Offered in the Department of Foreign Languages

1001. Elementary German (4)

An audio-lingual approach to German, designed to give students skill in understanding, speaking, reading and writing the language. (F, Su)

1002. Elementary German (4)

Continuation of Ger. 1001. Prerequisite: Ger. 1001. (F, Su)

1003. Elementary German (4)

Continuation of Ger. 1002. Prerequisite: Ger. 1002. (W)

2001. Intermediate German (4)

A continuation of Ger. 1003 with increased emphasis on audio-lingual facility, written composition and collateral reading. Prerequisite: Ger. 1003. (F)

2002. Intermediate German (4)

Continuation of Ger. 2001. Prerequisite: Ger. 2001. (W)

2003. Intermediate German (4)

Continuation of Ger. 2002. Prerequisite: Ger. 2002. (Sp)

3001. German Composition (4)

Advanced grammar and structure of the language. Prerequisite: Ger. 2003 or consent of instructor. (Su)

3002. German Composition (4)

Continuation of Ger. 3001. Prerequisite: Ger. 3001 or consent of instructor. (F)

3003. German Composition (4)

Continuation of Ger. 3002. Prerequisite: Ger. 3002 or consent of instructor. (W)

3201. Introduction to German Drama (4)

An introduction to German drama forms as illustrated by great works through the ages. Prerequisite: Ger. 2003 or consent of instructor. (F)

3202. Introduction to German Prose (4)

An introduction to German prose forms as illustrated by great works through the ages. Prerequisite: Ger. 2003 or consent of instructor. (W)

3203. Introduction to German Poetry (4)

An introduction to German poetry as illustrated by great works through the ages. Prerequisite: Ger. 2003 or consent of instructor. (Sp)

3501. Eighteenth Century Drama (4)

Storm and Stress and the Classical period. Emphasis on the plays of Lessing and Schiller. Prerequisite: Ger. 3201 or consent of instructor. (W)

3503. Modern and Contemporary Drama (4)

From Hauptmann to Brecht and Durrenmatt. Prerequisite: Ger. 3201 or consent of instructor. (F)

3601. German Fiction from the Enlightenment through Realism and Naturalism (4)

The development of German fiction from Wieland to Hauptmann. Prerequisite: Ger. 3202 or consent of instructor. (W)

3602. Modern and Contemporary German Fiction (4)

Kafka, Mann and present-day authors. Prerequisite: Ger. 3202 or consent of instructor. (Sp)

4101. Goethe and His Age: The Young Goethe (4)

Goethe's major early works: *Werther*, *Goetz von Berlichingen*, *Egmont*, *Urfaust*, poetry. The literary background: Herder, Lessing, Wieland. Prerequisite: Ger. 3201-3 or consent of instructor. (F)

4102. Goethe and His Age: The Classical Period (4)

Faust I, *Wilhelm Meister*, *Iphigenie*, *Tasso*, poetry. Background: Weimar and Schiller. Prerequisite: Ger. 4101 or consent of instructor. (W)

4900. Independent Study (1-4)**4901. Directed Group Study (1-4)**

Health Education**Offered in the Department of Health and Physical Education**

NOTE: For details of Health Science minor, consult departmental adviser.

1000. Concepts of Health (3)

Analysis of the basic concepts and principles of individual health. Investigation and evaluation of contemporary health problems and information. Meets general education requirement in health education. (A)

1100. Health and Physical Activity (3)

(Same as P.E. 1100)

4600. Health Programs (3)

Health services, environment, and information for community and social institutions. Administration and interpretation of medical examinations. (W)

4900. Independent Study (1-4)**4901. Directed Group Study (1-4)****5200. Methods and Materials in Health and Physical Education (3)**

(Same as P.E. 5200)

5420. Health Appraisal and Guidance (3)

Recognition and appraisal of illness or disability in the classroom situation; handling of emergencies. (Sp)

History**Offered in the Department of History****1101. History of the United States to 1865 (4)**

A survey of the development of the American nation from colonial times to the close of the Civil War. With Hist. 1102 meets statutory requirements in U.S. History, American Institutions, and California State and Local Government. (F, W, Sp)

1102. History of the United States Since 1865 (4)

A survey of American history from the Civil War to the present. With Hist. 1101 meets statutory requirements in U.S. History, American Institutions, and California State and Local Government. (F, W, Sp)

2001. Introduction to European History (4)

A general introduction to European history from Ancient Mediterranean times to the Renaissance. (F, W, Sp)

2002. Introduction to European History (4)

A general introduction to European history from the Renaissance to the present. (F, W, Sp)

ANCIENT AND MEDIEVAL**3100. Ancient History (4)**

Greece and Rome from the ancient city-states and monarchies to the decline of the Roman Empire. (F, Sp)

3115. Europe in the Early Middle Ages (4)

Political, social, intellectual, and economic evolution of Europe from the decline of the Roman Empire to about 1050. (W)

3116. Europe in the Later Middle Ages (4)

A continuation of Hist. 3115. Europe from the 11th century to the 15th century.

MODERN EUROPE**4125. The European Renaissance (4)**

The culture of Italy, France, Spain, Germany, the Netherlands, and England of the 14th, 15th, and 16th centuries, in the relevant setting of general history. (W)

4126. The Reformation Era (4)

The Protestant revolt and the Catholic Reformation, studied in the context of the general revolution of European culture and society in the 16th century and against the background of medieval doctrine and heresy. (F, Sp)

4140. Early Modern Europe (4)

Europe from 1600 to 1789. Post-Renaissance western Europe political and cultural development, including the Age of Enlightenment. (W)

4150. The French Revolution and Napoleon (4)

The French Revolution, 1789-1799, studied as a part of a pattern of democratic revolutions in Europe and America. (F)

4160. Europe in the 19th Century (4)

From Waterloo to Sarajevo. Development of dominant ideologies. (Sp)

4180. Europe in the 20th Century (4)

The transformation of traditional European institutions and values in the century of total war. (W, Sp)

4200. Tudor and Stuart England (4)

History of England from 1485 to 1689. The English Reformation and the growth of parliamentary institutions through the Glorious Revolution of 1688. (F)

4201. England, 1689-1815 (4)

English society in the time of the Enlightenment. The rise and growth of the British Empire through the American Revolution. The Napoleonic Wars. (W)

4202. England Since 1815 (4)

England in the era of rapid industrial growth. "Victorianism," expansion of democratic institutions, the "New Imperialism," the Commonwealth. Problems and prospects of contemporary British society. (Sp)

4211. Germany and East Central Europe, 1750 to 1900 (4)

The history of Germany and her eastern neighbors from the mid-18th century to the end of the 19th century. (F)

4212. Germany and East Central Europe Since 1900 (4)

The history of Germany and her eastern neighbors since the turn of the century. Recommended preparation: Hist. 4211. (W)

4221. History of Russia to 1855 (4)

Survey of the history of Kievan Rus, the Mongols, and the rise of Muscovy. Increasingly detailed coverage from the 16th to the mid-19th century with emphasis on the institutions of serfdom and autocracy and on the development of the Russian Empire. (F)

4222. History of Modern Russia, 1885-1917 (4)

Political, economic, social, and diplomatic developments from the Crimean War to the March Revolution. The "Great Reforms," reaction, the growth and diversification of the opposition movements—liberalism, socialism, Russian and non-Russian nationalism; the decay and collapse of the Monarchy. (W)

4223. History of the Soviet Union (4)

The revolutionary movement in Russia, Marxism-Leninism, the Provisional Government and the Bolshevik coup, domestic and foreign affairs under Lenin and his successors. (Sp)

ASIA**3300. The Ancient Orient (4)**

Introduction to traditional Oriental civilization from the earliest cities to the coming of the Western empire builders. (W)

3301. Modern Asia (4)

Oriental civilizations under the impact of the West, with emphasis on the development of China and Japan since the 19th century. (F, Sp)

4310. Traditional China (4)

Political, cultural, social history of China to the 19th century. (F)

4311. Modern China (4)

Revolutionary changes in 19th and 20th century China brought about by the Western impact. (W)

4320. History of Japan (4)

Japan from early times to the present, with emphasis on the modern period. (Sp)

4330.* History of India and Southeast Asia (4)

India and the lands of southeast Asia from early times to the present; European dominion; achievement of independence; problems of national development.

4340.* The Moslem World (4)

History of the Islamic world from the seventh century to the present.

UNITED STATES**3400. American History (4)**

Political and social history of the United States from colonial times to the present. A survey of the transformation of an agrarian society into a complex industrial-urban order. Satisfies statutory requirement in U.S. history. (Su)

3411. The United States: Colonial Period (4)

The 13 Colonies: European background, settlement and expansion, and development to the Revolution. (Sp)

3412. The United States: American Revolution (4)

The struggle for independence, 1763-1789. Intensive study of the causes of the American revolution, Confederation period and the Constitution. (F)

3413. The United States: The New Nation (4)

Domestic and foreign problems of the new nation to 1846. (F, Sp)

3414. The United States: Civil War and Reconstruction (4)

Study of the Civil War, its causes and the reconstruction period. (W)

4411. The United States: Emergence of the Modern Nation (4)

The U. S. from 1877 to 1920. The rise of American industrialism, populism, imperialism, progressivism and World War I. (F, Sp)

* Not offered, 1967-68.

4412. The United States: The New Deal Era (4)

Republican ascendancy through World War II. Origins of the Depression, Franklin Delano Roosevelt and the New Deal. (F, Sp)

4413. The United States: Recent American History (4)

The U. S. from 1945 to the present. Domestic problems and world leadership during the postwar era. (W)

4500.* The Westward Movement (4)

Westward expansion of the United States from 1763 to 1900; development of western states and effect on the history of the nation.

4511. Intellectual History of the United States to 1865 (4)

American thought from the colonial period to the Civil War. The growth of political, religious, scientific, literary, and educational ideas. (F)

4512. Intellectual History of the United States Since 1865 (4)

American thought from the Civil War to the present. The growth of political, religious, scientific, literary and educational ideas. (Sp)

4513.* American Social History to 1865 (4)

The development of American society from 17th century origins to the Civil War; social mobility, class structure, social movements, and institutions in American life.

4514.* American Social History Since 1865 (4)

The development of American society from the Civil War to date; social mobility, class structure, social movements, and institutions in American life.

4530. Diplomatic History of the United States to 1898 (4)

The colonial origins of American foreign policy and analysis of the diplomatic history of the United States from the American Revolution to the post-Civil War decline in foreign interest. (F)

4531. Diplomatic History of the United States Since 1898 (4)

Analysis of the foreign policies and diplomatic history of the United States from the Spanish-American War to the present. (W)

4532. Inter-American Relations (4)

The diplomatic and cultural relations of the United States and Latin America from the colonial period to the present, emphasizing the development of the Western Hemisphere idea. The Enlightenment, Monroe Doctrine, Pan Americanism, Drago Doctrine and Castroism. (Sp)

4540. History of California (4)

California history from early Spanish occupation to the present, emphasizing the influence of geography, natural resources, and a growing population. Satisfies requirement in California state and local government. (F, Sp)

LATIN AMERICA**3600. Latin America: Colonial Period (4)**

Discovery, conquest, and settlement of Spanish and Portuguese America; independence; evolution of society and institutions to 1825. (F)

3601. Latin America: Since 1825 (4)

Political, economic, and social development of the Latin American nations in the 19th and 20th centuries. (W)

* Not offered, 1967-68.

History

4532. Inter-American Relations (4)

(See course description under UNITED STATES HISTORY.)

4610. Mexico Since 1821 (4)

The development of Mexico since independence; evolution of political, economic, and social institutions. (Sp)

4620. The A B C Powers (4)

History of Argentina, Brazil, and Chile since independence. (Sp)

GENERAL

3011. Philosophy of Science (4)

(See Phil. 3011 for course description.)

3012. History of Science (4)

(See Phil. 3012 for course description.)

4000. Contemporary World Problems (4)

World affairs from 1914 to the present; present foreign policies of the major powers in their historical, political, and economic setting; events leading to World War II; the United Nations; current major issues. (F, Sp)

4030. Introduction to Historiography (4)

A critical study of the writings of the great historians. (F, W, Sp)

4031. Proseminar in Historical Method (4)

Introduction to the methods of historical research through the preparation of a research paper. Prerequisite: senior standing. (F, W, Sp)

4520. International Relations (4)

(See Pol. Sci. 3520 for course description.)

4711. Ancient and Medieval Political Thought (5)

(See Pol. Sci. 4711 section for course description.)

4712. Early Modern Political Thought (5)

(See Pol. Sci. 4712 section for course description.)

4900. Independent Study (1-4)

Supervised study. Prerequisite: consent of instructor. (F, W, Sp)

4901. Directed Group Study (1-4)

4910. Special Problems in History (1-4)

Readings, discussion and research on significant historiographical problems. Prerequisite: Consent of instructor. (W, Sp)

4990. Honors in History (2-3)

Intensive research and reading open to selected students only. A tutorial program to be taken for five of the six quarters before the student's graduation.

6010.* Seminar in Modern American History (5)

Historical methodology including critical analysis and use of source materials, research and writing. Intensive investigation of selected topics in the political, economic, diplomatic, intellectual and social history of the United States from the 1890's to the end of World War II. Reports and discussion. Prerequisite: consent of instructor.

6030.* Graduate Historiography (4)

Intensive readings in the classics of historical writings and the philosophy of history.

* Not offered, 1967-68.

Journalism—Mass Communications

6100.* Conference Course in Ancient and Medieval History (4)

Readings and discussion in the significant historical literature of Ancient and Medieval Europe emphasizing the chief areas of historical controversy and interpretation. Study of the major historians.

6200.* Conference Course in European History (4)

Readings and discussion in the significant historical literature of modern Europe emphasizing the chief areas of historical controversy and interpretation. Study of the major historians.

6300.* Conference Course in Asian History (4)

Readings and discussion in the significant historical literature of Asia emphasizing the chief areas of historical controversy and interpretation. Study of the major historians.

6400.* Conference Course in United States History (4)

Readings and discussion in the significant historical literature of the United States emphasizing the chief areas of historical controversy and interpretation. Study of the major historians.

6500.* Conference Course in Latin American History (4)

Readings and discussion in the significant historical literature of Latin America emphasizing the chief areas of historical controversy and interpretation. Study of the major historians.

6900. Independent Study (2-4)

Supervised preparation of individual study projects. Prerequisite: consent of instructor. (F, W, Sp)

6910. Thesis Research (4)

Supervision of thesis preparation.

History of Western Culture

Offered as an interdivisional study

1001. The Ancient and Medieval World (5)

Greco-Roman and medieval European culture from Homer to Chaucer, with special attention to the Golden Age of Athens. Readings include Sophocles, Plato, Aristotle, the literature of the *Bible*, and Dante. Two hrs. lect., 3 hrs. seminar. (F)

1002. The Renaissance and Early Modern Times (5)

European culture from the Renaissance to the French Revolution. Readings include Machiavelli, Luther, Shakespeare and Voltaire. Two hrs. lect., 3 hrs. seminar. (W)

1003. The Modern Western World (5)

European culture since the French Revolution. Readings include Marx, Darwin, Nietzsche, Freud and Kafka. Two hrs. lect., 3 hrs. seminar. (Sp)

Journalism—Mass Communications

Offered as an interdivisional study

2000. Introduction to Mass Communications (4)

Survey of historical, social, and economic development of the communications media, with emphasis upon current practices and responsibilities. Comparative anal-

* Not offered, 1967-68.

Journalism—Mass Communications

ysis and evaluation. Development of criteria for responsible judgments and professional standards. (F)

2400. News Writing and Reporting (3)

Fundamentals of gathering, analyzing, and organizing information for presentation as accurate and readable news stories. Evaluation of the news communication process. Training in structure and style and practice in writing various types of news stories. Ability to type essential. Two hrs. lect., 2 hrs. lab. (W)

2410. News Feature Writing (3)

Writing feature articles, interpretive stories, and specialized reports which are beyond straight news reporting. Study of newspaper feature and specialized sections with analysis of writing problems and style. Practice in writing different kinds of feature articles. Two hrs. lect., 2 hrs. lab. Prerequisite: Journ. 2400 or equivalent. (Sp)

3211. College Newspaper Laboratory (1-3)

A laboratory experience with instruction. Class members constitute the staff of the college newspaper. Prerequisite: Journ. 2000, 2400, 2410 or equivalent or consent of instructor. Two to 6 hrs. lab. May be repeated for maximum of nine units. (A)

3212. Pictorial Journalism (1-3)

A laboratory course for students working on college pictorial publications. Principles of copy writing, photo editing and layout. Two hrs. lab., 2 hrs. lect. May be repeated for maximum of six units. (F, W and tent. Sp)

3400. Reporting Public Affairs (4)

Instruction and practice in reporting police activities, government offices and agencies, civil and criminal court, politics, business and labor. Students visit and observe some of these in action; they write news stories based on class press conferences with newsworthy individuals. Two hrs. lect., 4 hrs. lab. and off-campus assignments. Prerequisite: a lower division course in news writing or consent of instructor. (Y)

3440. Magazine Article Writing (4)

Practice in planning, researching, and writing articles and feature stories for magazines and newspaper feature sections. Analysis of markets, free-lance and job opportunities. Articles are written and submitted to publications during the course. Prerequisite: consent of instructor.

3500. Editing (4)

Editing theory and practice; standards employed for editing copy for newspapers, trade journals, industrial publications and magazines. Three hrs. lect., 2 hrs. lab. Prerequisite: a lower division course in news writing. (Y)

3600. Theory and Practice in Public Relations (4)

Public relations as a behavioral science: the methods of using established public relations techniques in communication to, and influencing the opinions and actions of, various segments of contemporary society.

3620. Newspaper and Magazine Advertising (4)

Basic principles of print-media advertising. Study of the psychological, socio-economic, and legal aspects of advertising. Training in advertising copy writing and making effective layouts for newspapers and magazines, based on consumer and product analyses and the selection of appropriate appeals, illustrations, and type faces. Two hrs. lect., 4 hrs., lab. (Y)

Journalism—Mass Communications

3700. Development of Mass Media in the United States (4)

The historical development of journalism, particularly in the U.S., with special attention to radio and other mass media which have entered the news and information field; their relation to the development of society. No prerequisite. (Y)

4300. International Communication and the World Press (4)

Comparative analysis of mass communications patterns in various parts of the world, with attention to social, political and economic factors that shaped them. Cross-cultural differences in press and broadcasting systems relative to functions, control, press laws, freedom and social responsibility. Problems in communicating across national boundaries. Of value to both American and foreign students.

4450. Critical and Persuasive Writing (4)

Critical evaluation of personal journalism—the mass communicator in the role of entertainer and educator, critic of the lively arts and persuader for public causes. Practice in researching and writing editorials, critical reviews, columns, and other forms of persuasive writing and expressions. Three hrs. lect., 2 hrs. lab. Prerequisite: consent of instructor.

4480. Depth Reporting of Contemporary Issues (4)

Study and evaluation of the mass media's responsibility and performance in interpreting and backgrounding the key issues affecting the reader in the world of today. Members of the class write a specialized depth report requiring intensive research, based on comprehensive coverage of a complex contemporary issue. Emphasizes newswriting of high order. Prerequisite: Jour. 3400 and consent of instructor.

4550. Law of Mass Communications (4)

Basic description of the law as it relates to the rights and responsibilities of modern mass media. Case studies of current laws and regulations regarding defamation, contempt, invasion of privacy, obscenity and pornography, copyright and postal regulations. Special laws affecting print media, electronic media, and advertising. (Y)

4600. Press Management (3)

Analysis of newspaper organization, economics, and business operation. Circulation, advertising, promotion, and production problems. Field trips to observe community newspaper operations. Prerequisite: Journ. 3620. (On demand)

4650. Publications Internship (2-5)

On-the-job experiences with newspapers, industrial publications and other commercial organs in the area. 20 hrs. weekly. Prerequisite: department approval. (On demand)

4700. Public Opinion and the Mass Media (4)

The nature, influence, and measurement of public opinion as it affects and is affected by the mass media in modern society. Evaluation of the forces affecting opinion change and the role communications media play in public opinion, education, and propaganda. Practice in conducting and interpreting opinion surveys on questions of contemporary interest. (F, Sp and tent. W, Su)

4790. Theory and Research in Mass Communications (4)

An evaluation of the theories of communication as they apply to the mass media. Study of the literature regarding general principles of mass communications and their effects. Research methods used in the study of mass communications.

4810. Standards and Contemporary Problems in Mass Communications (4)

Seminar and independent study. Student is required to make a comprehensive investigation of an area of vital interest in communications and write a substantial senior thesis for the course. Prerequisite: senior standing.

4900. Independent Study (2-4)

(On demand)

5200. Advising School Publications (4)

Methods and curricula for prospective elementary and secondary school teachers in supervising school newspaper and yearbook staffs. Problems of organization, finance, personnel instruction, and promotion of school publications. Prerequisite: consent of instructor. Three hrs. lecture, 2 hrs. lab. (Y)

Latin

Offered in the Department of Foreign Languages and Literatures

1001. Elementary Latin (4)

Fundamentals of grammar and the reading of elementary texts. Reading is begun as early as possible and continued in conjunction with grammatical study. (F)

1002. Elementary Latin (4)

Continuation of Lat. 1001. Prerequisite: Lat. 1001 or consent of instructor. (W)

1003. Elementary Latin (4)

Continuation of Lat. 1002. Prerequisite: Lat. 1002 or consent of instructor. (Sp)

2001. Intermediate Latin (4)

Reading of selected works and systematic review of grammar. Prerequisite: Lat. 1003 or consent of instructor. (F)

2002. Intermediate Latin (4)

Continuation of Lat. 2001. Prerequisite: Lat. 2001 or consent of instructor. (W)

2003. Intermediate Latin (4)

Continuation of Lat. 2002. Prerequisite: Lat. 2002 or consent of instructor (Sp)

3301. Directed Group Study (4)

Study of texts from Cicero, Vergil, Horace, Catullus, Livy at the discretion of instructor. (F)

Latin American Literature

See Spanish

Mass Communications

See Journalism—Mass Communications

Management Sciences

See Business Administration

Marketing

See Business Administration

Mathematics

Offered in the Department of Mathematics

1060. Mathematics of Finance (4)

Simple and compound interest; discount, depreciation and amortization; study of annuities and other mathematical aspects of financial transactions. Prerequisite: intermediate algebra or equivalent. (Y)

1110. Elements of Mathematical Logic (4)

The concept of set. Operations on sets. Relations and functions. The mathematics of declarative sentences. The nature of proof. Will meet general education requirement in mathematics. (A)

1301. Basic Analysis (5)

A modern freshman mathematics course combining elements of college algebra and analytic trigonometry with an axiomatic development of the complex number system. Designed to prepare students for standard analytic geometry and calculus sequence. Prerequisite: intermediate algebra and trigonometry or acceptable score on department placement test. (A)

1302, 1303; 2301, 2302, 2303. Analytic Geometry and Calculus (4 each)

Analytic geometry, differential and integral calculus, with applications. Each course has its predecessor(s) as prerequisite(s). Prerequisite for 1302: Math 1301 or intermediate algebra, trigonometry and acceptable score on department placement test. (A)

1700. Elementary Computer Programming (4)

Elementary lecture course in computers and programming. FORTRAN and machine language. Use of the IBM 1620. Field trip to large computer installation. Not open to mathematics or physical science majors. Meets general education requirement in mathematics. Prerequisite: one year high school algebra. (Y)

2100. Finite Mathematics (5)

Consideration of finite mathematics with applications to the behavioral, life and management sciences. Combinatorial problems, elementary aspects of probability, vectors and matrices. Compound statements and sets. Prerequisite: intermediate algebra. (Y)

2300. Review of Calculus (3)

Comprehensive review of calculus for students who need a refresher course before proceeding to more advanced courses in mathematics. Credit cannot be granted toward a mathematics major or a bachelor's degree. Prerequisite: Math. 2303 or equivalent. (Y)

2301, 2302, 2303. Analytic Geometry and Calculus (4 each)

(See Math. 1302 for course description.) (A)

3000. Concepts of Mathematics (5)

For students planning not to specialize in mathematics or related sciences. Elementary concepts from topics such as set theory, algebra, geometric structures, symbolic logic, computer mathematics. Designed to satisfy general education requirement in mathematics for non-majors. (A)

3101, 3111. Foundations of Mathematics (4 each)

The nature of mathematics; mathematical logic; axiomatic bases for numbers and number systems; bases of geometries. Prerequisite to each; calculus. (Math. 3101—A, Math. 3111—Y)

3110. Theory of Polynomial Equations (3)

Nature, limits, location, and approximation of roots. Theorem of Sturm, elements and applications of determinants and matrices, symmetric functions, transformations of equations. Prerequisite: calculus. (Y)

3115. Theory and Applications of Boolean Algebras (3)

Axiomatic treatment of Boolean algebra. The algebra of sets and the algebra of propositions treated as Boolean algebras. Applications to logic, switching circuits, control problems and related topics. Prerequisite: Math. 2303. Lecture. (Y)

3130. Set Theory (5)

Sets, relations, functions. Quotient sets and product sets. The choice axiom and its equivalent forms. Ordinal and cardinal arithmetic. Prerequisite: two years of college mathematics. (Y)

3201, 3202, 3203. Higher Geometry (4 each)

Math. 3201 emphasizes advanced aspects of plane and solid Euclidean geometry, including foundations; Math. 3202, non-Euclidean geometry; Math. 3203, synthetic and analytic projective geometry. Prerequisite: Math. 3201—Calculus; Math. 3202—Math. 3201; Math. 3203—Math. 3201. (Math. 3201—A, Math. 3202, 3203—Y)

3320. Differential Equations (5)

A beginning course in ordinary differential equations. Prerequisite: Math. 2303 or equivalent. (F, W, Sp)

3331. Differential Equations I (3)

First order differential equations and a beginning study of linear differential equations with applications. Prerequisite: Math. 2303. Not open for credit to students having credit for Math. 3320 or equivalent. (A)

3332. Differential Equations II (3)

Solutions of nth order linear differential equations with variable coefficients, series solutions, classification and treatment of singular points, systems of linear differential equations in two or more dependent variables, special topics. Prerequisite: Math. 3331. Not open for credit to students having credit for 3320 or equivalent. (A)

3401. Introduction to Probability Theory (4)

(See Stat. 3401 for course description.)

