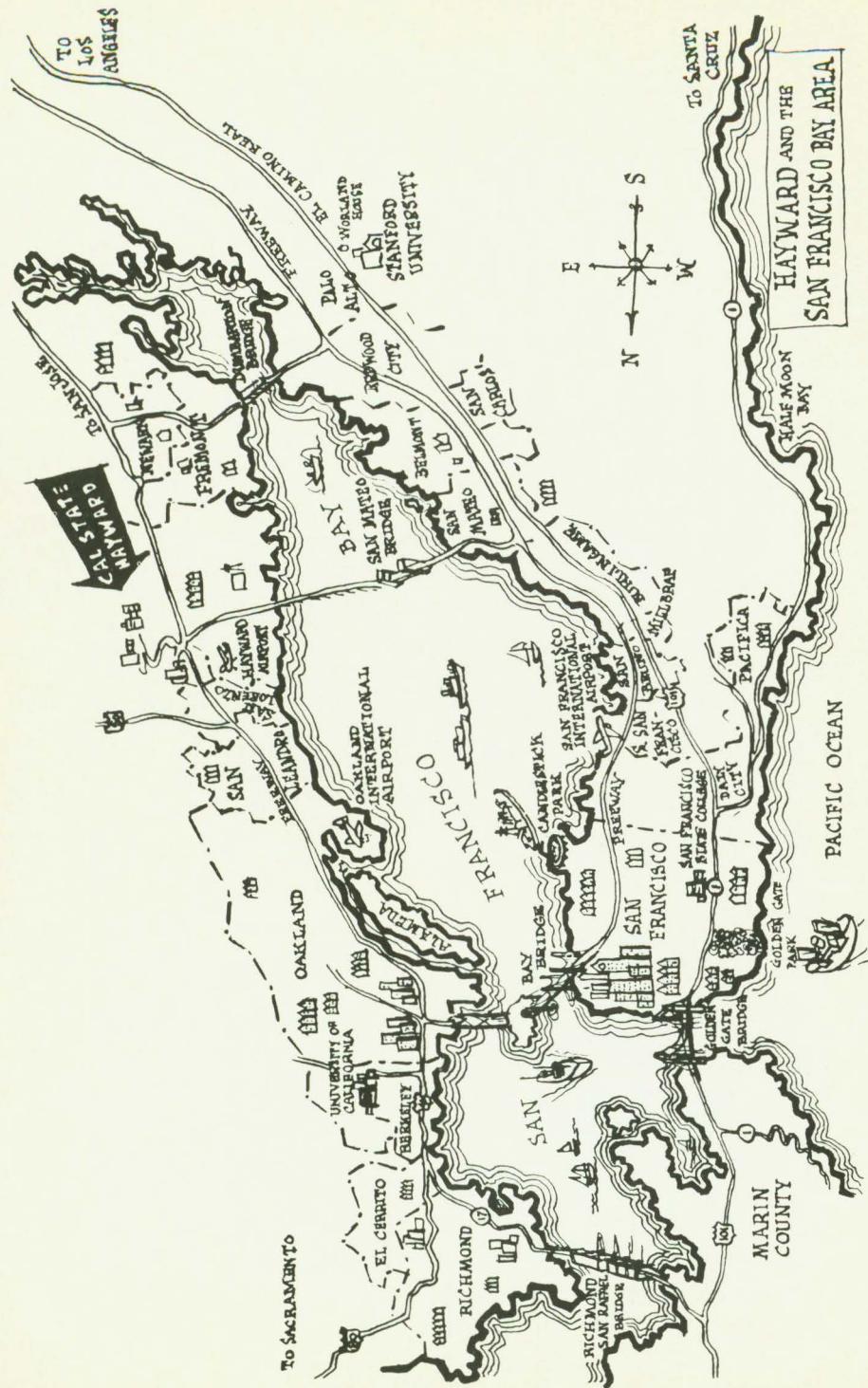


CALIFORNIA STATE COLLEGE AT HAYWARD
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GENERAL BULLETIN



CALIFORNIA STATE COLLEGE at HAYWARD

25800 Hillary Street, Hayward, California

Fifty Cents

Bulletin

1964-1965

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1964-1965 Academic Calendar

FALL QUARTER 1964

July 1	Last day to apply for admission to fall quarter *
Sept. 21-26	Testing, orientation and academic advisement
Sept. 28-29	Registration and payment of fees
Sept. 30	Classes begin
Sept. 30-Oct. 7	Late registration period
Oct. 7	Last day for enrolled students to add classes or drop classes without a grade mark
Nov. 10	Last day to drop classes with a grade mark of "W" or "WF"
Nov. 11	Veterans Day (all-college holiday)
Nov. 25	Last day to file application for graduation in fall quarter. Last day for winter quarter graduates to complete graduation checks
Nov. 26	Thanksgiving Day (all-college holiday)
Nov. 26-27	Thanksgiving recess
Nov. 30-Dec. 4	Academic advisement for continuing students
Dec. 4	Last day to apply for admission to winter quarter *
Dec. 11	Last day of classes
Dec. 14-18	Final examinations
Dec. 18	End of quarter. Grades due in Records Office
Dec. 19-Jan. 3	Academic recess

WINTER QUARTER 1965

Jan. 4-5	Registration and payment of fees
Jan. 6	Classes begin
Jan. 6-13	Late registration period
Jan. 13*	Last day for enrolled students to add classes or to drop classes without a grade mark
Feb. 12	Last day to drop classes with a grade mark of "W" or "WF"
Feb. 26	Last day to apply for admission to spring quarter *
March 1-5	Academic advisement for continuing students
March 5	Last day to file application for graduation in winter quarter
March 12	Last day for spring quarter graduates to complete graduation checks
March 15-19	Last day of classes
March 19	Final examinations
March 20-28	End of quarter. Grades due in Records Office
	Academic recess

SPRING QUARTER 1965

March 29-30	Registration and payment of fees
March 31	Classes begin
March 31-April 7	Late registration period
April 7	Last day for enrolled students to add classes or to drop classes without a grade mark

* Exceptions are made for full time teachers who: (1) have a regular or standard credential; (2) wish to carry 6 or fewer units; and (3) are not pursuing a degree or credential. They may apply for admission on presentation of either the regular credential or a transcript showing completion of the degree and be admitted until the close of the regular registration period.

SPRING QUARTER 1965—Continued

April 16	Last day to file application for graduation in spring quarter
April 21	Last day to file application for teaching credentials
May 7	Last day to drop classes with a grade mark of "W" or "WF"
May 14	Last day for summer and fall 1965 graduates to complete graduation checks
May 24-28	Academic advisement for students continuing in the fall
May 31	Memorial Day (all-college holiday)
June 4	Last day of classes
June 7-11	Final examinations
June 11	Grades due in Records Office
June 12	Commencement
June 12	End of quarter

SUMMER QUARTER 1965

June 21	Registration
June 22	Classes begin
July 5	Independence Day (all-college holiday)
July 16	Last day to file for graduation (summer)
August 27	End of session. Grades due in Records Office August 30

The Summer Quarter will include a Six Week term and a Four Week term. The Six Week Summer Term ends July 30. Grades for the Six Week Summer Term are due in the Records Office on August 2. Registration for the Four Week Summer Term is August 2. Classes begin August 2.

Other Important Deadline Dates for Students

FALL QUARTER 1964

Oct. 21	Last day for application for admission to the teaching credential programs and, or student teaching phase I
Nov. 20	American Institutions, U. S. Constitution, California Government Examinations

WINTER QUARTER 1965

Feb. 3	Last day for application for admission to the teaching credential programs and, or student teaching phase I
Feb. 19	American Institutions, U. S. Constitution, California Government Examinations

SPRING QUARTER 1965

April 21	Last day for application for admission to the teaching credential programs and, or student teaching phase I
April 23	American Institutions, U. S. Constitution, California Government Examinations

SUMMER QUARTER 1965

July 19	Last day for application for admission to the teaching credential programs and, or student teaching phase I
July 23	American Institutions, U. S. Constitution, California Government Examinations

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2930 West Imperial Highway
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25800 Hillary Street, Hayward, California	
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18111 Nordhoff Avenue, Northridge, California	
Stanislaus State College	Dr. Alexander Capurso, President
P.O. Box 1000, Turlock, California	
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265 College View Drive, Cotati, California	
California State College at Palos Verdes	Dr. Leo F. Cain, President
Mailing Address: 2930 West Imperial Highway, Inglewood, California	
California State College at San Bernardino	Dr. John M. Pfau, President
Mailing Address: 532 Mountain View Avenue, San Bernardino, California	

THE CALIFORNIA STATE COLLEGES

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 16 campuses of the California State Colleges (with two additional campuses in the planning stage) represent the largest system of public higher education in the Western Hemisphere and one of the largest in the world. Current enrollment is more than 135,000 full and part-time students. The faculty and administrative staff numbers some 7,000.

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. Each faculty within the system is a 'teaching faculty' whose primary responsibility 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.

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, nine new campuses have been developed and two more are scheduled to begin operation within the next two years. Enrollment in the system is expected to reach 180,000 by 1970.

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Executive Dean

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Dean of Students

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Assistant Dean of Instruction

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Head, Division of Education

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Associate Dean of Students, Dean of Admissions and Records

Tudor Jones

Associate Dean of Students and Dean of Men

Howard A. Slatoff

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Director, Instructional Computation Center

Thomas H. Southard

Supervisor, Administrative Records Center

Terry B. Clark

Director, Office of Institutional Studies

Robert E. Bates

CALIFORNIA STATE COLLEGE AT HAYWARD

California State College at Hayward occupies a striking 365-acre campus overlooking San Francisco Bay. Its regional service area includes the East Bay counties with a population of approximately one and one-half million persons. Although most of the students come from the region, many come from other counties, states and several foreign countries.

The City of Hayward is centrally located in the area and has experienced recent explosive growth which has increased the population to more than 80,000.

California State College at Hayward was established by the Legislature in 1957 and opened in temporary quarters in the fall of 1959. Initial enrollment of 179 students has mushroomed to approximately 2,500 in the brief span of five years.

In January 1959 the State Board of Education appointed Dr. Fred F. Harclerode president of the College. Before accepting his present appointment Dr. Harclerode served as dean of the college at San Jose State College.

Present facilities at Cal-State include a Science and Library Building, Fine Arts Building, Field House, and service buildings. A circular-shaped Music Building of distinctive design is now under construction and will be ready for occupancy in September 1965.

Three new dormitories to be situated near the Hillary Street entrance to the campus are under construction by a private contractor. The first dormitory, designed to house 300 students, will be ready in the fall of 1964.

Cal-State at Hayward now offers programs leading to the baccalaureate degree in 22 different majors and programs leading to the master's degree in mathematics and English. The College has a distinguished faculty carefully selected on the basis of education and experience. Approximately 75 percent of the full-time faculty hold the doctorate degree.

California State College at Hayward is accredited by the Western Association of Schools and Colleges, official accrediting group for colleges and universities in this area.

ADMISSION AND REGISTRATION

ADMISSION TO THE COLLEGE

Plan of Admission

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 they meet the admission standards appropriate to their entrance level. Admissions standards in the California State Colleges are prescribed by the Trustees of the California State Colleges and are stated in the California Administrative Code, Title 5, Education,* which provides a uniform pattern of admissions regulations for all the colleges. The specific admission requirements according to each respective class level may be found later in the catalog.

General Admission Policies and Procedures

Who Must Apply

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. Official transcripts from each institution attended since leaving this College must be filed in the Office of Admissions. Students graduating with baccalaureate degrees from Cal-State must reapply for admission to take work at the graduate level. Students disqualified from this College are referred to the section, "Scholarship Status," in order to determine their eligibility for readmission.

When to Apply

An application for admission or readmission should be filed at least one month prior to the beginning of the term for which the student

* 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.

plans to enroll. The final date for filing applications for admission and readmission for each term is as follows:

July 1	Fall Term
December 4	Winter Term
February 26	Spring Term

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 (7) semesters of high school work, will be granted a provisional acceptance. Upon receipt of a subsequent transcript which shows the granting of the high school diploma, the student will be notified that his admission status is clear.
2. A student who has graduated from high school may file an application, required transcripts, and application fee at any time before the deadline dates and be considered for admission to this institution.

Where to Apply

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, California State College at Hayward, 25800 Hillary Street, Hayward, California.

Policy Regarding Transcripts

It is the applicant's responsibility to see that the official transcript(s) (those required for his type of admission classification) be sent directly from the high schools and/or colleges attended. 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.

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.

It is highly recommended that applicants have a complete personal set of transcripts which they may take to their advising sessions each term.

Application Fee

All persons applying for admission to this College for the 1964-65 academic year will be required to pay a \$5 application fee. 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

Admission

payable to: *California State College at Hayward*. Please do not send cash.

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 decisions 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 effect their residence classification.

Required Examination

All new undergraduate students are required to take the American College Testing Program (ACT) examination prior to the first registration at this institution. Students who have completed this test for another institution should arrange to have the results sent to the Testing Office in lieu of taking the test a second time.

For most applicants, particularly those freshman students admitted under Provision I, as described in the section "Admission With Freshman Standing," the results are used primarily for advising and placement purposes. The test results are not used in these cases to determine a student's admissibility to the College. For freshman students qualifying for admission under Provision II, however, the ACT results will be used in determining their admissibility to the College.

The ACT may be taken at testing centers throughout the United States on established national testing dates during the year, or at specially designated testing sessions at California State College at Hayward.

Health Data

Each student pursuing an objective offered by this College will be required to complete a health history and take a physical examination before registering. The required two-part form will be sent to the student with the notification of acceptance. The first section (health history) must be completed by the applicant. The second section (physical examination) must be completed by the applicant's family physician. Both sections of the form, however, must be completed and filed in the Student Health Service Office before the student will be permitted to register.

Notification of Acceptance and Evaluation

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

An undergraduate transfer student accepted for admission also will receive an unofficial preliminary credit summary with the notification of acceptance. A subsequent official evaluation of the student's previous

Admission

college work will be completed and sent to the student during his first term of attendance at this college. This latter document will remain valid as long as the 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 State Legislature.

Cancellation of Admission

A student who is accepted for admission to the College for a given term, but does not register, will have this admission cancelled. 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.

Admission With Freshman Standing *

General Qualifications

A high school graduate must meet one of the following requirements, (a) or (b). All freshman applicants must also complete the required entrance examination in order that their applications be considered. American College Testing Program Examination (ACT).

(a) The applicant must have earned 14 or more semester grades of A or B in subjects, taken during the last three years of high school, other than physical education, military science and remedial courses. Six of the 14 grades must be in college preparatory subjects selected from one or more of the following fields (no specific course pattern is required):

- (1) English, including speech, drama, and journalism, other than activity courses.
- (2) Foreign languages.
- (3) Mathematics.
- (4) Natural sciences.
- (5) Social sciences.

(b) The applicant must have earned 10 or more semester grades of A or B in subjects, taken during the last three years of high school, other than physical education, military science, and remedial courses, and have achieved a score at or above the thirtieth percentile on national college freshman norms of a standard college aptitude test. Cal-State requires students to submit the results of the ACT examination.

* Special Note: The California State Colleges will change admission requirements for entering freshmen in the Fall of 1965. High school students who are planning to apply for admission to a state college at that time should consult with their high school counselors about the new freshman admission standards during the 1964-65 academic year. Counselors will be informed of these new requirements and all developments concerning them as the year goes on.

Admission

Admission Procedures *

1. Submit an application for admission, \$5 application fee, and Statement of Residence form.
2. File official transcripts which show the courses completed and 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 Advanced Standing

General Qualifications

An applicant who meets the requirements for admission with freshman standing and who has earned credit in one or more accredited junior colleges, colleges, or universities may be admitted if he has a grade point average of 2.0 (grade C on a five-point scale) or better in the total program attempted at such colleges or universities and is in good standing at the last college or university attended.

An applicant who does not meet the requirements for admission with freshman standing must, as a condition for admission, have earned 60 or more units of college credit with a grade point average of 2.0 or better in the total program attempted and must be in good standing as noted above.

Admission Procedure

1. Submit an application for admission, \$5 application fee, and Statement of Residence form.
2. File official transcripts from *each* college attended. Students with fewer than 60 units of acceptable college transfer credit must file transcript(s) of all course work completed and grades earned during the last three years of high school.
3. Arrange to take, or submit results of, the American College Testing Program (ACT) examination sometime *before* the first registration at this college.
4. Complete and file the two-part health form *before* first registration.

Evaluation of Transfer Credits

General Policy

Credits earned in accredited colleges and universities will be evaluated during the first quarter of attendance by the Office of Admissions and advanced standing allowed on the basis of the evidence submitted. Credits toward the fulfillment of graduation requirements will be al-

* NOTE: Eligibility to attend a California State College upon graduation from high school is in accordance with the requirements stated in the section, "Admission with Freshman Standing."

Admission

lowed only insofar as the courses satisfactorily completed meet the standards and the requirements of the basic course pattern of the college. Vocational and remedial courses are examples of credit not accepted on a transfer basis.

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.

Credits for Junior College Work

Credits earned in accredited junior colleges will be evaluated by the Office of Admissions 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 upper-division standing 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.
3. California State College at Hayward and junior colleges within the region 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 as explained under the section "Residence Requirements."

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.

Admission

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, and providing 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 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 these types of backgrounds 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 for the course, and at least one other course, during the regular registration period. The course to be challenged must be listed in the Schedule of Classes as a regular offering for the quarter. An application for credit by examination should be secured from the Office of the Dean of Instruction and approved prior to registration and be submitted to the Records Office by the end of the sixth week of instruction. The examination in the course in question should be administered within the first two weeks of the quarter. To earn credit in this manner, the student must get a "C" or better on the examination. If the examination is passed, the instructor will officially notify the Records Office to indicate the credit on the student's permanent record. If the student fails the examination (D or F), he must either continue taking the course in the regular manner, or officially withdraw from it in the Records Office within one week after completing the examination.

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 residence requirements of the College.

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:

Admission

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 specific programs should be directed to the department offering the program.

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 before being permitted to earn graduate credit at California State College at Hayward.

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 are expected, however, to have satisfied the prerequisites for the particular courses in which they enroll. Students under scholastic disqualification from Cal-State, Hayward or any other college may not enroll in the summer sessions without approval in advance by the Office of Admissions.

Admission of Foreign Students

Foreign students wishing to transfer to this college from another college in the United States should follow the regular admission procedures as directed above.

Foreign students wishing to be admitted to this college from their native country must present convincing evidence of having adequate knowledge of oral and written English to succeed at this institution. The student will also be expected to file an application form and official certified records of his previous schooling.

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 of the regulations of the Immigration Department, as well as those of the college. Special counseling and additional information can be obtained from the Dean of Men who serves as Foreign Students' Adviser.

Admission of Nonresident Students

Admission requirements for nonresident students are the same as those for resident students. A nonresident tuition fee is payable by all

Admission

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 section, "Statement of Residence."

Admission of Adults to Special Status

An applicant who has attained the age of 21 years and is not a high school graduate may be admitted to this college as an adult special student, when, in the judgment of the appropriate college authorities, he has equivalent preparation to that required of high school graduates described in the section "Admission With Freshman Standing." An applicant's test scores and experience are evaluated in terms of evidence of ability to do college level work. Further information regarding this type of admission can be obtained from the Office of Admissions.

Admission of Part-time Students

Persons who plan to enroll for six or fewer quarter units per term must qualify and follow the procedures under one of the provisions listed previously for admission with freshman standing, admission with advanced standing, admission with graduate standing, or admission of adults to special status.

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 California State College at Hayward under full benefits extended to veterans. Information concerning veterans' programs can be obtained from the Veterans Affairs Representative in the Dean of Women's 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.

REGISTRATION AND ACADEMIC REGULATIONS

Registration

General Policies

1. All students who register at Cal-State must be properly admitted to the college by the Office of Admissions.
2. Registration by proxy is not permitted.
3. Registration is complete only when program cards have been properly filed and all fees, deposits, and charges are paid. Students are required to pay all monies due the college at the time they register.
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 Records Office.

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.

Course Numbering System

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.

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.

Courses numbered 3000 or higher, when appropriate to the student's objective at Cal-State, may be taken for graduate credit.

Registration

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.

Classification of Students

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

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

Class Rank of Students

Students are assigned class rank according to the following plan:

1. Lower Division:

Freshmen	0-45 quarter units
Sophomores	46-90 quarter units
2. Upper Division:

Juniors	91-135 quarter units
Seniors	136 or more units
3. Graduate: Possession of baccalaureate degree from an accredited institution.

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.
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 work is expected of graduate level students.

Individual Study Programs

An Individual Study Class, as defined at this institution, is a course which is listed in the College Bulletin but is not being offered during a term absolutely required by a student to complete a specified objective.

Registration

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. Registration for such classes will take place during the six instructional days following regular registration in the Records Office. This six-day period is commonly known as the Late Registration Period. Any additional fees due the College will be assessed at this time. No "change of program" fee will be required.

Independent Study Programs

An Independent Study Class, as defined at this institution, is a program of study which is above and beyond the regular offerings of a department. The number of such a course will be 4900, 5900, 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.

Students are responsible for securing and completing the Application for Independent Study from the division secretary. Registration for such classes will take place during the six instructional days following regular registration in the Records Office. This six-day period is commonly known as the Late Registration Period. Any additional fees due the College will be assessed at this time. No "change of program" fee will be required.

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 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.

Registration

Dual Registration

Simultaneous matriculation in two academic institutions is not recommended. In exceptional cases should this condition be considered important or necessary, the total academic program must be planned and approved in conjunction with the student's adviser. Approval for dual matriculation must be made before the student is processed for admission. Forms and instructions for obtaining approval can be secured from the Dean of Instruction's Office. Failure to file this official notification of dual registration in the Office of Admissions may result in loss of credit for units simultaneously earned at other institutions.

Late Registration

A late registration period of six instructional days is available to 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.

Residence Status

During a student's first registration at this College, he must complete a Statement of Residence document, required by the State of California, attesting to his legal domicile. Any student classified as a nonresident is subject to nonresident tuition in addition to the regular material and service fee. Additional information can be obtained in the sections headed, "Statement of Residence" and "Admission of Nonresident Students." Specific questions concerning resident status should be referred to the Office of Admissions.

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 Registration

Adding Courses

During the first six (6) days of instruction, a student may add courses to a program already filed. An "Add Card" must be filed in the Records Office for each course added. A small service charge will be made for each course added to a student's program during this period. Add Cards can be obtained in the Records Office. (See also the section, "Late Registration.")

Registration

Dropping Courses

During the first six (6) days of instruction, a student may drop a course without a grade mark being recorded. A "Drop Card" must be filed in the Records Office for each course dropped. A small service charge will be made for each course dropped from a student's program during this period. A grade of "F" will be entered on a student's permanent record when he registers for a course and then drops out of it without filing an official Drop Card.

Withdrawal From Courses

A student who finds it necessary to withdraw from a course after 6 instructional days have lapsed, and before the end of the sixth week of instruction, must file a special "Withdrawal Card" in the Records Office. If the student is passing the course at the time of withdrawal, a mark of "W" will be entered on the permanent record. If the student was failing the course at the time of withdrawal, a mark of "WF" will be entered on his permanent record and the units of credit for that course will be included in the computation of the student's grade-point average. A student who withdraws from a course without filing the required form in the Records Office will be automatically assigned a grade of "F" in the course.

Students may not withdraw from individual classes after the end of the sixth week of instruction. The only possible exceptions to this regulation can be found under the section, "Marking Policies and Procedures."

Withdrawal From College

Students contemplating withdrawal from college because of personal or academic problems are encouraged to consult with the Dean of Men, Dean of Women, or Counseling Office before taking official steps to withdraw.

If complete withdrawal from the College is necessary, official withdrawal forms can be secured from the Records Office, approved by the student's adviser, his instructor(s), 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 (see above).

Students called into the armed forces are referred to the section headed "Military Service Withdrawal."

Schedule of Fees

The regular fees of the College are given below. The fees for auditors are the same as for those receiving credit for a course. "Fees are subject to change upon the approval by the Trustees of the California State Colleges."

Registration**I. Registration Fees (Payable at time of registration)****A. Fall, Winter, and Spring Terms:**

	<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
1. Regular students (More than 6 units):			
Material and service fee	\$25.50	\$25.50	\$25.50
Student Body Fee	7.00	7.00	6.00
	<hr/>	<hr/>	<hr/>
Totals	\$32.50	\$32.50	\$31.50
2. Part-time students (6 or fewer units):			
Material and service fee	\$13.00	\$13.00	\$13.00
Student body fee	2.00	2.00	2.00
	<hr/>	<hr/>	<hr/>
Totals	\$15.00	\$15.00	\$15.00
3. Nonresident tuition, per quarter (in addition to above fees):			
1 to 14 units		\$11.50 per unit	
15 or more units		\$167.00 total	
4. Foreign student tuition, per quarter (in addition to fees in 1 or 2 above):			
1 to 14 units		\$5.75 per unit	
15 or more units		\$85.00 total	
B. Extension Division			\$6.50 per unit
C. Summer sessions		<i>First 6-week Session</i>	<i>Post Session</i>
Material and service fee		\$9.50 per unit	\$9.50 per unit
Student body fee *		3.00 only	1.00 only
There is no nonresident tuition for summer sessions.			

II. Other Costs (Payable when service is rendered):

A. Application fee	\$5.00
B. Late registration fee	5.00
C. Change of program after final filing date	1.00
D. Failure to meet administratively-required appointment or time limit	2.00
E. Graduation fee (not a state fee)	10.00
F. Check returned	
1. Registration check	5.00
2. Any other check	1.00
G. Parking fee **	
1. Regular student	9.00/qtr.
2. Part-time student	4.00/qtr.
H. Official transcript of record (no charge for first copy)	1.00
I. Items lost or broken	Cost

III. Refund Regulations

- 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.
- 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

* No student body fees are necessary for either session if the student paid \$20 during the previous academic year.

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

the Records Office not later than two weeks (14 calendar days) after the term begins.

- Partial refunds may be granted to students receiving administrative suspension providing a request is filed by the student in the Records Office.

- Upon withdrawal from college, *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%

Scholarship Status**IMPORTANT NOTICE***Credential Programs Described in This Bulletin
Are Subject to Change*

The Trustees of the California State Colleges are reviewing all credential programs; supplements to this bulletin describing changes which may be forthcoming will be published as appropriate. Candidates already clearly admitted to a credential program as described in previous college publications will have the option of completing a program either under existing regulations or under subsequent changes. Reference is made to Title 5 of the California Administrative Code, Section 40401.

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 also in his major field.

Policy on Probation and Disqualification**I. UNDERGRADUATE STUDENTS****A. Probation**

- A student who, by special action, is admitted to California State College with a cumulative grade point average of less than "C" in all previous work attempted, shall be placed on probation.
- 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 all units attempted at this college.
- A student shall be placed on probation if reinstated following disqualification.

Registration

4. Probationary standing is cleared when a student achieves a cumulative grade point average of "C" (2.0) in (a) all work at this college, and in (b) all college work attempted.
- 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. If a probationary student earns a grade point average of less than "C" (2.0) during any quarter in residence.
 2. If a probationary student has failed to earn a cumulative grade point average of "C" (2.0) on *all* college work at the end of three 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; or,
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. Students 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.

Petition for Leniency

A student who because of low grades due to illness or other extenuating circumstances believes that he may be disqualified should consult the Associate Dean of Instruction concerning the procedure for presenting his petition. This petition must be presented during the last two weeks of the quarter. If a petition for leniency is filed as a result of this conference, it may be possible for the student to be continued in school. In case a student is disqualified, no immediate reinstatement is granted.

Reinstatement

Immediate reinstatement of students disqualified on the basis of academic performance is not considered. If the student shows evidence of profitable use of the disqualification period, such as acceptable credits from another institution showing superior academic performance, he may be considered for readmission. Questions regarding the reinstatement of disqualified students should be addressed to the Dean of Students.

Earning Graduate Credit While Still an Undergraduate

A student who has no more than 8 quarter units of credit to complete for graduation with a baccalaureate degree from Cal-State may take a

load up to 16 units and apply toward graduate credit up to 9 units beyond those required for graduation. Permission must be obtained from the division chairman in the area where the graduate credit is to be applied prior to such registration. This information must also be made available to the Records Office so that the units can be appropriately posted on the student's permanent record.

Class Attendance

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.

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 arrangements *in advance* 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.

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. The College serves as a reporting agency only, and any decisions affecting the student's Selective Service status will be made by the student's local board. Certification of registration and attendance to the Selective Service Board is accomplished by the Records Office upon request.

Veterans Information

Any student attending college under Provisions of Veterans Administration or the Cal-Vet Program is expected to clarify his status with the Dean of Women's Office at the beginning of each quarter during the registration period. Information about Veterans Administration or Cal-Vet regulations is available in the Dean of Women's Office through the Veterans Affairs Representative.

Observance of Bulletin Requirements

A student at Cal-State, Hayward will follow the *Bulletin* 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

General Regulations

student will be held responsible, however, for complying with changes in requirements which may be effected during this subsequent attendance at the college or by requirements imposed at any time by the Trustees of the State Colleges and/or State Legislature.

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 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 the section "Requirements for Graduation."

Additional Regulations

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.

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. 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.

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 in which the course is offered. An auditor pays the same

General Regulations

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 drop classes. Only students who register to audit a course and who attend the class are eligible to receive the audit ("AU") grade mark.

Credit by Examination

(See "Credit by Examination" in the section on admissions.)

Marking Policies and Procedures

Marking System

The marking system employed at the college is listed below:

1. Regular Grades

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

2. 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* 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 file an approved withdrawal card in the Records Office, approved by the student's adviser, his instructor and the Dean of Students. Students who withdraw from a course after the last day to drop classes without a grade mark 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 Incomplete policy as explained in this Bulletin.

Students who withdraw from courses without filing withdrawal forms or Request-to-Drop forms in the Records Office will be assigned a grade of "F" or "AF" in the course(s).

3. Incompletes ("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

* See college calendar.

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; or,
- 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 and approved by the head of the division offering the course. Incomplete courses automatically revert to grades of "F" if not completed *within* the next calendar year.

4. Military Service Withdrawal

Any student who presents evidence of being called into the armed forces may petition the Records Office for an honorable dismissal up to the last week of the academic term. No academic penalties will be assessed under the conditions and a mark of "W" will be entered on the student's permanent record.

5. Repeated Courses

A student may repeat a course in which he has received a grade of "D" or "F," but may not 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 grade points be counted in the student's record.

REQUIREMENTS FOR GRADUATION

Baccalaureate Degree

General Education

Residence Requirements

A total of 186 units of credit must be earned for graduation with a bachelor of arts degree. Up to 195 units of credit must be earned for a bachelor of science degree, the total depending on the specific major (see individual B.S. majors). Of these totals, 36 units must be earned at Cal-State, Hayward in resident (not extension) courses. At least 18 of these units must be completed among the last 30-quarter units counted toward the degree.

The bachelor of education degree requirements call for 36 units of credit earned from Cal-State, Hayward. Of that amount, at least 18 units must be earned in courses given on the Cal-State College campus after completion of 135 of the required number of quarter units.

Additional Graduation Requirements and Procedures

Scholarship Requirements for Graduation

A student planning to graduate must have an average grade of "C" (2.0) or better on:

1. All units attempted at California State College at Hayward;
2. All units in the major; and
3. All units attempted, including those accepted by transfer from other colleges and universities.

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.

Making Application for Graduation

1. A student is responsible for making an appointment with the Office of Admissions to have a graduation check made during the quarter immediately preceding the term in which graduation is anticipated. (See the college calendar for deadline dates for each term.) Division of Education students should plan to have graduation checks made two quarters prior to the term of graduation (excluding students with minors in education).
2. The Application for Graduation (which is secured at the time the graduation check is made) must be completed and filed in the Records Office before the deadline dates indicated in the College Bulletin for graduation in a specified quarter. Students planning to graduate in June must have their applications filed in the Records Office by April 16.
3. If a student does not graduate in the term for which he files, he must notify the Records Office of the new term in which he plans to graduate. If more than one regular term lapses, the student must make an appointment in the Admissions Office to have a new graduation check made.
4. Students graduating from the college must reapply for admission to take work at the graduate level.

STUDENT LIFE

The student personnel office provides special services to individual students and groups of students, and serves in a consultant capacity to academic advisers and academic departments of the college. Students with questions relative to academic programs should consult their academic advisers.

Counseling

California State College at Hayward provides a counseling service to assist students with academic and personal adjustment and to offer professional advice on questions of a non-academic nature.

Counselors work with department heads in the administration of the advising program. Information concerning incoming students is compiled and distributed to academic advisers for their guidance in planning student programs. The adviser who assists in the initial planning usually coordinates the educational program throughout the student's stay at the college.

The counseling service also assists students with career planning.

Scholarships

Scholarships ranging from \$100 to \$400 are granted to outstanding students by Divisional Scholarship Committees or the College Committee on Scholarships. Applications for scholarships for the 1964-65 academic year will be available after March 15, 1964, and should be returned to the Financial Aids Office not later than April 1. 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 in terms of criteria as may be established by the donor. All students receiving scholarships must be enrolled for 12 or more units of credit during each quarter of the college year. The amounts awarded will be paid in equal installments, one at the beginning of each quarter. The following scholarships are among those to be awarded during the 1964-65 academic year:

The Niles-Fremont Community Scholarship for Elementary Teachers
Alpha Gamma Chapter of Phi Epsilon Phi Sorority
California Congress of Parents and Teachers for Elementary Teachers
California Congress of Parents and Teachers Music Scholarship
Alpha Alpha Chapter of Alpha Delta Kappa Sorority.

Loans

Short-term loans are available through student loan funds established by the Faculty, the Dorothy Donahoe Memorial Fund, Sertoma, Inc. of Hayward, California, Laura Settle, California Retired Teachers Associa-

tion Loan Fund, and the Alpha Gamma Chapter of Phi Epsilon Phi Sorority. Details concerning the granting of loans are available through the Financial Aids Office.

Cal-State, Hayward is participating in the National Defense Act Student Loan Program. To be eligible for an application a student must be a United States national or a permanent resident pursuing full-time graduate or undergraduate work and must be in good standing at the institution.

Continuing students should deliver completed applications for 1964-65 National Defense Student Loans to the office not later than June 15, 1964; new students not later than July 15, 1964.

Cal-State, Hayward students are establishing a loan fund by raising money which will be matched approximately twelve to one by the United Student Aid Funds, Inc.

Placement 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.

Part-time Student Employment

Students seeking part-time employment may register with the Financial Aids Office at the beginning of each quarter.

Housing

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

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.

Student Services

Graduates Eligible for AAUW Membership

The American Association of University Women has notified the College that Cal-State graduates are eligible for membership in the AAUW.

Foreign Students

Students from other countries consult with the Student Personnel Office on matters affecting their visas, eligibility for employment, financial aid, travel programs, special workshops, and housing.

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.

Student Organizations

Associated Students: The Associated Students is represented by a Student Council composed of a president, vice-president, secretary, and one representative from each of the six academic divisions. The Council plans and executes student activities, recognizes and charters clubs and organizations, prepares the student budget, supervises student elections, initiates activities and cultural events, and forms committees to further the work of the Student Association.

Clubs and Organizations: Among the many interest groups which contribute to the well-balanced student life and supplement the academic program of the college are the Political Affairs Club, International Club, Student California Teachers Association, Veteran's Club, Alpha Phi Beta, The Honor Society, Women's Service Club and an Interfaith Council. Membership in student organizations depends solely upon individual qualifications without regard for race, color, religion, or national ancestry.

Publications: The Pioneer, the weekly college newspaper, is published by the Associated Students as a part of the journalism curriculum. The Literary Quarterly is published by the Humanities Division, and the yearbook by the Associated Students.

Intercollegiate Athletics

The College is a member of the Far Western Athletic Conference and competes on both varsity and freshman levels in cross country, basketball, football, baseball, wrestling, track, tennis and golf.

CURRICULA AND DEGREES

CURRICULA AND DEGREES

Baccalaureate Degrees With Major in:

Art (BA)	Music (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)
Elementary Education (BS)	Recreation (BS)
English (BA)	Social Science (BA)
French (BA)	Spanish (BA)
History (BA)	Speech & Drama (BA)
Language Arts (BA)	Special Major (BA) or (BS) *
Mathematics (BS)	

Master's Degrees with Major in:

English (MA)
Mathematics (MS)

IMPORTANT NOTICE

Credential Programs Described in This Bulletin Are Subject to Change

The Trustees of the California State Colleges are reviewing all credential programs; supplements to this bulletin describing changes which may be forthcoming will be published as appropriate. Candidates already clearly admitted to a credential program as described in previous college publications will have the option of completing a program either under existing regulations or under subsequent changes. Reference is made to Title 5 of the California Administrative Code, Section 40401.

Non-degree Credential Programs

The college is accredited to recommend for:

General Elementary Credential (limited to candidates accepted in a program before November 1, 1963).

Programs Leading to Direct Application for:

The general secondary credential (limited to students accepted in a program before November 1, 1963).

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

The Standard Teaching Credential with Specialization in Elementary School Teaching.

The Standard Teaching Credential with Specialization in Secondary School Teaching.

The Standard Designated Services Credential with Specialization in Pupil Personnel Services.

The Standard Supervision Credential.

LIBRARY AND AUDIOVISUAL SERVICES

The library now has over 90,000 volumes and 800 different periodical subscriptions 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.

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 350 films.

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

INSTRUCTIONAL COMPUTATION CENTER

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

REQUIREMENTS FOR GRADUATION

Baccalaureate Degree

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

1. Complete a major as described in this catalog.
2. Complete a minimum of 186-195 quarter units of acceptable college credit; at least 60-quarter units of which must be in courses numbered 3,000 or above and taken after attaining upper-division standing.
3. Complete a minimum of 36-quarter units in residence at this college in order to be eligible for a baccalaureate degree. At least 18 of these units must be completed among the last 30-quarter units counted toward the degree.
4. Satisfy the college general education requirements as described below.

Curricula, Degrees

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 a minimum of 45 quarter units of approved work, at least 36 of which must be in residence, completed within seven years.
5. A grade-point average of 3.0 (grade of B on a five-point scale) or better in all courses taken to satisfy the requirements for the degree.
6. Complete specific requirements relative to theses, foreign languages, required courses, grade point averages as specified in departmental sections of this Bulletin.

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 literate 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.

Each student, for graduation with a baccalaureate degree, must complete a minimum of 76 quarter units of general education work satisfying the following pattern and specific requirements. 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. The total program, however, in completing a major in any of the fields listed under general education requirements below 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 include¹ courses in two of the three fields of humanities, social and behavioral science, and science. (Students majoring in one of these

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

Curricula, Degrees

fields take courses in the other two.) As a part of the 14 units, each student must complete the Junior-Senior Symposia which includes selected readings from the three fields listed above.

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.

*Minimum number of units
for satisfying general
education requirements
of 76 units*

I. Upper-division (junior-senior level) requirements (8) _____ 14

- A. Courses are required in two of the three fields of (1) Humanities, (2) Science, and (3) Social Sciences.* Courses in each field may be selected from an approved list in each field. The two fields in which the courses are to be taken are fixed by the student's major:
 - a. The Humanities upper division course requirement is satisfied if the major is art, English, French, history, language arts, music, Spanish, or speech and drama. Each student with one of these majors will take an approved upper division course in (1) social and behavioral science and (2) science.
 - b. The Social and Behavioral Science upper division course requirement is satisfied if the major is: business administration, business education, economics, elementary education, political science, psychology, recreation, or social science. Each student with one of these majors will take an approved upper division course in (1) humanities and (2) science.
 - c. The Science upper division requirement is satisfied if the major is: biological science, chemistry, mathematics, physical education, physical science, or physics. Each student with one of these majors will take an approved upper division course in (1) humanities and (2) social and behavioral science.
- B. Junior-senior symposia—This requirement can be met only by completing Junior Symposium 3801 (3) and Senior Symposium 4801 (3).

The eight units taken in the upper-division (a, b, and c above) may be applied, as appropriate, to meet the requirements which follow.

* Upper division course requirements may occasionally be waived by the Dean of Instruction for entering upper division students who have completed all specific requirements from II to XII and who have exceeded the required total units in any given area.