3502, 3503. Statistical Inference I, II (4 each)

(See Stat. 3502, 3503 for course descriptions.)

3600. Number Theory (4)

Euclid's algorithm, prime numbers, congruences, theorems of Fermat and Euler, quadratic residues. Prerequisite: calculus. (Y)

3700. Digital Computer Programming (4)

The process of coding of problems for an automatic digital computer, with some emphasis on the logical aspects. "Hands-on" experience with the college instructional computing facility. One field trip to nearby computing installation. Prerequisite: one year of college mathematics or consent of instructor. (A)

3750. Basic Numerical Analysis (5)

Computation with approximate numbers; accuracy, checking and error considerations; choice and use of tables; applications involving polynomial approximations; interpolation, finite differences, numerical differentiation and integration; numerical solution of algebraic, transcendental equations and systems of equations. Prerequisite: Math. 3320 or consent of instructor. (Y)

3800. Selected Topics From Applied Mathematics for Engineers (3)

Some aspects of hyperbolic functions, elliptic integrals, infinite series, Fourier series, Gamma and Bessel functions with applications to engineering and physical problems. Attention given to formulation of such problems in mathematical language. Prerequisite: Math. 3320 or consent of instructor.

3801, 3802. Operations Research I, II (3 each)

The application of techniques, mainly mathematical, to the problems of decision-making and the analysis of complex systems in industry and government. Inventory control, replacement policy, waiting lines, competitive strategy, allocation sequencing and dynamic programming. Prerequisites: Math. 2303 or equivalent and some knowledge of probability or statistics; Math. 3401.

3850. Linear Programming (3)

Elementary principles and mathematical structure of linear programming. Simplex and alternative methods for solving systems of linear inequalities. Applications to problems in business, industry, transportation, military logistics and other fields. Prerequisite: calculus within the past three years or consent of instructor.

4021. Structures of Arithmetic, Algebra and Geometry (5)

Definitions, properties, and applications of the various subsets of the set of real numbers; numeration systems; properties of and operations on sets; modular arithmetic; mathematical sentences. Prerequisite: satisfaction of general education requirement in mathematics and a knowledge of high school algebra and geometry. (A)

4022. Structures of Arithmetic, Algebra and Geometry (4)

Measure and measurement; approximation; informal geometry of the plane and 3-space; the nature of proof; mathematical problem solving. Prerequisite: Math. 4021 or consent of instructor. (Y)

4040. History of Mathematics (4)

The historical development of mathematical ideas and techniques. Prerequisite: calculus or consent of instructor. (Y)

4100. Mathematical Logic (5)

The propositional calculus and its completeness. Boolean algebras. Functional calculi of various orders. Theorems of Gödel and Henkin. Prerequisite: senior standing in mathematics or consent of instructor. (Y)

4101. Introduction to Modern Algebra (Linear Algebra) (4)

Vector spaces. Linear transformations. Matrices and determinants. Principal axis theorem. Prerequisite: Math. 2303. (Y)

4102. Introduction to Modern Algebra (4)

Groups, rings and fields. Jordan-Hölder theorem. Principal ideal rings, polynomial rings. Prerequisite: Math. 4101. (Y)

4103. Introduction to Modern Algebra (4)

Modules. Structure theorem for finitely-generated modules. Galois theory. Prerequisite: Math. 4102. (Y)

4200. Elementary Metric Differential Geometry (5)

Topics in classical differential geometry of curves and surfaces. Prerequisite: Math. 2303 or equivalent. (Y)

4320. Vector Analysis (5)

Vector algebra, differentiation, and integration; gradient, divergence, curl; curvilinear coordinates. Prerequisite: Math. 3320. (Y)

4331, 4332. Advanced Calculus (5 each)

Limits and convergence, improper integrals, functions of several variables, partial derivatives, Jacobians and the linear approximation theorem, multiple integrals and Fubini's theorem, line and surface integrals, Stokes' theorem, special functions. Prerequisite: Math. 2303, 4331. (Math. 4331-F, W, Sp; Math. 4332-A)

4340. Introduction to Complex Variables (5)

Introduction to theory of functions of complex variables. Prerequisite: Math. 3320 (Y)

4360. Introductory Topology (4)

Beginning course in topological methods in analysis, standard theorems in topology, bicontinuous transformations, topological spaces, metric spaces. Prerequisite: Math. 4332 or consent of instructor. (Y)

4410. Introduction to Stochastic Processes (4)

(See Stat. 4410 for course description.)

4501, 4502. Linear Methods in Statistics I, II (4 each)

(See Stat. 4501, 4502 for course descriptions.)

4700. Advanced Computer Programming (4)

Topics in advanced computer programming such as subroutine linkage, input-output buffering, development of assemblers and interpreters. Prerequisite: Math. 3700. Lecture. (F, W, Sp)

4730. Numerical Methods in Ordinary Differential Equations (5)

Selected numerical methods of solution of one-point and two-point boundary value problems involving linear and nonlinear ordinary differential equations and systems. Prerequisite: Math. 3332, 3700, and 3750 or consent of instructor. (Y)

4750. Numerical Methods of Approximation (4)

Polynomial and rational methods of approximation of functions of one or more variables in senses such as least squares and least maximum deviation. Prerequisite: Math. 3700 and 3750 or consent of instructor. (Y)

4760. Numerical Matrix Inversion and Decomposition (5)

Numerical methods for inverting and decomposing matrices and solving systems of linear algebraic equations and inequalities. Methods for obtaining eigenvalues and eigenvectors of matrices. Prerequisite: Math. 4101 and 3700 or consent of instructor. (Y)

4900. Independent Study (1-5)**5020. Content of Elementary School Mathematics (3)**

Mathematical background to arithmetic; meanings, history, applications. Designed to help potential elementary school teachers understand mathematics. (Y)

5101. Numbers and Number Systems (3)

Postulates for, properties of, and operations with the natural and whole numbers, integers, rational and real numbers, with an introduction to complex numbers; the nature of proof. (Y)

5103. Introduction to Sets and Symbolic Logic (3)

Basic elements of symbolic logic and sets, simple connectives, compound statements, syllogism, interrelationships between sets and logic; the nature of proof. (Y)

5105. Introduction to Algebraic Concepts (3)

Beginning development of algebraic principles and processes from properties of the real numbers, the "why's" of elementary algebra; the nature of proof. (Y)

5107. Introduction to Geometric Concepts (3)

A "modern" introduction to the informal geometry of points, lines, planes and space from non-metric, metric, and analytic standpoints; the necessity of undefined terms, postulates, axioms, and pre-accepted "reasons"; the avoidance of circular definitions and "proofs"; the development of selected theorems from clearly specified minimum sets of assumptions; the nature of proof. (Y)

5109. Elements of Matrix Algebra (3)

Introduction to matrices and linear algebra; elementary properties, inverses, the algebra of vectors. (Y)

6120. Algebraic Structures (4)

Advanced topics in groups, rings and fields. Structure theorems. Introduction to homological algebra. Prerequisite: consent of instructor. (Y)

6201. Topology I (4)

Topological spaces, separation axioms, connectedness and compactness, continuous functions, metric spaces, product and quotient spaces. Prerequisite: Math. 4332. (Y)

6202. Topology II (4)

Simplicial and singular homology and cohomology. Dimension. Homotopy theory. Prerequisite: Math. 6201 and one year of modern algebra. (Y)

6331. Theory of Ordinary Differential Equations (4)

Introductory course limited to real domain. General theory of linear differential equations, algebraic theory of linear differential systems, existence theorems, nature of solutions of ordinary differential equations, solutions by definite integrals and in infinite form. Prerequisite: Math. 3332 and Math. 4332. (Y)

6340. Introduction to Advanced Complex Analysis (4)

Theory of analytic functions of one complex variable, Cauchy's integral formula, analytic continuation, calculus of residues, multiple-valued functions. Prerequisite: Math. 4340. (Y)

6350. Introduction to Advanced Real Analysis (4)

The real number system; point sets; fundamentals of limits, continuous functions and derivatives; Riemann integration; elements of the theory of sets and transfinite numbers. Prerequisite: Math. 4332. (Y)

6370. General Theory of Measure and Integration (4)

Set functions and measure spaces. Borel, Lebesgue and Radon measure. Measurable functions and integral. The Lebesgue dominated convergence theorem. The theorems of Fatou, Radon-Nikodym and Fubini. The Lebesgue spaces. Prerequisite: consent of instructor. (Y)

6410. Queueing Theory (4)

(See Stat. 6410 for course description.)

6420. Advanced Probability (4)

(See Stat. 6420 for course description.)

6430. Stochastic Processes (4)

(See Stat. 6430 for course description.)

6501. Mathematical Statistics I (4)

(See Stat. 6501 for course description.)

6502. Mathematical Statistics II (4)

(See Stat. 6502 for course description.)

6900. Independent Study (1-4)

6960-69. Selected Topics in Graduate Mathematics (2-3 each)

Lecture presentation of graduate mathematics extending beyond regular courses. Subject will vary from time to time. Content to be specified at time of offering. May be repeated for credit. Prerequisite: consent of instructor. (Y)

6970-79. Seminar (2-3 each)

Student participation in an intensive study of a selected topic in advanced mathematics. May be repeated for credit. Prerequisite: consent of instructor. (Y)

6910. Thesis (6)**Mathematics Education****Offered in the Department of Mathematics****4020. Teaching Mathematics in Elementary Schools (3)**

The curriculum, teaching methods and content in elementary school mathematics. Prerequisite: Math. 3000 or Math. 5020 or equivalent and Math. 4021. (A).

5040. Teaching Mathematics in Secondary Schools (3)

Curriculum and instruction in mathematics for grades 7 through 14. Open to seniors and graduate students with mathematics major or minor or consent of instructor. (Y)

Meteorology**Offered in the Department of Earth and Physical Science****1400. Weather and Climate (4)**

Introduction to the atmosphere, physics of the atmosphere, physical causes of climate; structure and circulation, weather and weather forecasting; emphasis on aspects of interest to the prospective or in-service teacher. Prerequisite: Phys. Sci. 1340 or equivalent. Four hrs. lect. (A)

Microbiology**See Biological Science****Music****Offered in the Department of Music****MUSIC THEORY****1001, 1002, 1003. Music Fundamentals (3 each)**

Modes and scales, the significance of chromaticism, rhythm, and intervals; melodic writing; and sight singing, ear training, melodic and rhythmic dictation, keyboard work. One hr. lect., 4 hrs. activity. (1001—F, 1002—W, 1003—Sp)

1008. Music Theory for Non-Music Majors (3)

Singing, conducting, music reading, functional keyboard, playing simple melody and rhythm instruments, and experience with literature through recordings. Recommended for non-music majors or minors who follow the Elementary Credential program. One hr. lect., 4 hrs. activity. (A)

2021, 2022, 2023,**3021, 3022, 3023. Literature and Materials I, II, III, IV, V, VI (3 each)**

Courses integrating the music history of a given period with the analysis of styles and techniques developed. Exercises in writing the music studied as well as listening, sight-singing, ear-training, dictation, and keyboard performance.

I Greeks to 1400

II 1400 to 1600

III 1600 to 1750

IV 1750 to 1820

V 1820 to 1910

VI 1910 to _____

Prerequisite: Mus. 1003 or equivalent. One hr. lect., 4 hrs. activity. (2021, 3021—F, 2022, 3022—W, 2023, 3023—Sp)

3050. Instrumental and Vocal Scoring (3)

Practice in scoring for small and large vocal ensembles; for strings, woodwinds, brasses, and percussion in individual choirs; chamber ensembles; orchestra and band. Prerequisite: Mus. 2023 or equivalent. (Y)

5005. Counterpoint (3)

Polyphonic techniques, including melodic construction, imitation, canon, fugal procedure and non-imitative counterpoint; creative development of musical ideas in polyphony. Prerequisite: Mus. 4022 or equivalent. (Y)

5060. Improvisation (3)

The creative development of original and prescribed musical ideas; experimentation with notational schemes; work at the keyboard and with percussion instruments in the development of improvisational techniques for classroom needs. Prerequisite: Mus. 4022 or consent of instructor. (Y)

6011, 6012. Analysis of Musical Styles I, II (3 each)

Analysis of compositional styles from chant to present day music. Compositional principals are derived from the music with results then generalized according to composer and period. Prerequisite: Mus. 4022 or equivalent, or consent of instructor. 6011—Chant through 1750; 6012—1750 to present (Y)

6021. Advanced Composition (3)

Analysis and application of contemporary techniques such as atonality, poly-harmony, linear counterpoint, multirhythms and related techniques. Prerequisite: Mus. 4022 or equivalent. (Y)

6051. Advanced Instrumentation (3)

An advanced course in orchestral and band arranging; emphasis upon scoring original works. Prerequisite: Mus. 3050 or equivalent. (Y)

MUSIC HISTORY AND LITERATURE**2111, 2112. Survey of Music Literature (3 each)**

A basic course in music understanding designed for the person without formal music training. 2111 will emphasize music as a communicative art, stressing music media periods, and styles. 2112 will emphasize design and forms. Fulfills creative arts portion of general education requirements. Mus. 2112 required of music majors. No prerequisites, but it is recommended for non-music majors and minors that 2111 precede 2112. (2111—A, 2112—F, W, Sp)

2021, 2022, 2023,
3021, 3022, 3023. Literature and Materials I, II, III, IV, V, VI (3 each)
 (For description, see MUSIC THEORY.)

3141. History of Music to 1600 (3)

Western music from the development of Gregorian chant to 1600. Designed for the major or minor in music. Non-majors may enroll with consent of instructor. Fulfills general education requirement, Humanities Division only. (F)

3142. History of Music: 1600-1800 (3)

Western music from the Baroque and Classical Eras. Designed for students whose major field of study is *not* music. No prerequisite. Fulfills general requirement, Humanities Division only. (W)

3143. History of Music Since 1800 (3)

Music from the beginning of the 19th century to the present. Designed for students whose major field of study is *not* music. No prerequisite. Fulfills general education requirement, Humanities Division only. (Sp)

4800. The Arts in Contemporary Society (4)

(See CREATIVE ARTS for course description.)

5110. Music Literature for Children (3)

A survey and analysis of music literature especially suited for use with children, with emphasis upon song materials and recorded instrumental music. (Y)

5131. History of Keyboard Music (4)

Keyboard works from the late Renaissance to the present day. Prerequisite: a course in music listening or history, or consent of instructor. (Y)

5161. History of the Symphony (4)

The development of the symphony orchestra and its literature through selected works from the 18th, 19th and 20th centuries. Intensive analysis by means of scores and recordings. Prerequisite: a course in music listening or history, or consent of instructor. (Y)

6121. Vocal Literature I (Art Song) (3)

Comprehensive survey of the art song, including early Italian arias, French chansons, German Lieder, English and American art songs. Course functions as performance laboratory for vocalists and pianists interested in accompanying/coaching. Analysis of style, performance practices, interpretation. Prerequisite: Mus. 3023 or equivalent, or consent of instructor.

6122. Vocal Literature II (Opera, Oratorio, Cantata) (3)

Comprehensive survey of solo song in opera, oratorio, and cantata, including solo song in early Italian opera and oratorio, opera of the 17th century in France and England, German sacred music, opera and oratorio of the 18th, 19th, and 20th centuries. Prerequisite: Mus. 3023 or equivalent, or consent of instructor.

6171. History of Chamber Music (4)

The development of the symphony orchestra and its literature through selected works from the 18th, 19th and 20th centuries. Prerequisite: Mus. 3023 or equivalent, or consent of instructor. (Y)

6180. Contemporary Music (3)

A critical survey of musical development since 1930 with analysis of representative scores. Special attention will be given the new means of organization, notation and sound production. Prerequisite: Mus. 3023 or equivalent, or consent of instructor. (Y)

6185. Music of the Orient (3)

A study of the tuning systems, instruments and performance practices in Oriental music, with emphasis on the classical traditions in Indian, Chinese and Japanese music. Prerequisite: Mus. 3023 or equivalent, or consent of instructor. (Offered 1968-69)

6191. History of Opera through Mozart (3)

The antecedents of opera in the 16th century; detailed analysis of the librettos and music of representative works by Monteverdi, Pergolesi, Purcell, Handel, Scarlatti, Gluck, and Mozart. Prerequisite: Mus. 3023 or equivalent, or consent of instructor. (Y)

6195. Operas of Wagner (3)

Critical study of the aesthetic ideals of Wagner together with detailed analyses of several of his complete operas. Prerequisite: Mus. 3023 or equivalent, or consent of instructor. (Y)

APPLIED MUSIC

1211, 1212, 1213. Elementary Class Piano (1 each)

A graded sequence of materials designed to develop keyboard facility through a study of technique, repertoire, sight-reading, and harmonization. Recommended for classroom teachers. Designed for students with little or no background. (A)

2211, 2212, 2213. Intermediate Class Piano (1 each)

Continuation of Mus. 1213. Required of music majors and minors for fulfilling basic piano requirements. Piano majors need only 2212 and 2213. Prerequisite: Mus. 1213 or equivalent. Mus. 2212: emphasis on keyboard harmony. Mus. 2213: emphasis on accompanying. (A)

2221, 2222, 2223. Basic Voice (1 each)

Class instruction in fundamentals of singing. Required of music majors and minors. Open also to other qualified students. May be repeated for credit. Mus. 2221 prerequisite for others in series. Two hrs. activity. (Y)

2231, 2232. Basic Orchestral Instruments (string) (1 each)

Instruction in the fundamentals of playing orchestral instruments, with attention to methods and materials used in teaching instrument classes in the elementary and secondary schools. Two hrs. activity. May be repeated for credit. (F, W, Sp).

2241, 2242. Basic Orchestral Instruments (woodwind) (1 each)

Instruction in the fundamentals of playing orchestral instruments, with attention to methods and materials used in teaching instrument classes in the elementary and secondary schools. Two hrs. activity. May be repeated for credit. (A)

2251, 2252. Basic Orchestral Instruments (brass) (1 each)

Instruction in the fundamentals of playing orchestral instruments, with attention to methods and materials used in teaching instrument classes in the elementary and secondary schools. Two hrs. activity. May be repeated for credit. (A)

2261. Basic Orchestral Instruments (percussion) (1)

Instruction in the fundamentals of playing orchestral instruments, with attention to methods and materials used in teaching instrument classes in the elementary and secondary schools. Two hrs. activity. May be repeated for credit. (F, W, Sp)

3210. Applied Music (piano) (1)

Individual advanced instruction for music majors and minors. May be repeated for credit. (A)

3211. Applied Music (organ) (1)

Individual advanced instruction for music majors and minors. May be repeated for credit. (A)

3220. Applied Music (voice) (1)

Individual advanced instruction for music majors and minors. May be repeated for credit. (A)

3230. Applied Music (string) (1)

Individual advanced instruction for music majors and minors. May be repeated for credit. (A)

3240. Applied Music (woodwind) (1)

Individual advanced instruction for music majors and minors. May be repeated for credit. (A)

3250. Applied Music (brass) (1)

Individual advanced instruction for music majors and minors. May be repeated for credit. (A)

3260. Applied Music (percussion) (1)

Individual advanced instruction for music majors and minors. May be repeated for credit. (A)

MUSIC PERFORMANCE ACTIVITIES**3500-3550. Music Performance Activities (1 each)**

Both music majors and minors are required to participate each quarter in a minimum of at least one music activity. Qualified students who are not music majors or minors are invited to enroll. Music activity courses may be used to satisfy the general education requirement in creative arts and may be repeated for credit. Open to students in lower, upper, and graduate divisions. Sections available:

- | | |
|--------------------------------|-------------------------------------|
| 01. Chorus (A) | 06. Chamber Ensemble (F, W, Sp) |
| 02. Orchestra (F, W, Sp) | 07. Composition Workshop (F, W, Sp) |
| 03. Band (A) | 08. Chamber Chorale (F, W, Sp) |
| 04. College Singers (F, W, Sp) | 09. Piano Accompaniment (F, W, Sp) |
| 05. Opera Workshop (F, W, Sp) | 10. Jazz Workshop (A) |

5500. Music Performance Activities (1)

(See Mus. 3500 for complete description—graduate students register for Mus. 5500.)

MUSIC EDUCATION**3391, 3392. Conducting (3 each)**

Techniques of conducting, score reading, interpretation, and rehearsing, gained through observation and laboratory experience. Mus. 3391, choral emphasis; Mus. 3392, instrumental emphasis. Prerequisite: upper division standing. Mus. 3391 must precede Mus. 3392. One hr. lect., 4 hrs. activity. (Y)

3580. Music Performance Laboratory (1)

Performance, through minor instruments and voice, of music suitable for use in school. Opportunity for student conducting. Minimum of three quarters required of music majors following completion of conducting and basic instrument courses. One unit credit following completion of three quarters work. (F, W, Sp)

5330. Music in the Elementary School (3)

Aims, methods, and organization of materials for elementary classroom music, with application to the adopted state music texts. Two hrs. lect., 2 hrs. activity. (A)

5335. Music in the Secondary School (3)

Place and function of music in grades 7 through 12, with emphasis on general music, choral and instrumental classes; aims, methods, materials, and audiovisual techniques. Prerequisite: consent of instructor. (Y)

5360. General Music Methods and Materials (3)

Exploring methods and planning activities and projects for the general music curriculum in the junior and senior high schools. (Y)

5391, 5392. Advanced Conducting (Choral I, Instrumental II) (3 each)

Advanced study of selected representative music literature. Analysis, interpretation, score reading, and actual experience in conducting in an advanced rehearsal situation. Prerequisite: Mus. 3391, 3392 or equivalents. (Y)

6300. Curriculum Seminar in Music Education (3)

Evaluating traditional music curriculum practices from elementary grades through junior college; survey of recent trends; ways of effecting curriculum change. Prerequisite: graduate standing in music or consent of instructor. (Y)

6320. Seminar in Choral Literature (3)

Designed for the advanced student of choral literature. Particular emphasis given to the best of representative choral works of various periods and styles, utilizing the student in the role of both conductor and performer. Prerequisite: graduate standing in music or consent of instructor. (Y)

6361. Voice Pedagogy (3)

Designed for voice teachers and choral directors. Presentation of methods of instruction, techniques of voice building, vocal hygiene, and materials for vocal instruction in private and class lessons and in vocal ensembles. (Y)

6362. Theory Pedagogy (3)

Techniques in the teaching of the various elements of music: sight singing, rhythmic and melodic perception, and harmony. A review of the principal materials available. Prerequisite: theory major or consent of instructor. (Offered 1968-69)

6381. Administration of the Music Program (3)

Principles and practices of administration and supervision of music in the schools. Emphasis upon improving instruction, personnel practices, budget and finance, equipment and housing, scheduling, and public relations. Prerequisite: teaching experience in elementary or secondary schools. (Y)

6901. Introduction to Graduate Studies (3)

Problems of music research involving bibliographical survey and method in the four main areas of music history and literature, music theory and composition, music education, and performance; writing style and organization and writing of the research study. (Y)

6910. Thesis (3-6)

Thesis or equivalent work in performance or original composition. (A)

MISCELLANEOUS COURSES**4900. Independent Study (1-4)****5900. Independent Study (1-4)****5901. Directed Group Studies (1-5)****6900. Independent Study (1-4)****Nature Study**

See Biological Science

Philosophy**Offered in the Department of Philosophy****1001. Introduction to Logic (4)**

A beginning study of the forms of valid inference, stressing recent developments in symbolic logic, and including Aristotelian deductive logic. Does not satisfy the general education requirement in humanities. (A)

1002. Inductive Logic and Scientific Methods (4)

An elementary study of how material truth is related to formal validity. The problems of induction and probable inference. (Y)

2000. Introduction to Philosophy (5)

Representative interpretations of man's place in the universe, studied through selections from the writings of the great philosophers. (Y)

2100. Ethics (5)

Major types of ethical theory and their relation to social systems and institutions. (Y)

3000. Modern Logic (4)

A second level course in logic stressing symbolic techniques and including a study of the logic of truth functions and propositional functions. Prerequisite: Phil. 1001 or consent of instructor. (Y)

3011. Philosophy of Science (4)

Methods and concepts of science and their philosophical significance. (Y)

3012. History of Science (4)

The relation between logic and science in antiquity; the development of the modern scientific attitude during the Renaissance; the development of biological science; the shift from classical physics to contemporary physics. (Not offered 1967-68)

3100. Ethical Theory (4)

Advanced problems in ethics including a survey of recent literature in ethical theory. Prerequisite: previous course in philosophy other than logic. (Y)

3201. Aesthetics (4)

Introduction to the major aesthetic schools and theories. (Y)

3202. Advanced Aesthetics (4)

Studies in recent analytical aesthetics. Prerequisite: Phil. 3201 or consent of instructor. (Y)

3300. Epistemology (4)

The methods of knowing and their relations to the questions of metaphysics. Prerequisite: one previous course in philosophy or consent of instructor. (Y)

3401. Philosophy of Religion (4)

Nature and significance of religion and its place in human society and in the life of the self. (Y)

3402. Contemporary Religious Thinkers (4)

A study of the religious philosophy of representative contemporary thinkers such as Niebuhr, Buber, Tillich, Maritain, Bultmann, Wieman, and Hartshorne. Prerequisite: one course in philosophy other than a course in logic. (Y)

3501. Social and Political Philosophy (5)

Representative social and political philosophies from the Greeks to the German idealists. Particular reference to their bases in metaphysics, epistemology and ethics. (Y)

3502. Contemporary Social and Political Philosophy (4)

A continuation of the inquiry undertaken in Phil. 3501 with particular reference to the social and political philosophy of the 19th and 20th centuries. Prerequisite: one previous course in philosophy other than Phil. 1001 and Phil. 1002, or consent of the instructor. (Not offered 1967-68.)