Curricula, Degrees

II. Communications	6
Expository writing and rhetoric or oral and written expression. The requirement should be met in the lower division.	
Acceptable: Eng. 1001-2 (3-3) or Speech 1001-2 (3-3).	
Hist. of Western Culture 1001-2-3 (5-5-5) satisfies 3 units of this requirement.	
III. United States history (code requirement)	
Complete course(s) or pass examination. Course credit is applicable to Sections V and VI as appropriate.	
Acceptable: Hist. 1101-2 (4-4), Hist. 3400 (4), or Pol. Sci. 1201-2 (4-4).	
IV. Local, state, national government (code requirement)	
Complete course(s) or pass examination. Course credit is applicable to Sections V and VI as appropriate.	
Acceptable: Hist. 1101-2 (4-4), Pol. Sci. 1201-2 (4-4), or Pol. Sci. 3100 (4)	
V. Anthropology, economics, geography, political science, sociology, and social science	12
Credit earned in satisfying Section IV is applicable to this section. Courses in two of the four fields—anthropology, economics, geography, and sociology—are required. Additional units to meet the total 12 may be taken in anthropology, economics, geography, political science, social science, and sociology. Four units earned in History of Western Culture satisfies one of the “two of four” (anthropology, economics, geography, sociology) requirement.	
VI. History, philosophy, literature, languages, and history of the arts (art, dance, drama, music)	16
Credit earned in satisfying Section III (U. S. history) is applicable to this section. At least 5 units in courses from literature and/or philosophy must be included. A maximum of 9 units of foreign language may be applied to this section. Units earned beyond those required in U. S. history and literature and/or philosophy may come from any of the fields listed in this section. Eight units earned in History of Western Culture is applicable to this section provided the sequence is completed.	
VII. Psychology	4
A course in principles of psychology is required. Credit earned in upper-division psychology courses may be applied to Section V provided the 12 unit requirement is met.	
Acceptable: Psy. 2000 (4).	
VIII. Health and physical education	5
Three units of health and 2 units of physical education activity are required. Not more than 6 units of general education physical education activities may be applied toward graduation requirements.	
Acceptable: P.E. 1100 (3) or H.E. 1000 plus P.E. 1010-2010 ($\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$ - $\frac{1}{2}$).	
IX. Creative Arts	3
Three units from performance or appreciation courses are required.*	
Acceptable: Art 1101 (3), Mus. 2111 (3), Sp. and Dr. 1010 (5).	

* Students should clear with advisers for other appropriate courses.

Curricula, Degrees

X. Science	14
Fourteen units in science are required; a basic course in biological science and a basic course in physical science must be included. In biological science, a course in principles of biology, biology, botany, or zoology is acceptable; in physical science, a course in principles of physical science, physics, chemistry, geology or astronomy is acceptable. Recommended: Biol. 1000 (5) and Phys. Sci. 1340 (5) or Chem. 1000 (5) or Geol. 1101-2 (5) plus at least four additional units in science.	
XI. Mathematics, Logic or Statistics	4-5
A college-level course in mathematics, logic or statistics is required. In mathematics the course should be a college-level course emphasizing the postulational approach; or college algebra or higher course; or mathematics of finance. A college course in logic or statistics is acceptable.	
Acceptable: Math. 1110 (4); Math. 1301 (5); Math. 1060 (4); Math. 2100; Stat. 1500 (5); Phil. 1000 (4); or Math. 3000 (5).	
XII. Electives	5-6
Electives must be selected from outside the major and related fields.	
Required total	76

Pre-professional Preparation

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 fits the general pattern required by the profession as well as the specific requirements of the professional school of his choice and 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, either by California State College-Hayward or by the 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

Curricula, Degrees

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 A.B. 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, 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 the following courses to have been completed 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 and one semester of vertebrate embryology, and 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

Interdivisional Programs

of Biological Sciences early in their college careers to plan their major and baccalaureate degree.

Overseas Study Programs

State College students who qualify may participate in overseas study programs of the California State Colleges. Upper Division and Graduate students may undertake a full academic year at major institutions of higher learning in Asia, Europe and Latin America. Academic work successfully completed at the cooperating universities abroad may be applied toward the degree requirements of State Colleges with the approval of the student's major advisers and in accordance with college regulations. Detailed information may be obtained at the office of the Dean of Students or by writing to the Office of International Programs, 1600 Holloway Avenue, San Francisco 32, California.

INTERDIVISIONAL PROGRAMS IN GENERAL EDUCATION

HISTORY OF WESTERN CULTURE

This integrated, interdivisional general education sequence is one way to meet: (1) 3 units of communications, (2) 8 units of humanities (literature and philosophy only), and (3) 4 units of social science exclusive of code requirements in U.S. history and institutions. With the completion of HWC 1001, five units of humanities electives will be met; with the completion of HWC 1001-2, two units of communications and five units of literature and philosophy (total of 8 units of humanities) will be met; and with the completion of HWC 1001-2-3 a third unit (total 3) of communications and four units of social science, including one course of the two of four courses (anthropology, economics, geography, sociology) requirement, will be met.

1001. The Ancient and Medieval World

Philosophic, scientific, social, and aesthetic foundations of the Western tradition. Five units.

1002. The Renaissance and Early Modern Times

Continuation of History of Western Culture 1001. Prerequisite HWC 1001. Five units.

1003. The Modern Western World

Continuation of History of Western Culture 1002. Prerequisite HWC 1002. Five units.

COMPARATIVE STUDIES IN ASIAN CULTURES

This integrated, interdivisional general education sequence (Asia 2001, 2003, 2005) is one way to meet: (1) 3 units of creative arts, (2) 5 units of humanities, (Philosophy-Literature), (3) 4 units of social science (exclusive of code requirements in U.S. history and institutions). The basic general education sequence is A.C. 2001, 2003, 2005 for a total of 12 units.

2001. Patterns of Asian Cultures

The significance of contemporary Asia; approaches to the study of Asia through various disciplines; physical, biotic, and social patterns of the major regions of Asia; Asian prehistory. Four units; Fall quarter.

Interdivisional Programs

2003. Development of Traditional Asian Cultures

Major traditions of Southern, Southeastern, and Eastern Asia, including political, economic, and aesthetic developments. Prerequisite: A.C. 2001. Four units; Winter quarter.

2005. Asian Societies in the Modern World

European expansion in Asia; the rise of nation states; problems of modernization. Prerequisite: A.C. 2001, 2003. Four units; Spring quarter.

JUNIOR-SENIOR SYMPOSIA

The Junior and Senior Symposia are courses required of all undergraduates as follows: 1. Freshmen who enroll in September 1963 and thereafter; 2. Transfers who enroll for the first time at this institution in September 1965 and thereafter; 3. Transfers who enroll as lower-division students in September 1964 and thereafter; 4. Upper-division transfers who have been in continuous enrollment at other institutions and who transfer to this college prior to September 1965 will be required to enroll in the Junior Symposium. It is recommended that these transfers take the complete sequence.

Junior Symposium

3801. The Idea of Nature

An exploration into the history of ideas. Interdisciplinary consideration of man's ideas of nature and man's relation to it during Greco-Roman, medieval, renaissance and modern periods. Effects of these changing views upon modern man's concepts of himself. Prerequisite: Junior standing and basic courses in natural science, humanities and social sciences. Three units.

4801. Senior Symposium

A continuation of Junior Symposium 3801. Prerequisite: Junior Symposium 3801. 2 hrs. lect., 2 hrs. act. Three units.

DIVISION OF BUSINESS AND ECONOMICS

Professors Salera (head), Allison, Mayer, Wren; Associate Professor Rice; Assistant Professors Elliott, Harter, Inberg, Maierhoffer, Morehouse, Ozaki, G. Smith; Lecturer Nordstrom.

CURRICULA OFFERED

Baccalaureate Degree Majors and Minors

Business Administration

Business Education

Economics

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 ADMINISTRATION MAJOR

Lower Division Requirements

Principles of accounting and principles of economics (both 8 or more units), and legal environment of business (4 units).

Completion of these courses is a *condition for admission* to the upper-division program of the division.

Recommended: a year of college-level mathematics.

Core Requirements

The student must arrange his program so as to complete the following courses in the junior year:

	Units
Bus. 3111. Business and Economic Statistics	4
Bus. 3200. Managerial Accounting	4
Bus. 3400. Principles of Marketing	4
Bus. 3600. Principles of Management	4
Bus. 4300. Business Finance	4
Econ. 3000. Economics of the Business Firm	4
Econ. 3310. Money and Banking	4

Total 28

To be completed in the senior year:

Bus. 4660. Industrial Relations	4
Econ. 4320. Business Fluctuations	4
Bus. 4500. Business and Public Policy	4

Total 12

Fields of Concentration

Accounting

Core requirements (all except Bus. 3200 above) 36 units

The concentration:

Bus. 3211, 3212, 3213, 4231, 4232, 4233 or 4240.

Business Administration

Management

Core requirements (see above) 40 units

The concentration:

Bus. 3610, 3620, 4630, 4650.

Marketing

Core requirements (see above) 40 units

The concentration:

Bus. 3410, 3420, 4430, 4440.

ILLUSTRATIVE PROGRAM, BUSINESS ADMINISTRATION

Freshman Year

Bus. 1151, 1152	Principles of Accounting
Eng. 1001, 1002	Exposition and Rhetoric, Expository Writing
Hist. 1100, 1101	History of U.S.
Biol. 1000	Principles of Biology
Math. 1060, or 1301, or 2100	Mathematics of Finance, Basic Analysis, Finite Mathematics
Psy. 2000	General Psychology
Gen. Ed. courses	

Sophomore Year

Econ. 2301, 2302	Principles of Economics
Bus. 2700	Legal Environment of Business
Eng. 1113	Introduction to Fiction
Chem. 1101, 1102, 1103	General Chemistry and Qualitative Analysis
Phil. 1000	Symbolic Logic
Pol. Sci. 2010	Introduction to Government
Gen. Ed. courses	

Junior Year

Pol. Sci. 4000	Contemporary World Problems
Bus. 3111	Business and Economic Statistics
Bus. 3200	Managerial Accounting
Bus. 3400	Principles of Marketing
Bus. 3600	Principles of Management
Bus. 4300	Business Finance
Econ. 3310	Money and Banking
Econ. 3000	Economics of the Business Firm
Jr. Sym. 3801	Junior Symposium
	One or two concentration courses
	General education course

Senior Year

Bus. 4660	Industrial Relations
Econ. 4320	Business Fluctuations
Bus. 4500	Business and Public Policy
Sr. Sym. 4801	Senior Symposium
	Two or three concentration courses
	Appropriate speech course
	General education and elective courses

Business Education, Economics

BUSINESS EDUCATION MAJOR

Lower Division Requirements:

Bus. 1151, 1152—Principles of Accounting
Econ. 2301, 2302—Principles of Economics
Bus. 2700—Legal Environment of Business

Demonstration of competency required in basic typing and, for the office management emphasis, shorthand. Students without previous course work or competency in these fields are advised to meet this requirement in a junior college.

Upper Division Requirements:

Complete the core requirements for Business Administration except for Bus. 4500. Complete 12-quarter units in addition to the core in two of four areas: accounting, economics, marketing, office management (at least 8 units must be in one area; either accounting or office management must be one of the areas).

Complete:

Bus. 3800—Business Office Practices.
Bus. 3850—Data Processing.

Post Baccalaureate Requirements for a Secondary Credential:

Bus 5800—Teaching Business in Secondary Schools

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 Education Division. 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 the Education Division.

BUSINESS EDUCATION MINOR

A teaching minor in Business Education consists of at least 30 quarter units of course work in business. Students should complete Bus. 1151, 1152; 3400; 3800; and additional electives from Upper Division business courses to complete 30 units. Upper Division courses on the minor may be taken during the graduate year. Bus. 5800, Teaching Business in Secondary Schools (3), is required above the 30 units for a minor.

ECONOMICS MAJOR

Lower Division Requirements

Identical with those for the business administration major.
See business administration major.

Core Requirements

A minimum of 40-quarter units of upper-division economics is required for the major, of which the following are core requirements:
Econ. 3000, 3211, 3310, 4120, 4140, 4320, 4610.

Other Requirements in Economics

The student may complete his major by including business administration courses selected in consultation with his adviser from the following:
Bus. 3420, 4310, 4430, and 4500.

DESCRIPTION OF COURSES

BUSINESS
Accounting**1151, 1152. Principles of Accounting**

An introduction to accounting analysis and practice. Courses are sequential. Four units each.

3200. Managerial Accounting

Applied course with emphasis on the use of accounting information in business decisions. Not accepted as a course in the accounting field of concentration. Prerequisite: One year of accounting. Four units.

3211, 3212, 3213. Intermediate Accounting

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. Prerequisite: Bus. 1152; courses are sequential. Four units each.

3220. Federal Income Tax Accounting

Statutes, regulations, administrative rulings, and court decisions relative to the income taxes of individuals. Prerequisite: Bus. 1152. Four units.

4231, 4232. Cost Accounting

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. Prerequisites: Bus. 1152. Courses are sequential. Four units each.

4233. Advanced Cost Accounting

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: Bus. 4232. Four units.

4240. Advanced Financial Accounting

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: Bus. 3213. Four units.

4250. Auditing

Principles, techniques and procedures in auditing. Prerequisite: Bus. 3213. Four units.

4260. Problems of Financial Reporting

Advanced treatment of the analysis of financial statements. Prerequisite: Bus. 3213. Four units.

Business Education

3820. Office Management

Study of office procedures with major attention to job analysis, equipment, and management problems. Four units.

5801. Secondary School Business Teaching I

Methods and materials for teaching bookkeeping, general business, and other basic business subjects. AV techniques included. Prerequisite: Consent of instructor. Three units.

5802. Secondary School Business Teaching II

Methods and materials for teaching typewriting, shorthand, business machines and clerical practice. AV techniques included. Prerequisite: Consent of instructor. Three units.

5803. Secondary School Business Teaching III

Methods and materials for teaching salesmanship, retailing, and the coordination of cooperative work experience programs. AV techniques included. Prerequisite: Consent of instructor. Three units.

5810. Principles of High School Business and Distributive Education

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 viewpoint of the prospective teacher. Prerequisite: Upper-division standing. Four units.

3800. Business Office Practices

Principles and techniques; the improvement of skills; operations and procedures in the modern office. Prerequisites: ability to typewrite. 2 hrs. lect., 4 hrs. lab. Four units.

3850. Data Processing

Computer programming, peripheral equipment operation, symbolic coding systems; application to business data processing problems; influence upon the flow and organization of intra-firm communications. Four units.

5800. Teaching Business in Secondary Schools

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 or graduate students with major or minor in business teacher education. Three units.

Management

3600. Principles of Management

Introduction to business organization and management practices; interrelationships of complex human, technical, and economic factors in administration of business. Four units.

3610. Personnel Management

Principles and methods of organized personnel work; developing optimum utilization of human resources within the organization; recruitment, selection, training, promotion, transfer, motivation and compensation. Prerequisite: Bus. 3600. Four units.

3620. Industrial Administration

Essentials of production management and control; organization of the production function, plant location and layout, production planning and control, quality control, production standards; the relationship between production and other business operations. Prerequisite: Bus. 3600. Four units.

4630. Organization Theory

A study of human behavior in organizations, analysis of organizational mechanisms, and theories and findings regarding individual behavior in formal organizations. Prerequisites: Bus. 3600. Four units.

4650. Executive Control and Administration

Application of management principles to top management problems; the responsibilities of an organization's major executive, such as setting company objectives, organizing and coordinating business activities, and controlling performance. Prerequisites: Bus. 3600 and 4300. Four units.

Marketing

3400. Principles of Marketing

Organization and principal operating aspects of the system of distributing goods and services. Four units.

Business, Economics

3410. Advertising

Marketing and economic functions of advertising, with emphasis on psychological and statistical aspects; includes media, copy, layout, and research. Prerequisite: Bus. 3400. Four units.

3420. Sales Analysis and Sales Management

Intermediate level course dealing mainly with the analytical problems of selling goods and services and the management of the sales function. Prerequisite: Bus. 3111 and 3400. Four units.

4430. Private and Social Efficiency in Distribution

Application to marketing of economic analysis of private and social cost; consumer and industrial products distinguished; cost-reducing and cost-increasing marketing tendencies contrasted; basic issues in marketing legislation. Prerequisites: Bus. 3400 and 3420. Four units.

4440. Marketing Policies and Problems

Advanced course concerned with major problems in marketing and policy alternatives relating thereto, with emphasis on problem-solving exercises. Prerequisite: Bus. 3420.

Other Business Courses

2700. Legal Environment of Business

A study of the legal setting in which business operates, with emphasis upon legal reasoning and the processes of the law. Four units.

3111. Business and Economic Statistics

Statistical methods used in business and economic analysis. Four units.

4300. Business Finance

Financial principles and practices relating to alternative forms of business organization. Sources and uses of financial data. Prerequisites: Bus. 3200 and Bus. 3310. Four units.

4310. Investment Management

Angell's theory of investment decision-making, followed by a standard treatment of securities, security markets, and investment management. Four units.

4500. Business and Public Policy

An analysis of theory relating to the manager's efforts to deal with competition and public policy, including antitrust policy. Prerequisites: Econ. 3000 and Econ. 4320. Four units.

4520. Government and Business

The competitive economy and the government's regulation and control activities; dynamic relations between business and government. Four units.

4660. Industrial Relations

A systematic study of labor-management relations. (Students will not receive credit for both Bus. 4660 and Econ. 4610.) Four units.

ECONOMICS

2301, 2302. Principles of Economics

Introduction to economic analysis and operation of the American economy. Four units each.

3000. Economics of the Business Firm

The operation of the price system in a free enterprise economy; prices and decision-making. Four units.

3211. Business and Economic Statistics

Statistical methods used in economic and business analysis. Four units. (Students will not receive credit for both Econ. 3211 and Bus. 3111.)

Business, Economics

3303. Controversial Economic Issues

Includes Soviet and American systems for organizing economic resources, monopoly and competition, economic growth rate and inflation, public versus private sector problems, farm policy, and a major international economic issue. Not open to students majoring in the division. No prerequisites. Four units.

3310. Money and Banking

Essentials of commercial and central banking and monetary policy. Four units.

4100. International Economics

The basis of trade, foreign exchange, and foreign investment and world economic growth. Four units.

4110. Economic Development

The economics of underdeveloped countries. Prerequisite: Econ. 4100. Four units.

4120. Current Economic Policies

A study of national issues related to economic stabilization and growth. Prerequisite: Econ. 3000. Four units.

4130. Inter-American Economic Relations

Major economic problems, issues and policies in relations between the United States and Latin America. Four units.

4140. Development of Economic Thought

The history of economic analysis. Prerequisite: Econ. 3000. Four units.

4312. Federal Reserve Policies and Money Markets

Advanced study of monetary policy, debt management and the money system. Prerequisite: Econ. 3310. Four units.

4320. Business Fluctuations

Nature and significance of business fluctuations. Four units.

4510. Comparative Economic Systems

A comparative study of different systems which man has proposed or used to deal with the economic organization of society. Four units.

4610. Labor Economics

Study of labor markets and wages; development of unions and collective bargaining; labor legislation. Four units. (Students will not receive credit for both Econ. 4610 and Bus. 4660.)

DIVISION OF CREATIVE ARTS

Art, Music, Speech and Drama

Professors Ernst (head and chairman, Department of Music), Kjelson, Martin (chairman, Department of Speech-Drama), Randall (chairman, Department of Art), Rosenbaum; Associate Professors Pugliese, Slatoff; Assistant Professors Barrett, Bartlett, Bertsch, Black, Burke, Cambus, Cory, Davis, Dempster, Denke, Glasow, Goeser, Gray, J. Hall, Krenz, LePell, Lewis, Lincoln, Muir, Nelson, Saxton, Stern, Whelan.

CURRICULA OFFERED

Baccalaureate Degree Majors

Art (B.A.)

Music (B.A.)

Speech-Drama (B.A.)

Language Arts (interdivisional major: See Humanities Division for details.)

Minors

Art

Music

Speech-Drama

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, and (4) courses designed to broaden the general education pattern through increased knowledge and understanding of the arts.

ART MAJOR AND ART MINOR

(See Art Department Section)

MUSIC MAJOR

(Baccalaureate Degree)

Requirements are as follows:

- 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

THEORY

Mus. 1001, 1002, 1003—Music Fundamentals	6
Mus. 1011, 1012, 1013—Music Fundamentals Laboratory	3
Mus. 2001, 2002, 2003—Harmonic Theory and Practice	6
Mus. 2011, 2012, 2013—Harmony Laboratory	3

Music

PERFORMANCE

	Units
Mus. 3210 through 3260—Applied Music (Major performance media)	6
Mus. 3500—Music Performance Activities	6
¹ Mus. 1211, 1212, 1213—Elementary Class Piano	3
¹ Mus. 2211, 2212, 2213—Intermediate Class Piano	3

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Upper Division

HISTORY AND LITERATURE

Mus. 3141, 3142, 3143—Music History and Literature	9
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THEORY

Mus. 3001, 3002, 3003—Analysis and Composition	9
Mus. 4001—Orchestration	3

PERFORMANCE

Mus. 3210 through 3260—Applied Music (Major performance media)	6
Mus. 3500—Music Performance Activities	6
² Electives in music	6

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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 of 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. Seniors must appear in a satisfactory joint-recital prior to approval for graduation.
- IV. Proficiency tests in piano, voice, sight singing, ear training, theory, and major instrument will be given to all music majors who 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.

¹ May be met by examination.

² Electives are for non-credential students only. Secondary credential students must follow program outlined in following section.

VI. Upper-division transfer students who have completed most of their music major in other institutions will be expected to take certain minimal courses at Cal-State in each of the principal areas of theory, history and literature, and performance.