3503. Philosophy of Law (4)

Introduction to the main schools of jurisprudence and legal philosophy. (Y)

3601, 3602, 3603. History of Western Philosophy (4 each)

A survey of Western philosophy from the Pre-Socratics to the 19th century. Each course may be taken independently, but the full sequence is recommended.

3601. The Ancient and Early Medieval Periods (F)

3602. The Later Medieval, Renaissance, and Early Modern Periods (W)

3603. The 18th and 19th Centuries (Sp)

3701, 3702, 3703. History of Eastern Philosophy (4 each)

A survey of the philosophical systems of India and the Far East. Each course may be taken independently, but the full sequence is recommended.

3701. Classical Indian Philosophy

The Upanishads, Bagavadgita, Early Buddhism, Jainism. (F)

3702. The Six Schools of Later Indian Philosophy

Nayaya-Vaisesika, Sankhya, Vendanta: absolutistic and theistic, philosophy of evolution. (W)

3703. Philosophies of China and Japan

Confucius, Lao-Tse, Zen Buddhism and modern movements. (Sp)

3710. Comparative Themes in Eastern and Western Philosophy (4)

Critical and comparative study of themes in Western philosophy, Indian philosophy, and Chinese philosophy. Prerequisite: one previous course in Eastern philosophy. (Y)

3800. The Development of American Philosophy (4)

The history of American philosophy from its origin in 17th century New England through the rise of idealism and pragmatism in the end of the 19th century.

3900. Metaphysics (4)

A study of selected metaphysical systems and of such problems as substance, causality, space and time, mind and body.

4801. Contemporary American Philosophy (4)

Selected writings of major American philosophers of the 20th century. Prerequisite: one previous course in philosophy other than Phil. 1001 and 1002, or consent of instructor. (Y)

4802. Contemporary British Philosophy (4)

Selected writings of major British philosophers of the 20th century. Prerequisite: one previous course in philosophy other than Phil. 1001 and 1002, or consent of instructor. (Y)

4803. Contemporary Continental Philosophy (4)

Selected writings of the major European philosophers of the past century. Prerequisite: one previous course in philosophy other than Phil. 1001 and 1002, or consent of instructor. (Y)

Photography

4900. Independent Study (1-4)
(On demand)

4901. Group Study (1-4)
(On demand)

4951. Senior Seminar in Philosophy (4)

Intensive study of an important philosopher, school, or problem of philosophy. Maximum total credit 8 units. Prerequisite: two courses in philosophy or consent of instructor. (W, Sp)

4952. Senior Project (4)

Supervised research and preparation of an essay on a significant philosophical problem. Prerequisite: Phil. 4951. (On demand)

5000. Philosophy of Education (4)

Introductory course in philosophy of education. (See Educ. 5000 for course description.)

Photography

Offered by the Department of Earth and Physical Science

4500. Introductory Photography (3)

Elementary course in fundamentals of photography, basic theory and practice of photography through picture taking, development and print making; emphasis on use of photography as an adjunct to teaching and other professions. Two hrs. lect., 3 hrs. lab. (Not offered 1967-68)

Physical Education

Offered in the Department of Physical Education

1000-1012. Beginning Activities, Group I (1/2)

Two hrs. activity. (A)

- | | | |
|------------------|------------------|---------------------|
| 00. Badminton | 05. Rugby | 10. Weight Training |
| 01. Basketball | 06. Soccer | 11. Wrestling |
| 02. Bowling | 07. Swimming | 12. Field Hockey |
| 03. Folk Dance | 08. Social Dance | |
| 04. Modern Dance | 09. Volleyball | |

1020-1025. Beginning Activities, Group II (1/2)

Two hrs. activity. (A)

- | | | |
|-------------|----------------|----------------|
| 20. Archery | 22. Gymnastics | 24. Tennis |
| 21. Golf | 23. Trampoline | 25. Water Polo |

1100. Health and Physical Activity (3)

Analysis and application of the basic concepts of health with particular emphasis on physical fitness. Meets general education requirement in health education. Two hrs. lect., 2 hrs. activity. (F, W, Sp)

2000-2014. Intermediate and Advanced Activities, Group I (1/2 each)

Two hrs. activity. (A)

- | | |
|------------------|-----------------|
| 00. Badminton | 06. Swimming |
| 03. Folk Dance | 14. Life Saving |
| 04. Modern Dance | |

Physical Education

2020-2024. Intermediate and Advanced Activities Group II (1/2 each)

Two hrs. activity. (A)

- | | |
|-------------|----------------|
| 20. Archery | 22. Gymnastics |
| 21. Golf | 24. Tennis |

2030-2031. Activity Laboratory (2 each)

Instruction in and practice of necessary skills prerequisite to certain professional courses. For major and minor students. One hr. lect., 3 hrs. lab. (F, W, Sp)

2050-2053. Intercollegiate Sports, Group I (1 each)

May be repeated according to season.

- | | |
|----------------|-------------------------------|
| 50. Football | 52. Track and Field Athletics |
| 51. Basketball | 53. Baseball |

2060-2075. Intercollegiate Sports, Group II (1 each)

May be repeated according to season.

- | | | |
|--------------------------|------------------------|----------------------|
| 60. Freshman Football | 66. Badminton (co-ed) | 72. Water Polo |
| 61. Freshman Basketball | 67. Tennis | 73. Wrestling |
| 62. Basketball (women) | 68. Volleyball (women) | 74. Softball (women) |
| 63. Field Hockey (women) | 69. Soccer | 75. Swimming |
| 64. Cross Country | 70. Rugby | |
| 65. Golf | 71. Gymnastics | |

2080. Orchesis (1)

Dance performance. May be repeated. (F, W, Sp)

2100. Water Safety Instructor Training (2)

Red Cross certification. Prerequisites: senior swimming and life saving. One hr. lect., 3 hrs. lab. (F, W, Sp)

2110. Skin and Scuba Diving (2)

Introductory course. Prerequisite: senior swimming. One hr. lect., 3 hrs. lab. (F, W, Sp)

2200. World Ethnic Dance (2)

Selected dances of other countries studied in relation to local history, geography, and national characteristics. One hr. lect., 3 hrs. lab. (W, Sp)

2210. Styles and Techniques of Dance (2)

The study and practice of established styles and techniques of the modern dance, including the discussion of theories underlying the schools of Graham, Humphrey and Weidman, Simon, Holm, Nikolais, etc. Prerequisite: Modern Dance (P.E. 1004). One hr. lect., 3 hrs. lab. (W)

2220. Dance Improvisation (2)

The development of creative dance patterns based on spontaneous movement responses. Experimentation with expressive movements as reaction to other art forms. Prerequisite: Modern Dance (P.E. 1004). One hr. lect., 3 hrs. lab. (F)

UPPER DIVISION MAJOR COURSES

3100. History of Physical Education (4)

Theories or bases for the rationale of physical education and its role in the culture. (F, W)

3500. History of Dance (3)

Understanding and appreciation of dance. Development, philosophy and relationship to the other arts, including analysis of ballet and modern dance choreography. Prerequisite: P.E. 3100 or consent of instructor. (W)

Physical Education

3400. Kinesiology (5)

Study of anatomical concepts and physical laws applied to joint and muscular action. Analysis of human movement in the performance of various motor skills. Prerequisite: Biol. 3601 and 3602 or equivalent. Four hrs. lect., 3 hrs. lab. (F, Sp)

3410. Physiology of Activity (5)

Study of effects of physical exercise upon the circulatory, respiratory, digestive and nervous system. Relationship of endurance, fatigue, training and nutrition on the efficiency of physical performance. Prerequisite: P.E. 3400, 3420. Four hrs. lect., 3 hrs. lab. (W, Sp)

3420. Measurement in Physical Education (3)

Theoretical basis of measurement in physical education. Role of statistical analysis in physical education research. The limitations of measurement. Prerequisite: Stat. 1000 or Stat. 1502. (F, Sp)

4400. Motor Learning and Skilled Performance (4)

Perceptual and sensory systems involved in motor performance. Role of kinesiology and reaction time in neuromotor coordination and movement control. Motor learning and transfer of learning. The structure of skill. Factors influencing performance. Prerequisite: Psych. 2010, P.E. 3420. Three hrs. lect., 3 hrs. lab. (F, W)

4410. Motor Development (3)

Physical growth, body build and motor development in childhood, adolescence and the later ages. Age changes, sex and individual differences in strength, balance, coordination and typical motor performances. Prerequisites: P.E. 3400, 3410, 3420 and senior standing. (W)

4420. Sport and Society (3)

The inter-relationship of sports and athletics with other aspects of culture. Emphasis on 20th century. Prerequisite: P.E. 3100 and senior standing. (W)

4500. Dance in Contemporary Society (3)

The place and function of dance in contemporary society. Dance as art, therapy, entertainment, process of exploration, creativity, socialization, education. Prerequisite: P.E. 3500. Three hrs. lect. (Sp)

PROFESSIONAL COURSES

3000-09. Theory of Sport (2 each)

Instruction at the advanced theory level in designated areas of sport, including analysis of skill, game strategy and specific techniques of coaching. Organization of the sport, training and conditioning. Prerequisites: P.E. 3400 (for certain sections only), experience specific to each section and permission of instructor. Appropriate participation, without unit credit, in the organization and conduct of intercollegiate meets is required of all students enrolled in each section.

- | | | |
|---------------------------|------------------------|-------------------|
| 00. Football (F) | 04. Baseball (Sp) | 08. Wrestling (W) |
| 01. Field Hockey (F) | 05. Softball (Sp) | 09. Aquatics (W) |
| 02. Basketball, men (W) | 06. Track & Field (Sp) | |
| 03. Basketball, women (F) | 07. Gymnastics (W) | |

Different sections may be repeated for a maximum of eight units. One hr. lect., 3 hrs. lab.

3241. Theory of Modern Dance (3)

Analysis and practice of skills, creative processes, and knowledge involved in modern dance. Technique, composition and production. Prerequisite: activity course in modern educational dance. Two hrs. lect., 2 hrs. activity (F)

Physical Education

3242. Composition of Dance, Solo Forms (3)

Choreography and composition problems in modern dance. Discussion and practice of movement materials, traditional and modern forms. Prerequisite: activity course in modern dance and/or skill proficiency and background. Two hrs. lect., 2 hrs. activity. (W)

3243. Composition, Group Forms (3)

Composition and aesthetic problems of space and rhythmic designs for group performance. Prerequisite: P.E. 3242. Two hrs. lect., 2 hrs. activity. (Sp)

3244. Dance Production (3)

Production aspects of dance performance, including elements of sound taping and accompaniment, lighting, staging, costume and make-up for dance. Principles of designing and producing a dance concert. Prerequisites: dance experience and consent of instructor. Two hrs. lect., 2 hrs. activity. (Sp)

4030-4031. Professional Field Experience (1 each)

Instruction in and practice of professional technique and methodology through supervised field work. Prerequisites: completion of skill requirements for the major or minor, and senior standing. (F, W, Sp)

4210. Creative Dance for Children (3)

Theory and techniques for developing the creative capacities of the child through dance. Participation and leadership in creative dance provided by means of a special class with children. Prerequisite: Modern Dance. Two hrs. lect., 2 hrs. activity. (W)

4600. Organization and Administration of Physical Education (4)

Administration and policy formulation, classification, scheduling, class organization, finances and budgeting, equipment and facilities, public relations in physical education, athletics, and intramurals. Prerequisite: senior or graduate standing. Four hrs. lect. (W, Sp)

4900. Independent Study (1-4)

4901. Directed Group Study (1-4)

5200. Methods and Materials in Health and Physical Education (3)

Methods of teaching physical education and health education on the secondary level. Instructional materials, audio visual resources, classroom organization, management and evaluative techniques. Prerequisite: Senior standing, physical education or health education major or minor. (F)

5210. Elementary School Physical Education (3)

The elementary school physical education program. Games, sports, fundamental rhythms and dances, and other activities commonly taught on the elementary level. Prerequisite: teaching experience or consent of instructor. (F)

5230. Dance Seminar (4)

Discussion of problems in advanced choreographic design, dance research, theory and teaching. Prerequisites: P.E. 3241, 3242 or 3243 or 4210. Four hrs. seminar. (Sp)

5400. Rehabilitation of Athletic Injuries (3)

Application of anatomy and physiology to the analysis, care, and prevention of athletic injuries, including protective strapping, conditioning and sport medicine. Prerequisite: P.E. 3400. (F)

5440. Adaptive Physical Education (4)

A study of the theory of adapted physical education as applied to the exceptional person. Special emphasis on contribution or related disciplines to physical education for the handicapped. Prerequisites: P.E. 3400 and 3410. (W, Sp)

Physical Education

5500. Evaluation of Health and Physical Education (3)

Principles and techniques in evaluation of instruction in health and physical education. Emphasis given to test administration and construction, application of statistical procedures. Prerequisite: Educ. 5100 or P.E. 3420. (W, Sp)

GRADUATE COURSES

6400. Seminar in Kinesiology and Body Mechanics (4)

Critical review of research and the application of neuropsychological concepts, physical laws and kinesiology to analysis of human movement. Prerequisite: graduate standing, P.E. 3400 or equivalent. (W)

6410. Seminar in Motor Learning and Performance (4)

Advanced study of the scientific basis of movement behavior, with an emphasis upon learning and performance variables. Prerequisite: graduate standing, P.E. 4400 or equivalent. (F)

6420. Seminar in Exercise Physiology (4)

Immediate and long-range adaptations of the body to exercise. Physiological limits and work capacities in relation to age, sex, diet, environmental factors and nature of activity. Prerequisite: graduate standing, P.E. 3410 or equivalent. (Sp)

6430. Seminar in Cultural and Historical Aspects of Physical Education and Sport (4)

Critical analysis of the literature pertaining to the interrelationships of sport, physical education and culture within the historical perspective. Prerequisite: graduate standing, and P.E. 3100 or equivalent. (W)

6600. Comparative Physical Education (4)

A cross cultural study of the place of sport and exercise in education. Extent of governmental control of finance, program development, professional preparation. Special emphasis on programs in Scandinavia, Russia, and United Kingdom. (Sp)

6610. Physical Education Programs and Facilities (4)

Development of various aspects of the school physical education program, including the preparation of courses of instruction and the functional planning of facilities. (F)

6620. Seminar for Supervision in Physical Education (4)

Analysis of present trends in physical education, their relationship to the school program, staffing needs, program development. Supervisor's role in elementary schools, in-service training. (W)

6800. Research in Health and Physical Education (4)

Study and application of research techniques to selected problems in health and physical education. Prerequisite: P.E. 3420, P.E. 5500 or Educ. 5100. (F, Sp)

6850. Directed Study (2-4)

Independent study under direction of staff. (F, W, Sp)

6900. Independent Study (1-4)

6910. Masters Thesis (3-6)

Students may enroll for one or more units per term to a minimum total of three units and a maximum total of six units. (F, W, Sp)

Physics

Physical Science

Offered in the Department of Earth and Physical Science

1340. Principles of Physical Science (5)

Fundamental principles of physics and chemistry with applications to astronomy, meteorology and geology. Not open to students having credit for lower division courses in chemistry or physics. Prerequisite: high school algebra. Four hrs. lect., 3 hrs. lab. and problem session. (A)

4900. Independent Study (1-4)

5000. Analysis of Physical Science Concepts (3)

The development of physical science using original writings of key figures from the Greeks to contemporary physicists. Prerequisite: upper division standing, with major or minor in a physical science. Three hrs. lect. (Sp)

5050. Advanced Science Education (Physical Science) (3)

Practice in preparing and presenting science lessons. Prerequisite: previous instruction in science education or consent of instructor. (Not available, 1967-68.)

5100. Science in the Secondary School (Physical Science) (3)

Curriculum, materials, A-V techniques, content, methods for secondary school science. Prerequisite: consent of instructor. Two hrs. lect., 3 hrs. lab. (F, W)

Physics

Offered in the Department of Physics

1000. Elements of Physics (4)

An introductory survey course in classical and modern physics designed primarily for liberal arts students. Prerequisites: high school algebra and plane geometry. Four hrs. lect. (W and tent. Su)

1011, 1012, 2011, 2012, 2013. General Physics (4 each)

The beginning course series for science and mathematics majors. All major fields of physics are covered in the sequence. Math. 1302 is a prerequisite for Phys. 1011*. Each course is a prerequisite for the one following. The mathematics series, 1303, 2301, 2302 and 2303 is to be taken concurrently.

1011. Mechanics (W)

1012. Wave Motion, Heat and Thermodynamics (Sp)

2011. Electricity and Magnetism (F)

2012. Electromagnetic Waves and Light (W)

2013. Atomic and Nuclear Physics (Sp)

Three hrs. lect., 3 hrs. lab. each.

2001, 2002, 2003. Introduction to Physics (4 each)

An introductory sequence in general physics at a level that does not require a knowledge of calculus. Designed primarily for students majoring in the biological sciences (including pre-medical and pre-dental studies) or in the humanities. Does not satisfy prerequisite requirements for further work in physics, nor for graduate work in some fields of biology.

2001. Newtonian Mechanics (4)

Prerequisite: Math 1301 or equivalent. Three hrs. lect., 3 hrs. lab. (F and tent. Su)

2002. Heat, Kinetic Theory, Electricity and Magnetism

Prerequisite: Phys. 2001. Three hrs. lect., 3 hrs. lab. (W and tent. F)

2003. Light and Modern Physics

Prerequisite: Phys. 2002. Three hrs. lect., 3 hrs. lab. (Sp and tent. W)

* In certain circumstances the student can enroll concurrently in Math. 1302 and Phys. 1011.

3181, 3182, 3183. Junior Laboratory (1 each)

Supervised experimental projects in electricity, magnetism, optics, atomic and nuclear physics. Prerequisite: Phys. 2013 or consent of instructor. Three hrs. lab. each. Transfer students check with instructor. (F, W, Sp.)

3311, 3312, 3313. Analytic Mechanics (3 each)

Fundamentals of statics, kinematics, dynamics of rigid bodies, introduction to Lagrange's and Hamilton's equations. Prerequisites: Phys. 2013, Math. 3320, or consent of instructor. Phys. 3311 is prerequisite to Phys. 3312; Phys. 3312 is prerequisite to Phys. 3313. Three hrs. lect. (F, W, Sp.)

3331, 3332, 3333. Electricity and Magnetism (3 each)

Theory of electrostatics, magnetostatics, magnetism, steady and varying currents, electron theory and electromagnetic waves. Prerequisite: Phys. 2013, Math. 3320 or consent of instructor. Phys. 3331 is prerequisite to Phys. 3332; Phys. 3332 is prerequisite to Phys. 3333. Three hrs. lect. (F, W, Sp.)

3511, 3512. Electronics (3 each)

Primary emphasis is on physics instrumentation. Some topics covered are: circuit analysis, properties of transistors, power supplies, amplifiers, feed-back, multi-vibrators. Prerequisite: Phys. 2013. Three hrs. lect. (F, W)

4170. Nuclear Physics (3)

Natural and artificial radioactivity, nuclear transformations, nuclear structure, magnetic moments, nuclear radiations, mesons, high energy physics. Prerequisite: Phys. 4321 or consent of instructor. Three hrs. lect. (Tent. Sp.)

4181, 4182, 4183. Senior Laboratory (1-3 each)

Projects, experimental or theoretical, performed under the supervision of a faculty member for seniors, by arrangement. (F, W, Sp.)

4210. Physical Optics (4)

The phenomena of diffraction, interference and polarization of light and their applications. Prerequisite: Phys. 3333 or consent of instructor. Four hrs. lect. (W)

4320. Statistical Thermodynamics (4)

The thermodynamic functions and equations of state as developed classically and from the application of statistics to aggregates of microscopic systems. Prerequisite: Phys. 2013 or equivalent. Four hrs. lect. (F)

4321, 4322, 4323. Quantum Physics (4 each)

Quantum theory, atomic physics, nuclear physics, x-rays, particles. Prerequisites: Phys. 3313, 3333. Phys. 4321 is prerequisite to Phys. 4322; Phys. 4322 is prerequisite to Phys. 4323. Four hrs. lect. (F, W, Sp.)

4611, 4612. Mathematical Physics (2 each)

Mathematical techniques in physics solutions and methods of solution for the differential equations encountered most frequently in mathematical physics. The higher transcendental functions, numerical techniques (as appropriate). Prerequisites: Math. 3320 and 4340. Phys. 4611 is prerequisite to Phys. 4612. Two hrs. lect. each. (F, W)

4900. Independent Study (1-4)

(F, W, Sp.)

Political Science

Offered in the Department of Political Science

AMERICAN GOVERNMENT AND POLITICS**1201, 1202. American Political Institutions (4 each)**

Development of political institutions and ideals in the U. S. from the Puritan community to date. The development of such ideals as freedom, equality and democracy; development of branches of government, political parties and the changing role of government. Meets code requirement of American ideals, U. S. Constitution and California government. Prerequisite to 1202 is 1201. (A)

2020. National Government in the United States (4)

The operation and function of the branches and agencies of American national government; rights and duties of the individual; political parties and the electoral system; fiscal policy; functions; and foreign policy. Meets requirement in the U. S. Constitution. (F)

3100. American National, State and Local Government (4)

Relationships of various governments in the United States; the organization, processes and problems of national, state and local government. Meets requirement in the U. S. Constitution and in California state and local government. (A)

3111. The American Executive (4)

The position of the executive in national, state and local governments: the powers and duties of the executive; leadership role of the executive in government, political parties and public opinion. Prerequisite: Pol. Sci. 1201-1202 or 2010 or consent of instructor. (F, Sp.)

3112. American Legislatures and Legislation (4)

Organization and functioning of Congress, state legislatures, local councils and boards with particular attention to California; pressure groups; committee systems; executive-legislative-judicial relations; selected reform proposals. Prerequisite: Pol. Sci. 1201-1202 or 2010 or consent of instructor. (W)

4120. State and Local Government and Politics (4)

State constitutions; legislative, judicial, administrative and electoral systems; contemporary problems and issues, with special reference to California and San Francisco Bay Area government organization and problems. Satisfies the California state and local government requirement. (Sp.)

4130. Urban Governments (4)

Organizations and functions of metropolitan areas; the web of governments and growth of authorities and boards; problems of finance, crime, planning, welfare and others; emphasis on Bay Area planning and problems. (F)

4310. Political Parties in the U.S. (4)

An evaluation and study of parties in the political process: electoral, educative, organizational, and governing functions. Party structure and reorganization. (Sp and tent. F)

4320. Political Behavior (4)

The individual and group aspects of political behavior; social and psychological factors in politics; consideration of available research on voting behavior; extreme belief and affiliation; leadership; participation. Prerequisite: Pol. Sci. 1201 or equivalent in political science. (W)

4330. Pressure Groups and Political Power (4)

Private power and American public policy; the nature and sources, strategy and tactics of pressure group power in the American political process. Business, labor, agriculture, the professions, minority groups, and religion as organized groups influencing political decision making. Prerequisite: Pol. Sci. 1201. (Sp)

COMPARATIVE GOVERNMENT**3210. Comparative Government (4)**

Comparative political systems: dictatorships and democracies; presidential and parliamentary systems; federal and unitary: multi-party, two-party and single-party systems; individual rights and duties in varying systems. (F, tent. Sp)

4222. Government and Politics of the USSR (4)

The political ideas and institutions of the USSR: philosophical foundations; role of Communist party; organization and functions of government; place of the individual in Soviet society. Prerequisite: Pol. Sci. 4720 or consent of instructor. (W)

4223. Government and Politics of Western Europe (4)

The political ideas and institutions of the major Western European nations: England, France. Prerequisite: a course in European history or consent of instructor. (W)

4224. Government and Politics of Western Europe (4)

The political ideas and institutions of the major Western European nations: Germany, Italy, and Switzerland. Prerequisite: a course in European history or consent of instructor. (Sp)

4241. Governments of Asia; India and Pakistan (4)

The political ideas and institutions of these countries; the cultural contexts from which their political systems developed, with emphasis upon contemporary governmental structure, functions and political processes. (Tent. F)

4248. Government and Politics of China (4)

Development of political ideas and institutions in Communist and Nationalist China, with emphasis upon nationalism, communism, constitutional development, foreign policy and current political problems. (F)

4249. Government and Politics of Japan (4)

Development of political ideas and institutions, with emphasis upon constitutional development, political parties and movements, legislation, foreign policy and current political problems. (Not offered 1967-68)

4260. Government and Politics of Africa South of the Sahara (4)

The governments of the independent states and dependent territories of Africa south of the Sahara, with special reference to comparative colonial policies, nationalism, political parties and the problems of nation building, pan-Africanism and inter-state relations. (W)

4280. Political Systems of Latin America (4)

Political development and revolution in a comparative framework, using 15 largest republics as examples. Key problems of each country in terms of political forces at work. Prerequisite: four-unit social science course on Latin America or consent of instructor. (Sp)

4580. International Relations of the Latin American States (4)

Salient international relations problems in light of domestic forces, using comparative terms, for most countries. U.S. policy for stability and development in the countries. Prerequisite: four-unit social science course on Latin America or consent of instructor. (W)

PUBLIC LAW**3410. Law and Society (4)**

Organization, jurisdiction and functions of national, state and inferior courts, with particular attention to California; judicial decision making and group dynamics; place of law in the American society; analysis of selected reform proposals. (F)

3503. Philosophy of Law (4)

(See Phil. 3503 for course description.)

4441. American Constitutional Law (4)

United States Constitution as interpreted by the courts in the areas of the federal system; taxation, commerce and implied powers; inter-governmental relations; separation of powers; emphasis upon the social, economic and political factors. (W)

4442. American Constitutional Law (4)

United States Constitution as interpreted by the courts in the areas of freedom of speech, press, religion, assembly; self incrimination; desegregation; due process; criminal procedures and safeguards. Emphasis upon social, economic and political factors affecting court decisions. (Sp)

5450. Administrative Law (4)

Administrative function in the American national and state systems: foundation of administrative power; judicial supervision of administration; status of regulatory and quasi-judicial agencies; delegation of legislative and executive powers. Prerequisite: Pol. Sci. 4800. (W)

INTERNATIONAL RELATIONS**3520. International Relations (4)**

Analytical introduction to international relations; nationalism; imperialism; racial, population, and economic factors; war; settlement of international disputes by methods other than war; foreign policies of the major powers. (F, W, Sp)

4000. Contemporary World Problems (4)

(See Hist. 4000 for course description.)

4505. American Foreign Policy (4)

Current American foreign policies toward other nations as related to the Good Neighbor Policy; security, containment, and liberation; the problem of foreign policy in American democracy. (W, Sp)

4530. Diplomatic History of the United States (4)

(See Hist. 4530 for course description.)

4540. Principles of International Law (4)

Sources, function, evolution and principles of international law; the law-making and adjudicatory agencies; the delegation of legislative and executive powers. Prerequisite: Pol. Sci. 3520 or consent of instructor. (Sp)

4550. International Organization (4)

Historical survey and evaluation of international organizations; emphasis on the League of Nations and the United Nations with its specialized agencies; role of

Political Science

the U. S. in those organizations. Appraisal of factors tending to strengthen and weaken the UN; major problems confronting international organizations. Prerequisite: Pol. Sci. 3520 or consent of instructor. (Tent. W)

4560. Soviet Foreign Policy (4)

The basic factors which underlie and condition Soviet foreign policy; goals in particular areas and fields of activity; methods, strategy and tactics of USSR in foreign policy. Prerequisite: Pol. Sci. 3520 or consent of instructor. (Sp)

4570. U.S. and the Far East (4)

Forces influencing the relations between the U.S. and the states of the Far East; analysis of foreign policies of major Asian nations and factors leading to cooperation and conflict between U.S. and these states. Prerequisite: Pol. Sci. 3520 or consent of instructor. (Tent. W)

POLITICAL THEORY

4711. Ancient and Medieval Political Thought (5)

Major Western political ideas from the Greeks through the 15th century. Emphasis upon major political theorists in the development of classical Greek and Roman, Medieval Christian, and Renaissance political theory. Prerequisite: Pol. Sci. 2010. (F, tent. W)

4712. Early Modern Political Thought (5)

Major Western political ideas from 1500 to 1800. Emphasis upon major figures in the development of modern scientific, natural rights, nationalistic, and power theories. Prerequisite: Pol. Sci. 2010. (W, tent. Sp)

4713. Contemporary Political Thought (5)

Major Western political ideas in the 19th and 20th centuries. Emphasis upon central figures in the development of democratic, Marxist, socialist, and various other contemporary bodies of political theory. Prerequisite: Pol. Sci. 2010. (Sp)

4720. Totalitarian Ideologies (4)

Analysis of doctrines of Communism, Nazism, Fascism and related "isms" and their impact on the practices of totalitarian states. Prerequisite: Pol. Sci. 4713 or a course in modern European history or consent of instructor. (Sp)

4731. Early American Political Thought (4)

The origins, the founding, and the first hundred years. A study of the ideas and men who created and sustained the nation and of those who dissented from that course. From the Puritans to Lincoln and the Civil War. (W)

4732. Recent American Political Thought (4)

American political ideas of the last hundred years. Emergence of social Darwinism and its critics, the reform movements of the 19th and 20th centuries, theories of liberal democracy, the new conservatism, the role of political theory in the political process. (W, Sp)

GENERAL

2010. Introduction to Government (4)

Analysis of political society—legitimacy and social control; relationship of individual to individual and individual to government; concept of state and the nature of government; basic ideas of competing political systems; forms of government; regional and international organizations and relations among states. (F, W, tent. Sp)

4900. Independent Study (1-4)

5900. Independent Study (2-4)

Psychology

5910. Political Science Seminar (2-4)

Contributions of natural and social science theories, methods, results for political science; scope and method of political science; individual research on selected topics. (F, Sp)

GRADUATE COURSES

6000. Graduate Seminar in Political Science Methodology (4)

The methodology employed in political science research; individual research on selected topics with emphasis upon the methodology. Prerequisite: approved M.A. candidates or consent of instructor. (F, tent. W)

6180. Graduate Seminar in American Government and Politics (4)

Research and analysis of selected issues and problems of significance in the area of American government and politics. Prerequisite: approved M.A. candidate in political science and 8 units in American government and politics, or consent of instructor. (W)

6280. Graduate Seminar in Comparative Government (4)

Research and analysis of selected problems of significance in selected major and/or minor nations. Prerequisite: approved M.A. candidate in political science and 8 units in comparative government, or consent of instructor. (W)

6480. Graduate Seminar in Public Law (4)

Research and analysis in selected problems in public law including constitutional law, administrative law, comparative law, judicial processes, theory of law. Prerequisite: approved M.A. candidate in political science and 8 units in public law, or consent of instructor. (Sp)

6580. Graduate Seminar in International Relations (4)

Research and analysis of problems in international relations. Prerequisite: approved M.A. candidate in political science and 8 units in international relations, or consent of instructor. (Sp)

6780. Graduate Seminar in Political Theory (4)

Research on selected topics in political philosophy. Prerequisite: approved M.A. candidate in political science and 8 units in political theory, or consent of instructor. (Sp)

Psychology

Offered in the Department of Psychology

2000. General Psychology I (4)

An introduction to the scientific study of basic processes underlying human and animal behavior: sensation and perception, learning and thinking, motivation and emotion. Sophomore standing strongly recommended. (F, W, Sp)

2010. General Psychology II (4)

A survey of method, content, and theory in the scientific study of behavior. Selected problems of psychology viewed in terms of the experiments by which they have been investigated. Prerequisite: Psych. 2000. (F, W, Sp)

3100. Experimental Psychology I (5)

A laboratory course on the development, design, and execution of psychological experiments and the analysis of data. Problems of psychophysics, sensory and perceptual function, learning, transfer, and forgetting dealt with in terms of experimental methodology. Prerequisites: Psych. 2010, Stat. 1000. Three hrs. lect., 6 hrs. lab. (F, W, Sp)

3500. Social Psychology (4)

Current theory and research on the individual in society, small groups, and interpersonal interaction. Socialization, social structure, attitude formation, and group structure. Prerequisite: Psych. 2010. (Y)

3510. Attitude and Opinion Surveys (4)

Methods in the study of social attitudes and opinions; design of research and critical analysis of data. Results of attitude studies, opinion surveys, and content analyses as related to differences between individuals, groups, roles and statuses. Prerequisite: Psych. 3500. (On demand)

3520. The Psychology of Small Groups (4)

Group development; leadership roles; interpersonal interaction in a group setting; types of group atmosphere; research designs and critiques of small group behavior; sociodrama. Prerequisite: Psych. 3500. (Y)

3710. Personnel Selection (4)

Techniques, tests, administration and evaluation of programs for the selection and placement of personnel. Prerequisite: college algebra and elementary statistics or consent of instructor. (Y)

4200. Conditioning and Learning (4)

Basic principles and results of conditioning and learning experimentation. Prerequisite: Psych. 3100. (Y)

4210. Theories of Learning (4)

A survey of theories of learning with emphasis upon the experimental work arising from alternative conceptual systems, discussed in terms of their underlying assumptions and their methodological approaches to research problems. Prerequisite: Psych. 4200; Psych. 4300 is recommended. (Y)

4220. Thinking and Problem Solving (4)

Psychological processes involved in problem solution. Survey of experimental research and theories dealing with concept formation and thought processes. Prerequisite: Psych. 3100. (Y)

4300. Motivation (4)

Nature of primary and secondary drives. Critical analysis of the concept of motivation in relation to behavior, learning and performance. Prerequisite: Psych. 3100 or consent of instructor. (Y)

4310. Comparative Psychology (4)

Basic psychological processes in relation to animal behavior. Prerequisite: Psych. 3100. (Y)

4320. Physiological Psychology I (4)

The biological foundations of human and animal behavior, including physiological processes related to sensory and motor activity, perception, learning, thinking, motivation and emotion. Effects of drugs, internal secretions, and brain lesions and stimulation on behavior. Prerequisite: Psych. 2010 and consent of instructor. (Y)

4330. Physiological Psychology II (4)

Continuation of Psych. 4320. Prerequisite: Psych. 4320. (Y)

4340. Perception (4)

A systematic review of experiments: studies in perceiving the physical world. Perception of size, shape, distance, color and other characteristics of objects. Theories of perception. Prerequisite: Psych. 3100. (Y)

4350. Heredity and Behavior (4)

A consideration of genetic and environmental determinants of behavior and psychological characteristics of animals and humans. Prerequisites: Psych. 2010, 3100 and an elementary statistics course. (On demand)

4390. History and Systems of Psychology (4)

Survey of historical developments in the emergence of modern scientific psychology. Contemporary theoretical systems discussed with emphasis on how they approach the recurring problems of psychology. Prerequisites: 12 units of upper division psychology and senior standing. (Y)

4401. Math Methods in Behavioral Science I (4)

Psychophysics and choice. Application of elementary probability theory and finite-state models to psychophysical behavior and the psychology of choice. Prerequisite: consent of instructor. (On demand)

4402. Math Methods in Behavioral Science II (4)

Learning and motivation. Application of linear-recursive models and Markov process models to problems in learning. Prerequisite: consent of instructor. (On demand)

4403. Math Methods in Behavioral Science III (4)

Selected topics. Discussion of current developments in the application of mathematical methods to topics of interest in the social and behavioral sciences. Prerequisite: consent of instructor. (On demand)

4410. Behavior Pathology (4)

The concepts of normality, abnormality, and psychopathology. Symptom syndromes of neurosis, psychosis and other behavioral abnormalities. Methodological problems in the investigation of mental illness and psychotherapy. Prerequisite: Psych. 2010. (Y)

4451. Scientific Method in Psychology I (4)

Logic of measurement. Definition of scientific events; analysis of variables, semantic relations, and measurement scales in behavioral studies. Prerequisite: consent of instructor. (On demand)

4452. Scientific Method in Psychology II (4)

Role of theory. Study of logical and semantic criteria for construction or evaluation of theories of behavior. Prerequisite: consent of instructor. (On demand)

4453. Scientific Method in Psychology III (4)

Interplay of theory and experimentation. Study of the influence of theory on the selection and design of experiments as well as the refinement and revision of theories on the basis of experimental findings. Prerequisite: consent of instructor. (On demand)

4610. Psychology of Personality (4)

Critical review of method, theory and content in the study of personality. Historical development of the field, with attention to recent applications of scientific method to problems of personality. Prerequisite: Psych. 2010 or equivalent. (Y)

4700. Psychological Testing (4)

Techniques of administration of individual and group tests: manipulation, perception, coordination, comprehension, aptitude tests. Emphasis on the use and interpretation of test results. Prerequisite: 16 hours of psychology or permission of instructor. (Y)

4730. Tests and Measurement (4)

Emphasis on the theories underlying the development, analysis, and evaluation of standardized and non-standardized tests. Consideration of principles of measurement. Prerequisite: college algebra and elementary statistics or consent of instructor. (Y)

4740. Verbal Behavior and Psycholinguistics (4)

Basic psychological aspects of human verbal behavior and related phenomena. The acquisition and development of language, perception of language, meaning and syntax, animal communication, effect of language on thought and selected topics, e.g., verbal learning and mediation. Prerequisites: Psych. 4200. (Y)

4790. Psychology of Individual Differences (4)

Critical consideration of representative ideas about ability and other traits. Historical development of measurement of individual differences; relation of measurement of individual differences to psychological theory. Prerequisite: Psych. 2010 and Stat. 1000 or equivalent. (Y)

4801. Learning and Motivation Laboratory (1-2)

Selected experiments in conditioning, learning and motivation. Experiments will also be designed, executed, analyzed and reported. May be repeated up to three times for credit. Prerequisite: Psych. 3100 and consent of instructor. 3-6 hr. lab. (Y)

4802. Response Processes and Psychophysical Methods Laboratory (1-2)

Selected experiments from psychophysics, perception, vision, audition and olfaction. Experiments will also be designed, executed, analyzed and reported. May be repeated up to three times for credit. Prerequisite: Psych. 3100 and consent of instructor. 3-6 hr. lab. (On demand)

4803. Physiological Psychology Laboratory (1-2)

Selected experiments in physiological processes, related sensory and motor activity. Experiments will also be designed, executed, analyzed and reported. May be repeated up to three times for credit. Prerequisite: Psych. 3100 and consent of instructor. 3-6 hr. lab. (On demand)

4804. Social Psychology Laboratory (1-2)

Selected experiments ranging from two-person interaction to field studies and surveys. Experiments will also be designed, executed, analyzed and reported. May be repeated up to three times for credit. Prerequisite: Psych. 3100 and consent of instructor. 3-6 hr. lab. (Y)

4900. Independent Study (1-4)

Work by arrangement for honors students in psychology.

6700. Advanced Educational Psychology (4)

Systematic analysis of general principles of motivation and learning as applied to educational processes. (On demand)

6720. Individual Mental Tests (4)

The concept of intelligence and its use in mental testing. Major types of tests, their uses and interpretation. Prerequisite: Psych. 6700 or equivalent. (Y)

Public Administration
Offered in the Department of Political Science**4800. Public Administration (4)**

Role of public administration in modern society; development of public service in national, state and local government; principles of administrative organization; functions and services; politics and personnel of administration. (F)

4805. Politics of Public Administration (4)

The politics in the administration of such areas as planning, personnel, public safety and urban renewal, with special reference to organizational theory, decision-making and pressure groups. Prerequisite: Pol. Sci. 4800. (W)

4810. Public Personnel Administration (4)

Personnel administration in large scale public organizations; recruitment, position classification, training, promotion, human relations and morale; labor unions in the public service; political activity for public servants. Prerequisite: Pol. Sci. 4800 or consent of instructor. (W)

4820. Public Financial Administration (4)

Sources of revenue of various levels of government. Role of the budgetary process in the determination of policy, in control of government operations, in intergovernmental relations. Prerequisite: Pol. Sci. 4800 or consent of instructor. (Sp)

6800. Graduate Seminar in Principles and Practices (4)

The historical development and contemporary status of administrative institutions, the principles and practices of public administration, and the processes of public management. (F)

6810. Seminar in Organization Theory (4)

Intensive analysis of selected traditional and contemporary theories of organization and administration; operationalizing theory; inductive theory building; implications of philosophical value predispositions and research for organization and administration; bureaucracy and society. (F)

6820. Seminar in Organizational Behavior (4)

Relating psychological and sociological behavior models to organizations; implications of theory and research for understanding human behavior in groups, decision making, communication, control and leadership; the individual and the organization; political and social behavior in organizations. (W)

6830. Data Processing and Administrative Analysis (4)

Systems analysis and electronic data processing as management tools; theory of systems and administrative analysis; staff studies; management planning. (Not offered 1967-68)

6840. Public Financial Administration (4)

Financial administration with emphasis upon the role of the budget system in the determination of public policy in administrative planning and management, in control of government operations, in intergovernmental operations, and in relation to the private economy. (Sp)

6850. Public Personnel Administration (4)

Categories and methods of employment of public servants; problems in public service administration. (W)

Pupil Personnel

6860. Graduate Seminar in Administrative Law (4)

The position of the executive branch of government in the American constitutional system, the foundation of administrative power, the area of judicial supervision of administration, and liability of public officers and of the state based on misuse of administrative power. (Sp)

6900. Independent Study (1-4)

6910. Graduate Thesis in Political Science (5)

Research on approved topics for thesis for the master's degree. Prerequisite: advancement to candidacy and an officially appointed thesis director or thesis committee. (F, W, Sp)

Pupil Personnel

See Counseling and Pupil Personnel

Recreation

Offered in the Department of Recreation

1000. Nature and Scope of Recreation (4)

The nature, scope, and significance of recreation, including historical developments; organizational patterns in community recreation. (F, Su)

1500. Social Groups in Recreation (3)

Analysis of social recreation groups; participant characteristics, interpersonal relationships in the recreation setting, and the role of the recreator. Laboratory experiences in community agencies. Prerequisite: P.E. 1000 (Folk & Square Dance) or equivalent. Two hrs. lect., 2 hrs. activity. (Sp)

2000. Principles and Practices in Organized Camping (3)

Principles and practices in organized camping, with emphasis on the function of leadership in the camp setting. Field trips to school and/or agency camps. Two hrs. lect., 2 hrs. activity. (Sp)

3500. The Recreation Program (6)

General principles of programming as related to community characteristics; analysis of the relationship of the recreator to the program, with emphasis on organizing, teaching, group leadership, and professional roles. Prerequisite: Rec. 1000 or equivalent, or consent of instructor. Four hrs. lect., 6 hrs. supervised field work. (F, W)

3750. The Recreation Setting (6)

Introductory study of recreation and park facilities; general principles related to operation of facilities, with emphasis on staff relationships and supervision. Prerequisite: Rec. 1000 or equivalent, or consent of instructor. Four hrs. lect., 6 hrs. supervised field work. (Sp)

4000. The Structure of Recreation (5)

Analysis of the structure of recreation agencies, including organization, administration, and interagency relationships. Prerequisites: Rec. 3500 and 3750 or consent of instructor. Four hrs. lect., 2 hrs. activity. (F)

4500. Trends and Problems in Recreation (3)

Selected trends and problems in recreation, with emphasis on the influence of changing patterns of leisure in contemporary society. (W)

4900. Independent Study (1-4)

Russian

5000. Internship I (6)

Half-time assignment to a public, private or specialized agency (hospital, industry, etc.), under supervision of agency representative and major adviser. Prerequisites: departmental approval and concurrent registration in Rec. 5001. Application for permission to enroll in Rec. 5000 must be made during the quarter preceding enrollment. A minimum grade point average of 2.0 overall and in the major, completion of Rec. 4000, completion of at least 12 units in the Foundation Area, and satisfactory recommendations from the field work aspects of Rec. 3500 and 3750 are prerequisites for enrollment. For specific details, see major adviser. (A)

5001. Internship Seminar (2)

Problems related to internship experiences. Prerequisite: concurrent registration in Rec. 5000. (A)

5002. Internship II (8)

Half-time assignment to a public, private or specialized agency (hospital, industry, etc.), under supervision of agency representative and major adviser. Prerequisites: departmental approval and Rec. 5000 (may be taken concurrently). (A)

5200. Theories of Leisure and Recreation (4)

Analysis of varying points of view regarding leisure and its influence on society; examination of traditional and modern theoretical explanations of recreation; the relationship of leisure and recreation. Prerequisite: senior or graduate standing and consent of instructor. (W, alt. yrs.)

5300. Recreation and Park Administration (4)

Administrative practices peculiar to recreation and parks; pertinent federal, state and local legislation; uses of fee systems, financing park development, and other similar considerations. Prerequisites: senior or graduate standing, recreation and park agency experience or consent of instructor. (Su, alt. yrs.)

5400. Recreation and Park Development (4)

Procedures used in the development of recreation and park services and facilities; consideration of demographic data, benefit and cost estimates; contributions of landscape architecture, etc. Prerequisites: senior or graduate standing, recreation and park agency experience or consent of instructor. (W, alt. yrs.)

5500. Community Organization for Leisure (4)

Processes by which a community organizes resources to meet leisure needs; varying responsibilities of public, private and commercial agencies; the relationship of recreation to other community services. Prerequisites: senior or graduate standing, recreation and park agency experience, or consent of instructor. (Su, alt. yrs.)

Russian

Offered in the Department of Foreign Languages and Literatures

1001. Elementary Russian (4)

An audio-lingual approach to Russian, designed to give students skill in understanding, speaking, reading and writing the language. (F)

1002. Elementary Russian (4)

Continuation of Russ. 1001. Prerequisite: Russ. 1001. (W)

1003. Elementary Russian (4)

Continuation of Russ. 1002. Prerequisite: Russ. 1002. (Sp)

School Administration and Supervision

2001. Intermediate Russian (4)

Continuation of Russ. 1003, with increased emphasis in the speaking, reading and writing of the language. Prerequisite: Russ. 1003. (F)

2002. Intermediate Russian (4)

Continuation of Russ. 2001. Prerequisite: Russ. 2001. (W)

2003. Intermediate Russian (4)

Continuation of Russ. 2002. Prerequisite: Russ. 2002. (Sp)

School Administration and Supervision

Offered in the Department of School Administration and Supervision

6000. Leadership and School Organization (4)

Leadership theories and practices in public schools. Legal, fiscal and administrative bases for school organizations. Organizational patterns in California schools. The relationship of local districts to county, state and federal educational agencies. Prerequisite: graduate standing and two years of teaching experience. (A)

6050. Federal, State and Local School Administration (4)

Relationship of local school districts to county, state and federal agencies. Legal, fiscal, organizational and administrative bases. Personnel dynamics. Leadership and the several publics. Phenomenon of growth. Prerequisite: teaching experience and consent of instructor. (F)

6225. Beginning Reading Instruction (3)

Identification of special problems in teaching and supervision of beginning reading. Application of current research, experiments and practices to individual classrooms. Review and evaluation of new materials in beginning reading instruction. Prerequisite: teaching experience and consent of instructor. Enrollment may be limited to teacher-principal or teacher-supervisor teams. (F)

6230. Improving Reading in the Elementary Schools (3)

Development of reading programs; analysis of reading needs, materials and techniques for reading instruction, including lectures, demonstrations, production of materials and plans for classroom use. Prerequisite: teaching experience, Educ. 5800 series or equivalent, or permission of the instructor. (F, W)

6231. Analysis of Reading Problems (3)

Use and interpretation of informal, formal, group and individual tests used in the analysis of reading difficulties; methods of difficulty analysis; diagnostic test evaluation; assessment of psychological emotional factors and physical factors. Prerequisites: SAS 6230 or SAS 6240, Educ. 5100, and consent of instructor. (Elementary and secondary sections—W)

6232. Correction of Reading Difficulties (3)

Group and individual techniques, case studies, sample lessons and demonstrations of remedial methods. Construction, use, and evaluation of materials for the correction of reading difficulties. Prerequisite: teaching experience, SAS 6231, consent of instructor. (Elementary and secondary sections—Sp)

6233. Laboratory Practice in Correction of Reading Difficulties (6)

Remedial instruction for children with reading difficulties. Daily practice in tutoring children in clinical situation. Each teacher will practice individual tutoring, group remedial activities, parent interviews, case study and clinic reports. Prerequisite: SAS 6232 and consent of instructor. (Elementary and secondary sections—Su)

School Administration and Supervision

6240. Reading and Study in Secondary School (3)

For junior and senior high school teachers of all subjects who wish to help students improve reading and study skills. The developmental reading program; the nature of reading; methods in teaching reading; vocabulary building; comprehension; study skills; students' reading interests; materials for teaching reading. Three hrs. lect. (F, W)

6250. Seminar in Reading (3)

Comprehensive review and evaluation of research and literature in the field of reading; investigation of a research topic; selection of the problem; literature survey, and interpretations and summaries of findings. Prerequisite: Educ. 6020. (F)

6300. Foundations of Curriculum Development (4)

Determinants of curricula in elementary and secondary schools. Effects of national goals, state legislation and community forces on curriculum development. Theories and patterns of curriculum organization. K-14 curriculum sequences. Current issues and trends. Prerequisite: SAS 6000 and department approval. (F, Sp)

6310. Curriculum Development (4)

Study of principles, procedures, and issues in public elementary and secondary school curriculum development, improvement and evaluation. Meets credential requirements for supervision and administration. Prerequisite: teaching experience, teaching credential, consent of instructor.

6320. Advanced School Curriculum (4)

Organization of curriculum development programs; technical aspects of preparing curricula; review of pertinent research; evaluation of curriculum programs. Aspects of school housing, law, and public relations. For school curriculum personnel. Prerequisites: teaching experience, regular credential, SAS 6300 or consent of instructor. (Su)

6330. Procedures for Curriculum Change (4)

Planning and directing curriculum improvement programs. Organizing workshops, curriculum study groups, and other in-service work by teachers and administrators. Attention to action research, child study, outside consultants, lay participation, and the development of curriculum guides. Prerequisite: SAS 6000 and department approval. (F, Sp)

6340. Advanced Curriculum Development, Materials (4)

Development of curriculum resources, school and commercial sources, curriculum laboratory planning and utilization, relation to library service, duplication processes, editing procedures. District, county, state and college services. Prerequisite: teaching experience, regular credential, SAS 6300 or consent of instructor.

6350. Development of Curriculum Resources (4)

Preparation of curriculum materials, curriculum laboratory planning and utilization; relation to library services, duplication and circulation processes, and editing procedures; district, county, state and college services. Prerequisite: SAS 6000 and departmental approval.

6400. Public School Supervision (4)

Principles and techniques of classroom supervision in elementary and secondary schools. Evaluation of teaching, small group processes, human relations and communication skills in working with teachers and other leadership personnel. Prerequisite: SAS 6000, 6300 and department approval. (W, Su)

School Administration and Supervision

6500. Administration of Elementary Schools (4)

Evaluation of modern developments in the organization and administration of elementary schools. Principles and practices of supervising staff, providing leadership for the instructional program. Managing building, budget, extra-class activities, and community relationships. Prerequisite: SAS 6000 and department approval.

6510. Administration of Secondary Schools (4)

Evaluation of modern developments in the organization and administration of secondary schools. Principles and practices of supervising staff, providing leadership for the instructional program. Managing building, budget, extra-class activities, and community relationships. Prerequisite: SAS 6000 and department approval.