Secondary Teaching Credential Music Major

The Secondary 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); (b) complete the requirements for a teaching minor; and (c) complete, in addition to the requirements for the baccalaureate degree major, the following program:

	Units
<i>Lower Division</i>	
1 Mus. 2231, 2232, 2241, 2242—Basic Orchestral Instruments (strings and woodwinds recommended)	6
Mus. 2221, 2222, 2223—Basic Voice	3
	—
	9
<i>Upper Division</i>	
1 Mus. 2251, 2252, 2261—Basic Orchestral Instruments (brass and percussion) The selection of specific courses will depend upon the work on basic instruments taken in the lower division	3
Mus. 3391, 3392—Conducting	6
Mus. 3580—Music Performance Laboratory (3 quarters minimum)	1
	—
	10
<i>Graduate Year</i>	
Music content course electives recommended	6
Music 4005—Counterpoint	
Music 4161—History of the Symphony	
Mus. 5335—Music in the Secondary School	3
	—
	9

For complete details of the Secondary Teaching Credential fifth year program see Division of Education section.

Recommended Sequence of Music Courses for Four-year Baccalaureate Program

	Units		
	F	W	S
<i>First Year</i>			
Music Fundamentals. Mus. 1001	2		
Music Fundamentals Laboratory. Mus. 1011	1		
* Basic Orchestral Instruments—String. Mus. 2231	1		
Applied Music—Major Performance Area. Mus. 3210 to 3260	1		
Performance Activities. Mus. 3500	1		
Elementary Class Piano. Mus. 1211	1		

* Required only of credential candidates

¹ 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.

	Units		
	F	W	S
Music Fundamentals. Mus. 1002	2		
Music Fundamentals Laboratory. Mus. 1012	1		
* Basic Orchestral Instruments—String. Mus. 2232	1		
Applied Music—Major Performance area. Mus. 3210 to 3260	1		
Performance Activities. Mus. 3500	1		
Elementary Class Piano. Mus. 1212	1		
Music Fundamentals. Mus. 1003	2		
Applied Music—Major Performance Area. Mus. 3210 to 3260	1		
Performance Activities. Mus. 3500	1		
Elementary Class Piano. Mus. 1213	1		

Second Year

Harmony, Theory and Practice. Mus. 2001	2
Harmony, Theory and Practice Laboratory. Mus. 2011	1
* Basic Orchestral Instruments—Woodwinds. Mus. 2241	1
Applied Music—Major Performance Area. Mus. 3210 to 3260	1
Performance Activities. Mus. 3500	1
Intermediate Class Piano. Mus. 2211	1
* Basic Voice. Mus. 2221	1
Harmony, Theory and Practice. Mus. 2002	2
Harmony, Theory and Practice Laboratory. Mus. 2012	1
* Basic Orchestral Instruments—Woodwinds. Mus. 2242	1
Applied Music—Major Performance Area. Mus. 3210 to 3260	1
Performance Activities. Mus. 3500	1
Intermediate Class Piano. Mus. 2212	1
* Basic Voice. Mus. 2222	1
Harmony, Theory and Practice. Mus. 2003	2
Harmony, Theory and Practice Laboratory. Mus. 2013	1
* Basic Orchestral Instruments—Woodwinds. Mus. 2241	1
Applied Music—Major Performance Area. Mus. 3210 to 3260	1
Performance Activities. Mus. 3500	1
Intermediate Class Piano. Mus. 2213	1
* Basic Voice. Mus. 2223	1

Third Year

Music History and Literature. Mus. 3141	3
Analysis and Composition. Mus. 3001	3
* Basic Orchestral Instruments—Brass. Mus. 2251	1
Applied Music—Major Performance Area. Mus. 3210 to 3260	1
Performance Activities. Mus. 3500	1
Music History and Literature. Mus. 3142	3
Analysis and Composition. Mus. 3002	3
* Basic Orchestral Instruments—Brass. Mus. 2252	1
Applied Music—Major Performance Area. Mus. 3210 to 3260	1
Performance Activities. Mus. 3500	1
Music History and Literature. Mus. 3143	3
Analysis and Composition. Mus. 3003	3
* Basic Orchestral Instruments—Percussion. Mus. 2261	1
Applied Music—Major Performance Area. Mus. 3210 to 3260	1
Performance Activities. Mus. 3500	1

* Required only of credential candidates.

Fourth Year

	Units		
	F	W	S
Orchestration. Mus. 4001	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		
* 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		

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:

	Units
Music Literature or History	3-4
Selected from Mus. 2111, 2112, 3141, 3142, 3143, or C.A. 4800	6
Music Theory	6
Any combination of music theory courses for which the student is eligible	3
Conducting (Mus. 3391)	9
¹ Piano, voice, add basic orchestral instruments	9
² Music activities	9
³ Music electives	9
⁴ Major instrument (or voice)	30-31

Post Graduate Requirements

All teaching candidates should note the special references to the teaching minor in the Division of Education section.

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-major

* Required only of credential candidates.

[†] Required only of liberal arts majors.

¹ Distribution of these 9 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.

³ With approval of adviser.

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

baccalaureate year. It is recommended that music minors take one three-unit music course such as Mus. 4161, History of the Symphony, as partial fulfillment of this requirement.

DESCRIPTION OF COURSES**CREATIVE ARTS****4800. The Arts in Contemporary Society**

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. Four units.

ART

(See Art Department Section.)

MUSIC**A. Music Theory****1001, 1002, 1003. Music Fundamentals**

A study of modes and scales, the significance of chromaticism, rhythm, and intervals; melodic writing. For music majors and minors. Concurrent registration in 1011, 1012, 1013 required. 2 units each.

1008. Basic Musicianship

Basic music skills for non-music majors, including singing, conducting, music reading, functional keyboard, playing simple melody and rhythm instruments, and experience with literature through recordings. Required of non-music majors or minors who follow the elementary credential program. 1 hr. lect., 4 hrs. act. Three units.

1011, 1012, 1013. Music Fundamentals Laboratory

Sight singing, ear training, melodic and rhythmic dictation, keyboard work related to 1001, 1002, and 1003. 3 hrs. lab. One unit each.

2001, 2002, 2003. Harmonic Theory and Practice

A study of 18th and 19th century harmony with practical exercises in different styles. Concurrent registration in 2011, 2012, 2013 required. Prerequisite: Music 1003 and 1013 or equivalent. Two units each.

2011, 2012, 2013. Harmony Laboratory

Sight singing, ear training, harmonic and melodic dictation, keyboard work related to 2001, 2002, and 2003. 3 hrs. lab. One unit.

3001, 3002, 3003. Analysis and Composition

Analysis of musical structure in representative compositions from the short song form through large cyclic works and contrapuntal forms; creative development of musical ideas into suitable homophonic and contrapuntal compositions. Prerequisite: Music 2003 and 2013 or equivalent. Three units each. 3 quarters.

4001. Orchestration

Theory and practice of scoring for various combinations of instruments with examples written to be conducted and performed in class. Prerequisite: Music 3003 or equivalent. Three units.

4005. Counterpoint

A study of polyphonic techniques, including melodic construction, imitation, canon, fugal procedure and non-imitative counterpoint; creative development of musical ideas in polyphony. Prerequisite: Music 3003 or equivalent. Three units.

B. Music History and Literature**2111, 2112. Survey of Music Literature**

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 General Education Creative Arts requirement. No prerequisites, but it is recommended that 2111 precede 2112. Three units each.

3141, 3142, 3143. Music History and Literature

A chronological history of music in western civilization from its origins to contemporary times. Partially fulfills General Education Humanities requirement. Prerequisite: non-music majors and minors must have a previous course in music appreciation or consent of instructor. Three units each.

4110. Music Literature for Children

A survey and analysis of music literature especially suited for use with children with emphasis upon song materials and recorded instrumental music. Prerequisite: Music 1008 or equivalent. Three units.

4800. The Arts in Contemporary Society

Four units. (See description under Creative Arts listing)

4161. History of the Symphony

A study of 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. Three units.

C. Applied Music**1211, 1212, 1213. Elementary Class Piano**

Basic keyboard techniques with special application to song materials and simple accompaniments used in the elementary school. Recommended for classroom teachers and for fulfilling basic piano requirements of the music major and minor. Must be taken in sequence. 2 hrs. act. One unit each.

2211, 2212, 2213. Intermediate Class Piano

Continuation of 1211, 1212, 1213. Needed by music majors and minors for fulfilling basic piano requirements. Prerequisite: Music 1213 or equivalent. 2 hrs. act. One unit each.

2221, 2222, 2223. Basic Voice

Class instruction in fundamentals of singing. Required of music majors and minors. Open also to other qualified students. May be repeated for credit. Music 2221 prerequisite for others in series. 2 hrs. act. One unit each.

2231, 2232. Basic Orchestral Instruments (string)**2241, 2242. Basic Orchestral Instruments (woodwind)****2251, 2252. Basic Orchestral Instruments (brass)****2261. Basic Orchestral Instruments (percussion)**

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. 2 hrs. act. One unit each. May be repeated for credit.

3210. Applied Music (piano)**3211. Applied Music (organ)****3220. Applied Music (voice)****3230. Applied Music (string)****3240. Applied Music (woodwind)****3250. Applied Music (brass)****3260. Applied Music (percussion)**

Individual advanced instruction for music majors and minors in voice, piano, organ, and on all orchestral and band instruments. May be repeated for credit. One unit.

D. Music Performance Activities**3500. Music Performance Activities**

The performance of music literature is a most important aspect of training process for the music student. 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 also invited to enroll. Music activity courses may be used to satisfy the general education requirement in creative arts and they provide suitable small unit electives for students with heavy academic programs. They may be repeated for credit. Music 3500 is open to students in lower, upper, and graduate divisions. The following sections are available.

1. Chorus
2. Orchestra
3. Band
4. College Singers
5. Opera Workshop
6. Instrumental Ensemble

E. Music Education**3391, 3392. Conducting**

Techniques of conducting, score reading, interpretation, and rehearsing, gained through observation and laboratory experience. Music 3391; choral emphasis; Music 3392; instrumental emphasis. Prerequisite: upper division standing. Music 3391 must precede Music 3392. One hr. lect., 4 hrs. act. Three units each.

3580. Music Performance Laboratory

Performance through minor instruments and voice of music suitable for use in school. Opportunity for student conducting. Minimum of 3 quarters required of music majors following completion of conducting and basic instrument courses. One unit credit following completion of 3 quarters work.

4360. General Music Methods and Materials

Exploring methods and planning activities and projects for the general music curriculum in the junior and senior high schools. Three units.

5300. Seminar in Music Education

Current issues and problems in the teaching of public school music, instrumental, vocal, and administration. Prerequisite: Graduate standing in music or consent of instructor. Three units.

5310. Seminar in Literature for Group Performance

A survey of music available for performance at various levels of difficulty with emphasis upon its use in teaching for understanding of music theory, style, and form. Prerequisite: Graduate standing in music or consent of instructor. Three units.

5320. Seminar in Choral Literature

Designed for the advanced student of choral literature. Particular emphasis given to the study of 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. Three units.

5330. Music in the Elementary School

Aims, methods, and organization of materials for elementary classroom music with application to the adopted state music texts. Prerequisites: Music 1008 and 4110 or equivalent competency as determined by Music Department. 2 hrs. lect., 2 hrs. act. Three units.

5335. Music in the Secondary School

Place and function of music in grades 7 through 12 with emphasis on general music, choral and instrumental classes; aims, methods, materials, and A-V techniques. 2 hrs. lect., 2 hrs. act. Prerequisite: Consent of instructor. Three units.

5370. Choral Techniques and Materials

Technique involved in directing and rehearsing choral ensembles and participation in study and performance of new choral materials. Prerequisite: Music 3391 or 3392. Three units.

Miscellaneous Courses**5900. Individual Study**

One-four units.

5901. Directed Group Studies

One-five units.

ART MAJOR

Requirements are as follows:

I. Complete the 76-unit requirement in general education. Study of one or more modern foreign languages is highly recommended.

II. Complete the following requirements in the major:

Lower Division**Units**

Total of 18 units (at least 3 units in 3 of the 4 areas): (a) Survey of Art or History of Art, (Art 1010, 3040, 3050, 3060, 3070) (b) Design, (Art 1110, 1120, 1130) (c) Drawing, (Art 2140) (d) Painting 18

Upper Division

Minimum of 3 units in 5 of the following areas must be included to complete major (portfolio of work completed in other institutions may be submitted for possible upper-division placement by transfer students; a portfolio and Senior exhibit will be required of graduating students): (a) Painting, (b) Graphics, (c) Sculpture, (d) Crafts, (e) Advertising Arts, (f) Art Education 15

Art electives with adviser's approval. Those planning on a teaching career will need approval of Education Department adviser 21

Elect 3 units in each of Speech-Drama and Music 6

Total 60

III. For credential purposes the major and minor in art or academic and single subject areas, 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); (c) the requirements for a teaching minor (see minor adviser); (d) approval of education adviser and advisers for major and minor study.

See adviser for additional art courses. Professional major is a preparatory for advanced professional work and graduate study. Teaching Credential Major—See Division of Education.* above. Teaching Credential Minor—See Division of Education.* above. Elementary Credential—See Division of Education.

Suggested Distribution of Courses for a Well-Rounded Program

Degree and Credential Offerings	Pro- fessional Major	Cred- ential Major	Cred- ential Minor
† Art 1010 Intro. to Art History (4)	4	4	4
* Art 1110 Introduction to Art (3)	3	3	3
* Art 1120 Basic Design (3)	3	3	3
* Art 1130 Applied Design (3)	3	3	3
* Art 2141, 42 Drawing (3)	3	3	3
† Art 3040 Art in the Ancient World (3)			
† Art 3050 Medieval (3)			
† Art 3060 Renaissance and Baroque (3)			
† Art 3070 Development of Modern Art (3)	3	3	
Art 3161, 62, 63 Life Drawing (2)	2	2	
Art 3211, 12, 13 Painting (3)	3	3	3
Art 3320 Arts and Crafts for Children (3)			
Art 3511, 12, 13 Ceramics (3)	3	3	
Art 3521, 22 General Crafts (3)	3	3	3
Art 4231, 32 Painting: Water Media (3)	3		
Art 4521, 22 Jewelry (3)	3		
Art 4531, 32, 33 Sculpture (3)	3	3	3
Art 4611, 12 Printmaking (3)	3	3	
Art 4630 Lettering (2)	2	2	2
Art 4651, 52 Advertising Art (3)	3		
Art 4681, 82 Advanced Studio Practices (2-4)			
Art 4800 Art in Contemporary Soc. (4)			
Art 5350 Art Methods (3)		3	3
Art 5900 Individual Study (2-5)			
Art 5901 Directed Group Study (1-5)			
Music	3	3	
Speech-Drama	3	3	3
Electives	7	4	
TOTAL	60	60	33

See adviser for additional art courses.

Professional major is a preparatory for advanced professional work and graduate study.

Teaching Credential Major—See Division of Education.* above

Teaching Credential Minor—See Division of Education.* above

Elementary Credential—See Division of Education.

* Required prerequisite or equivalent for art majors and minors.

† Will meet general education requirement.

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

First Year

	<i>Units</i>		
	<i>F</i>	<i>W</i>	<i>S</i>
Introduction to Art. Art 1110	3	3	
Basic Design. Art 1120		3	
Applied Design. Art 1130		3	
Introduction to Art History. Art 1010		3	

Second Year

Drawing. Art 2141	3
Ceramics. Art 3511	3
General Crafts. Art 3521	3
Painting. Art 3211	3
Drawing. Art 2142	3
Painting. Art 3212	3
Sculpture. Art 4531	

Third Year

Development of Modern Art. Art 3070	3
Life Drawing. Art 3161	2
Arts and Crafts for Children. Art 3320	3
Art in the Ancient World. Art 3040	3
Lettering. Art 4630	2
Sculpture. Art 4532	3
Life Drawing. Art 3162	2
Medieval Art. Art 3050	3
Ceramics. Art 3512	3

Fourth Year

Renaissance and Baroque Art. Art 3060	3
Jewelry. Art 4521	3
Printmaking. Art 4611	3
Advertising Art. Art 4652	3
Art Methods. Art 5350	3
Painting—Water Media. Art 4231	3
Advanced Studio Practices. Art 4681	2-4

ART MINOR

Requirements

See art adviser for approval.

A minimum of 31 units in courses selected in general areas of art. Recommended are one course each, or equivalent, on approval of art staff, in design, art history, appreciation, drawing, painting, crafts or jewelry, ceramics or sculpture, and art electives to complete requirements.

DESCRIPTION OF COURSES

CREATIVE ARTS

4800. The Arts in Contemporary Society

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 General Education. Four units.

***1010. Introduction to the History of Art**

A survey of the important media in the history of art; lectures in elementary aesthetics, with particular attention to the evaluation of style from classical art to present time. Approved elective for Humanities Division. 4 units.

1110. Introduction to Art

This course is designed to help the student experience and understand the inter-relationship of materials, processes and means of expression in the visual and applied arts. Required prerequisite for most art courses. 1 hr. lect., 4 hrs. act. Three units.

1120. Basic Design

Application of design to theoretical and practical art problems. Prerequisite: Art 1110 or approval of staff. 1 hr. lect., 4 hrs. act. Three units.

1130. Applied Design

Emphasis on manipulation of three-dimensional media in order to discover their creative potential. Prerequisite: Approval of staff. 1 hr. lect., 4 hrs. act. Three units.

2141, 2142. Drawing

Graphic representation through a variety of techniques and media. Emphasis on form, structure, perspective, value, line, proportion. Approval of staff. 1 hr. lect., 4 hrs. act. Three units.

*** 3040. Art in the Ancient World**

The history of western art from prehistoric cultures through ancient and contemporary primitive arts. Preclassical civilizations and their contributions to the arts of Greece and Rome. Evolution of classical forms to the end of the Roman Empire. Three units.

*** 3050. Medieval Art**

The influence of Christian art upon the arts of Rome through the Byzantine, Romanesque and Gothic periods. The Renaissance in art in northern and southern Europe. Three units.

*** 3060. Renaissance and Baroque Art**

Evolution of the arts reflecting tastes from the late Renaissance and Baroque eras and their influence on the art that followed. Three units.

*** 3070. Development of Modern Art**

A survey of the evolution of contemporary art; philosophies of the "isms"; development of American art. Three units.

3161, 3162, 3163. Life Drawing

A development of graphic representation through the study of the human form. Problems dealing with anatomy, form, and structure. Prerequisite: Art 2141 or approval of staff. 1 hr. lect., 3 hrs. lab. Two units.

3211, 3212, 3213. Painting

Emphasis on individual expression and experimentation with varied media such as oil, tempera, casein, ink, collage, chalk. Approval of staff. Prerequisite: Art 1120. 1 hr. lect., 6 hrs. lab. Three units.

3320. Arts and Crafts for Children

Introduction to art materials, tools and equipment necessary in providing art experiences for children. Prerequisite: Art 1110 or approval of staff. 1 hr. lect., 4 hrs. act. Three units.

3511, 3512, 3513. Ceramics

Emphasis on designing in clay, decorating, glazing and firing procedures of ceramics. Approval of staff. 1 hr. lect., 6 hrs. lab. Three units.

3521, 3522. General Crafts

Experience in the processes of the crafts, utilizing wood, plastic, metal, leather, and fabric. 1 hr. lect., 6 hrs. lab. Three units.

* See General Education Requirements.

Art

4231, 4232. Painting, Water Media

Transparent and opaque watercolor techniques; creative interpretation of structure and form in relation to line and value. Prerequisite: Consent of instructor. 1 hr. lect., 4 hrs. act. Three units.

4521, 4522. Jewelry

Design and execution of simple jewelry, flatware, and hollow-ware, involving the use of silver, gold, copper, and brass. Approval of staff. 1 hr. lect., 6 hrs. lab. Three units.

4531, 4532, 4533. Sculpture

Basic techniques and processes involving clay, wood, stone, plaster, and metal. Approval of staff. 1 hr. lect., 6 hrs. lab. Three units.

4611, 4612. Printmaking

Introduction to the field of printmaking, lithography, etching, engraving, wood-cut, and other graphic media. Prerequisite: Approval of staff. 1 hr. lect., 4 hrs. act. Three units.

4630. Lettering

A study of basic lettering forms with emphasis on styles and alphabet, their proportion and spacing. The adaptation of lettering to layout and poster design. Approval of staff. 1 hr. lect., 2 hrs. act. Two units.

4651, 4652. Advertising Art

The elements of visual expression and design related to the technical, psychological and social aspects of advertising. Prerequisite: Art 4630 or approval of staff. 1 hr. lect., 4 hrs. act. Three units.

4681, 4682. Advanced Studio Practices

Preparation and organization of student's art work to meet exhibition and commercial requirements. Approval of staff. Two-four units.

5350. Art Methods

Fundamentals of teaching art in the elementary and secondary schools. Study of approved practices of art education at these levels. Audio-visual techniques. Required of all art education students. Prerequisite: Consent of instructor. 2 hrs. lect., 2 hrs. act. Three units.

5900. Individual Study

Two-five units.

5901. Directed Group Study

One-five units.

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; (4) pre-professional 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:

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

Speech-Drama

- II. Complete the following requirements in the major:

Lower Division

Oral and Written Expression I and II, Fundamentals of Speech, Introduction to Theater, 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 General Speech or a Theater emphasis.

- III. Teaching candidates 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 Speech/Drama 4355, Teaching of Speech and Dramatics; (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

THEATER EMPHASIS—APPROVED FOR CREDENTIAL

First Year

Oral and Written Expression I, 1001 3
Oral and Written Expression II, 1002 3
Fundamentals of Speech, 1003 3

Second Year

Introduction to Theater, 1010 5
Interpretative Reading, 2310 4
Argumentation and Debate, 2411 5

Third Year

Acting, 2012 4
Creative Dramatics, 3650 3
Introduction to Shakespeare, Eng. 3250 4
History of Drama I, Eng. 3800 4
Fundamentals of Production, 4110 5

Fourth Year

Advanced Acting, 4012 4
Advanced Public Speaking, 4350 4
Shakespeare's Comedies, Eng. 3251 4
History of Drama II, Eng. 3801 4
History of Drama III, Eng. 3802 4
Directed Group Studies in Drama, 5901 3

		Units	
	F	W	S
Oral and Written Expression I, 1001	3		
Oral and Written Expression II, 1002		3	
Fundamentals of Speech, 1003			3
Introduction to Theater, 1010			5
Interpretative Reading, 2310		4	
Argumentation and Debate, 2411			5
Acting, 2012		4	
Creative Dramatics, 3650			3
Introduction to Shakespeare, Eng. 3250		4	
History of Drama I, Eng. 3800			4
Fundamentals of Production, 4110			5
Advanced Acting, 4012			4
Advanced Public Speaking, 4350			4
Shakespeare's Comedies, Eng. 3251			4
History of Drama II, Eng. 3801			4
History of Drama III, Eng. 3802			4
Directed Group Studies in Drama, 5901			3

GENERAL SPEECH EMPHASIS—APPROVED FOR CREDENTIAL

	Units		
	F	W	S
First Year			
Oral and Written Expression I, 1001	3		
Oral and Written Expression II, 1002		3	
Fundamentals of Speech, 1003			3
Second Year			
Introduction to the Theater, 1010	5		
Interpretative Reading, 2310		4	
Argumentation and Debate, 2411			5
Third Year			
Acting, 2012	4		
Introduction to Radio and Television, 3310	4		
Study of Great Speeches, 4410		5	
Business and Professional Speech, 3412			4
Fourth Year			
Advanced Public Speaking, 4350	4		
Public and Group Discussion, 3510		5	
Mass Media of Communication, 3210			4
Introduction to Linguistics, Eng. 4060			4
Directed Group Studies in Speech			6

SPEECH-DRAMA MINOR

Upon approval of the departmental adviser students may enroll in a program leading to a minor in speech or in drama. Such a program should include a minimum of 30 units of approved courses in either speech or drama. Consultation with the departmental adviser will result in a special individual minor program for each the student, depending upon his major and upon his objectives. A minor in speech and drama will consist of all of the courses in the lower division, a total of 23 units, plus at least 7 units of elective speech or drama courses. Electives also should be taken in English, art, and music.

SPEECH-DRAMA

* 1001, 1002. Oral and Written Expression, I-II

A theory and skills course covering all aspects of rhetoric, with special attention to oral communication, and work in written expression. Special emphasis is on research, organization, clarity, integrity, and delivery. Three units each term.

1003. Fundamentals of Speech

A general survey of the field of speech and drama, with introductory units in voice and diction, theater, interpretation, and public speaking. Prerequisite to all Speech and Drama courses. Laboratory required for students with special speech problems. Three units.

1010. Introduction to the Theater

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) G.E. requirement. Five units.

* A student who fails either English 1001 or Speech and Drama 1001 must present evidence of satisfactory completion of an independent study course (emphasizing the mechanics of English) or equivalent before repeating either of these courses.

2012. Acting

Techniques of performance in relation to historical modes of production. Play analysis in relation to character, vocal method, body movement, dance. Four units.

2310. Interpretative Reading

A fundamental course devoted to theory, methods, and practice of oral communication of different types of literature. Four units.

2411. Argumentation and Debate

A course stressing those elements of logic and rhetoric making up responsible argumentative discourse. Practice in parliamentary, legislative, and forensic debating technique. Five units.

3012. Advanced Acting

Creative character analysis and portrayal. Use of short plays and scenes to teach advanced techniques in acting. Prerequisite: Speech-Drama 2012. Four units.

3210. Mass Media of Communication

Importance of periodicals and newspapers, motion pictures, radio, and television. Comparative analysis and evaluation. Development of criteria for responsible judgments. Four units.

3310. Introduction to Radio and Television

A course designed to improve understanding of the medium, studying programming, elements of production, business management, aesthetics, history. Four units.

3412. Business and Professional Speech

A course designed to meet the needs of business management. Units in explanations, sales and policy speaking, reading aloud, and conference work. Four units.

4355. Teaching of Speech and Dramatics

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. AV techniques. Prerequisite: Consent of instructor. Four units.

4410. Study of Great Speeches

A study of the great American public addresses of all types, and of the speakers who delivered them. Emphasizes elements of rhetoric of use to the student speaker. Five units.

4650. Children's Theater

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. 2 hrs. lect., 2 hrs. act. Three units.

5900. Individual Study

Two-five units.

5901. Directed Group Study

Two-five units.

The following English courses carry credit toward the Speech and Drama major:

Eng. 3250—Introduction to Shakespeare

Eng. 3251—Shakespeare's Comedies and History Plays

Eng. 3252—Shakespeare's Tragedies

Eng. 3800, 1, 2—History of the Drama (I) (II) (III)

Eng. 4060—Introduction to Linguistics

3510. Public and Group Discussion

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. Five units.

Speech-Drama

3512. Development of Dramatic Art

Historic development of the theater from the Greek period until the present time, including study of representative plays, physical theater, and production practices for each period. Five units.

3650. Creative Dramatics

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. 2 hrs. lect., 2 hrs. act. Three units.

4050. Trends in Modern Theater

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 general education requirement. Three units.

4110. Fundamentals of Play Production

Analysis of dramatic productions. Attention to the physical theater and its equipment, stage scenery; properties; stage lighting and sound; organization and design of stage productions. 3 hrs. lect., 6 hrs. lab. Five units.

4180. Rehearsal and Performance

Activity course for students participating in acting, staging, and other phases of production of college-theater performances. Admission by consent of instructor. One-three units.

4350. Advanced Public Speaking

Principles of public speaking and the development and presentation of talks redesigned to achieve specific purposes. May fulfill teaching credential speech requirement. Four units.

DIVISION OF EDUCATION

The Division of Education includes the following departments: Education, Counseling and Pupil Personnel, Health and Physical Education, Recreation, and School Administration and Supervision. The programs and courses of the departments are listed separately.

Professors: Hall (Head), Burnett (Chairman, Department School Administration and Supervision), Lawrence Lepore, Lutt, Marsh (Coordinator of Secondary Education), Peters, Shriner, Schunhoff, White (Chairman, Department of Counseling and Pupil Personnel), Vandenburg (Chairman, Department, Health and Physical Education); Associate Professors. Carlson, Comer, Davies, Eboch, McHugh, Niepeth (Chairman, Department, Recreation), Sabath, Seavey, Soldahl, Whitehorn, Worland, Yeager, Zeitlin; Assistant Professors Brock, Brown, Davidson, Gobin, Hendrickson, Jones, King, M. Martin, R. Martin, Mathews, Mennet, Olavarri, Patton, Quinzel, Roossinck, Spencer, Williams.

CURRICULA OFFERED

Baccalaureate Degrees Offered in the Division

Majors in:

Elementary Education (B.S. with the institutional recommendation for the General Elementary Credential is limited to students accepted in the program before November 1, 1963.)

Physical Education (B.S.)

Recreation (B.S.)

Minors in:

Physical Education

IMPORTANT NOTICE

Credential Programs Described in This Bulletin Are Subject to Change

The Trustees of the California State Colleges are reviewing all credential programs; supplements to this bulletin describing changes which may be forthcoming will be published as appropriate. Candidates already clearly admitted to a credential program as described in previous college publications will have the option of completing a program either under existing regulations or under subsequent changes. Reference is made to Title 5 of the California Administrative Code, Section 40401.

Nondegree Credential Programs and Courses Offered in the Division

A program leading to the institutional recommendation for the General Elementary Credential is limited to candidates accepted in the program before November 1, 1963.

A program leading to direct application for the General Secondary Credential is limited to students accepted in the program before November 1, 1963.

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

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

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

A program leading to direct application for the Standard Supervision Credential.

PURPOSES

The Division of Education is concerned at the undergraduate level with offerings in selected areas in the general education program of the College and baccalaureate programs for certain majors. It is concerned at the graduate level with the professional education of teachers, and programs for specialists in selected areas of school service. Programs prepare students for elementary school teaching, for secondary school teaching, for recreation leadership, and for specialists in health and physical education, pupil personnel services, and supervision.

The professional programs are interdivisional in nature and are based on general education in the arts, sciences, humanities, and mathematics. All professional programs provide public school laboratory, fieldwork, or internship experiences within each major phase of the work.

THE DEPARTMENT OF EDUCATION

The Department of Education offers programs and courses primarily concerned with the Standard Teaching Credentials and the in-service education of school teachers. Students who plan to enroll in 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 Education and participate in the co-curricular activities in the department and its student organizations.

ADMISSION TO THE TEACHER EDUCATION PROGRAM

There are four steps in the program of students working toward the Standard Teaching Credentials with specializations in either elementary school or secondary school teaching. (1) Admission to course work; (2) preliminary candidacy; (3) full candidacy; (4) completion of the program.

(1) Students will be admitted to course work on the basis of satisfactory completion of the pre-professional education requirements. (2) The education adviser may recommend individuals to preliminary candidacy, but APPROVAL IS MADE ONLY BY THE CREDENTIALS BOARD. Since the appraisal of candidates is COLLEGE-WIDE and the principal settings are in the college classroom and the field laboratory experience, the recommendation to preliminary candidacy is normally made only after the student has completed 12 units of work at the College including a field laboratory experience. Students are normally admitted to Phase I of student teaching only after approval of preliminary candidacy. (3) Full candidacy is gained when the candidate is approved for Phase II of student teaching. (4) To complete requirements for the credential the student must maintain a "C" average through each quarter in both over-all college and professional work, and shall maintain satisfactory performance in the skills of writing, spelling and language usage.

Moreover a candidate must:

Demonstrate adequate intellectual ability; evidence 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.

Students who plan to teach in California must meet citizenship requirements. Prospective candidates and candidates who do not meet these standards are subject to denial of candidacy.

The student is 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, consult an education adviser.

1. The Elementary Teacher Education Program

A. Requirements for the Bachelor of Science Degree in Elementary Education

Students planning to obtain the Bachelor of Science degree with a major in education and at the same time complete the requirements for the general elementary credential must have been accepted in a program of professional education prior to November 1, 1963. (New requirements stipulated under the Licensing of Certificated Personnel Law of 1961 pertain to candidates for credential after that date.) Students qualified to receive the general elementary credential are referred to the requirements outlined in the *1963-64 College Bulletin*. Before entering this program, the student must obtain the permission of the Chairman of the Department of Education.

B. Requirements for the Standard Teaching Credential with a Specialization in Elementary Teaching

The department offers a program of courses which may be used to meet State requirements for the Standard Teaching Credential with a Specialization in Elementary Teaching. Students entering the program starting with the Winter Quarter 1964-65 will normally take courses leading to this credential.

1. General Requirements:

Satisfactory compliance with admission standards of the College.
A baccalaureate or higher degree from an approved institution.

Successful completion of a program of studies leading to a teaching major, a teaching minor, and general education as defined in the California Certification Requirements and as required by the College.

Successful completion of a program of 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.

2. Pre-professional Education Requirements:

Except for a course in Child Growth and Development and a public school laboratory experience which may be taken as undergraduate electives, the professional education courses are taken post-baccalaureate. Prior to admission to course work in professional education, the student will complete an application form, submit a transcript, and be interviewed by a member of the Education faculty who will determine if the student has met the following pre-professional requirements.

Completion of the general education requirements:
Completion of a teaching credential major.

Teaching majors may be completed at this College concurrently with work leading to the following baccalaureate majors:

Business Education, Economics, Art, Music, Speech, Drama, Physical Education, English, History, Spanish, Biological Science, Physical Science, Physics, Chemistry, Mathematics, Social Science, Political Science, and Psychology. The student is asked to consult with both his adviser in the major AND AN ADVISER IN THE DEPARTMENT OF EDUCATION concerning the practicability of specific majors. Details of these major programs may be found outlined in this *Bulletin* under the appropriate divisions and departments. Transfer students who hold a baccalaureate degree completed at another institution should consult an adviser in Education.

3. Progress Toward Completion of a Teaching Minor.

Teaching minors may be completed at this College through the appropriate selection of electives in any one of the following areas: Economics, Business Education, Art, Music, Speech, Drama, Physical Education, English, Spanish, History, Chemistry, Physics, Biology, Mathematics, Anthropology, Geography, Journalism, Political Science, Psychology, and Sociology. Details of these minor programs may be found outlined either in this *Bulletin* under the appropriate division and department or in the office of the appropriate division chairman. Students transferring with a completed baccalaureate degree and/or contemplating completion of any part of the teaching minor in the fifth year of work are to consult with the adviser in Education. Most students, by careful planning, will complete the teaching minor prior to completion of the bachelor's degree.

4. Submission of a Transcript Which Shows Appropriate Work in:

English (9 quarter units, including completion of the communications requirement and a course in literature or the equivalent); mathematics (a minimum of 4½ quarter units; course work must include the theory of the structure, arithmetic, and algebra of the real number system or calculus); music; art; speech; social sciences (includes satisfactory completion of the statutory requirements in U. S. Constitution); science; psychology; verification of experience with children either in a community youth-service agency or a school laboratory program.

C. The Professional Education Requirements:

	Units
Ed. 5025. Psychological Foundations of Education (corequisite Public School Lab III or Student Teaching)	3
Ed. 5030. Sociological Foundations of Education (corequisite Public School Lab III or Student Teaching)	3
Ed. 5100. Evaluation	3
Ed. 5800. Elementary School Methods, Block I and II Ed. 5811 and 5812, Lang. Arts in Elem. School Ed. 5821 and 5822, Soc. Studies in Elem. School Ed. 5831 and 5832, Reading in Elem. School (corequisite Public School Lab II or Student Teaching)	9
Ed. 5250. Teaching Resources in the School (corequisite Public School Lab III or Student Teaching)	2
Ed. 5265. Public School Lab III (Includes Youth Agency experience if not waived)	3

	Units
Ed. 5600. Student Teaching, Phase I, II, and Seminar	11
Ed. 5601. Student Teaching in Elem. School I	
Ed. 5602. Student Teaching in Elem. School II	
Ed. 5603. Student Teaching Seminar	
Math. 4020. Teaching Mathematics in Elementary Schools	3
Electives:	
Group 1. At least one course taken by advisement from the following:	3-4
Ed. 5233. Correction of Reading Difficulties	
Ed. 5240. Children's Literature	
Ed. 5281. Curriculum Planning in the Nursery School, Kindergarten & Primary Grades	
Other	
Group 2. Student's majoring or minoring in Art, Music, Science, or Physical Education must take one of the following:	3
Mus. Ed. 330. Music in the Elem. School	
P.E. 4200. Methods & Materials in Health & P.E.	
Sc. Ed. 4020. Science in the Elem. School	
Art 4350. Arts & Crafts in Elem. School	
Group 3. Additional electives to complete the requirement of a postbaccalaureate year. Recommended electives include:	3-9
Engl. _____. Grammar and Linguistics	
_____. A graduate level course in the student's teaching major.	
_____. A course in the student's teaching minor.	
Math. 4022. Foundations of Geometry	
P.E. 3200. Fundamental Movement	
H.E. 4600. Health Programs	
_____. Other	
_____. Selected	
_____. Other courses from Group 2	
Minimum Fifth Year Requirement	45

II. The Secondary Teacher Education Program

A. Requirements for the Standard Teaching Credential with a Specialization in Secondary Teaching.

The department offers a professional graduate program which may be used to meet current State requirements for the Standard Teaching Credential with a Specialization in Secondary Teaching.

All secondary candidates are required to enter this program except for those students admitted to the secondary credential programs governed by legislation prior to the Licensing Law of 1961. These exceptions are referred to the requirements outlined in the 1963-64 *General Catalog*.

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 advisor in the Department of 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.

Education**2. Pre-professional Education Requirements**

Applicants must complete an application form and be interviewed by a member of the education faculty and by members of the divisions appropriate to his teaching major and teaching minor. He must submit a transcript which shows work leading toward, or fulfilling, the credential requirements for general education and requirements for a teaching major and a teaching minor. 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 Education concerning the appropriateness of majors, minors, and major-minor combinations.

3. Minimum Teaching Major and Teaching Minor Requirements

A *teaching major* consists of at least 36 quarter units of upper division or graduate work, as specified in the Bulletin to appropriate major requirements. 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. A single academic subject consisting of at least 23 quarter units of upper division or graduate work is required.
- (2) The single subject major which consists of at least 36 quarter units of upper division or graduate work as specified.

A *teaching minor* consists of at least 30 quarter units of course work in a single academic subject, at least 9 units of which are specified and must be taken at the upper division or graduate level. A minimum of 9 quarter units in either the major or minor fields, or any combination of the major and minor, must be taken after the granting of the baccalaureate degree.

No more than 9 quarter units of work in general education may be applied toward the requirements for a teaching major or a teaching minor. 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.

4. The Professional Graduate Secondary Teaching Program

General pre-requisite: Baccalaureate degree; satisfactory completion or partial completion of a teaching major and a teaching minor, as determined by the appropriate College division or departments; and preliminary acceptance into the secondary credential program.

Units

Minimum post-graduate course work in content courses in the teaching major and/or teaching minor, or a combination of both	9
Ed. 5020. Psy. Foundation of Education I	3
Ed. 5030. Soc. Foundations of Education I	3
Ed. 5264. Public School Laboratory II	2
Ed. 5025. Psy. Foundations of Education II	3
Ed. 5250. Teaching Resources Laboratory	2
Ed. 5651. Student Teaching in the Sec. School Phase I	4
Ed. 5652. Student Teaching in the Sec. School Phase II	5
Ed. 5260. Secondary School Curriculum	4
Teaching Major Methods (See appropriate Division)	3
Teaching Minor Methods (See appropriate Division)	3
Minimum units required	45

SCHOOL DISTRICTS PARTICIPATING IN THE FIELD EXPERIENCE PROGRAM

The in-school field work feature of the education of teachers, supervisors, administrators and guidance workers is made possible through the cooperation of a number of public school districts in the service area of the college. The assisting school districts as of the fall quarter, 1963, include:

Acalanes Union High School District
 Alameda County Schools Office (Special Schools)
 Alameda Unified School District
 Alviso Elementary School District
 Canyon Valley Union High School District
 Castro Valley Elementary School District
 Centerville Elementary School District
 Decoto Elementary School District
 Hayward Unified School District
 Irvington Elementary School District
 John Swett Union High School District
 Livermore Elementary School District
 Livermore Joint Union High School District
 Milpitas Elementary School District
 Mt. Diablo Unified School District
 Newark Elementary School District
 Oakland Unified School District
 Pittsburg Unified School District
 San Leandro Unified School District
 San Lorenzo Unified School District
 San Pablo Elementary School District
 Tracy Union High School District
 Washington Union High School District

DESCRIPTION OF COURSES**EDUCATION**

The general prerequisite for all professional courses is upper-division or graduate standing.

3000 Series—Child, Youth, School ***3010. Principles, Scope, and Function of Education**

The modern public elementary and secondary school as a community agency; history and development; objectives, operation, scope, and functions. Two units.

3020. Growth and Development of Child and Youth

Human growth and development; psychology of child and youth with emphasis on school-related problems. Three units.

3060. Public School Laboratory I

Supervised public school laboratory experience, 3 hours. One unit.

3061. Youth Agency Laboratory

Supervised youth agency experience, 3 hours. One unit.