6550. The Public School Principalship (4)

Roles and duties of elementary and secondary school principals, including building and business management, public relations, instructional supervision, guidance services, extra-class activities, and professional growth. Evaluation of recent developments in organization and scheduling. Prerequisite: SAS 6000 and department approval. (F, Sp)

6600. Business and Legal Aspects of School Administration (4)

Practices and problems of school finance, schoolhouse planning and construction, and business management. The legal and financial relationships of local school districts to county, state and federal agencies. Special attention to the provisions of the California Education Code. Prerequisite: SAS 6000 and department approval. (W, Sp, Su)

6610. School Housing (4)

The problems involved in planning, financing, and constructing school buildings. Surveys, population projections, site problems, educational specifications, equipment, care and maintenance, legal provisions. Includes case studies. Prerequisite: teaching experience and consent of instructor.

6660. Problems of School Law (4)

The legal bases of federal, state, county and local administrative levels. Major legal provisions of the California Education Code and related sources affecting the administration of public schools. Prerequisite: teaching experience and consent of instructor. (Su)

6670. School Finance and Business Administration (4)

Principles, problems, and practices of educational finance and business management; state and local support; legal aspects of finance. Aspects of planning, financing, and constructing school buildings. Prerequisite: teaching experience and consent of instructor. (F)

6801, 6802, 6803. Field Work in Administration and Supervision I, II, III (3 each)

Supervised study of a public school problem in administration, curriculum, or supervision. Problem must be of genuine concern to a local district and approved by the superintendent. Student must enroll for a minimum of two quarters. Prerequisite: completion of all other credential requirements; approval by the department and the cooperating district. (A)

6851, 6852, 6853. Internship in Administration and Supervision I, II, III (2 each)

Arranged administrative and supervisory experiences for one full school year. Student must demonstrate competencies in several assignments (public relations, business, curriculum, personnel). District provides some release time from teaching duties. Student must enroll for three quarters. Prerequisite: completion of all other credential requirements; approval by the department and the cooperating district. (A)

Sociology

6900. Independent Study (4)

6901. Directed Group Study (4)

6910. Thesis (3-6)

Supervised thesis and/or project work. In addition to class sessions, students should plan on devoting substantial blocks of time to laboratory projects, research activities and intensive periods of group study and independent writing. Prerequisite: Educ. 6020. Students may enroll for one or more units per term to a minimum total of three units and a maximum total of six units. (A)

Science Education

See Biological Science
and Physical Science

Social Science

Offered in the Division of Social and Behavioral Sciences

3001. Social Science I (4)

Introduction to the broad field of social and behavioral science. The subject fields; their common concerns and relationships; problems of method involved; culture and change; basic sources in social analysis. (A)

3002. Social Science II (4)

Selected case studies in social analysis; the character of social problems, relevance, nature of proof, the meaning of causality, ways in which social theory and practice develop and extend each other. Prerequisite: Soc. Sci. 3001. (F, W, Sp)

4000. Social Science Seminar (4)

Review of major concepts in social science as tools in developing alternative social policies; directed research in current issues employing relevant data and methods of the several social science fields. Prerequisite: approval of instructor. (Sp)

4900. Independent Study (1-4)

5000. Teaching Social Science in the Secondary School (3)

Curriculum, methods, audiovisual techniques, and content in social sciences, grades 7 through junior college. Prerequisite: consent of instructor. (F, W)

Sociology

Offered in the Department of Sociology

2000. Introduction to Sociology (4)

Introductory analysis of (a) the structure and functioning of human groups and (b) interrelations between groups; changes in (a) and (b). (A)

2400. Introduction to Social Organization (4)

Systematic analysis of the principal institutions of society. Interrelations among family, governmental, religious, military, economic, educational and ameliorative systems and institutions. Individual laboratory projects related to the analysis of particular organizations. Two hrs. lecture-discussion, 4 hrs. lab. Prerequisite: Soc. 2000. (A)

3000. Social Institutions and Issues (4)

A systematic study of changing patterns in the social institutions and an analysis of the social issues emerging out of these changes. Prerequisite: junior standing. Not available for credit to sociology or social science majors (sociology core).

3200. Introduction to Population and Demography (4)

Major trends in population growth, distribution and composition. Introduction to population theories and analytic techniques. Individually supervised student projects. Three hrs. lect., 2 hrs. lab. Prerequisites: Soc. 2000, 2400; Stat. 1000.

3300. History of Social Thought (4)

Development of thought concerning human society from earliest times until the middle of 19th century. Prerequisite: Soc. 2000, 2400.

3310. Current Sociological Theory (4)

Critical analysis of the works of leading sociological theoreticians from the middle of the 19th century to the present. Prerequisites: Soc. 2000, 2400.

3410. Sociology of the Family (4)

The family with respect to its institutional, organizational and interactional character. Emphasis upon comparative study and analysis based upon field projects. Prerequisite: Soc. 2000, 2400.

3420. Social Stratification (4)

Examination of past and probable future interrelations among the major bases of social differentiation in various societal types, with emphasis on urban-industrial society. Individually supervised student projects. Prerequisite: Soc. 2000, 2400.

3430. Comparative Society (4)

Structure of the social organizations and institutions within the cultural contexts of selected societies. Comparative study of historical and current differences as related to ideological, technological and organizational processes. Prerequisites: Soc. 2000, 2400.

3500. Social Psychology (4)

Current theory and research on the individual in society, small groups, complex organizations and interpersonal interaction. Such topics as socialization, social structure, attitude formation, and group structure. Prerequisites: Soc. 2000, 2400.

3510. Social Change (4)

Descriptive analysis of social change in technology, social institutions and systems of symbolism; social movements; field projects related to social change. Prerequisites: Soc. 2000, 2400.

3520. Minority Groups (4)

Racial and cultural minority groups in the United States; problems of education, social adjustment, family life, relations in industry, race consciousness, race and cultural prejudice, tension areas, assimilation; race problems in international relations. Prerequisite: Soc. 2000 or equivalent.

3700. Introduction to Social Services (4)

A systematic analysis of the development of social services in reference to the normative and non-normative functioning of social systems. Field projects. Prerequisites: Soc. 2000, 2400.

3710. Social Legislation and Public Policy (4)

The social philosophy of democratic processes as related to legislation affecting social services. The impact of changing cultural values on public policy. Prerequisites: Soc. 2000, 2400.

3730. Juvenile Delinquency (4)

A systematic analysis of theories seeking to explain juvenile delinquency together with the research data that test them. Various practices and procedures which deal with problems of treatment and rehabilitation of youthful offenders. Prerequisites: Soc. 2000, 2400.

4111. Methods of Sociological Research, I (4)

The nature and application of the scientific method in social research. The use of different techniques for specific problems; descriptive and analytical procedures employing the statistical, the historical, and comparative methods. Use of such research instruments as the interview, the questionnaire and observation. Analysis of data and reporting of results. Individual projects. Two hours lect., 4 hrs. lab. Prerequisites: Soc. 2000, 2400, Stat. 1000, 3010.

4112. Methods of Sociological Research, II (4)

The design of sociological studies. Advanced problems of sampling and measurement. Individual projects and instruction. Two hrs. lect., 4 hrs. lab. Prerequisites: Soc. 4111; Stat. 1000, 3010.

4121. Field Investigation I (3)

Placement of students with suitable community agencies for supervised instruction. Prerequisites: senior standing; Soc. 2000, 2400, 3700; consent of instructor. To be taken concurrently with Soc. 4711.

4122. Field Investigation II (3)

A continuation of Field Investigation I. Placement of students with suitable community agencies at a more advanced level for the purpose of supervised instruction. Prerequisite: Soc. 4121. To be taken concurrently with Soc. 4712.

4320. Sociology of Knowledge (4)

Ideas, ideologies and nature of social thought which are functionally interdependent with social processes and structure. Prerequisites: Soc. 2000, 2400.

4420. Sociology of Religion (4)

Functions of religion in society; the interrelations between religion and social structure; analysis of religious authority and leadership; the nature of religious movements. Prerequisites: Soc. 2000, 2400.

4440. Industrial Sociology (4)

Historical and descriptive analysis of various principal forms of business organizations, trade associations and labor organizations as social organizations; influences of industrialization on family and other social organizations. Prerequisites: Soc. 2000, 2400.

4450. Urban Sociology (4)

Development of the urban and metropolitan area as a distinctive pattern of population distribution; particular attention to changing relationships within and among metropolitan areas. Individually supervised student projects. Prerequisites: Soc. 2000, 2400.

4460. Sociology of Occupations and Professions (4)

A comparative study of certain occupational and professional groups with emphasis on social significance of occupational choice and sociological factors related to choice. Prerequisites: Soc. 2000, 2400.

4470. Sociology of Education (4)

Analysis of the institutional character of education; the relationship of education as a social institution to aspects of political, economic and family organization;

social relations within the school, school culture and roles. Prerequisites: Soc. 2000, 2400.

4500. Sociology of Small Groups (4)

Analysis of the emergence and formation of small human groups. Their basic properties, structures and functions, norm formation, inter-group relations, goal formation and leadership. Student participation in laboratory demonstrations of classic experimental studies. Two hrs. lecture-discussion; 4 hrs. lab. Prerequisites: Soc. 2000, 2400, 3500.

4510. Dynamics of Collective Behavior (4)

Systematic analysis of the phenomena of crowds, masses and public, social movements and the processes by which nascent institutions are formed within old institutions and under conditions of institutional demoralization. Prerequisites: Soc. 2000, 2400.

4530. Introduction to Political Sociology (4)

Analysis of political organization as an important environmental factor in the individual's life; human aspects of bureaucracy; responses to authority and control in typical systems; participation and exclusion from communication and decision-making; morale and efficiency; research methods. Prerequisites: Soc. 2000, 2400, or equivalent.

4711. Pro Seminar in Social Processes (2)

A seminar utilizing theoretical and conceptual material in the sociological literature in order to compare and contrast it with the accompanying field experiences undergone by students. Prerequisites: senior standing; Soc. 2000, 2400; consent of instructor. To be taken concurrently with Soc. 4121.

4712. Pro Seminar in Social Processes (2)

A seminar utilizing theoretical and conceptual material of an advanced nature in the sociological literature for the purpose of comparing and contrasting it with the accompanying field experiences undergone by the student. Prerequisites: Soc. 4121, 4711 and consent of instructor. To be taken concurrently with Soc. 4122.

4720. Medical Sociology (4)

The socio-cultural and interactional components in the etiology and treatment of illness (physiological, psychosomatic and "mental"), medical and paramedical professions. Prerequisites: Soc. 2000, 2400.

4740. Basic Criminology (4)

Exploration of the meaning of crime, its origins and its functions; current practices in respect to the identification and treatment of criminal behavior. Prerequisites: Soc. 2000, 2400.

4750. Child Welfare (4)

Trends in public policy regarding programs for the protection and care of the child in American society. Sociological analysis of the conditions pertinent to the socialization of the child; the implications of these conditions for the development of such programs as foster care, adoptions, institutions, school social work and corrections. Prerequisites: Soc. 2000, 2400 or equivalents.

4900. Independent Study (1-4)**GRADUATE COURSES****6111. Advanced Sociological Research Methods, I (4)**

Application of scientific methods to the analysis of social phenomena; methodological orientations in sociology; types of research procedure, nature of sociological

variables and their statistical treatment. Two hrs. seminar; 4 hrs. lab. Prerequisites: graduate standing in sociology and consent of instructor. (W)

6112. Advanced Sociological Research Methods, II (4)

Development of individual projects, illustrating study designs, application of scientific method in the collection, analysis and presentation of data at advanced levels. Two hrs. seminar; 4 hrs. lab. Prerequisites: graduate standing in sociology; Soc. 6111. (Sp)

6311. Seminar in Sociological Theory, I (4)

An examination and analysis of major sociological theories of the late 19th and 20th centuries with particular reference to the writings of Durkheim, Mannheim, Simmel, Mead, Parsons, Merton, Homans, Goffman and others. Prerequisites: graduate standing in sociology and consent of instructor. (F)

6312. Seminar in Sociological Theory, II (4)

Coordination of current theories, examination of their epistemological and methodological foundations and their significance of empirical application. Major theoretical models in respect to their utility in selected areas of research. Prerequisite: Soc. 6311. (W)

6400. Seminar in Population Studies and Ecology (4)

Advanced study of selected aspects of population growth, distribution and composition. Critical assessment of the theory and research in human ecology. Measurement techniques and problems in population and ecology. Two hrs. seminar; 4 hrs. lab. Prerequisites: graduate standing in sociology and consent of instructor. (Sp)

6500. Seminar in Social Psychology (4)

Research designs and processes, measurement and analytical techniques in social psychology at advanced levels. Prerequisite: graduate standing in sociology and consent of instructor. (W)

6600. Seminar in Social Organization (4)

Advanced study of the elementary forms of social structure, their processes and their changes; comparison of different structural forms. Prerequisites: graduate standing in sociology and consent of instructor. (F)

6700. Seminar in Social Policy (4)

Advanced study of the distributive systems of complex social organization as related to the social services. Identification and analysis of major issues in the field in regard to the social objectives and cost of their attainment. Prerequisites: graduate standing in sociology and consent of instructor. Not offered, 1967-68.

6745. Seminar in Deviant Behavior (4)

Analysis of selected problems in developing theories of deviant behavior. Questions of definitions and study design. Independent investigation of a specific problem in the field of deviant behavior. Prerequisite: graduate standing in sociology and consent of instructor. Not offered, 1967-68.

6900. Independent Study (1-4)**6910. Thesis (5)**

Research project selected and pursued under the general direction of the departmental adviser. Prerequisites: approval of departmental adviser and graduate standing in sociology.

Spanish

Offered in the Department of Foreign Languages and Literatures

1001. Elementary Spanish (4)

An audio-lingual approach to Spanish, designed to give students skill in understanding, speaking, reading and writing the language. (A)

1002. Elementary Spanish (4)

Continuation of Span. 1001. Prerequisite: Span. 1001. (A)

1003. Elementary Spanish (4)

Continuation of Span. 1002. Prerequisite: Span. 1002. (A)

2001. Intermediate Spanish (4)

A continuation of Span. 1003 with increased emphasis on audio-lingual facility, written composition and collateral reading. Prerequisite: Span. 1003. (A)

2002. Intermediate Spanish (4)

Continuation of Span. 2001. Prerequisite: Span. 2001. (A)

2003. Intermediate Spanish (4)

Continuation of Span. 2002. Prerequisite: Span. 2002. (F, W, Sp)

2100. Spanish Conversation (4)

A practical application of Spanish to present-day experiences. Spanish sounds and intonation; vocabulary building. Prerequisite: Span. 2003 or consent of instructor. (A)

3001. Spanish Syntax (4)

Written Spanish and formal grammar applied to advanced composition in the language. Prerequisite: Span. 2003 or consent of instructor. (F)

3002. Spanish Syntax (4)

Continuation of Span. 3001. Prerequisite: Span. 3001 or consent of instructor. (W)

3003. Advanced Composition (4)

Selected authors with special attention to style. Prerequisite: Span. 3002 or consent of instructor. (Sp)

3101. Introduction to Spanish Phonology and Morphology (4)

Scientific analysis of the Spanish language with emphasis on the discovery of formal units and patterns in linguistic behavior. Historical survey of the development of Spanish. The phonemic principle. Morphological structure. Prerequisite: Span. 3001 or consent of instructor. (Sp)

3102. Spanish Phonetics (4)

The fundamentals of Spanish pronunciation and intonation through the phonetic structure of the language. Attention given to each student's difficulties. Individual laboratory work. Prerequisite: two years of college Spanish or consent of instructor. (W)

3201. Introduction to Literary Studies: Spanish Peninsular Prose (4)

Background and critical appraisal of the novel and other forms of prose from medieval to modern times. Prerequisite: Span. 3001 or consent of instructor. (F)

3202. Introduction to Literary Studies: Spanish Peninsular Poetry (4)

Background and critical appraisal of important poems from medieval to modern times. Prerequisite: Span. 3001 or consent of instructor. (W)

3203. Introduction to Literary Studies: Spanish Peninsular Drama (4)

Background and critical appraisal of the theater from medieval to modern times. Prerequisite: Span. 3001 or consent of instructor. (Sp)

3300. Spanish Literature from the 12th to 15th Centuries (4)

Medieval and pre-Renaissance literature from *El Cantar de mio Cid* to *La Celestina*. Prerequisite: Span. 3002 or consent of instructor. (W)

3401. Spanish Poetry of the Golden Age (4)

Major poets of the 16th and 17th centuries, from Garcilazo de la Vega to Góngora. Prerequisite: Span. 3202 or consent of instructor. (Sp)

3402. Spanish Prose of the Golden Age (4)

A survey of major writers of the 16th and 17th centuries. Prerequisite: Span. 3201 or consent of instructor. (F)

3403. Spanish Theater of the Golden Age (4)

Major playwrights of the 16th and 17th centuries. Prerequisite: Span. 3203 or consent of instructor. (W)

3501. Spanish Literature: 19th Century Poetry and Drama (4)

Selected readings from the major poets and dramatists of the 19th century. Prerequisite: consent of instructor or Introduction to Literary Studies. (Sp)

3502. Spanish Literature: 19th Century Novel and Its Sources (4)

Selected readings from the major novelists of the 19th century. Prerequisite: Span. 3201 or consent of instructor. (Su)

4101. The Generation of '98: Poetry and Drama (4)

The major writers of the generation of '98. Prerequisite: consent of instructor or Introduction to Literary Studies. (F)

4102. The Generation of '98: Prose (4)

The major authors of the generation of '98. Prerequisite: Span. 3201 or consent of instructor. (W)

4201. The Contemporary Novel (4)

A study of the major novelists of the 20th century. Prerequisite: Span. 4102 or consent of instructor. (Sp)

4202. Contemporary Poetry and Drama (4)

Major poets and dramatists of the 20th century. Prerequisite: Span. 4101 or consent of instructor. (Su)

4500. Spanish Culture and Civilization (4)

The cultural history of Spain from the prehistoric period to the reign of the Catholic kings. Prerequisite: Span. 3001 or consent of instructor. (Su, W)

4900. Independent Study (1-4)**4901. Directed Group Study (1-4)****5001. Cervantes (4)**

Prerequisite: Span. 3402 or consent of instructor. (Su, F)

5002. Lope de Vega or Calderón de la Barca (4)

Prerequisite: Span. 3401 or 3403 or consent of instructor. (W)

5003. Galdós and the Realist Novel (4)

Prerequisite: Span. 3502 or consent of instructor. (Sp)

5004. Unamuno or Ortega y Gasset (4)

Prerequisite: Span. 4102 or consent of instructor. (Su, F)

5101. Spanish Language and Methods for Elementary Teachers (3)

Methodology in teaching Spanish at the elementary level. Particular stress given to improvement in linguistic skills. Prerequisite: one year of college Spanish. (F)

5102. Spanish Language and Methods for Elementary Teachers (3)

Continuation of Span. 5101. Prerequisite: Span. 5101. (W)

5103. Spanish Language and Methods for Elementary Teachers (3)

Continuation of Span. 5102. Prerequisite: Span. 5102. (Sp)

LATIN-AMERICAN LITERATURE**3601. Introduction to Latin-American Literature: Before the 19th Century (4)**

History and anthology selections. Prerequisite: Span. 3001 or consent of instructor. (F)

3602. Introduction to Latin-American Literature: 19th Century Romanticism and Modernism (4)

Continuation of Span. 3601. Prerequisite: Span. 3001 or consent of instructor. (W)

3603. Introduction to Latin-American Literature: from 1910 to the Present (4)

Prose, poetry and drama. Continuation of Span. 3602. Prerequisite: Span. 3001 or consent of instructor. (Sp)

3701. Latin-American Literature: The Essay (4)

Selected writings of representative authors of the 19th and 20th centuries. Prerequisite: Span. 3601 or consent of instructor. (F)

3702. Latin-American Literature: The Short Story (4)

Continuation of Span. 3701. Selected writings of representative authors of the 19th and 20th centuries. Prerequisite: Span. 3601 or consent of instructor. (W)

3801. Latin-American Literature: The Drama (4)

Selected plays of representative authors of the 19th and 20th centuries. Prerequisite: Span. 3603 or consent of instructor. (Sp)

3802. Latin-American Literature: Poetry (4)

Major poets from the 17th century to the present. Prerequisite: Span. 3901 or consent of instructor. (Su, F)

3901. Latin-American Novel (4)

A study of the novel of the Mexican Revolution and its development. Prerequisite: Span 3602 or consent of instructor. (W)

3902. The Latin-American Novel (4)

The *indianista* and *gaucho* novels and their development. Continuation of Span. 3901. Prerequisite: Span. 3603 or consent of instructor. (Sp)

4601. The Contemporary Literature of One Latin-American Country (4)

The literature of Mexico, Argentina, Peru, Ecuador or Chile. Prerequisite: Span. 3603 or consent of instructor. (Su, F)

4900. Independent Study (1-4)**4901. Directed Group Study (1-4)****5000. Latin-American Studies in Literature (4)**

Special studies of the novel of social protest. Prerequisite: Span. 3901 or 3902 or consent of instructor. (Sp, Su)

Speech—Drama**Offered in the Department of Speech—Drama****GENERAL****1000. Rhetoric and Public Address (3)**

Theory, practice and evaluation of oral communication. Emphasis on ethical responsibility, careful selection of ideas, and logical organization of expository and argumentative discourse. Speaking, reading and writing assignments stressing the fundamentals of rhetorical theory, practice and criticism. (A)

1007. Fundamentals of Speech (3)

A general survey of the field of speech and drama, with introductory units in voice and diction, theatre, interpretation, and public speaking. Prerequisite to all speech and drama courses. Laboratory required for students with special speech problems. (A)

2210. Mass Media of Communication (4)

Importance of periodicals and newspapers, motion pictures, radio, and television. Comparative analysis and evaluation. Development of criteria for responsible judgments. (Sp)

2310. Interpretative Reading (4)

A fundamental course devoted to theory, methods, and practice of oral communication of different types of literature. Meets general education requirement in creative arts. (A)

3310. Introduction to Radio and Television (4)

A course designed to improve understanding of these media; studying programming, elements of production, business management, aesthetics, history. (F)

3410. Voice and Speech Improvement (4)

Voice and articulation through lecture, discussion and drill. Designed for majors, teachers, and students who have minor speech and voice problems. (Sp)

4180. Speech/Drama Workshop (1-3)

An activity course for students participating in acting, stagecraft, forensic, and/or costuming activities. Admission by consent of the instructor only. Six units maximum. (A)

4355. Teaching of Speech and Drama (4)

To develop skills in both curricular and extra-curricular uses and activities in choral reading, creative and formal dramatics, interpretative reading, public speaking, discussion and debate, and informal speech activities as tools for the speech teacher. Audiovisual techniques. Prerequisite: consent of instructor. (F, W, Sp)

4610. Speech Development in the Classroom (3)

Techniques appropriate for speech activity improvement and for cultivation of student's speech habits. Designed for elementary and secondary teachers. (W)

4900. Independent Study (1-4)**5900. Independent Study in Speech or Drama (2-5)**

(A)

5901. Directed Group Study in Speech or Drama (2-5)

(A)

DRAMA COURSES

1010. Introduction to the Theatre (5)

A survey of the world of the drama, with units in stagecraft, production, selection, acting, etc. A required introduction to the field for majors, a survey-appreciation course for others. Can be used to fulfill the creative arts (drama) requirement in general education. (A)

2012. Acting (4)

The basic techniques of acting involving pantomime, voice, improvisation, and dramatic literature as related to character delineation and projection. (W)

2110. Fundamentals of Play Production (5)

Analysis of dramatic productions. Attention to the physical theatre and its equipment, stage scenery; properties; stage lighting and sound; organization and design of stage productions. Three hrs. lect., 6 hrs. lab. (F)

3212. Advanced Acting (4)

Techniques of production in relation to historic modes of production. Analysis of plays in relation to character, vocal techniques, body movement, and dance. Prerequisite: Sp/Dr 2012. (Sp)

3201. Development of Dramatic Art I: The Greek Period Through the Middle Ages (3)

The historic development of the theatre from the Greek period through 1400, including study of representative plays, physical aspects of the theatre and production practices. (F)

3202. Development of Dramatic Art II: The Renaissance Through the 17th Century (3)

The historic development of the theatre from 1400 through 1700, including study of representative plays, physical aspects of theatre and production practices. (W)

3203. Development of Dramatic Art III: The 18th Century to the Present (3)

The historic development of the theatre from 1700 to this year, including study of representative plays, physical aspects of theatre and production practices. (Sp)

3650. Creative Dramatics (3)

Theory and techniques for developing the creative capacities of children through improvisations of stories; participation and leadership in creative dramatics provided by means of a creative dramatics class with children. Two hrs. lect., 2 hrs. activity (F, W, Sp)

3916. Stagecraft (3)

Theory and practice of planning and execution of scenery for stage production. Two hrs. lect., 2 hrs. activity. Prerequisite: Sp/Dr 2110 or consent of instructor. (W)

4050. Trends in Modern Theatre (3)

Lecture and discussion of contemporary drama on the stage, in motion pictures, and television. Study and analysis of current dramatic activity in the Bay Area. Field trips to current dramatic events and production centers. Fulfills creative arts requirement in general education. (F, W, Sp)

4315. Play Directing (4)

The principles of stage directing: composition, movement, business, tempo, directing procedures, problems in historical styles of production. Prerequisites: Sp/Dr 2012 and 2110. (Sp)

4420. Scene Design (4)

Study and practice in scenic design through the use of various techniques and media, stressing the importance of line, mass, color, lighting and form. Actual

experience in theatre design. Prerequisite: Sp/Dr 3916 or consent of instructor. (Sp)

4422. Costume Design (4)

The history of costume, with concentration on the design of costumes for the stage in each era and on the construction of such costumes for modern duplication, utilizing designs and patterns created by the students. Prerequisite: Sp/Dr 2110 or consent of instructor. (W)

4650. Children's Theatre (3)

Theory and techniques of selecting, directing, and producing plays by and for children. Opportunity for working with a children's play to be presented for a child audience. Two hrs. lect., 2 hrs. act. (F, Sp)

RHETORIC AND PUBLIC ADDRESS

3411. Argumentation and Debate (5)

A course stressing those elements of logic and rhetoric making up responsible argumentative discourse. Practice in parliamentary, legislative, and forensic debating technique. (F, W, Sp)

3412. Business and Professional Speech (4)

Designed to meet the needs of business management. Units in explanations, sales and policy speaking, reading aloud, and conference work. (Sp)

3510. Public and Group Discussion (5)

Principles and methods of public and group discussion in problem solving and learning situations. Development of individual skills in discussion preparation, participation, and leadership through practical application. (F)

3515. Persuasion (4)

The theory and practice of the principles of social psychology as applied to persuasion. Choice, arrangement and adaptation of materials implementing this theory. (W)

4350. Advanced Public Speaking (4)

Principles of public speaking and the development and presentation of talks designed to achieve specific purposes. May fulfill teaching credential speech requirement. (Sp)

4450. Contemporary Public Address (4)

Investigations of the use of speechmaking in public affairs today. Students engage in analysis of contemporary speaking by representative figures in politics, education, religion, law and business. (Sp)

5201. History of Rhetorical Theory and Practice I (4)

Greek and Roman rhetoric and oratory: the teachings of significant scholars in rhetoric from Corax to Quintilian, and the outstanding speeches and speakers from Pericles to Cicero. (F)

5202. History of Rhetorical Theory and Practice II (4)

British rhetoric and oratory: the teachings of significant scholars in rhetoric, especially Blair, Campbell, and Whately, and the outstanding speeches and speakers from Chatham to Churchill. (W)

5203. History of Rhetorical Theory and Practice III (4)

American rhetoric and oratory: the teachings of significant scholars in rhetoric, and the outstanding speeches and speaking from Jonathan Edwards to Adlai Stevenson. (Sp)

Statistics**Statistics**

Offered in the Department of Statistics

1000. Elements of Probability and Statistics (5)

Descriptive statistics; measures of central tendency, variation, correlation. Elementary discrete probability, sampling and sampling distributions. Tests of statistical hypothesis. Role of statistics in scientific research. Prerequisite: 1½ years of high school algebra. Not open for credit to students having credit for Math. 2303 or equivalent. (F, W, Sp)

2000. Statistical Analysis I (4)

Sampling, distributions, test of significance and correlational methods. Prerequisite: Stat. 1000 or equivalent. Students requiring this course should substitute Stat. 3010.