3100. Educational Psychology

Research and theory in the teaching-learning process; application to school practices; mental hygiene; individual differences in school behavior. Teacher-pupil relationships. Prerequisite: Basic psychology, Ed. 3000 series, concurrent registration in Ed. 3161. Three units.

* Concurrent registration in an entire series required unless special permission is granted.

3161. Public School Laboratory II

Supervised public school laboratory experience, 6 hours. Two units.

3200 Series—Elementary School and Kindergarten-Primary**Curriculum and Methods ***

Prerequisites: Ed. 3000 series, Ed. 3100 series, or equivalent.

3210. Language Arts in the Elementary School**3211. Language Arts in the Kindergarten-Primary School**

Curriculum, methods, and resource materials in speaking, listening, spelling, writing, and children's literature. 2 hrs. lect., 2 hrs. act. Three units.

3220. Social Studies in the Elementary School**3221. Social Studies in the Kindergarten-Primary School**

Curriculum, resource materials, and methods in scope and sequence of social studies in the elementary school. 2 hrs. lect., 2 hrs. act. Three units.

3230. Reading in the Elementary School**3231. Reading in the Kindergarten-Primary School**

Materials and methods of reading development; emphasis on group and individual techniques. 2 hrs. lect., 2 hrs. act. Three units.

3263. Public School Laboratory III

Three hours of supervised participation laboratory in public schools. One unit.

Ed. 4021. Child Growth and Development

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: Basic psychology. (Students interested in becoming elementary school teachers should enroll concurrently in public school laboratory I.) Lect. 3 hrs. Three units.

4100. Evaluation in Education

Principles, techniques, and current practices of evaluation in school; relationships to curriculum; current practices in tests and measurements. Prerequisite: Ed. 3100 or equivalent. Lect. 3 hrs., lab. 3 hrs. Four units.

4250. Participation and Audio-Visual Education

Selection, evaluation, preparation, and use of audio-visual materials. Prerequisites: Ed. 3200 series or equivalent. 1 hr. lect., 2 hrs. act. (Concurrent registration in Ed. 4264.) Two units.

4251. Audio-Visual Methods and Materials

Selection, utilization and evaluation of audio-visual methods and materials in the teaching-learning process; operation of audio-visual equipment. (Fulfils credential requirement. No credit for students with prior audio-visual course.) Prerequisite: Teaching experience or permission of instructor. 1 hr. lect., 4 hrs. act. Three units.

4252. Preparation of Instructional Materials

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. 4251 or equivalent and teaching experience. Lect. 2 hrs., act. 2 hrs. Three units.

4264. Public School Laboratory IV

Public school participation preceding student teaching and weekly on-campus group conference; includes use of A-V materials and resources. Lab. 9 hrs. Three units.

4500. Secondary Education: Curriculum, Counseling, and Guidance

Scope and sequence of secondary school curriculum; audio-visual equipment operation and material preparation; counseling and guidance; use of cumulative folder; roles of the teacher, student, parent, administrator, supervisor, and counselor. Prerequisite: Ed. 3000 series and Ed. 3100, or equivalent and preliminary candidacy. (Concurrent registration in Ed. 4560.) 5 hrs. lect. Five units.

4560. Public School Laboratory (Secondary)

Supervised public school laboratory experience, 3 hrs. One unit.

4600. Student Teaching in the Elementary Schools

Full-time student teaching under the supervision of a public-school teacher and a member of the college faculty in conjunction with a student-teaching seminar. Prerequisites: Full candidacy in elementary-education program and approval of Committee on Credentials. (Concurrent registration in Ed. 4601) Thirteen units.

4601. Student Teaching Seminar—Elementary Schools

Weekly conference period required as corequisite with student teaching—Ed. 4600. Two units.

4650. Student Teaching in the Secondary Schools

Full-time student teaching under the supervision of a public-school teacher and a member of the college faculty in conjunction with a student-teaching seminar. Prerequisite: Full candidacy in secondary-education program and approval of Committee on Credentials. (Concurrent registration in Ed. 4651) Thirteen units.

4651. Student Teaching Seminar—Secondary Schools

Weekly conference period required as corequisite with student teaching—Ed. 4650. Two units.

4900. Individual Study

Two-four units.

5000. Philosophy of Education

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. Four units.

Ed. 5001. History of Education

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 among Ancient, Medieval, or European History; American History; or permission of the instructor. Three units.

5010. Contemporary American Education

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.) Prerequisites: Ed. 3020 and Ed. 3060, or permission of instructor. Four units.

5020. Psychological Foundations of Education I

Problems of adolescence as reflected in and influenced by the school-community and society at large; counseling and guidance of secondary school students; analysis of current practices in evaluation useful to the teacher and to the school's pupil personnel services. Prerequisites: Preliminary acceptance into the Standard Teaching Credential program, concurrent registration in Ed. 5030 and Ed. 5264. Three units.

5021. The Exceptional Child

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. Three units.

5025. Psychological Foundations of Education II

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. Three units.

Education**5030. Sociological Foundations of Education I**

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. Three units.

5040. Teaching the Adolescent

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 psychology course. Three units.

5060. Human Relations in Teaching

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. Four units.

5069. Home and School

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. Three units.

5100. Evaluation in Education

Principles, techniques, and current practices of evaluation in schools. Relationship to curriculum; current practices in tests and measurements. Lect. 2 hrs., lab. 3 hrs. Three units.

5210. Improving Language Arts in the Elementary Schools

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, Ed. 3200 series or equivalent, or permission of instructor. Three units.

5220. Improving Social Studies in Elementary Schools

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, Ed. 3200 series, or equivalent, or permission of the instructor. Three units.

5230. Improving Reading in the Elementary Schools

Research in psychology and methods of the teaching-learning process in reading; diagnosis and evaluation; relation to school curriculum materials and resources. Prerequisite: Teaching experience, Ed. 3200 series or equivalent, or permission of the instructor. Three units.

5231. Methods, Techniques and Research for Analysis of Reading Problems

Use and interpretation of informal, formal, group and individual tests used in the analysis of reading difficulties. Prerequisite: Teaching experience, Ed. 5100, Ed. 5200, or consent of instructor. Three units.

5233. Correction of Reading Difficulties

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, Ed. 5231, or consent of instructor. Three units.

5240. Children's Literature

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. Three units.

5241. Literature for Adolescents

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. Three units.

5250. Teaching Resources in the School

Identification and review of teaching resources and materials used in school teaching; utilization of audio-visual 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., act. 2 hrs. Two units.

Ed. 5261. Public School Laboratory I**Ed. 5262. Public School Laboratory II****Ed. 5263. Public School Laboratory III****Ed. 5264. Public School Laboratory IV**

Three hours supervised participation in public schools and/or youth agencies for each unit of credit. (Concurrent registrations as required with specific courses.) Lab. I, one unit; Lab. II, two units; Lab. III, three units; Lab. IV, four units.

5270. Secondary School Curriculum

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. Four units.

5275. Teaching in the Junior High School

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. Four units.

5281. Curriculum Planning in the Nursery School, Kindergarten and Primary Grades

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.) Three units.

Ed. 5600. Series, Student Teaching Phase I and II**Ed. 5601. Student Teaching in the Elementary School Phase I****Ed. 5602. Student Teaching in the Elementary School Phase II****Ed. 5651. Student Teaching in the Secondary School Phase I****Ed. 5652. Student Teaching in the Secondary School Phase II**

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. Normally, the student teaching sequence will cover two quarters.) Phase I, four units. Phase II, five units.

Ed. 5603. Student Teaching Seminar Elementary School

Conference periods with College supervisors. (Corequisite with Student Teaching Phase I or Phase II.) Two units.

5700. Teaching the Gifted

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. Three units.

Education

5746. Learning Difficulties

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. 3 hours lect., 3 hrs. lab. Four units.

Ed. 5800 Series, Elementary School Methods Block I and II

Ed. 5811. Language Arts in the Elementary School I

Ed. 5812. Language Arts in the Elementary School II

Curriculum, methods, and resource materials in speaking, listening, spelling, writing.

Ed. 5821. Social Studies in the Elementary School I

Ed. 5822. Social Studies in the Elementary School II

Curriculum, resource materials, and methods in scope and sequence of social studies in the elementary school.

Ed. 5831. Reading in the Elementary School I

Ed. 5832. Reading in the Elementary School II

Materials and methods of reading development; emphasis on group and individual techniques. Prerequisite: Admission to course work in the elementary teaching credential program. (Concurrent registration in the series and Public School Lab. III, or student teaching.) Block I—Lect., 3 hrs., act. 6 hrs., six units. Block II—Lect. 3 hrs., three units.

5900. Individual Study

One to five units.

5901. Directed Group Study

One to four units.

6020. Research in Education

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. Ed. 4100 and course in statistics recommended. Four units.

6700. Advanced Education Psychology

(See Psychology Department for course description.)

6900. Individual Study

Two-four units.

6901. Group Study

Two-four units.

For descriptions of the following courses please refer to the listing under the appropriate division or department:

Subject Area Methods Courses

Principles, practices, trends, instructional methods, and evaluation procedures useful in a special subject or broad field taught in the secondary school. Prerequisite: Graduate standing and preliminary or formal acceptance into the secondary credential program. 3 units.

English 5694. Linguistics and Composition

The Department of School Administration and Supervision

The Department of School Administration and Supervision offers courses which may be used to meet State requirements for the Administration and Supervision credentials in effect before November 1, 1963, and for the Standard Supervision Credential which became effective after that date. The program of the department is designed to meet the needs of graduate students with previous successful school experience as a teacher, supervisor or administrator seeking the authorization to serve in administrative or supervisory positions in the public schools of California.

Supervision, Administration

ADMISSION TO THE PROGRAM IN SUPERVISION AND ADMINISTRATION

Students may qualify for work toward credentials in the Department of School Administration and Supervision as follows: (1) Students will be admitted to the course work of Group I below on the basis of graduate standing and satisfactory experience in the field of education. Prior to completion of the courses in Group I, the student will fill out an application form; submit a transcript; be interviewed by a member of the Education faculty; and take the standardized tests prescribed by the department. (2) Students will be admitted to preliminary candidacy and the course work in Group II following satisfactory completion of the foregoing requirements. (3) Admission to field work or the internship in Group III is limited to students for whom the department has made arrangements with a cooperating school superintendent.

I. The Administration and Supervision Credential Programs

A. Requirements for the Elementary Administration, Secondary Administration, General Administration and General Supervision Credential program.

Students who had completed some of the course requirements for the several administration and supervision credentials in effect before November 1, 1963, are eligible to continue work toward the Elementary Administration, Secondary Administration, General Administration, or General Supervision credentials until September, 1966. Such students are referred to the courses outlined in the 1963-64 Bulletin. Before entering this program leading to any of these several credentials the student must obtain the permission of the Chairman of the Department. Upon adviser approval, students may substitute courses from the new program below.

B. Requirements for the Standard Supervision Credential

Students completing their first administration or supervision course after November 1, 1963, are required to take courses leading to the Standard Supervision Credential. This credential authorizes holders to serve in the public schools of California as a general supervisor, a curriculum consultant, a supervisor of special areas or subjects, an elementary school principal, or a secondary school principal. Students should follow the course sequence outlined below in consultation with the faculty of the department.

Courses leading to the Standard Supervision Credential fall into three groups:

Group I Prerequisites: Graduate standing and two years of teaching experience.

SAS 6000 Leadership and School Organization (4)

Two additional graduate courses approved by the department.

Group II Prerequisites: Three years of teaching experience; three courses completed at Cal-State, Hayward; preliminary acceptance into the credential program by the department.

SAS 6200 Foundations of Curriculum Development (4)

SAS 6300 Procedures for Curriculum Change (4)

SAS 6320 Public School Supervision (4)

SAS 6550 The Public School Principalship (4)

SAS 6650 Business and Legal Aspects of School Administration (4)

Group III Prerequisites: Four years of teaching experience; completion of all Group II courses; approval of a cooperating superintendent.

SAS 6800 Field Work (3-3) or

SAS 6850 Internship (2-2-2)

Supervision, Administration

DESCRIPTION OF COURSES

SCHOOL ADMINISTRATION AND SUPERVISION

5200. Curriculum Development

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, regular credential, consent of instructor. Four units.

5600. Federal, State and Local School Administration

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. Four units.

5640. Legal Aspects of Education

Consideration of 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. Four units.

5901. Directed Group Study

One to four units.

6000. Leadership and School Organization

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. Four units.

6100. Advanced School Curriculum

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. (Meets credential requirements for supervision and administration.) For school curriculum personnel. Prerequisites: Teaching experience, regular credential. Ed. 5200 or consent of instructor. Four units.

6200. Foundations of Curriculum Development

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. Four units.

6300. Procedures for Curriculum Change

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. Four units.

6310. Development of Curriculum Resources

Preparation of curriculum materials, community and commercial resources, curriculum laboratory planning and utilization. Relation to library services, duplication and circulation processes, and editing procedures. District, county, state, and college services. Prerequisite: Teaching experience and consent of instructor.

6320. Public School Supervision

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, 6200 and Department approval. Four units.

Supervision, Administration

Innovative Knoll Curriculum

6500. Administration of Elementary Schools

Evaluation of modern developments in the organization and administration of elementary schools. Principles and practices of supervising staff, providing leadership for the instructional program, and managing building, budget, extra-class activities, and community relationships. Prerequisite: SAS 6000 and Department approval. Four units.

6501. Administration of Secondary Schools

Evaluation of modern developments in the organization and administration of secondary schools. Principles and practices of supervising staff, providing leadership for the instructional program, and managing building, budget, extra-class activities, and community relationships. Prerequisite: SAS 6000 and Department approval. Four units.

6510. Advanced Curriculum Development, Materials

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. Prerequisites: Teaching experience, regular credential, Ed. 5200 or consent of instructor. Four units.

6550. The Public School Principalship

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. Four units.

6600. Aspects of School Finance and Business Administration

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. Four units.

6610. School Housing

Study of 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. Four units.

6650. Business and Legal Aspects of School Administration

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. Four units.

6800 Series—Field Work in Administration and Supervision

6801. Field Work I

6802. Field Work II

6803. Field Work III

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. Three units each quarter.

6850 Series—Internship in Administration and Supervision

6851. Internship I

6852. Internship II

6853. Internship III

Counseling; Pupil Personnel**6850. Internship**

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. Two units each quarter.

For the description of the following courses please refer to the listing under the appropriate division or department.

Ed. 5010. Contemporary American Education

Ed. 5100. Evaluation in Education

Ed. 6020. Research in Education

Coun. 5641. School and Child Welfare

Coun. 5670. Organization and Administration of Pupil Personnel Services

The Department of Counseling and Pupil Personnel

The Department of Counseling and Pupil Personnel offers a program of courses which, by direct application to the California State Department of Education may be used to meet specific 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 program is entirely post-baccalaureate. It may be based on either a teaching credential or an academic bachelor's degree program. Course work, which may be undergraduate, in the areas of learning, measurement, general psychology, and human growth and development is prerequisite to study toward this credential. Check course descriptions in Education and Psychology for specific course listings and prerequisite.

ADMISSION REQUIREMENTS AND PROCEDURES

The candidate's program of study, including evaluation of course work already completed, is planned in conference with a member of the department faculty.

1. Admission to study is based upon evidence of completion of a bachelor's degree from an accredited college with an overall grade point average of 2.0 (C average); a 2.5 average in upper division courses closely related to the course work of this program; and completion of the prerequisites in learning, measurement, general psychology and human growth and development. Transcripts and a completed application blank are to be submitted at least one week prior to registration dates.
2. Admission to candidacy requires completion of three or more of the following courses: Coun. 5750, Coun. 6901, Coun. 6735, Ed. 5021, Psy. 4410 and Psy. 4610. A 3.0 average is required. Satisfactory performance on standardized tests prescribed by the department and completion of an interview with a member of the department faculty are to be accomplished prior to acceptance as a candidate.
3. Admission to field work or internship assignments requires maintenance of a 3.0 average, supporting 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.

**Requirements for the Designated Services Credential
With a Specialization in Pupil Personnel Services**

A full statement of the credential requirements for all concentrations may be obtained from either the department office in the Division of Education or from the State Department of Education in Sacramento. The credential sections referred to are those used in the California Certification Requirements.

A. General Statement of Requirements

1. A master's degree. (See 6402(a))

2. Ninety quarter hours of post-baccalaureate course work. (See 6402(b) and 6402(c))

3. Field work or internship. (See 6402(c))

B. College program concentrations leading to authorization for various types of services. (See course groupings listed under C below)**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 will complete the following:

Course Groups 1 and 2. (See code number 6402(b) regarding these credit and experience substitutions possibilities)

(b) Applicant without teaching experiences will complete Course Groups 1, 2, and 3, except that he may substitute electives for Psy. 6720, Coun. 6911, Coun. 6912, and Coun. 6025.

2. Authorization for administration of individual examinations under supervision for purposes of placement in special classes.

(a) Applicant with 3 years successful teaching experience and 45 other quarter hours will complete Course Groups 1, 2, and starred courses of Group 3.

(b) Applicant without teaching experience will complete Course Groups 1, 2, starred courses of Group 3, and electives to reach a total of 90 quarter hours.

3. Authorization as a competent psychologist.

(a) All applicants will complete Course Groups 1, 2, and 3.

C. Courses designed to meet specific California Certification Requirements.**6402(a)(4)****Group I**

(A) Pupil personnel services concepts and procedures

Coun. 5750. Pupil Personnel Work (4)

(B) Dynamics of individual behavior

Psy. 4610. Psychology of Personality (4)

Psy. 4410. Behavior Pathology (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

Ed. 6020. Research in Education (4)

(H) Remedial and special education

Ed. 5021. The Exceptional Child (3)

(I) Laws relating to children

Coun. 5570. Organization and Administration of Pupil Personnel Services (4)

Counseling; Pupil Personnel

(J) Organization of pupil personnel services
Coun. 5570 Organization and Administration of Pupil Personnel Services (4)

Group II

6402(c)
Coun. 6610 Pupil Personnel Seminar (2)
Coun. 6660 Field Work in Pupil Personnel Services (2)
or 6770 Pupil Personnel Internship
Coun. 6620 Pupil Personnel Seminar (2)
Coun. 6661 Field Work in Pupil Personnel Services (2)
or 6770 Pupil Personnel Internship
Coun. 6630 Pupil Personnel Seminar (2)
Coun. 6662 Field Work in Pupil Personnel Services (2)
or Coun. 6770 Pupil Personnel Internship (2-6)

Group III

6402(d)(1)
* Coun. 6810 Advanced Pupil Personnel Seminar (2)
* Coun. 6860 Advanced Field Work in Pupil Personnel Services (2)
(A) Diagnostic tests of learning difficulties
* Ed. 5746 Learning Difficulties (4)
(B) Individual tests of intelligence
* Psy. 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
Psy. 6700 Advanced Education Psychology
Stat. 4001 Statistical Analysis I
Coun. 6820 Advanced Pupil Personnel Seminar
Coun. 6830 Advanced Pupil Personnel Seminar
Coun. 6861 Advanced Field Work in Pupil Personnel Services
Coun. 6862 Advanced Field Work in Pupil Personnel Services
Coun. 6880 Advanced Pupil Personnel Internship

DESCRIPTION OF COURSES

Counseling

5641. School and Child Welfare

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. Three units.

Counseling; Pupil Personnel

5570. Organization and Administration of Pupil Personnel Services

Study of 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: Ed. 5750. Four units. 3 hrs. lect., 3 hrs. act.

5670. Organization and Administration of Pupil Personnel Services

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: Ed. 3000, 3100, 4100. Four units.

5750. Pupil Personnel Work

Basic services included in public school pupil personnel programs. Philosophy, rationale, and basic concepts underlying such services are developed as background for study of procedures, techniques, and materials employed by teachers, counselors, and others in providing guidance and related psychologically oriented personnel services. Prerequisite: Teaching experience or consent of instructor. 3 hrs. lect. and 3 hrs. act. Four units.

5901. Directed Group Study

One to four units.

6025. Clinical Study of Atypical Children

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. Four units. 3 hrs. lect., 3 hrs. lab.

6610, 6620, 6630. Pupil Personnel Seminar

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. Two units each.

6660, 6661, 6662. Field Work in Pupil Personnel Services

Supervised field work in pupil personnel services in organized program for the various specializations for the pupil personnel services credential. Prerequisite: Approval of department, advance application, concurrent registration Pupil Personnel Sem. Two units each.

6670. Supervision of Pupil Personnel Services

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. Four units. 3 hrs. lect., 3 hrs. lab.

6735. Educational and Vocational Planning

Sources of educational and occupational information; evaluation of such information, and its clinical use in the counseling process. Prerequisite: Ed. 5750. 3 hrs. lect., 3 hrs. lab. Four units.

6750. Counseling Theory

Theory and techniques of counseling students. Use of relevant environmental and individual data in facilitating personal decisions and the development of sound educational and vocational plans. Prerequisites: Ed. 5750, Coun. 6735, Coun. 6901. Four units. 3 hrs. lect., 3 hrs. lab.

6751. Advanced Counseling Seminar

Relationship of counseling theory and methodology to theory of learning and personality development. Development of a personal philosophy of counseling. Prerequisite: Coun. 6750. 3 hrs. lect., 3 hrs. lab. Four units.

Counseling; Pupil Personnel

6752. Rehabilitation Counseling

Special considerations involved in counseling persons with the more frequently occurring handicaps. Prerequisite: Coun. 6570. 3 hrs. lect., 3 hrs. lab. Four units.

6770. Internship in Pupil Personnel

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 advance application. Two to six units, usually three quarters of two units each.

6810, 6820, 6830. Advanced Pupil Personnel Seminar

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, and advance application. Two units each.

6860, 6861, 6862. Advanced Field Work in Pupil Personnel Services

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, advance application. Two units each.

6880. Advanced Pupil Personnel Internship

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, advance application. Two to six units, usually three quarters of two units each.

6901. Appraisal Procedure

Interpretation and use of standardized tests commonly used in the counseling process. Prerequisite: Ed. 4100, Ed 5750. 3 hrs. lect., 3 hrs. lab. Four units.

6902. Group Theory and Procedures

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. 6570, 3 hrs. lect., 3 hrs. lab. Four units.

6911. Individual Mental Testing Practicum

Clinical practice under supervision of individually administered tests of mental ability. Prerequisite: Psy. 5720. 12 hrs. lab. Four units.

6912. Projective Techniques

Study of instruments and procedures commonly employed in clinical study of emotional and social adjustment. Prerequisite: Psy. 5720. 3 hrs. lect., 3 hrs. lab. Four units.

For description of the following courses please refer to the listing under the appropriate division or department.

Ed. 5021 The Exceptional Child

Ed. 5069 Home and School

Ed. 6020 Research in Education

Psy. 5410 Behavior Pathology

Psy. 5610 Psych. of Personality

Psy. 5720 Individual Mental Tests

Psy. 6700 Advanced Education Psych.

Stat. 4001 Statistical Analysis I

DEPARTMENT OF HEALTH AND PHYSICAL EDUCATION

The Department of Health and Physical Education offers course work enabling a student to obtain a baccalaureate major in physical education, a credential major and minor in physical education, and a minor in health science.

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

General Education Requirement 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. A student may elect Option I or Option II in fulfillment of this requirement.

Option I

	Units
P.E. 1100 Health and Physical Activity	3
P.E. 1010-2010 Required Activity Courses	2
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Option II

	Units
H. Ed. 1000 Concepts of Health	3
P.E. 1000 Fundamentals of Physical Activity	½
P.E. 1010-2010 Required Activity Courses	1½
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Entering freshmen take Physical Education 1000 or Physical Education 1100, depending on the option selected, during the first quarter in attendance. Option I is designed as an integrated approach to the areas of health and physical education emphasizing the basic concepts of health as related to individual fitness and physical activity. Option II divides the areas of health and physical education into separate courses.

Students are counseled during the first quarter concerning the completion of the general education requirement in health and physical education. The requirement should be completed by the end of the second year. 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 activity laboratory sequence for students majoring or minoring in physical education.

PHYSICAL EDUCATION MAJOR (B.S. DEGREE)¹

	Units
P.E. 3100—Scope and History	4
P.E. 3400—Kinesiology	4
P.E. 3410—Physiology of Activity	4
P.E. 3420—Analysis of Body Motion	4
P.E. 4100—Seminar in Principles and Program	4
P.E. 4600—Organization and Administration	4
	<hr/>

¹ Baccalaureate program in physical education is the same for men and women.

Health, Physical Education

	Units
Selected Sports Skills and Techniques ³	3
Professional Physical Education Electives	6
<i>Requirements from Related Fields</i>	<i>6</i>
Anatomy and Physiology 3301	4
Anatomy and Physiology 3302	4
<i>Electives from Related Fields⁸</i>	<i>5</i>
Biol. 2500—Genetics	5
Stat. 1500—Statistics	4
Zool. 3600—General Embryology	5
Anthro. 3010—Social Anthropology	4
Psy. 2010—General Psychology II	4
Psy. 4300—Motivation	4
Psy. 5410—Behavior Pathology	4
Soc. 2010—Social Problems	4
Rec. 1000—Nature and Scope of Recreation	4
H.Ed. 3600—School Health Programs	3
	15-20
	56-61

Credential Requirements for Physical Education Major

I. All students must complete the bachelor of science degree in physical education at California State College at Hayward or an equivalent degree at an accredited institution of higher learning or the equivalent courses either at California State College or other accredited institution.

II. A student must also complete the following:

	Men	Women
P.E. 3210—Theory of Interscholastic Football and Basketball	3	
P.E. 3220—Theory of Interscholastic Baseball and Track	3	
P.E. 3230—Theory of Aquatics and Gymnastics	2	2
P.E. 3240—Theory of Individual Sports	2	2
P.E. 3250—Theory of Combatives and Team Sports	2	
P.E. 3260—Theory of Modern Dance	3	
P.E. 3270—Theory of Women's Team Sports	3	
P.E. 3280—Theory of Games and Rhythms	2	2
P.E. 5400—Rehabilitation of Athletic Injuries or 4500—Health Appraisal and Guidance	3	3
P.E. 5500—Evaluation of Health and Physical Education	3	3
Electives	2	
	20	20
P.E.—4200—Methods and Materials in Health and Physical Ed.	3	

In addition to the course work specified, all teaching candidates majoring 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; (c) the professional courses in teacher education; and (d) the requirements for a minor.

² An activity course will be required every quarter during the upper-division (junior and senior) years. No activity may be repeated. Activities will be selected in consultation with the adviser. This requirement is in addition to the general education, health and physical education requirement.

³ Students will elect, in consultation with adviser, four courses from the approved list.

Health, Physical Education

Credential Requirements for a Physical Education Minor (Men and Women)

	Units
Required Core (18 units)	
P.E. 3100—Scope and History of Physical Education	4
P.E. 3400—Kinesiology	4
P.E. 4600—Organization and Administration of P.E.	4
P.E. 5400—Rehabilitation of Athletic Injuries or 4500—Health Appraisal and Guidance	3
P.E. 5500—Evaluation of Health and Physical Education	3
Electives (12 units selected from the following courses)	
P.E. 3210—Theory of Interscholastic Football and Basketball	3
P.E. 3220—Theory of Interscholastic Baseball and Track	3
P.E. 3230—Theory of Aquatics and Gymnastics	2
P.E. 3240—Theory of Individual Sports	2
P.E. 3250—Theory of Combatives and Team Sports	2
P.E. 3260—Theory of Modern Dance	3
P.E. 3270—Theory of Women's Team Sports	3
P.E. 3280—Theory of Games and Rhythms	2
	30
P.E. 4200—Methods and Materials in Health and P.E.	3

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.

Recommended Program for the Physical Education Major

	Units		
	F	W	S
<i>First Year</i>			
Biol. 1000	5		
Eng. 1001 or Sp. 1001	3		
G.E. and/or electives	8		
P.E. 1000			
Zoo. 1001			
Eng. 1001 or Sp. 1001			
G.E. and/or electives			
P.E. 1010			
Zoo. 1002			
H.Ed. 1000			
G.E. and/or electives			
P.E. 1030			

<i>Second Year</i>			
Phys. Sci. 1340	5		
Psy. 2000	4		
G.E. and/or electives	7		
P.E. 2010			
A & P 3301			
G.E. and/or electives			
P.E. 2010			
A & P 3302			
Electives in assoc. fields			
G.E. and/or electives			
P.E. 2030			

Health, Physical Education

	Units		
	F	W	S
Third Year			
P.E. 3100	4		
P.E. 3400	4		
Electives in assoc. fields	4		
Electives	3		
P.E. 3011	½		
P.E. 3410	4		
Symposium 3901	3		
Electives in assoc. fields	4		
Electives in P.E.	3		
P.E. 3030	1		
P.E. 3420	4		
Upper Div. G.E.	4		
Electives in assoc. fields	3		
Electives	½		
P.E. 3011			
Fourth Year			
Upper Div. G.E.	4		
Electives in P.E.	3		
Electives	8		
P.E. 4011	½		
P.E. 4100	4		
Symposium 4901	3		
Electives	8		
P.E. 4030	½		
P.E. 4600	4		
Electives	11		
P.E. 4012	½		

HEALTH EDUCATION

For details of Health Science minor, consult departmental adviser.

1000. Concepts of Health

Analysis of the basic concepts and principles of individual health including the investigation and evaluation of contemporary health problems and information. Meets general education health education requirement. 3 hrs. lect. Three units.

1100. Health and Physical Activity

Three units. (For description see P.E. 1100.)

4200. Methods and Materials in Health and Physical Education

Three units. (For description see P.E. 4200.)

4500. Health Appraisal and Guidance

Recognition and appraisal of illness or disability in the classroom situation, including handling of emergencies. 3 hrs. lect. Three units.

4600. Health Programs

Health services, environment, and information for community and social institutions. Includes administration and interpretation of medical examinations. 3 hrs. lect. Three units.

4900. Individual Study

Two-four units.

4901. Directed Group Study

One-four units.

Health, Physical Education

PHYSICAL EDUCATION

1000. Fundamentals of Physical Activity

Instruction in the fundamental physical skills, with emphasis on individual fitness and evaluation of skill achievement. 2 hrs. act. One-half unit.

1010.¹ 2010.² 3010.³ 4010.⁴ Beginning Activity

1011.¹ 2011.² 3011.³ 4011.⁴ Intermediate Activity

1012.¹ 2012.² 3012.³ 4012.⁴ Advanced Activity

Instruction in designated physical education activities on the beginning, intermediate and advanced levels. May be repeated for credit. 2 hrs. act. One-half unit.

Archery

Baseball

Basketball

Bowling

Conditioning and Weight Training

Cross Country

Field Hockey

Folk and Square Dance

Golf

Gymnastics

Relaxation and Special Exercise

Soccer

Social Dance

Tennis

Track and Field

Tumbling and Trampoline

Volleyball

Wrestling

1020.¹ 2020.² 3020.³ 4020.⁴ Intercollegiate Activity

Participation in the intercollegiate athletic program on the varsity, junior varsity or freshman level. One unit.

1030.¹ 2030.² 3030.³ 4030.⁴ Activity Laboratory for Major and Minor Students

Instruction in and practice of necessary skills prerequisite to certain professional courses. 3 hrs. act. One unit.

1100. Health and Physical Activity

Analysis and application of the basic concepts of health with particular emphasis on individual fitness and physical activity, including the study of individual health appraisal and problems. Meets general education health education requirement. 2 hrs. lect., 2 hrs act. Three units.

3100. Scope and History of Physical Education

The study of physical education as a fundamental phase of the school curriculum with emphasis on historical development. Includes relationship to recreation, health education, and professional preparation. 4 hrs. lect. Four units.

3200. Fundamental Movement

Fundamental physical skills, self-testing activities, games and sports, and rhythms. Prerequisite: Completion of general education requirements in health and physical education including folk and square dancing. 2 hrs. lect., 2 hrs. act. Three units.

3210. Theory of Interscholastic Football and Basketball

Theory and technique of coaching interscholastic football and basketball, including practice, game, and schedule organization. 2 hrs. lect., 2 hrs. act. Three units.

3220. Theory of Interscholastic Baseball and Track

Theory and technique of coaching interscholastic baseball and track, including practice, game, and schedule organization. 2 hrs. lect., 2 hrs. act. Three units.

3230. Theory of Aquatics and Gymnastics

Analysis and practice of the skills, techniques, and knowledges involved in teaching and coaching aquatics and gymnastics. Prerequisite: Activity courses in aquatics and gymnastics and/or skill proficiency. 1 hr. lect., 2 hrs. act. Two units.

¹ Activity courses taken during the freshman year.

² Activity courses taken during the sophomore year.

³ Activity courses taken during the junior year.

⁴ Activity courses taken during the senior year.

Health, Physical Education

Recreation

3240. Theory of Individual Sports

Analysis and practice of the skills, techniques, and knowledges involved in teaching golf, tennis, archery, and badminton. Prerequisite: Activity course in individual sports and/or skill proficiency. 1 hr. lect., 2 hrs. act. Two units.

3250. Theory of Combatives and Team Sports

Analysis and practice of the skills, techniques, and knowledges involved in teaching wrestling, boxing, volleyball and soccer. Prerequisite: Activity courses in combatives and team sports and/or skill proficiency. 1 hr. lect., 2 hrs. act. Two units.

3260. Theory of Modern Dance

Analysis and practice of the skills, techniques, and knowledges involved in modern and creative dance. Dance production is also included. Prerequisite: Activity courses in modern and creative dance and/or skill proficiency. 2 hrs. lect., 2 hrs. act. Three units.

3270. Theory of Women's Team Sports

Analysis and practice of the skills, techniques, and knowledges involved in teaching or coaching team sports for women. Prerequisite: Activity courses in team sports and/or skill proficiency. 2 hrs. lect., 2 hrs. act. Three units.

3280. Theory of Games and Rhythms

Analysis and practice of the skills, techniques, and knowledges involved in teaching lead-up games, and folk, square, and social dancing. Prerequisite: Activity courses in rhythms and/or skill proficiency. 1 hr. lect., 2 hrs. act. Two units.

3400. Kinesiology

Study of joint articulation, muscular action, and basic principles of body mechanics as a foundation for the analysis of motor performance in physical education activities, athletics, and physical therapy. Prerequisites: Anat. and Phys. 3301 and 3302 or equivalent. 3 hrs. lect., 2 hrs. lab. Four units.

3410. Physiology of Activity

Study of the effects of physical exercise upon the circulatory, respiratory, digestive, and nervous systems. Relationship of endurance, fatigue, training and nutrition to the efficiency of physical performance. Prerequisite: P.E. 3400. 3 hrs. lect., 2 hrs. lab. Four units.

3420. Analysis of Body Motion

Analysis of human movement in the performance of various motor skills through the application of anatomical, kinesiological, and physiological concepts. Includes consideration of individual and adapted physical education. Prerequisite: P.E. 3410. 3 hrs. lect., 2 hrs. lab. Four units.

4100. Seminar in Principles and Programs

Development of the principles and program of physical education through an analysis and study of the scientific and cultural foundations. Prerequisite: P.E. 3100 and senior standing. Four units.

4200. Methods and Materials in Health and Physical Education

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. 3 hrs. lect. Three units.

4600. Organization and Administration of Physical Education

Administration and policy formulation, classification, scheduling, class organization, finances and budgeting, equipment and facilities, and public relations in physical education, athletics, and intramurals. Prerequisite: P.E. 3100. 4 hrs. lect. Four units.

4900. Individual Study

Two-four units.

4901. Directed Group Study

One-four units.

5200. Elementary School Physical Education

The elementary school physical education program including games, sports, fundamental rhythms and dances, and other activities commonly taught on the elementary level. Prerequisite: Teaching experience or consent of instructor. Three units.

5220. Physical Education Programs in Secondary Schools

Development of total program of instruction in secondary school physical education. Methods of instruction; intramural, extramural, and interscholastic athletics; recreation, rehabilitation, and preparation of courses of study. Prerequisite: Physical education major or consent of instructor. Three units.

5400. Rehabilitation of Athletic Injuries

Application of anatomy and physiology to the analysis, care, and prevention of athletic injuries including protective strapping, conditioning and sports medicine. Prerequisite: P.E. 3400. Three units.

5500. Evaluation of Health and Physical Education

Principles and techniques in evaluation of instruction in health and physical education. Emphasis is given to test administration and construction, application of statistical procedures, and development and interpretation of research data. Prerequisite: Ed. 4100 or equivalent. Three units.

5610. Physical Education Facilities and Equipment

Functional planning of indoor and outdoor physical education facilities and equipment for schools and recreation centers; design and construction of facilities for a complete physical education and recreation program; survey of school plants and recreation facilities in California. Three units.

5800. Problems in Health and Physical Education

Research techniques applied to selected problems in health and physical education. Prerequisite: Teaching experience or consent of instructor. Three units.

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.

Students pursuing this degree must plan their program with a recreation adviser to assure proper selection of courses. A minor is available through consultation with departmental adviser.

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 (must include at least two courses in each area; 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

Note: See course descriptions for prerequisites. Application for permission to enroll in Rec. 5000, 5002 must be made during the quarter preceding enrollment. A minimum grade point average of 2.0 overall and in the major, completion of Rec.

Recreation

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. Students should see a major adviser for specific details.

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**
—
86 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.

Suggested Four-year Sequence: Recreation Curriculum

	FRESHMAN YEAR	Units
Sp. 1001-2. Oral and Written Expression	6	
Biol. 1000. Principles of Biology	5	
H.Ed. & P.E. 1100. Health and Physical Activity	3	
P.E. 1011. Activity	1	
Psy. 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 (includes required course in mathematics)	18	
—		
48		
	SOPHOMORE YEAR	
Phys. Sci. 1340. Principles of Physical Science	5	
Psy. 2010. General Psychology II	4	
Soc. 2010. Social Problems	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	
—		
48		
	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	
—		
48		

* Check with major adviser for details.

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

	SENIOR YEAR	Units
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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48		

RECREATION**1000. Nature and Scope of Recreation**

The nature, scope, and significance of recreation, including historical developments; organizational patterns in community recreation. Four units.

1500. Social Groups in Recreation

Analysis of social recreation groups; emphasis on participant characteristics, interpersonal relationships in the recreation setting, and the role of the recreator. Laboratory experiences in community agencies. Prerequisite: P.E. 3000 (Folk & Square Dance) or equivalent. 2 hrs. lect., 2 hrs. act. Three units.

2000. Principles and Practices in Organized Camping

Principles and current practices related to organized camping, including analysis of uses of outdoor recreation resources. Field trips to school and/or agency camps. 2 hrs. lect., 2 hrs. act. Three units.

3500. The Recreation Program

General principles of programming as related to community structure; 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. 4 hrs. lect., 6 hours supervised field work. Six units.

3750. The Recreation Setting

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. 4 hrs. lect., 6 hours supervised field work. Six units.

4000. The Structure of Recreation

Analysis of the structure of recreation agencies, with emphasis on organization, administration, finance, legal aspects, personnel, and interagency relationships. Prerequisites: Rec. 3500 and 3750 or consent of instructor. 4 hrs. lect., 2 hours act. Five units.

4500. Trends and Problems in Recreation

A study of selected trends and problems in recreation, with emphasis on the influence of changing patterns of leisure in contemporary society. Three units.

4900. Individual Study

One to five units.

5000. Internship I

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. Six units.

* Check with major adviser for details.

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

Recreation

5001. Internship Seminar

Consideration of problems related to Internship experiences. Prerequisite: concurrent registration in Rec. 5000. Two units.

5002. Internship II

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). Eight units.

DIVISION OF HUMANITIES

English, Foreign Languages, History, Philosophy

Professors Biella (Head), Ham, Mayers (Chairman, Department of Philosophy), Nikam, Rosenbaum; Associate Professors Conner, Peterson, Rice (Chairman, Department of History), Thompson; Assistant Professors Bryant, Carter, Chan, Cummins, Huppert, Marshall, Nomikos, Petersen, Roszak, Stanforth, Sylvester, Williams, Yalom; Instructors Ganz, Ovalle.

CURRICULA OFFERED

Graduate Degree

English (M.A.)

Baccalaureate Degrees

English (B.A.)

French (B.A.)

History (B.A.)

Language Arts (B.A.) An interdivisional major.

Social Science (B.A.) An interdivisional major; see Social and Behavioral Science for details.

Spanish (B.A.)

Minors

English

French

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, history, and Spanish and to teaching majors and minors for the standard teaching credentials. Candidates for the masters degree in English may take courses leading to junior college teaching. Some of the offerings satisfy part of the general education requirements of the College.

HONORS IN ENGLISH AND HISTORY

The Division of Humanities offers upper-division English and history honors on the tutorial plan to students who can qualify for admission to honors. The purpose of the program is to offer mature students the opportunity for intensive special project in reading, research, and writing in areas not ordinarily covered in the curriculum. The course includes the two years prior to graduation. Candidates will normally take two or three credits each quarter for five of the six quarters. Applicants for the program will be selected by an honors board, and the actual determination of the honors award will be made by the board in the final quarter of the program. Students who complete the course successfully will receive the citation *Honors in English* or *Honors in History* upon graduation.