3010. Statistical Methods in the Social Sciences (4)

Standard scores, t scores, ranked data, linear regression, correlation, measures of association, the normal distribution and its uses, paired comparisons, the uses of chi-square, introduction to design of experiments. Prerequisite: Stat. 1000 or equivalent. (F, W, Sp)

3031. Statistical Methods in Biology (4)

Review of basic statistical concepts. Measurement of variability of data. Introduction to the analysis of variance and covariance, correlation and regression with applications to biology. Prerequisites: Stat. 1000, Math. 1301 or equivalent courses, or consent of instructor.

3401. Introduction to Probability Theory (4)

The modern theory of probability with applications to science and engineering. Topics include the notion of sample space, random variables, expectation, joint distributions, combinatorial analysis and special distributions such as the binomial, the Poisson, the normal, etc. Prerequisite: Math. 2303 or equivalent. (F)

3500. Statistical Methods in Science and Engineering (4)

Probability background to statistical methods. Statistical ideas, the binomial, hypergeometric and Poisson distributions and their applications. Introduction to the uses of the normal, Student-t, and the chi-square distributions. Prerequisite: Math. 2301 (may be taken concurrently).

3502. Statistical Inference I (4)

An introduction to mathematical statistics and its applications. Probability spaces, random variables, maximum likelihood and Bayes estimation, and testing of hypotheses. Prerequisites: Math 2303 or equivalent and consent of instructor. (W)

3503. Statistical Inference II (4)

Continuation of Stat. 3502. Regression and general linear hypothesis, experimental design models, sequential analysis and non-parametric methods. (Sp)

3601. Applied Statistics (4)

Laboratory and computational methods in statistics. Use of desk calculators and automatic digital computers in regression, the analysis of variance and sample surveys. Miscellaneous types of numerical analysis applied to statistics. Prerequisite: Stat. 3502 (may be taken concurrently).

4000. Statistical Analysis II (4)

Introduction to analysis of variance. Prerequisite: Stat. 2000 or equivalent. (Sp)

4410. Introduction to Stochastic Processes (4)

The theory and application of stochastic models to empirical phenomena, with emphasis on stationary and counting processes and on Poisson, Markov and Gaussian processes. Prerequisite: an upper division probability course.

4501. Linear Methods in Statistics I (4)

An introduction to General Linear Hypothesis and its applications. The multivariate normal, regression models and correlation. Prerequisite: Stat. 3502 and Math. 4101 or equivalent.

4502. Linear Methods in Statistics II (4)

Continuation of Stat. 4501. Further development of the general linear hypothesis. Analysis of variance models, randomization, balanced incomplete blocks, design of experiments. Prerequisite: Stat. 4501 or equivalent.

4900. Independent Study (1-4)**6410. Queueing Theory (4)**

Structure and basic theory of queues. Poisson queues, non-Poisson queues, renewal theory and applications. Prerequisite: advanced calculus and a probability course or consent of instructor.

6420. Advanced Probability (4)

Probability spaces. Random variables and probability distributions. Product spaces and conditional probabilities and expectations. Characteristic functions. The classical limit theorems. Prerequisites: Stat. 4410 and Math. 4332; or consent of instructor.

6430. Stochastic Processes (4)

The theory of random processes and its application to the natural and social sciences. Prerequisites: Stat. 4410 and Math. 4332 or consent of instructor.

6501. Mathematical Statistics I (4)

Theory of point and interval estimation and hypothesis testing, from the Neyman-Pearson point of view. Prerequisite: Math. 4332, Stat. 3502 or consent of instructor.

6502. Mathematical Statistics II (4)

Continuation of Stat. 6501. Certain topics from among decision theory, non-parametric inference, sequential analysis, multivariate analysis. Prerequisite: Stat. 6501 or consent of instructor.

6510. Analysis of Variance (4)

The theory and application of the statistical methods of experimental design; the analysis of variance and covariance. Prerequisites: Math. 4101 and Stat. 3503 or consent of instructor.

Zoology

See Biological Science



Stairway solitude in the Music Building

PART IV

ADDENDA

PUBLIC SCHOOL TEACHERS IN EDUCATION PROGRAM

The public school classroom student teaching experience is made possible through the cooperation of a number of public school districts in the service area of the College. Public school teachers have made a most important professional contribution to the College's program of teacher education.

ASSISTING SCHOOL DISTRICTS Fall 1966 and Winter 1967

Castro Valley
Hayward
Newark
Oakland
San Lorenzo

Freemont
Mt. Diablo
New Haven
San Leandro
San Ramon

PUBLIC SCHOOL TEACHERS WHO SUPERVISED STUDENT TEACHERS

Fall 1966 and Winter 1967

Margaret Alexander	Nathan Blake	William Clark
Margaret Allen	Frank Blakeman	Tommie Clay
Eleanor Amar	Alfred Blea	Clint Claxton
Barbara Anderson	Gerald Bishop	Diane Coburn
Doris Anderson	Cory Blodgett	Josephine Cockrell
Emory Anderson	Donald Blood	Robert Collins
Christine Apple	George Blum	Kenneth Cook
Marian Appleton	William Bock	Lorin Cornwell
Ricardo Arenas	Harold Bodon	Stella Cowan
Betty Arighi	Darrell Bond	Louis Crawford
Gladys Asbach	Milton Bowerman	James Creed
Joan August	Patricia Bowhen	Ivan Crosland
Ernest Avellar	Don Bonvicino	Charlotte Cruz
Atsuko Awayo	James Boynton	Joan Cultis
Virginia Baker	Beverly Braden	Linda Cumming
Dorcas Badny	Fern Brady	William Cunningham
L. B. Barbe	Frederick Bretz	Dorothy Crow
Milton Barber	Francis Brewer	Alberta Dalla-Betta
Keith Baron	Barbara Brown	Clare Dean
Martin Barstad	El Brown	John Delany
Beryl Barstad	Michael Bryant	Floyd Delvey
James Bartlett	Teg Bryant	Mary Demos
Barbara Bawden	Louis Bufkin	Larry Deutsch
Lunecia Baxter	Leonard Burt	Eugene Dias
Vera Bayer	Lucille Burt	Marian Dickson
Andrew Bergloff	Ruth Bush	Carol Diehl
Helen Bell	James Butler	Robert Diemer
Melvin Belotz	Margaret Byrne	Joseph Di Geronimo
Elliott Betts	Henry Callaghan	Salvatore Di Geronimo
James Bennett	Paul Campbell	Pamela Di Mercurio
Mary Bennett	Betty Camuffo	Don Dixon
Dorothy Berner	Richard Cardella	Stephen Dollinger
Joan Blackwell	Frank Casson	James Drommond
Rutheloise Blair	Joseph Cass	Marcella Duran

Albert Eaton
Norman Emory
Barbara Erb
Kenneth Ernst
Robert Eustis
Karen Evans
Robert Everingham

Joe Farrias
Carol Federighi
Carl Feick
August Fenneman
Andrew Ferrari
Maurice Ferrero
Bill Field
Curtis Filloon
John Finch
Rual Flores
Edward Foreman
Mary Forward
Robert Franco
Beulah Fredericks
Don Funk
Julia Furlow

Philip Gastineau
Matt Gefre
Betty Gebhart
Gerald Genese
Janice Gill
Sherman Glanz
John Goetsche
Philip Gordon
Virginia Graban
Terrell Graham
Clifford Gray
Shirley Green
Edward Grundel
Adelheide Gurley

Ron Hakola
Helene Hall
Jenner Hall
Steve Handran
Nancy Hanson
Mark Harris
Lois Haynes
Wallace Hennessey
Jerry Hennings
Marjorie Herndon
Joseph Hertle
Robert Hidalgo
Robert Hilden
Jack Hillis

Thomas Himmelberg
Ruby Hockett
Bernard Hoffman
MaryAnne Hogerheide
Marian Hopping
Ed Horvath
Naomi Hudson
Betty Hulbert
Owen Hughes
George Hunt
Vasici Hurbace
Peggy Hurt
Lee Hyde

Gerald Irving

Janice Janeiro
Susan Jarvella
Adelaide Jenike
Gerald Jensen
Richard John
Frances Johnson
Homar Johnson
Joel Johnson
Melinda Johnson
Barbara Jones
Evelyn Jones
Jay Jones
Larry Jones
Virginia Jones
Ronald Jorgenson

Wilma Karr
Marjorie Kelly
Roman Kendzior
Olga Kennedy
Lawrence Kimmick
Kay Kjeldgaard
Carolyn Koenig
Anna Konstantopoulos
Vernon Korstad
Elizabeth Koski
John Kriege
Elaine Kuhlemeyer
Quentin Kuhlman
Marta Kurtz

John Lage
Juanita Lambert
Goldie Landers
Jack Landers
Winifred Lane
Edna Larson
Eleanor Lazansky

Roy Leaf
Bernard Leech
Ruth Levenson
Gilbert Leveroni
Moses Levy
Edith Lewis
Nancy Lewis
Andrienne Libby
Sharron Lindsey
Shirley Liston
Dawn Ludwig
Arthur Lund
Taylor Lyen
Robert Lyons

Lillie McCarthy
Neil McCarthy
Nina McCarty
William McCaulley
Verrell McCullough
James McDonnell
David McLaughlin

Barbara Madison
Olive Madrid
Judith Malynn
Robert Mann
Bernice Margolis
Nancy Marshall
David Martin
Irene Martinez
Victor Martino
Andonia Masterakos
Robert Mattsson
Mary Mayer
Pete Michaletos
Marilyn Michell
Curt Miller
Helen Miller
Stanley Miller
Marc Mims
James Mink
Ruby Mischler
Helen Moniz

Mary Montague
Kenneth Morris
David Morrow
Agnes Morse
Vincent Mueller
Linda Murphy
Dorothy Nandresy
Elizabeth Nelson
Victor Nelson

Howard Hemir
Kozo Nishifue
Sheila O'Connell
Art Oldenberg
William Osborn
Ollie Owens

Kay Pacheco
Peter Palm
Zack Papachristos
Samuel Pastore
Evelyn Pavone
James Peckham
Barbara Pence
Frances Phillips
James Phillips
William Piedmont
Florence Piliavan
Louis Pisani
Angelo Pizelo
Myrtle Poier
Frank Poulsen
Joyce Powell
Mike Preston
Pat Pullman
Charles Putkey
Cathy Putman

Robert Quartarolo

Earline Raby
Gary Rehrig
Bobette Reese
Bernice Reinoldson
Wayne Rhoades
Jim Richey
Mildred Ridgell
Bert Roberts
Cleve Roberts
Elsie Roberts
Terry Ritchie
Jann Robbins
Milton Robinson

Carolyn Stovall
John Sudmeier
Lois Summersett
Lorraine Sun

Richard Roderick
Evelyn Rogers
Lionel Romero
Al Roper
Donna Russell

Elin Sandecker
Joseph Sankene
Bernice Schaffer
Edward Schoenberger
Fred Schouten
Ima Seifer
Richard Shaffer
Ethel May Shaw
Opaline Shelton
Dale Sherrill
Ben Shorum
Joseph Sibilia
Phillip Silberman
James Silva
Peter Silva
Marian Simon
Ralph Sixmiller
Sheila Smart
George Smith
Paul Smith
Sonya Smith
Robert Sloan
Kenneth Soares
Irene Soland
Scott Soper
Ted Spillman
Jeanne Squires
Susan Starr-bresette
Ralph Steinhaus
Norman Stelle
Harriet Stevens
Mae Stevens
Harry Stookey
Frank Stott
Carolyn Stovall
John Sudmeier
Lois Summersett
Lorraine Sun

Beverly Ulbricht
Gwen Vallio
Glen Van Vactor
Robert Vollen
William Vollick
Cassandra Walker
Mary Wallace
Frank Waltjen
Jack Ward
Wayne Ward
Kathleen Wehner
Mary Whelton
Charles Whitehead
Roald Wick
Robert Wilder
Jeannine Wiles
Ronald Williams
Wallace Williams
Helen Willis
Michael Wilwand
Sidney Wishnoff
Michael Woodke
Joanne Wright
Gloria Yee

Charles Swanson
Virginia Swihart

Skeeter Taigen
Robert Tanghe
Robert Tebelskis
Emily Theodosiou
Frank Thomas
Howard Thompson
Harriett Thomburg
Govenor Tootle
Martha Trusheim
Velma Tucker
Barbara Tyler

FACULTY

HARCLEROAD, FRED F. (1959)	President B.A., 1939, M.A., 1942, Colorado State College; Ph.D., 1948, Stanford University
*ADLER, MAURICIO (1967)	Instructor of Statistics B.A., 1966, California State College at Los Angeles
*AHERN, T. JAMES (1966)	Associate Professor of Education A.B., 1923, Alfred University; M.A., 1936, Ph.D., 1955, New York University
ALBAUGH, GLEN (1965)	Assistant Professor of Physical Education B.A., 1954, M.A., 1959, San Jose State College
*ALBERT, JANICE M. (1967)	Instructor of English B.A., M.A., 1960, University of Chicago
ALCAMO, GERALDINE D. (1966)	Instructor of Biological Science B.S., 1966, California State College at Hayward
ALLEN, DORIS L. (1966)	Librarian B.A., 1957, San Francisco State College; M.L.S., 1963, University of California, Berkeley
ALLISON, HARRY E. (1964)	Chairman, Department of Marketing; Professor of Business Administration B.S., 1949, M.S., 1950, Pennsylvania State University; Ph.D., 1955, Harvard University
AMEMIYA, FRANCES CAMPBELL (1964)	Associate Professor of Mathematics A.B., 1935, A.M., 1936, University of California at Los Angeles; Ph.D., 1945, University of Michigan
ANDERSON, BARBARA GALLATIN (1964)	Associate Professor of Anthropology B.A., 1942, San Francisco College for Women; Ph.D., 1959, University of Paris (Sorbonne)
*ANDERSON, ROBERT F. (1967)	Assistant Professor of Art B.F.A., 1960, University of California at Los Angeles.
*ARMSTRONG, LEE R. (1964)	Assistant Professor of Biological Science B.S., 1946, University of Washington; M.S., 1962, San Francisco State College
ASHLEY, JOHN W. (1965)	Professor of Economics B.A., 1943, M.B.A., 1947, Stanford University; Ph.D., 1958, University of California at Los Angeles
*AUSTIN, WILLARD H. (1966)	Lecturer in Business and Economics A.B., 1947, Stanford University; M.B.A., 1961, University of Washington
BAALMAN, ROBERT J. (1965)	Assistant Professor of Biological Science B.S., 1960, M.S., 1961, Fort Hays Kansas State College; Ph.D., 1965, University of Oklahoma
BARLADELIS, GEORGIA (1966)	Associate Professor of Psychology B.A., 1953, University of Michigan; M.A., 1955, University of California, Berkeley; Ph.D., 1959, University of Colorado
BAIRD, JOHN E. (1967)	Assistant Professor of Speech and Drama B.A., 1947, M.A., 1948, College of the Pacific; Ph.D., 1959, Columbia University
BANK, SYLVIA P. (1967)	Assistant Professor of English B.A., 1963, McGill University; M.A., 1964, Yale University
BARCLAY, JAMES R. (1964)	Professor of Education A.B., 1949, Sacred Heart College; M.A., 1956, Ph.D., 1959, University of Michigan
BARRETT, G. HAROLD (1963)	Associate Professor of Speech and Drama A.B., 1949, M.A., 1952, University of the Pacific; Ph.D., 1962, University of Oregon
BATES, ROBERT E. (1963)	Professor, Director of Institutional Studies A.B., A.M., 1932, Indiana University; Ph.D., 1939, Columbia University
BATTEN, THELMA F. (1965)	Assistant Professor of Sociology A.B., 1951, A.M., 1953, Ph.D., 1956, University of Michigan
BAUER, FRANCIS H. (1965)	Associate Professor of Geography B.A., 1949, M.A., 1952, University of California; Ph.D., 1960, Australian National University
BEAN, LOWELL J. (1966)	Assistant Professor of Anthropology B.A., M.A., 1961, University of California at Los Angeles
BECK, FRANCES O. (1964)	Assistant Professor of Foreign Languages B.A., 1956, M.A., 1958, University of Colorado
*BECKETT, PAUL E. (1965)	Assistant Professor of Physical Science B.Ed., 1948, University of Alberta; M.Sc., 1960, Kansas State University; M.A.T., 1962, Stanford University
BEJARANO, RUTH Z. (1967)	Lecturer in Business and Economics B.S., 1966, M.B.A., 1967, San Jose State College
BELGUM, EVELYN H. (1965)	Assistant Professor of Education A.B., 1948, University of California; M.A., 1959, San Francisco State College

* Part time

BELTON, JOHN C. (1966)	Assistant Professor of Biological Science B.S., 1957, Lewis and Clark College; M.S., 1962, Ph.D., 1966, Oregon State University
BERINGER, RICHARD E. (1965)	Assistant Professor of History B.A., 1956, Lawrence College; M.A., 1957, Ph.D., 1966, Northwestern University
BEVEN, STEPHEN P. (1967)	Assistant Professor of English B.A., 1961, Knox College; M.A., 1963, Emory University
BIELLA, ARNOLD P. (1960)	Dean of Instruction; Acting Dean, Graduate Studies; B.A., 1939, University of Colorado; M.A., 1940, State University of Iowa; Ph.D., 1954, Stanford University
*BIRGE, ANN CHAMBERLAIN (1965)	Associate Professor of Physics A.B., 1946, Vassar College; A.M., 1947, Ph.D., 1951, Radcliffe College, Harvard
BLACK, JAMES M. (1962)	Associate Professor of Art B.S., 1951, M.S., 1952, University of Wisconsin; M.F.A., 1953, Cranbrook Academy of Fine Arts
*BLAWIE, JAMES L. (1967)	Lecturer in Political Science B.A., 1950, University of Connecticut; A.M., 1951, Ph.D., 1959, Boston University
BLAWIE, MARILYN-JUNE (Mrs.) (1959)	Professor of Political Science B.A., 1952, University of Connecticut; J.D., 1955, University of Chicago Law School
BOZAK, RICHARD E. (1964)	Associate Professor of Chemistry B.S., 1956, University of Washington; Ph.D., 1959, University of California
*BRADFIELD, ANNE F. (1966)	Associate Professor of Education B.A., 1940, University of Oregon; Ed.D., 1950, Stanford University
BRETT, DAWN I. (1966)	Associate Professor of Sociology B.S., M.S.W., 1960, Ohio State University; D.S.W., 1962, University of California, Berkeley
BROCK, PHYLLIS J. (1963)	Assistant Professor of Physical Education A.B., 1951, Chico State College; A.B., 1956, San Jose State College; M.A., 1963, University of California
BROOKS, ELWOOD R. (1964)	Assistant Professor of Geology B.S., 1956, Michigan College of Mining and Technology; M.S., 1958, University of California; Ph.D., 1965, University of Wisconsin
BROWN, DONALD J. (1963)	Director of Testing Services; Associate Professor of Education A.B., 1953, University of California at Los Angeles; M.A., 1955, Chico State College; Ph.D., 1960, Ohio State University
BROWN, GERALD W. (1965)	Chairman, Department of Teacher Education; B.S., 1939, University of Nebraska; M.A., 1951, University of California; Ed.D., 1954, Stanford University
BROWN, PAULINE (1966)	Assistant Professor of Education A.B., 1941, A.M., 1959, Stanford University; Ed.D., 1966, Boston University
BRYANT, JERRY H. (1963)	Associate Professor of English B.A., 1951, M.A., 1955, Ph.D., 1959, University of California at Los Angeles
BULK, HAROLD C. (1966)	Assistant Professor of Physical Science A.B., 1941, State College for Teachers, New York; B.S., 1942, Air Force Technical School; M.S., 1957, New York University
*BULL, RONALD F. (1966)	Instructor of Health and Physical Education A.B., 1959, San Jose State College
BURKE, CLETUS J. (1963)	Professor of Psychology and Statistics A.B., 1939, University of Southern California; M.A., 1943, University of California Scripps Institute; Ph.D., 1948, State University of Iowa
BURNETT, LEWIE W. (1962)	Head, Division of Education; Professor of Education B.S., 1937, Central Washington State College; Ed.D., 1948, Stanford University (on leave)
*BUSH, ROBERT C. (1966)	Assistant Professor of Education B.S., 1942, Bemidji State Teachers College; M.A., 1951, University of Oregon; Ed.D., 1959, Stanford University
CALKINS, KEITH D. (1966)	Assistant Professor of Health and Physical Education A.B., M.A., 1963, Chico State College
CAMBUS, JOHN (1963)	Acting Chairman, Department of Speech and Drama; B.A., 1952, M.A., 1953, Ph.D., 1959, Wayne State University
CARLSON, RUTH K. (Mrs.) (1959)	Professor of Education A.B., 1932, M.A., 1944, Ed.D., 1959, University of California
CARSON, LEWIS S. (1965)	Instructor of Art B.A., 1960, Alfred University; M.A., 1963, University of California
*CATTERALL, CALVIN D. (1967)	Assistant Professor of Education B.A., 1948, College of the Pacific; M.A., 1949, Ph.D., 1965, University of Southern California
*CHACHERIE, MARVIN L. (1967)	Assistant Professor of Mathematics A.B., 1950, St. Michael's College; M.E.D., 1953, Boston College; M.A., 1962, University of California, Berkeley; M.S., 1967, California State College at Hayward
CHAMBERS, JOHN W. (1967)	Assistant Professor of History B.S., 1958, Temple University; M.A., 1965, San Francisco State College

* Part time

Faculty

CHAN, DAVID B. (1963)	Chairman, Department of History, Professor of History
B.A., 1947, University of California; M.A., 1948, Columbia University; Ph.D., 1957, University of California (on leave, academic year)	
CHANG, FLORENCE (1964)	Librarian
B.A., 1960, National Taiwan University; M.L.S., 1963, School of Librarianship, University of California	
CHARNOW, ALLEN K. (1967)	Associate Professor of Mathematics
A.B., 1956, M.A., 1958, Ph.D., 1965, University of California, Berkeley	
CHENEY, GAY E. (1964)	Assistant Professor of Physical Education and Drama
B.S., 1955, Bouve School of Tufts University; M.S., 1964, University of Wisconsin	
*CLARK, C. ESMER (1966)	Associate Professor of Education
B.A., 1937, San Francisco State College; M.A., 1947, University of California, Berkeley	
CLARK, EUGENE W. (1964)	Director of Placement Services
B.A., 1949, Macalester College; M.S., 1951, University of Illinois; Ph.D., 1963, University of Denver	Professor of Biology
CLARKE, WILLIAM C. (1962)	Assistant Professor of Geography
B.A., 1952, M.A., 1959, University of California	
CLAY, EDWARD M. (1965)	Assistant Professor of English
B.A., 1954, M.A., 1958, University of Minnesota; Ph.D., 1965, University of Missouri	
COGSWELL, HOWARD L. (1964)	Associate Professor of Biological Science
B.A., 1948, Whittier College; M.A., 1951, Ph.D., 1962, University of California	
*COLEY, NEIL R. (1965)	Assistant Professor of Physical Science
B.A., 1960, M.A., 1963, San Jose State College	
COLLIER, L. ARLEN (1964)	Assistant Professor of English
B.A., 1960, M.A., 1961, University of California, Santa Barbara; Ph.D., 1966, University of Washington	
COMER, JAMES L. (1963)	Director of Intramural and Intercollegiate Athletics; Professor of Physical Education
B.A., B.S., 1947, Kansas State College; M.S., 1955, Central Missouri State College; E.D.S., 1960, New Mexico State University; Ed.D., 1963, University of Utah	
CONNER, JACK E. (1962)	Chairman, Department of English; Professor of English
B.A., 1939, B.S., 1942, Texas College of Arts and Industries; Ph.D., 1952, Stanford University	
COOPER, RICHARD K. (1965)	Assistant Professor of Physics
B.S., 1958, M.S., 1959, California Institute of Technology; M.S., 1962, Ph.D., 1964, University of Arizona	
CORY, NORMAN R. (1963)	Acting Chairman, Department of Music; Associate Professor of Music
B.S., 1938, B.M., 1939, Miami University; M.F.A., 1941, University of Oregon	
COSTY, JAMES O. (1964)	Assistant Professor of Speech and Drama
B.A., 1945, Santa Barbara College; M.A., 1946, University of Washington; Ph.D., 1954, University of Denver	
CRANSTON, PHILIP E. (1965)	Assistant Professor of Foreign Languages
B.A., 1951, University of Arizona; M.A., 1958, University of California, Berkeley	
CROWELL, JACKSON H. (1963)	Associate Professor of Political Science
A.B., Bowdoin, 1947; M.A., 1949, Ph.D., 1959, Fletcher School of Law and Diplomacy	
CRUMLINE, N. ROSS (1965)	Assistant Professor of Anthropology
B.A., 1957, Northwestern University; M.A., 1962, University of Arizona	
CUMMINGS, JON C. (1964)	Associate Professor of Geology
B.S., 1952, M.S., 1956, Ph.D., 1960, Stanford University	
CUMMINS, LEJEUNE (1963)	Associate Professor of History
A.B., 1950, M.A., 1951, Ph.D., 1964, University of California	Professor of English
CUOMO, GEORGE M. (1965)	
B.A., 1952, Tufts University; M.A., 1955, Indiana University	
CURTI, G. PHILIP (1966)	Associate Professor of Social Science and Education
B.A., 1951, M.A., 1957, Ph.D., 1960, University of California at Los Angeles	
DAVIDSON, MORRIE (1963)	Assistant Professor of Recreation
A.B., 1950, M.A., 1958, San Francisco State College; Ed.D., 1965, University of California	
DAVIES, GORDON F. (1960)	Coordinator of Field Experience—Elementary; Professor of Education
B.Ed., 1948, University of Alberta; M.Ed., 1949, University of Oregon; Ed.D., 1960, Stanford University	
*DAVIS, GREGSON (1966)	Assistant Professor of Foreign Languages
A.B., 1960, Harvard University; M.A., 1965, University of California, Berkeley	
DAVIS, JOHN K. (1961)	Associate Professor of Art
B.A., 1948, M.A., 1950, Central Washington State College	

* Part time

Faculty

DAVIS, LESTER RAY (1965)	Assistant Professor of Physical Education
B.A., 1963, San Jose State College; M.A., 1965, Stanford University	
*DELLA, DAN G. (1967)	Lecturer in School Administration
A.B., 1943, M.A., 1949, Ed.D., 1966, University of California, Berkeley	
*DENKE, FRANK R. (1961)	Assistant Professor of Music
Chicago Musical College (Roosevelt University), 1950, Teachers Certificate	
DE VRIES, JOHN E. (1964)	Professor of Chemistry
A.B., Hope College, 1941; Ph.D., University of Illinois, 1944	
DICKERSON, ROBERT H. (1966)	Assistant Professor of Physics
B.S., 1959, M.S., 1963, Ph.D., 1964, University of Arizona	
*DODSON, LEO C. (1966)	Assistant Professor of English
A.B., 1948, M.A., 1961, University of California, Berkeley	
DOUTY, CHRISTOPHER M. (1966)	Assistant Professor of Business and Economics
B.A., 1959, George Washington; M.A., 1964, Stanford University	
DUHNKE, HORST G. (1964)	Associate Professor of Political Science
B.A., 1950, M.A., 1952, Ph.D., 1964, University of California	
EBERHARD, CARL J. (1966)	Assistant Professor of Music
B.M., 1962, M.M., 1963, Michigan State University	
EBERHARD, KENNETH R. (1967)	Instructor of Statistics
B.S., 1965, California State College at Hayward	
EDMISON, LYLE D. (1959)	Dean of Students; Professor of Psychology
A.B., 1950, M.A., 1951, Ph.D., 1955, University of Nebraska	
EDWARDS, SCOTT E. (1966)	Assistant Professor of Political Science
B.A., 1960, San Fernando Valley State College; Ph.D., 1964, Claremont Graduate School	
*EINSTADTER, WERNER J. (1967)	Assistant Professor of Sociology
A.B., 1952, M.Crim., 1960, D.Crim., 1966, University of California, Berkeley	
ELLIOT, H. ROY (1962)	Assistant Professor of Business Administration and Economics
B.A., 1950, Harvard University; M.A., 1953, Ph.D., 1964, University of Chicago	
ERICKSON, FLOYD R. (1959)	Head, Division of Libraries and College Archivist
B.E., 1940, State Teachers College, Superior, Wisconsin; B.S.L.S., 1946, University of Minnesota; M.A., 1958, Long Beach State College	
ERNST, KARL D. (1959)	Head, Division of Creative Arts; Chairman, Department of Music; Professor of Music (on leave)
B.M., 1932, M.M., 1936, University of Washington; Ed.D., 1955, University of Oregon (on leave)	
EWING, DORLESSA B. (1966)	Instructor of Education
B.A., 1950, University of California, Berkeley	
*FASTEAU, HERBERT M. (1966)	Lecturer in Political Science
A.B., 1962, University of California, Berkeley; M.A., 1964, University of California at Los Angeles	
FAY, JOSEPH (1965)	Associate Professor of Art
B.A., 1957, M.A., 1960, Michigan State University	
*FERNANDEZ, DELVIS A. (1967)	Assistant Professor of Mathematics
B.A., 1961, Westminster College; M.S., 1963, University of Miami	
FINNEY, FRANK R. (1966)	Assistant Professor of Business Administration
A.B., 1942, Stanford University; M.B.A., 1957, University of California	
FLANDERS, HOWARD B. (1966)	Medical Officer
A.B., 1931, University of California, Berkeley; M.D., 1935, University of California Medical School	
FLOYD, RICHARD L. (1966)	Assistant Professor of Psychology
B.S., 1960, University of Michigan; Ph.D., 1964, University of Minnesota	
*FLYNN, DOUGLAS M. (1967)	Assistant Professor of Chemistry
B.S., 1954, Eastern Kentucky State University; M.A., 1956, Vanderbilt University	
FORBES, ROBERT L. (1960)	Assistant Professor of Social Science and Education
B.S., 1949, New York University; A.M.I., 1950, Harvard University (on leave)	
*FOSTER, MARY L. (1966)	Assistant Professor of Anthropology
B.A., 1936, Northwestern University; Ph.D., 1965, University of California	
FOX, FREDERICK A. (1964)	Associate Professor of Music
B.M., 1953, Wayne State University; M.M., 1957, Ph.D., 1959, Indiana University	
*FREDERICK, HELEN W. (1967)	Assistant Professor of Education
B.A., 1941, Stanford University; M.A., 1966, San Francisco State College	
FREDERICK, PETER J. (1964)	Assistant Professor of History
B.A., 1959, Harvard College; M.A., 1960, University of Michigan; Ph.D., 1966, University of California	
FREITAG, OTTO F. (1960)	Professor of Political Science
B.A., 1939, M.A., 1940, University of Denver; Ph.D., 1942, State University of Iowa (on leave)	
*FROST, THOMAS R. (1966)	Instructor of Physical Science
B.S., 1966, California State College at Hayward	
FRY, HILARY GLEN (1960)	Professor of Social Science
B.S., 1948, University of Illinois; M.A., 1951, Ph.D., 1958, University of Chicago	

* Part time

Faculty

FULLER, MILTON E. (1964)	Associate Professor of Chemistry
B.S., 1948, Arizona State University; Ph.D., 1956, Northwestern University	
GALLER, MEYER (1966)	Librarian
B.S., 1939, Agricultural University, Warsaw, Poland; B.S., 1964, M.L.S., 1966, University of California, Berkeley	
GARCIA, ELSA (1965)	Assistant Professor of Foreign Languages
B.A., 1958, M.A., 1960, University of California	
GARDNER, JEANNE C. (1965)	Assistant Professor of Mathematics
B.S., 1953, University of Illinois; M.S., 1959, University of Pittsburgh	
GARG, PULIN K. (1965)	Assistant Professor of Sociology
B.A., 1950, Rajputana University; M.A., 1952, Patna University, India	
GEISER, PETER (1963)	Chairman, Department of Sociology; Professor of Sociology
A.B., 1934, University of Pittsburgh; M.S.W., 1948, Ph.D., 1960, University of Southern California	
GIBSON, ARCHIE G. (1966)	Assistant Professor of Mathematics
B.S., 1962, Ph.D., 1966, University of Colorado	
GILES, JOHN C. (1964)	Associate Professor of Physics
B.Sc., 1955, University of Sheffield, England; Ph.D., 1958, University of Exeter, England	
GILLIARD, FRANK D. (1966)	Assistant Professor of History
B.A., 1957, University of Florida; M.A., 1961, Ph.D., 1966, University of California	
GLASOW, GLENN L. (1961)	Associate Professor of Music
B.A., 1947, M.A., 1948, Hamline University	
GLOE, ERNST (1965)	Assistant Professor of Music
B.M., 1942, University of Rochester Eastman School of Music; M.A., 1964, University of California	
*GOESER, ISABELLE McClUNG (Mrs.) (1962)	Assistant Professor of Music
B.A., 1943, State University of Iowa; M.A., 1949, Teachers College, Columbia University	
GOLDSTEIN, NORMAN N. (1965)	Associate Professor of Biological Science
A.B., 1951, M.A., 1952, Ph.D., 1966, University of California	
GOOD, ROBERT H. (1966)	Associate Professor of Physics
A.B., 1953, University of Michigan; Ph.D., 1961, University of California	
*GOODWIN, DWIGHT L. (1966)	Assistant Professor of Education
A.B., 1947, University of California, Berkeley; M.A., 1954, San Francisco State College; Ph.D., 1966, Stanford University	
GOTHBERG, JOHN A. (1960)	Associate Professor of Journalism
B.A., 1949, San Jose State College; M.A., 1950, Ed.D., 1963, Stanford University	
GOVE, CHARLES ALLEN (1966)	Assistant Professor of Music
B.M., 1952, M.M., 1953, University of Illinois	
GRAW, HERBERT M. (1965)	Assistant Professor of Physical Education
B.A., 1957, M.A., 1959, University of California	
GRAY, DARRELL M. (1964)	Publicity Assistant, Assistant Professor of Journalism
A. & S., 1957, Everett Junior College; B.A., 1959, University of Washington	
*GRAY, GARY E. (1963)	Assistant Professor of Music
Eastman School of Music, Rochester	
GRAY, MARY W. (1965)	Assistant Professor of Mathematics
A.B., 1959, Hastings College; M.A., 1962, Ph.D., 1964, University of Kansas	
GRIES, FRAUKE (1966)	Assistant Professor of Foreign Languages
B.A., 1962, San Francisco State College; M.A., 1964, Stanford University	
GROODY, TOM C. (1960)	Professor of Biological Science
B.S., 1936, Kansas State University; M.S., 1937, Ph.D., 1952, University of California	
GROSS, PHYLLIS (1965)	Associate Professor of Biological Science
B.A., 1937, San Jose State College; M.A., 1939, Stanford University	
GROVES, FRANK F. (1965)	Assistant Professor of Education
B.A., B.S., 1950; M.S., 1952, Southern Illinois University; Ed.D., 1964, University of Colorado	
GUTHRIE, ANDREW (1960)	Chairman, Department of Physics; Professor of Physics
B.A., 1934, University of British Columbia; M.S., 1939, Ph.D., 1941, Purdue University	
HALL, JEANNE L. (Mrs.) (1960)	Associate Professor of Speech and Drama
B.S., 1936, Northwestern University; M.A., 1939, University of Southern California; Ph.D., 1966 University of Michigan	
HALL, ROBERT O. (1960)	Head, Division of Learning Resources; Professor of Education
B.S., 1939, M.S., 1941, Ed.D., 1954, University of Southern California	
HAM, GALIA M. (1966)	Associate Professor of Foreign Languages
B.A., 1927, 1928, College Sainte-Marie, Amiens, France; M.A., 1939, Ph.D., 1947, University of California at Los Angeles; M.A., Library Science, 1953, University of Michigan	
HANCOCK, JOHN D. (1960)	Professor of Mathematics and Education
B.A., 1948, University of Southern California; M.A., 1949 Ed.D., 1961, Stanford University (on leave)	
*HANOVER, LOUISE A. (1966)	Instructor of Speech and Drama
B.S., 1949, M.A., 1950, Northwestern University	

* Part time

Faculty

HARKNESS, MARY LOU (1966)	Assistant Professor of Statistics
B.S., 1956, Michigan State University; M.A., 1965, Pennsylvania State University	
*HARKNESS, WILLIAM L. (1967)	Associate Professor of Statistics
B.S., 1955, M.A., 1956, Ph.D., 1959, Michigan State University	
HARRELL, JEAN GABBERT (1964)	Associate Professor of Philosophy
A.B., 1943, University of California; Ph.D., 1950, Columbia University	
HARTMAN, WILLIAM R. (1965)	Assistant Professor of Political Science
B.A., 1961, Kenyon College; M.A., 1962, University of Chicago	
HATCHELL, ALICE F. (1966)	Instructor of Speech and Drama
B.A., 1961, M.A., 1965, San Francisco State College	
HAYNES, JANE B. (1965)	Assistant Professor of Political Science
B.A., 1954, LL.B., 1954, University of British Columbia; M.A., 1959, University of Toronto	
HEATH, HARRISON DUANE (1960)	Professor of Biological Science
A.B., 1944, A.M., 1946, Ph.D., 1951, Stanford University	
HEBLER, JANE ANN (1965)	Assistant Professor of Education
B.A., 1949, M.A., 1953, Syracuse University; Ed.D., 1965, Stanford University	
HENDRICKSON, DALE (1960)	Associate Professor of Education
B.S., 1950, M.S., 1954, University of Southern California; Ed.D., 1960, University of California	
HERGERT, LORETTA J. (1964)	Assistant Professor of Physical Education
B.S., 1958, M.S., 1963, University of Colorado	
*HERNANDEZ, JOSEPH V. (1966)	Instructor of Foreign Languages
B.A., 1962, San Jose State College; M.A., 1964, University of Madrid	
HOCKETT, JANE (1964)	Librarian
B.A., 1941, Whittier College	
*HOFFACKER, BARBARA (1966)	Instructor of English
B.A., 1954, Miami University; M.A., 1966, California State College at Hayward	
HOFFMAN, RICHARD B. (1965)	Assistant Professor of Business Administration
B.S., 1964, M.B.A., 1965, University of California at Los Angeles	
HONG, SOON-YOUNG (1965)	Librarian
B.A., 1960, M.A., Ewha Women's University, Korea; M.L.S., 1965, University of California	
*HOROWITZ, LAURENCE J. (1967)	Assistant Professor of Education
A.B., 1948, Long Island University; B.S., 1949, University of California, Berkeley	
HSIEH, MARGARET M. (1966)	Librarian
B.A., 1963, National Taiwan University; M.L.S., 1966, University of California, Berkeley	
HUDSON, DON RICHARD (1965)	Assistant Professor of Physical Education
B.A., 1958, M.A., 1963, San Francisco State College; Ed.D., 1965, University of Utah	
HUNT, JUDITH ANN (1965)	Assistant Professor of Psychology
A.B., 1960, Brown University; M.S., 1964, Ph.D., 1964, Northwestern University	
HUNTER, ULYSSES (1964)	Associate Professor of Mathematics
B.S., 1959, A.M. & N. College, Arkansas; M.S., 1961, Ph.D., 1964, Purdue University	
HUTTMAN, ELIZABETH D. (1965)	Assistant Professor of Sociology
B.A., 1951, Syracuse University; M.S., 1955, Cornell University (on leave)	
INBERG, CAROL (1963)	Assistant Professor of Business and Economics
A.B., 1943, C.P.A., 1952, M.B.A., 1960, University of California	
JACKMAN, NORMAN (1965)	Professor of Sociology
B.A., 1947, B.L.S., 1950, M.A., 1953, Ph.D., 1955, University of California	
JAEGER, DANIEL J. (1960)	Librarian
B.A., 1950, University of Denver; M.A., 1955, University of Minnesota	
JAY, EDWARD J. (1964)	Chairman, Comparative Studies in Asian Cultures; Associate Professor of Anthropology
B.A., 1952, Queens College; M.A., 1957, Ph.D., 1963, University of Chicago (on leave)	
JAY, RICHARD E. (1964)	Special Assistant to the President; Professor of Economics
A.B., 1946, M.A., 1947, Texas Christian University; Ph.D., 1953, University of California; LL.B., 1963, Boalt Hall, University of California School of Law; Member California State Bar	
JESSNER, PETER HANS (1964)	Associate Professor of Mathematics
A.B., 1949, Harvard College; M.S., 1951, University of New Mexico; Ph.D., 1962, University of North Carolina	
JOHNSON, J. THOMAS (1965)	Assistant Professor of Philosophy
B.A., 1955, University of Minnesota; M.A., 1958, Columbia University	
JOHNSON, MARY K. (1966)	Librarian
B.A., 1960, East Central State College; M.L.S., 1963, University of Oklahoma	
JONES, TUDOR (1964)	Associate Professor of Education
A.B., 1949, San Jose State; M.A., 1951, Stanford University; Ed.D., 1965, University of California	
JONES, WILLIAM E. (1963)	Coordinator of Field Experience-Secondary
A.B., 1957, University of California; M.A., 1961, San Diego State College; Ed.D., 1964, University of California	Associate Professor of Education

* Part time

Faculty

JOYAL, ARNOLD E. (1964)	Professor of Educational Administration
A.B., 1925, M.A., 1926, Ph.D., 1931, University of California; L.H.D., 1959, California College of Medicine	
*KELLER, LEO (1966)	Assistant Professor of Statistics
B.A., 1958, University of Denver; Ph.D., 1963, Indiana University	
KENNARD, JEAN E. (1967)	Assistant Professor of English
B.A., 1959, University of London; M.A., 1966, University of California, Berkeley	
*KERN, CAROL G. (1966)	Instructor of Mathematics
A.B., 1951, Chico State College	
KIMELDORF, GEORGE S. (1965)	Assistant Professor of Mathematics
A.B., 1960, University of Rochester; M.A., 1961; Ph.D., 1965, University of Michigan	
KIMMEL, ARTHUR S. (1965)	Assistant Professor of Foreign Languages
A.B., 1953, M.A., 1954, University of Miami; Ph.D., 1966, University of California	
KLEIN, SUZANNE S. (1966)	Assistant Professor of Political Science
A.B., 1953, Pembroke College; A.M., 1955, Radcliffe College	
KRAFCHICK, MARCELLINE (1964)	Assistant Professor of English
A.B., 1954, Beaver College, Pennsylvania; M.A., 1957, University of North Carolina	
KWANG, CHING-WEN (1965)	Professor of Business and Economics
B.A., 1948, Yenching University; M.A., 1952, University of Southern California; B.S., 1954, Ph.D., 1955, Syracuse University	
LARSEN, ROBERT E. (1965)	Professor of Philosophy
A.B., 1944, Luther College; M.A., 1952, Ph.D., 1957, University of Minnesota	
LAWTON, WILLIAM C. (1963)	Professor of Sociology
B.A., 1933, M.A., 1935, University of Texas; Ph.D., 1955, University of Chicago	
LE PELL, CORBAN (1962)	Associate Professor of Art
B.F.A., 1956, M.F.A., 1959, University of Wichita	
LEPORE, ALBERT R. (1959)	Dean of the College; Professor of Education
B.A., 1942, San Diego State College; M.A., 1949, Teachers College, Columbia University; Ph.D., 1960, Columbia University	
*LETT, WARREN R. (1966)	Assistant Professor of Education
B.Ed., 1959, Melbourne University	
*LEWIS, JAMES S. (1962)	Assistant Professor of Music
B.M., 1948, M.M., 1950, Catholic University of America	
*LEWIS, SHERMAN L. (1966)	Assistant Professor of Political Science
B.A., 1962, Harvard College	
LIMPER, PETER F. (1966)	Assistant Professor of Philosophy
B.A., 1961, M.A., 1965, Yale University	
*LINCOLN, LELAND R. (1962)	Assistant Professor of Music
B.M., 1948, M.M., 1949, Boston University	
*LIVESAY, DANIEL B. (1966)	Instructor of Music
B.A., 1956, San Jose State College	
LIVSON, NORMAN (1966)	Chairman, Department of Psychology, Professor of Psychology
B.S., 1945, M.A., 1949, Ph.D., 1951, University of California	
LOEBS, BRUCE D. (1965)	Assistant Professor of Speech and Drama
B.A., 1959, University of California at Santa Barbara; M.A., 1964, University of Oregon	
LOTT, JAMES A. (1967)	Assistant Professor of History
A.B., 1956, Stanford University; A.M., 1961, Columbia University	
LUETHE, MARIE K. (1965)	Librarian
B.S., 1964, California State College at Hayward	
LUITT, CARL J. (1960)	Professor of Biology and Health Education
B.S.M., 1942, Creighton University; M.D., 1945, Creighton University School of Medicine	
*LYKE, CAROL E. (1966)	Instructor of Biology
B.S., 1962, M.S., 1965, University of Wisconsin	
LYKE, EDWARD B. (1965)	Assistant Professor of Biological Science
B.A., 1959, Miami University; M.S., 1962, Ph.D., 1965, University of Wisconsin	
*MACPHERSON, ANNE M. (1967)	Assistant Professor of Geography
B.A., 1944, B.S., 1945, M.A., 1954, University of Chicago	
*MAGARIAN, HAROLD M. (1966)	Assistant Professor of Biological Science
A.B., 1951, M.A., 1954, Stanford University	
MAHANEY, DAVID W. (1961)	Coordinator of Building Program; Lecturer in Engineering
B.S., 1937, Virginia Polytechnic Institute	
MAIN, ROBERT A. (1966)	Associate Professor of Biological Science
A.B., 1948, University of California at Santa Barbara; M.S., 1953, University of Washington; Ph.D., 1961, University of Michigan	
*MANSFIELD, KENNETH Z. (1966)	Assistant Professor of Music
B.A., 1954, Harvard College; M.A., 1955, Harvard University	
MARKOS, DONALD W. (1966)	Assistant Professor of English
B.S., 1959, Wisconsin State University; M.S., 1960, Mankato State College; Ph.D., 1966, University of Illinois	

* Part time

Faculty

MARSH, JACK N. (1962)	Chairman, Department of Teacher Education; Professor of Education
B.A., 1939, San Jose State College; M.A., 1952, Ed.D., 1957, Stanford University	
MARTIN, MARGERY M. (1962)	Associate Professor of Physical Education
B.S., 1954, Valparaiso University; M.S., 1961, University of Wisconsin	
MARTIN, ROBERT C. (1962)	Acting Head, Division of Creative Arts; Professor of Speech and Drama
B.S., 1940, M.A., 1943, Ph.D., 1953, Northwestern University	
MARTIN, RUTH L. (Mrs.) (1960)	Associate Professor of Education
A.B., 1926, M.A., 1955, University of California	
*MARTINSEN, SHEILA M. (1967)	Instructor of English
B.A., 1950, University of Toronto	
MARUT, CHARLES M. (1966)	Assistant Professor of Mathematics
B.S., 1960, M.S., 1962, Ph.D., 1966, Purdue University	
MATHEWS, ALFRED (1963)	Associate Professor of Physical Education
A.B., 1954, M.A., 1958, Ed.D., 1966, University of California	
MATSUMOTO, ROY T. (1965)	Assistant Professor of Psychology
B.A., 1962, University of Hawaii; M.A., 1964, Ph.D., 1965, State University of Iowa	
MATTHEWS, M. RICHARD (1966)	Instructor of English
A.B., 1961, Saint Patrick's College; S.T.B., 1963, Gregorian University, Rome	
*MATULICH, SERGE (1966)	Assistant Professor of Business and Economics
B.S., 1964, Sacramento State College	
MAYER, FORREST L. (1960)	Dean of Educational Services; Professor of Business
A.B., 1937, Colorado State College; M.S., 1938, University of Denver; Ph.D., 1949, University of Pittsburgh	
MAYERS, EUGENE D. (1963)	Chairman, Department of Philosophy; Professor of Philosophy
A.B., 1936, Yale College; LL.B., 1940, Yale School of Law; Ph.D., 1956, Columbia University	
McAFFEE, MALCOLM (1966)	Associate Professor of Sociology
B.A., 1944, University of Chicago; B.D., 1945, Yale Divinity School; M.A., 1950, Ph.D., 1954, Yale Graduate School	
McCOLM, CAROL A. (1966)	Assistant Professor of Biological Science
B.A., 1961, M.S., 1963, University of Minnesota	
McGINNIS, SAMUEL E. (1963)	Assistant Professor of Biological Science
B.S., 1958, University of Wisconsin; Ph.D., 1965, University of California	
McHUGH, WALTER S. (1960)	Professor of Education
B.S., 1953, Lowell State College; Ed.M., 1957, Ed.D., 1960, Boston University	
McKNIGHT, ROBERT K. (1966)	Associate Professor of Anthropology
B.A., 1951, Miami University; M.A., 1954, Ph.D., 1960, Ohio State University	
*McMULLEN, STERNE (1967)	Instructor of English
A.B., 1965, University of California, Berkeley	
MECHANIC, ARNOLD (1961)	Associate Professor of Psychology
B.A., 1954, Queens College; M.A., 1955, Ohio State University; Ph.D., 1960, University of California	
MEHLING, REUBEN (1965)	Chairman, Interdivisional Committee on Mass Communications; Professor of Journalism and Mass Communications
B.A., 1949, University of California; M.A., 1950, University of Iowa; Ph.D., 1957, Stanford University	
MERRIFIELD, CHARLES WARREN (1960)	Head, Division of Social and Behavioral Sciences; Professor of Social Science
A.B., 1935, M.A., 1935, University of Chicago; Ph.D., 1952, Claremont Graduate School	
MEUTER, ROBERT G. (1965)	Librarian
B.A., 1956, Golden Gate College; B.A., 1960, M.A., 1965, San Jose State College	
*MILLER, JOHNN T. (1966)	Lecturer in Business and Economics
B.B.A., 1950, University of Texas; M.A., 1956, Arizona State College	
*MINOR, DAVID M. (1966)	Assistant Professor of Mathematics
A.B., 1955, M.A., 1963, San Jose State College	
MINOTT, RODNEY G. (1966)	Head, Division of Humanities; Professor of History
B.A., 1953, M.A., 1954, Ph.D., 1960, Stanford University	
*MINSER, J. ROBERT (1964)	Associate Professor of Music
B.M.E., 1950, University of Wichita; M.S.M.E., 1955, University of Illinois	
MINTZ, LEIGH W. (1965)	Assistant Professor of Geology
B.S., 1961, M.S., 1962, University of Michigan; Ph.D., 1966, University of California	
*MITROFF, IAN I. (1966)	Lecturer in Business and Economics
B.S., 1961, M.S., 1962, Ph.D., 1963, University of California, Berkeley	
MONSON, RICHARD S. (1963)	Associate Professor of Chemistry
B.S., 1959, University of California at Los Angeles; Ph.D., 1964, University of California	
*MOONEY, JOHN B. (1966)	Assistant Professor of Chemistry
B.S., 1950, University of Santa Clara; M.S., 1953, Stanford University	

* Part time

Faculty

MORFORD, ROBERT W. (1965) Chairman, Department of Health and Physical Education, Professor of Health and Physical Education
B.P.E., 1956, M.P.E., 1959, University of British Columbia; Ed.D., 1964, University of California

MORGENROTH, WILLIAM M. (1967) Head, Division of Business and Economics; Professor of Business and Economics
A.B., 1937, M.B.A., 1940, University of Michigan; Ph.D., 1962, University of Pittsburgh

*MUI, VICTORIA C. (1966) Assistant Professor of Education
B.S., 1960, M.S., 1964, Boston State College; Ph.D., 1966, University of California, Berkeley

MUIR, DONALD BELDEN (1960) Associate Professor of Speech and Drama
B.A., 1951, George Washington University; M.A., 1954, Stanford University

*MYERS, ELIZABETH B. (1966) Instructor of Anthropology
B.A., 1966, California State College at Hayward

MYERS, HAROLD W. (1965) Assistant Professor of Art
A.B., 1954, San Jose State College; M.F.A., 1959, Mills College

NELKEN, ZOILA E. (1966) Assistant Professor of Foreign Languages
A.B., 1934, H. Sophie Newcomb College; M.A., 1936, Tulane University

NELSON, MARVIN D. (1967) Assistant Professor of Music
B.Mus., 1951, Lewis and Clark College

*NELSON, NELS B. (1967) Lecturer in School Administration
B.A., 1947, M.A., 1948, Ed.D., 1961, University of California, Berkeley

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B.S., 1956, University of California, Berkeley; M.B.A., 1966, San Jose State College

NICHOLS, JAMES L. (1966) Assistant Professor of Political Science
B.A., 1954, University of Denver; M.A., 1956, Syracuse University

NICHOLSON, ROBERT F. (1966) Assistant Professor of Sociology
A.B., 1963, M.A., 1966, University of California, Berkeley

NIEPOTH, EDWARD W. (1960) Chairman, Department of Recreation; Professor of Recreation
B.A., 1949, M.A., 1950, Chico State College; Ed.D., 1962, Stanford University

NOMIKOS, EUGENIA V. (1964) Associate Professor of History
B.A., 1948, Hood College; M.A., 1950, Columbia University; Ph.D., 1962, Stanford University

NORDSTROM, EARLE W. (1962) Business Manager
B.S., 1950, University of California

NYBAKKEN, JAMES W. (1965) Assistant Professor of Biological Science
B.A., 1958, St. Olaf College; M.S., 1961, Ph.D., 1965, University of Wisconsin

OLSEN, EDWARD G. (1966) Professor of Education
A.B., 1930, Pacific University; M.A., 1932, Columbia University; B.D., 1933, Union Theological Seminary; Ed.D., 1937, Teachers' College, Columbia University

ONNEWEER, CORNELIUS W. (1966) Assistant Professor of Mathematics
B.A., 1957, M.A., 1962, Utrecht University

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B.S., 1938, University of California; M.A., 1958, San Jose State College; M.A.T., 1962, Washington State University

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B.S., 1957, Seoul National University, Seoul, Korea; M.S., 1961, Ph.D., 1964, University of Chicago

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B.A., 1947, San Jose State College; M.S., 1950, Stanford University; Ph.D., 1952, Cornell University

PETTI, JOHN (1966) Assistant Professor, Counseling Services
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B.A., 1960, McGill University; M.A., 1961, Inter American University; Ph.D., 1966, Stanford University

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A.B., 1941, Dartmouth College; M.A., 1950, Ph.D., 1965, Stanford University

POOL, KENNETH B. (1964) Assistant Professor of Psychology
A.A., 1950, Ventura Junior College; B.A., 1951, University of California, Santa Barbara

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PRETORIUS, WYNAND J. (1966) Lecturer in Mathematics
B.Sc., 1933, Rhodes University; M.Sc., 1935, Grahamstown; D.I.C., 1936, Imperial College, London

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PURDY, C. RICHARD (1959) Professor of Mathematics
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PURVIS, COLBERT T. (1960) Professor of Mathematics
B.S., 1940, Georgia Teachers College; M.S., 1948, East Texas State Teachers College; Ph.D., 1957, George Peabody College

PYLE, JOYCE S. (1961) Librarian
B.A., 1944, Reed College; M.L.S., 1945, Columbia University

*QUINN, JAMES M. (1966) Instructor of Health and Physical Education
B.S., 1963, Eastern Montana College

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A.B., 1950, A.M., 1953, University of California at Los Angeles; Ph.D., 1957, Harvard University

RAILTON, ESTHER P. (1960) Associate Professor of Education
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RAMOS, MELVIN J. (1966) Associate Professor of Art
B.A., 1958, Sacramento State College

RANDALL, ARNE WILLIAM (1960) Professor of Art
B.A., 1938, Central Washington State College; M.A., 1940, Teachers College, Columbia University

RATNER, MARC L. (1967) Professor of English
B.A., 1950, Fordham University; M.A., 1951, University of Pennsylvania; Ph.D., 1958, New York University

REEVES, ROSA (1965) Assistant Professor of Foreign Languages
B.A., 1961, NorthWestern State College

*REIFF, ALLAN R. (1967) Lecturer in History
B.A., 1962, M.A., 1965, San Francisco State College

* Part time

Faculty

REMPLE, ROBERT K. (1967)	Instructor of Mathematics
B.A., 1962, University of Kansas; M.S., 1963, Stanford University	
RENSIKOFF, GEORGE J. (1964)	Chairman, Department of Statistics; Professor of Mathematics and Statistics
B.S., 1950, University of Chicago; M.S., 1952, Ph.D., 1955, Stanford University	
REUTER, WILLIAM C. (1965)	Assistant Professor of History
A.B., 1955, M.A., 1959, Ph.D., 1966, University of California	
RICKE, RICHARD B. (1960)	Professor of History
B.A., 1945, M.A., 1947, Ph.D., 1957, University of California	
RIVENES, RICHARD S. (1964)	Associate Professor of Physical Education
B.S., 1960, Washington State University; M.S., 1961, Ph.D., 1964, Pennsylvania State University	
RODRIGUEZ-CEPEDA, ENRIQUE (1967)	Assistant Professor of Foreign Languages
M.A., 1965, Ph.D., 1966, University of Madrid	
ROSE, MELISSA M. (1964)	Librarian
A.B., 1951, M.L.S., 1963, University of California	
ROSENBAUM, MORTON (1960)	Professor of English
B.A., 1943, M.A., 1947, Wayne State University; Ph.D., 1952, University of Wisconsin (on leave)	
ROSZAK, THEODORE (1963)	Chairman, History of Western Culture; Associate Professor of History
B.A., 1955, University of California at Los Angeles; Ph.D., 1958, Princeton University	
*ROTHKOPF, MICHAEL H. (1967)	Assistant Professor of Mathematics
A.B., 1960, Pomona College; M.S., 1962, Ph.D., 1964, Massachusetts Institute of Technology	
SABATH, MILDRED R. (1960)	Professor of Education
B.A., (LAS) 1945, University of Illinois; M.E., 1951, Ed.D., 1960, Wayne State University	
SALERA, VIRGIL (1959)	Professor of Business Administration and Economics
B.S., 1935, M.A., 1936, University of California; Ph.D., 1941, Columbia University	
SALTZER, RUDOLPH B. (1965)	Associate Professor of Music
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SARKAR, ANIL KUMAR (1965)	Professor of Philosophy
B.A., 1933, St. Columba's College; M.A., 1935, Ph.D., 1946, Patna University, Patna, India	
SAWREY, WILLIAM L. (1960)	Professor of Psychology and Statistics
A.B., 1949, Indiana University; Ph.D., 1952, University of Nebraska (on leave)	
*SAXTON, S. EARL (1962)	Assistant Professor of Music
A.B., 1947, University of California; M.A., 1960, San Francisco State College	
SCHOENHOLZ, WALTER K. (1965)	Associate Professor of Biological Science
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*SCOTT, H. BYFORD (1965)	Assistant Professor of Sociology
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SCUDDER, HARVEY L. (1966)	Head, Division of Biological and Health Sciences; Chairman, Department of Health Sciences; Professor of Microbiology
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SEAVEY, JOAN (1962)	Associate Dean of Students; Dean of Women; Associate Professor of Education
B.A., 1939, M.E., 1950, University of Oregon; Ed.D., 1958, Stanford University	
SHAUDYS, VINCENT K. (1963)	Assistant to the President; Professor of Geography
B.A., 1950, Duke University; M.A., 1953, Ph.D., 1956, Ohio State University	
SHELTON, JOHN C. (1965)	Assistant Professor of Chemistry
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SHIPP, ETHEL (1966)	Assistant Professor of Art
B.A., 1951, M.F.A., 1951, California College of Arts and Crafts	
SHIVELY, THORNTON T. (1963)	Librarian
B.A., 1934, Hastings College; M.L.S., 1958, University of California	
SHKURKIN, GEORGE V. (1966)	Instructor of Anthropology
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Faculty

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*SILVERMAN, THALIA (1965)	Assistant Professor of Education
B.S., 1949, M.A., 1956, Northwestern University	
SIMS, JOHN H. (1965)	Assistant Professor of Business Administration
B.S., 1940, United States Naval Academy; M.B.A., 1950, Harvard University	
SKLAR, FRED (1966)	Assistant Professor of Sociology
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SLATOFF, HOWARD A. (1959)	Associate Dean of Students; Dean of Men; Associate Professor of Art
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*SMITH, ALEXANDER R. (1966)	Lecturer in Education
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SMITH, ARLENE H. (1965)	Assistant Professor of Health and Physical Education
B.A., 1956, University of Redlands; M.A., 1960, California State College at Los Angeles	
SMITH, ARTHUR C. (1959)	Chairman, Department of Biological Science; Professor of Biological Science
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SMITH, CLARENCE E. (1964)	Chairman, Department of Geography-Anthropology; Associate Professor of Anthropology
A.B., 1940, Ph.D., 1950, University of California	
SMITH, J. MALCOLM (1965)	Chairman, Department of Political Science; Professor of Political Science
B.A., 1946, University of Washington; M.A., 1948, Ph.D., 1951, Stanford University	
SMITH, MARIANNE (1963)	Associate Professor of Mathematics
B.S., 1943, Queens College; M.S., 1944, Ph.D., 1947, University of Illinois	
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SNOW, LORENZO H. (1967)	Associate Professor of Sociology
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B.S., 1947, M.A., 1950, Ph.D., 1962, University of Minnesota	
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SPENCER, JAMES E. (1963)	Associate Professor of Education
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SPRAGUE, DOUGLAS G. (1965)	Assistant Professor of Education
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STANIFORTH, GWENDOLYN E. (1964)	Assistant Professor of English
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STANLEY, JUDITH M. (1966)	Instructor of History
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STEVENS, JOHN M. (1965)	Associate Professor of Education
B.S., 1953, M.A., 1955, University of Chicago; Ed.D., 1965, University of California	
STRASBURG, L. GLEN (1964)	Chairman, Department of Management; Professor of Business Administration
B.S., 1953, University of Utah; M.B.A., 1960, Ph.D., 1962, Ohio State University	
STRONG, DONALD J. (1963)	Director of Counseling Services; Professor of Psychology
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SUMMERS, JOHN W. (1961)	Professor of Mathematics and Statistics
A.B., 1951, M.A., 1955, San Jose State College; Ph.D., 1961, University of California	
*SWARTOUT, SFERWIN G. (1966)	Professor of Education
B.A., 1939, Valley City State College; M.S., 1946, University of North Dakota; Ph.D., 1950, Ohio State University	
*TAPIRO, RUDOLPH E. (1966)	Assistant Professor of Music
A.B., 1951, M.A., 1954, San Francisco State College	
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Faculty

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TICKNER, ELSE (Mrs.) (1962)	Librarian
B.A., 1951, University of Minnesota; M.S., 1952, Columbia University	
TOFT, DANIEL J. (1966)	Assistant Professor of History
B.A., 1957, Grinnell College; M.S., 1962, University of Wisconsin	
TRACEWELL, THEODORE N. (1962)	Associate Professor of Mathematics
B.A., 1959, Ph.D., 1964, University of California	
*TREADWELL, LUJUANA W. (1966)	Instructor of English
B.A., 1964, M.A., 1966, University of Arizona	
TRUMBO, BRUCE E. (1965)	Associate Professor of Statistics
A.B., 1959, Knox College; M.S., 1961, Ph.D., 1965, University of Chicago	
*TUTTLE, CARROLL S. (1965)	Instructor of Music
B.A., 1965, California State College at Hayward	
VAN AKEN, MARK J. (1966)	Director, Latin American Studies; Professor of History
A.B., 1944, University of Michigan; M.A., 1950, Ph.D., 1955, University of California, Berkeley	
VANDENBURGH, WILLIAM G. (1960)	Executive Dean, Administrative Services; Professor of Physical Education
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VATUK, VED PRAKASH (1965)	Associate Professor of Foreign Languages
B.A., 1952, M.A., 1954, Meerut College, Agra University, India	
*VICIAN, THOMAS A. (1966)	Assistant Professor of Philosophy
B.A., 1957, Luther College; B.D., 1961, Luther Theological Seminary	
VIDAL, ELIE R. (1965)	Chairman, Department of Foreign Languages and Literature; Professor of Foreign Languages
A.B., 1952, M.A., 1953, Ph.D., 1957, University of Michigan	
VRMEER, RICHARD (1965)	Lecturer in Political Science
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B.A., 1951, Tabor College; M.E., 1954, University of Kansas; Ed.D., 1960, University of California	
WALPOLE, EARL L. (1965)	Assistant Professor of Foreign Languages
B.A., 1962, Arizona State University	
WALZ, JOHN D. (1965)	Assistant Professor of History
B.A., 1951, University of Wyoming; A.M., 1961, Ph.D., 1966, Syracuse University	
WANAMAKER, NEIL T. (1967)	Instructor of Statistics
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A.B., 1952, Jacksonville State College; M.A., 1955, University of Washington; Ph.D., 1964, University of California	
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B.A., 1947, M.A., 1963, University of California	
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B.F.A., 1957, Wayne State University; M.F.A., 1961, Mills College	
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B.A., 1961, University of North Carolina; A.M., 1963, Harvard University	
WELLS, BENJAMIN B., JR. (1966)	Assistant Professor of Mathematics
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WENIG, ADELE R. (1966)	Assistant Professor of Physical Education and Drama
B.S., 1950, University of California; M.A., 1960, Mills College	
*WEST, MARIAN (1964)	Assistant Professor of Music
B.S., 1951, University of Washington	
WHEELER, LAWRENCE (1964)	Associate Professor of Psychology
A.B., 1948, M.A., 1950, Ph.D., 1962, Indiana University	
WHELAN, HAROLD P. (1962)	Associate Professor of Music
B.A., 1937, University of Washington; M.M., 1947, Northwestern University	
*WHELAN, TRULIA J. (1966)	Assistant Professor of Music
B.A., 1939, University of Washington	
WHIMBEY, ARTHUR E. (1967)	Assistant Professor of Psychology
B.A., 1961, University of Miami; B.S., 1963, Ph.D., 1965, Purdue University	
WHITE, JULIAN M. (1965)	Assistant Professor of Music
B.S., 1957, M.S., 1958, Juilliard School of Music	

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Faculty

WHITE, ROBERT M. (1962)	Chairman, Department of Counseling and Pupil Personnel; Professor of Education
B.A., 1947, Dakota Wesleyan University; M.A., 1954, Ph.D., 1958, University of Minnesota	Professor of Physics
WHITEHEAD, MARIAN (1964)	Professor of Physics
B.A., 1944, Reed College; M.A., 1945, Columbia University; Ph.D., 1951, University of California	
WHITEHORN, EUGENE D. (1963)	Coordinator, Materials Preparation Services; Associate Professor of Education
B.S., 1938, M.E., 1946, Wayne State University	
WHITNEY, ROBERT C. (1963)	Chairman, Department of Earth and Physical Science; Professor of Physical Science
B.S., 1947, University of Washington; M.S., 1958, Ph.D., 1963, Cornell University	Instructor of English
*WILCOVE, JOANNA (1967)	Assistant Professor of Music
B.A., 1962, University of Rochester; M.A., 1964, University of California	
*WILLIAMS, MILTON H. (1966)	Associate Professor of English
B.M., 1963, San Francisco Conservatory of Music	
*WILLIAMS, ROBERT C. (1963)	Associate Professor of Education
A.B., 1949, A.M., 1953, Ed.D., 1960, Stanford University	
WILLIAMS, ROBERT V. (1963)	Professor of English
B.A., 1948, Cornell University; M.A., 1950, Stanford University	
WINTER, ROBERT E. (1965)	Assistant Professor of Geography
B.S., 1962, M.S., 1965, University of Wisconsin	
*WOLF, ARNE (1966)	Assistant Professor of Art
Studied one year at Art School, Hamburg, and three years at the Academy of Fine Arts, Munich, Germany	
*WOOD, DOUGLAS K. (1966)	Assistant Professor of History
B.A., 1960, George Washington University; M.A., 1961, Yale University	
WOODS, MARION C. (1960)	Chairman, Department of Chemistry; Professor of Chemistry
B.S., 1947, Colorado State University; M.S., 1948, California Institute of Technology; Ph.D., 1950, Cornell University	
WORLAND, CHARLES W. (1960)	Coordinator, Utilization Services; Professor of Education
A.B., 1948, Indiana University; M.A., 1950, University of Michigan; Ed.D., 1960, Columbia University	
WREN, DALE P. (1959)	Professor of Business Administration
A.B., San Jose State College; M.A., 1950, Ed.D., 1952, Stanford University	
WRIGHT, EDWARD J. (1966)	Associate Professor of Health and Physical Education
M.S., 1959, Ph.D., 1964, University of Southern California	
YALOM, MARILYN K. (1963)	Associate Professor of Foreign Languages (leave)
B.A., 1954, Wellesley College; M.A.T., 1956, Harvard; Ph.D., 1963, Johns Hopkins (on leave)	
YEAGER, HERMAN V. (1960)	Professor of Social Science and Education
A.B., 1950, San Jose State College; M.A., 1951, Ph.D., 1959, Stanford University	
ZEITLIN, HARRY (1960)	Professor of Education
B.S.S., 1948, College of the City of New York; M.A., 1949, Teachers College, Columbia University; Ph.D., 1958, Columbia University	
ZELVER, JACK S. (1967)	Assistant Professor of Mathematics
A.B., 1961, M.A., 1963, University of California, Berkeley	
ZHIVADINOVICH, MILKA RADOICICH (1964)	Associate Professor of Chemistry
M. Chem. Eng., 1934, Belgrade University; Sc.D. (Doctorat es Sciences), 1939, Sorbonne (University of Paris)	
*ZIEGLER, CAROL A. (1966)	Instructor of Mathematics
A.B., 1956, Goucher College; M.A., 1958, Stanford University; M.S., 1964, Harvard University	
ZIEGLER, JOHN A. (1966)	Assistant Professor of Political Science
B.S., 1955, M.S., 1956, Southern Illinois University	

* Part time

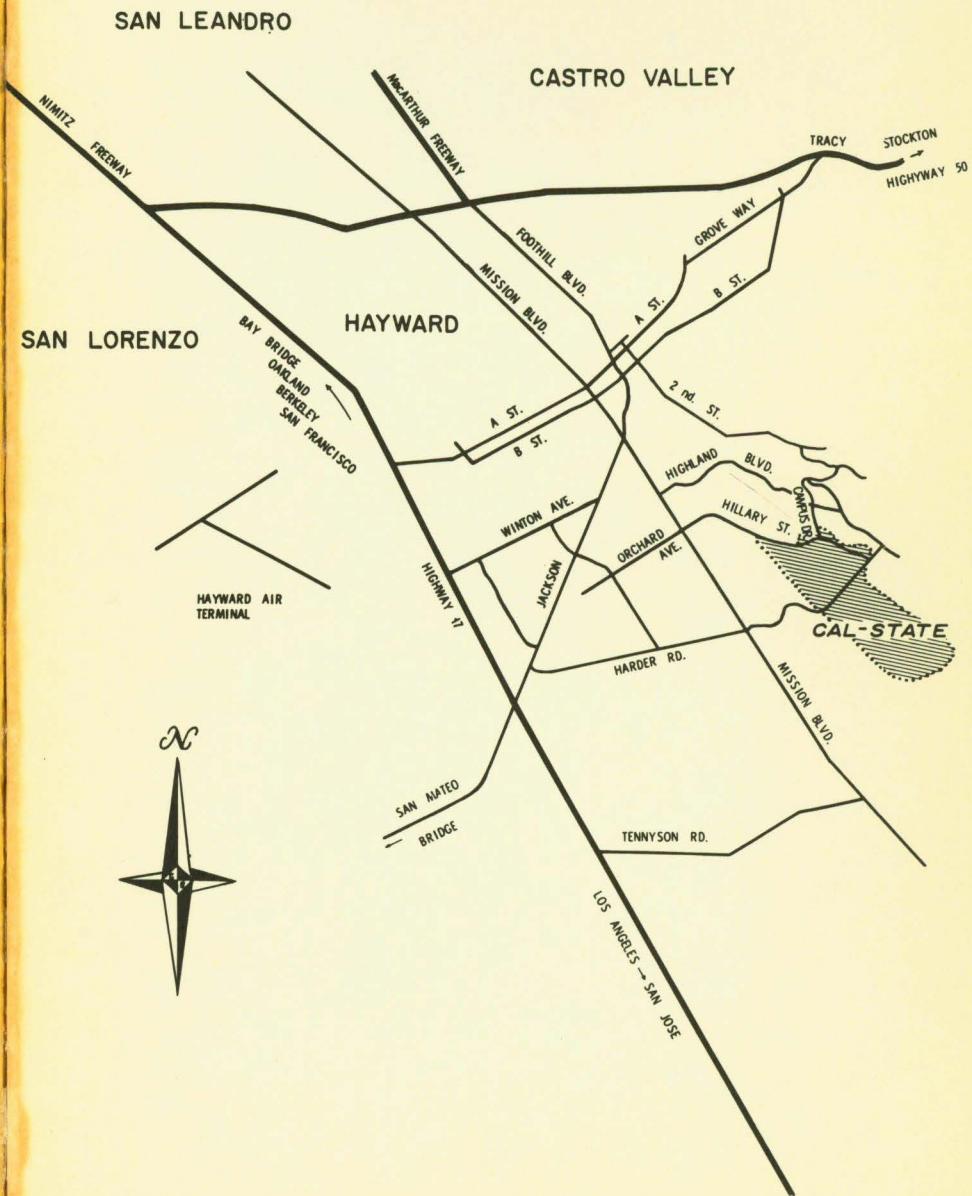
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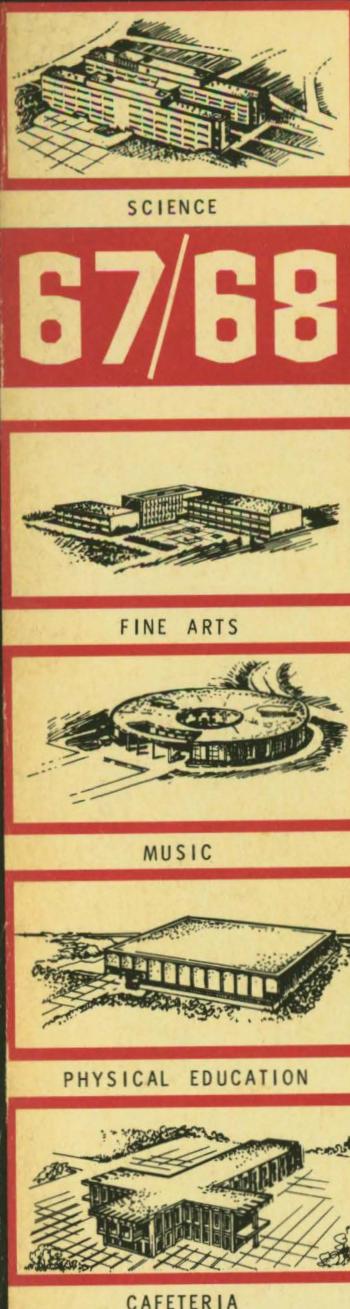
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AREA MAP



Catalog

CALIFORNIA STATE COLLEGE
AT HAYWARD



CALIFORNIA STATE COLLEGE AT HAYWARD CATALOG 1967-1968