ENGLISH MAJOR

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

- I. Complete 76 units in general education, as prescribed by the faculty of the college. English courses in the 1000 series are designed to satisfy general education requirements.
- II. Demonstrate a reading knowledge of a modern foreign language.
- III. Complete requirements in the major: 48 units, including
 - A. A course in advanced writing (4 units).
 - B. Eng. 3250, Introduction to Shakespeare, and one other course in Shakespeare (8 units total).
 - C. Eng. 4040, Modern English Grammar (5 units).
 - D. A prescribed list of readings in English and American literature and language, designed to produce familiarity with the several types of literature, and with the works of the major writers of all periods. The student is advised to begin this reading as soon as he decides to major in English, and to read intensively during summer vacations. The reading program will culminate in:
 - E. Eng. 4950, Pro-seminar in English. The final examination in this course will be based on the reading list in (D) and will therefore be in effect a comprehensive examination in English (4 units).
 - F. Other courses in English, including
 - (1) Not *more* than 8 units in the 2000 series
 - (2) At least one of these courses: 3100, 3200, 3300, 3400, 3500
 - (3) At least one of these courses: 3600, 3601, 3650
 - (4) At least one of these courses: 4100, 4200, 4300, 4400, 4500, 4650, 4850.
- IV. Candidates for the standard teaching credential with specialization in secondary teaching must complete (a) a baccalaureate degree with major in English; (b) the requirements for admission to teacher education; and (c) the required professional courses in teacher education, including English 5950. Consult with advisers in English and the Division of Education for details.
- V. Candidates for the standard teaching credential with specialization in elementary teaching must complete (a) a baccalaureate degree with a major in English; (b) the requirements for admission to teacher education; and (c) the required professional courses in teacher education. Consult with advisers in English and the Division of Education for details, particularly concerning recommended patterns of general education courses.

NOTE: Eng. 4900 or 4901 may be substituted for any 4-unit section of the course requirements in English except 3250.

General English Minor**ENGLISH MINOR**

- I. Complete the following requirements: 30 quarter-units including Eng. 3250; Eng. 4040; 2 of these courses: Eng. 3100, 3200, 3300, 3400, 3500, 3800, 3801, 3802; 1 of these courses: Eng. 3600, 3601, 3650; 1 of these courses: Eng. 4100, 4200, 4300, 4400, 4500, 4650, 4850.
- A. Candidates for the standard teaching credential with specialization in secondary teaching must complete Eng. 5950 unless the adviser in English makes a specific exemption. Consult the Division of Education for requirements in professional education.
- B. Candidates for the standard teaching credential with specialization in elementary education must consult advisers in English and the Division of Education for details concerning professional education courses and recommended patterns of general education courses.

English Minor With Journalism Emphasis

- I. Complete the following requirements in the Upper Division: 30 quarter-units including Eng. 3250; Eng. 4040; 2 of these courses: Eng. 3100, 3200, 3300, 3400, 3500, 3800, 3801, 3802; 1 of these courses: Eng. 3600, 3601, 3650; Jour. 5200; and either Jour. 3400 or 4500.
- II. Candidates for teaching credentials see section A and B under General English minor.

MASTER OF ARTS IN ENGLISH

For admission to the program leading to the M.A. in English a student must hold a baccalaureate degree from an accredited college, with a major in English; his grade-point average in his English courses normally must be at least 3.0. Transfers from other colleges will be expected to familiarize themselves with the readings required of English majors at California State College at Hayward, and to read in areas in which they are deficient.

To qualify for candidacy for the M.A. in English, a student must (1) attain a satisfactory score on a Graduate Record Examination; (2) no later than the end of his second quarter of graduate study, demonstrate a reading knowledge of a modern foreign language (Greek or Latin may be substituted, at the discretion of the department); and (3) complete at least 15 units of graduate work.

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 B.A., including

- (1) Eng. 6700, 6710, 6720, and 6900 (thesis or equivalent);
- (2) Not more than 16 quarter-units of course work in the 3000 and 4000 series, approved by adviser;
- (3) Elective courses in the 6000 series, to complete the 45-unit requirement.

FRENCH MAJOR

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

- I. Take a proficiency examination in language competence given for the placement of students in appropriate French language and literature courses.
- II. 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.
- III. In Lower Division complete the 24 units provided by Fr. 1001 through Fr. 2003 (or equivalent).
- IV. In Upper Division complete Fr. 3001, 2, 3; and 33 units from among the literature courses.
- V. 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.
- VI. 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

- I. In Lower Division complete requirement III under major.
- II. In Upper Division complete Fr. 3001, 2, 3; and 9 units from among the literature courses.
- III. 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.
- IV. 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.

HISTORY MAJOR**I. General Education**

Complete the 76-unit requirement in general education. A minimum of 4 quarter units in political science and 4 quarter units in economics are strongly recommended as a part of the social and behavioral science requirement in general education.

II. Demonstrate a reading knowledge of one foreign language. Proficiency may be demonstrated either by two years of college level course work or by examination.**III. Complete the following requirements in the major:**

Lower division: A minimum of 8 quarter units in either world history, western culture, 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 sequence in *each of three* of the following fields: (a) ancient and medieval; (b) modern Europe; (c) Asia; (d) United States; (e) Latin America. A comprehensive examination must be passed in the senior year.

HISTORY MINOR

A minor in history requires a minimum of thirty quarter units, at least twenty of which must be in upper-division courses, including one two-course sequence. The History of Western Culture course 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.

LANGUAGE ARTS MAJOR

- I. Complete the 76-units requirement in general education. Demonstrate a reading knowledge of one foreign language.
- II. Complete the following requirements in the major:
 - A. Courses in English, totaling 29 units beyond the general education requirements, to include a course in advanced writing; Eng. 4040; at least 12 units of upper-division literature courses.

B. At least 6 units in journalism courses.

- C. Speech and drama courses totaling at least 26 units, including Sp. & Dr. 1003, 1010, 2310, 2411, 3310, 3512.

SPANISH MAJOR**I. 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.

II. Spanish Major**A. General Education**

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

B. Spanish

Lower Division: 24 units including the following courses: Span. 1001, 2, 3; Span. 2001, 2, 3. Span. 2101, 2, 3 are strongly recommended for the Spanish major.

Upper Division: 45 units including the following courses: Span. 3001, 2, 3; Span. 3101, 2, 3; Span. 3301, 2; Span. 4001, 2, 3; Span. 4503 and nine units chosen from the following: Span. 4101, 2, 3; Span. 4201, 2, 3; Span. 4301, 2, 3; Span. 4900, 1.

C. Candidates for the standard teaching credential with specialization in secondary teaching must complete (a) a baccalaureate with a major in Spanish; (b) the required professional courses in teacher education, including For. Lang. 5950. Consult with advisers in Spanish and the Division of Education for details.**D. 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.****III. Spanish Minor****A. Lower Division: As outlined above for the Spanish major.****B. Upper Division: 18 units: Span. 3001, 2, 3; Span. 3101, 2, 3.****C. 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.****D. 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.**

Spanish**English****Illustrative Program for the Spanish Major**

	FALL	WINTER	SPRING
Freshman			
Spanish 1001	4	Spanish 1002	4
HWC 1001	5	HWC 1002	5
History 1101	4	History 1102	4
P. E. 1100	3	Philosophy 1000	4
		P. E. 1010	½
	16		
		17½	14½
Sophomore			
Spanish 2001	4	Spanish 2002	4
Foreign Lang. 1001	4	Foreign Lang. 1002	4
Asian Culture 2001	4	Asian Culture 2002	4
Psychology 2000	4	Physical Science	5
P. E. 2010	½	P. E. 2010	½
	16½		15
Junior			
Spanish 3001	3	Spanish 3002	3
Spanish 3101	3	Spanish 3102	3
Foreign Lang. 2001	4	Foreign Lang. 2002	4
Junior Symposium	3	Life or Physical Sci	4
Junior Elective	3	Junior Elective	4
	16		
		14	14
Senior			
Spanish 4001	3	Spanish 4002	3
Spanish 3301	3	Spanish 3302	3
Spanish Elective	3	Spanish Elective	3
Senior Symposium	3	Senior Elective	3
Senior Elective	3	Senior Elective	3
	15		15

PHILOSOPHY MINOR

A minor in philosophy requires the following: 32 units including Phil. 1000, 2100; 3 of these courses: Phil. 2000, 3000, 3001, 3002; and any 3 additional Upper Division philosophy courses.

DESCRIPTION OF COURSES**ENGLISH***** 1001. Expository Writing**

The theory and practice of expository writing. Three units.

1002. Exposition and Rhetoric

The theory and practice of expository writing. Three units.

1010. Introduction to Literature

Studies in prose fiction, verse, and the drama. Five units.

* A student who has failed either English 1001 or Speech and Drama 1001 must present evidence of satisfactory completion of an independent study course (emphasizing the mechanics of English) or equivalent before registering in either of these courses.

1111. Introduction to Poetry

The elements of poetry: a study of structure, imagery, theme, and rhythm. Five units.

1112. Introduction to Dramatic Literature

Elements of the drama: a study of dramatic structure, characterization, and theme. Five units.

1113. Introduction to Fiction

Elements of fiction: a study of plot, characterization, language, and theme. Five units.

2070. Introduction to Creative Writing

Introduction to imaginative writing of various types. Four units.

2700. World Literature I

Selected writings from the great cultures of the world from ancient times through the Middle Ages. Four units.

2701. World Literature II

Selected writings from the great cultures of the world from the Renaissance through the Enlightenment. Four units.

2702. World Literature III

Selected writings from the great cultures of the modern world. Four units.

3020. Advanced Expository Writing

Expository writing and analysis in relation to traditional and contemporary theories of composition. Four units.

3100. Beowulf to Marlowe

Epic and Romance, Chaucer, drama, other poetry and prose. Four units.

3200. Spenser to Milton

Elizabethan, Jacobean, and Puritan; drama, poetry, and prose exclusive of Shakespeare; Milton. Four units.

3250. Introduction to Shakespeare

Techniques and conventions of the Elizabethan theater; Shakespeare's comedies, histories and tragedies. Four units.

3251. Shakespeare's Comedies and History Plays

Analysis of selected comedies and history plays. Prerequisite: Eng. 3250. Four units.

3252. Shakespeare's Tragedies

Analysis of selected tragedies. Prerequisite: Introduction to Shakespeare. Four units.

3300. Dryden to Burns

Restoration and 18th century poetry and prose; the novel; the drama. Four units.

3400. Wordsworth to Shaw

Romantic, Victorian, and *fin de siècle* poetry and prose; the novel; the drama. Four units.

3500. Contemporary English Literature

Major trends in British literature from World War I to the present. Four units.

3600. American Literature to 1865

Writings of the colonial and revolutionary periods; transcendentalism; major poets and novelists. Four units.

3601. American Literature from the Gilded Age to 1918

Realism and naturalism, major poets and novelists. Four units.

3650. Contemporary American Literature

Major trends in American literature from World War I to the present. Four units.

3800. History of the Drama I

Medieval and Elizabethan drama exclusive of Shakespeare. Four units.

English

3801. History of the Drama II

Jacobean, Restoration, and 18th century drama. Four units.

3802. History of the Drama III

19th and 20th century British and American drama. Four units.

4040. Modern English Grammar

Review of traditional grammar; overview of modern linguistic theories. Five units.

4060. Introduction to Linguistics

Origin, nature, and philosophy of language; history and comparison of language systems and structures. Four units.

4070. Creative Writing

Writing descriptive sketches, short character studies, brief narrations, short stories, and simple poems; reading various types of imaginative writing. Four units.

4100. Studies in Medieval Literature

Intensive study of an important literary topic in the period. Maximum total credit 8 units. Prerequisite: Eng. 3100 or equivalent. Four units.

4200. Studies in Renaissance Literature

Intensive study of an important literary topic in the period. Maximum total credit 8 units. Prerequisite: Eng. 3200 or equivalent. Four units.

4300. Studies in Restoration and Eighteenth Century Literature

Intensive study of an important literary topic in the period. Maximum total credit 8 units. Prerequisite: Eng. 3300 or equivalent. Four units.

4400. Studies in Nineteenth Century Literature

Intensive study of an important literary topic in the period. Maximum total credit 8 units. Prerequisite: Eng. 3400 or equivalent. Four units.

4500. Studies in Contemporary English Literature

Intensive study of an important literary topic in the period. Maximum total credit 8 units. Prerequisite: Either Eng. 3500 or Eng. 3650 or equivalent. Four units.

4650. Studies in Contemporary American Literature

Intensive study of an important literary topic in the period. Maximum total credit 8 units. Prerequisite: Either Eng. 3600 or Eng. 3601 or equivalent. Four units.

4850. Studies in the Novel

Intensive study of selected novels. Maximum total credit six units. Three units.

4900. Individual Study

One-four units.

4901. Directed Group Study

One-four units.

4950. Pro-seminar in English

An intensive survey of English and American literature and language. Includes a comprehensive examination in English. Four units.

4990. Honors in English

Intensive research and reading open to selected students only. A tutorial program to be taken for five of the six quarters prior to the student's graduation. Two to three units per quarter.

5670. Literature of California

Literature of California from the earliest times to the present. Three units.

5950. Teaching English in the Secondary School

Methods and curricula for the teaching of English in the junior high school, the high school, and the junior college. Audio-visual techniques. Prerequisite: Consent of instructor. Three units.

6200. Renaissance Rhetoric and Poetics

Seminar in classical and medieval origins of Renaissance literary theory. Four units.

French

6210. Renaissance Drama

Seminar in themes and conventions; intensive study of a single dramatist or genre. Four units.

6700. Bibliography and Methods of Research

Introduction to bibliographic aids and materials; textual criticism; preparation of scholarly writing. Four units.

6710. Literary Criticism

Theory and practice of literary criticism; study of important critical works. Four units.

6720. Foundations of the English Language

Intensive study of representative writings in English from the beginnings to the Age of Johnson; development of modern pronunciation, sentence structure, and prose style. Four units.

6900. Thesis

Thesis or an equivalent work in fiction, verse, or drama. Nine units.

FOREIGN LANGUAGES

FRENCH

Note: Students may be admitted to any of the following courses by consent of instructor.

1001. Elementary French

Introduction to the reading, writing, understanding, and speaking of French. Four units.

1002. Elementary French

Continuation of 1001. Prerequisite: French 1001. Four units.

1003. Elementary French

Continuation of 1002. Prerequisite: French 1002. Four units.

2001. Intermediate French

Continuation of 1003, with increased emphasis on the reading and writing of French. Prerequisite: French 1003. Four units.

2002. Intermediate French

Continuation of 2001. Prerequisite: French 2001. Four units.

2003. Intermediate French

Continuation of 2002. Prerequisite: French 2002. Four units.

3001. French Syntax

Written French and formal grammar. Prerequisite: French 2003. Three units.

3002. French Syntax

Continuation of 3001. Prerequisite: French 3001. Three units.

3003. French Syntax

Continuation of 3002. Prerequisite: French 3002. Three units.

3101. French Romanticism and Realism

Manifestations of romanticism and realism in French literature, with emphasis on nineteenth-century fiction. Prerequisite: French 2003. Three units.

3102. French Romanticism and Realism

Continuation of 3101. Prerequisite: French 2003. Three units.

3201. French Drama

Tragedy and comedy, with emphasis on the classical period. Prerequisite: French 2003. Four units.

3202. French Drama

Continuation of 3201. Prerequisite: French 2003. Four units.

4101. Contemporary French Literature

French fiction, poetry, and criticism from the mid-1880's to the present. Prerequisite: French 2003. Four units.

German

4102. Contemporary French Literature

Continuation of 4101. Prerequisite: French 2003. Four units.

4103. Contemporary French Literature

Continuation of 4102. Prerequisite: French 2003. Four units.

4301. The "Age of Enlightenment" in France

The era of Montesquieu, Diderot, Rousseau, and Voltaire. Prerequisite: French 2003. Three units.

4302. The "Age of Enlightenment" in France

Continuation of 4301. Prerequisite: French 2003. Three units.

4303. The "Age of Enlightenment" in France

Continuation of 4302. Prerequisite: French 2003. Three units.

4900. Individual Study

One-four units.

4901. Directed Group Study

One-four units.

GERMAN

1001. Elementary German

An audio-lingual approach to German, designed to give students skill in understanding, speaking, reading and writing the language. Four units.

1002. Elementary German

Continuation of 1001. Prerequisite: Ger. 1001 or consent of instructor. Four units.

1003. Elementary German

Continuation of 1002. Prerequisite: Ger. 1002 or consent of instructor. Four units.

2001. Intermediate German

A continuation of German 1003 with increased emphasis on audio-lingual facility, written composition and collateral reading. Prerequisite: Ger. 1003 or consent of instructor. Four units.

2002. Intermediate German

Continuation of 2001. Prerequisite: Ger. 2001 or consent of instructor. Four units.

2003. Intermediate German

Continuation of 2002. Prerequisite: Ger. 2002 or consent of instructor. Four units.

4900. Individual Study

One-four units.

4901. Directed Group Study

One-four units.

SPANISH

1001. Elementary Spanish

An audio-lingual approach to Spanish, designed to give students skill in understanding, speaking, reading and writing the language. No prerequisite. Four units.

1002. Elementary Spanish

Continuation of 1001. Prerequisite: Span. 1001 or consent of instructor. Four units.

1003. Elementary Spanish

Continuation of 1002. Prerequisite: Span. 1002 or consent of instructor. Four units.

2001. Intermediate Spanish

A continuation of Span. 1003 with increased emphasis on audio-lingual facility, written composition and collateral reading. Prerequisite: Span. 1003 or consent of instructor. Four units.

2002. Intermediate Spanish

Continuation of 2001. Prerequisite: Span. 2001 or consent of instructor. Four units.

2003. Intermediate Spanish

Continuation of 2002. Prerequisite: Span. 2002 or consent of instructor. Four units.

Spanish

2101. Spanish Conversation

Practical application of Spanish in present-day experiences. Spanish sounds and intonation; vocabulary building. Prerequisite: Span. 1003 or consent of instructor. Three units.

2102. Spanish Conversation

Continuation of 2101. Prerequisite: Span. 2101 or consent of instructor. Three units.

2103. Spanish Conversation

Continuation of 2102. Prerequisite: Span. 2102 or consent of instructor. Three units.

3001. Spanish Grammar

Essentials of Spanish grammar and their application to advanced work in the language. Prerequisite: Major in Spanish or consent of instructor. Three units.

3002. Spanish Lexicon

Spanish vocabulary: word formation, cognate and topical vocabularies, and word families. Prerequisite: Major in Spanish or approval of instructor. Three units.

3003. Spanish Phonetics

Detailed study of the formation of Spanish sounds and intonation. Particular stress will be given to the problems English-speaking students face in acquiring an authentic pronunciation of Spanish. Prerequisite: Major in Spanish or consent of instructor. Three units.

3101. Survey of Spanish Literature: Middle Ages and Early Renaissance

Study of literary Spain of the Middle Ages and Early Renaissance. Prerequisite: Major in Spanish or consent of instructor. Three units.

3102. Survey of Spanish Literature: Renaissance, Golden Age and Baroque

Study of Spanish literature from the Renaissance to the 18th century. Prerequisite: Major in Spanish or consent of instructor. Three units.

3103. Survey of Spanish Literature: 18th, 19th and 20th Centuries

Study of Spanish literature from the 18th century to the present. Prerequisite: Major in Spanish or consent of instructor. Three units.

3301. Spanish Culture and Civilization: Prehistoric Period to Reign of the Catholic Kings

A study of Spanish culture—history, art, architecture and philosophy from the prehistoric period to the reign of the Catholic Kings. Prerequisite: Major in Spanish or consent of the instructor. Three units.

3302. Spanish Culture and Civilization: Reign of the Catholic Kings to Present

A study of Spanish culture—history, art, architecture and philosophy from the reign of the Catholic Kings to the present. Prerequisite: Major in Spanish or consent of instructor. Three units.

4001. Spanish Syntax

Detailed study of synchronic Spanish syntax. Prerequisite: Span. 3001 or consent of instructor. Three units.

4002. Spanish Syntax

Continuation of 4001. Prerequisite: Span. 4001 or consent of instructor. Three units.

4003. Spanish Syntax

Continuation of 4002. Prerequisite: Span. 4002 or consent of instructor. Three units.

4101. The Golden Age: Prose

The novel of the Golden Age in its various forms and non-fictional prose. Prerequisite: Major in Spanish or consent of instructor. Three units.

4102. The Golden Age: Drama

The major dramatists before Lope de Vega and the dramas of the cycles of Lope de Vega and Calderón. Prerequisite: Major in Spanish or consent of instructor. Three units.

4103. The Golden Age: Poetry

Study of the major poets of the Golden Age. Prerequisite: Major in Spanish or consent of instructor. Three units.

4201. The 19th Century Spanish Literature: Novel

Selected readings from the major novelists of the 19th century, including Alarcón, Galdós, Pereda and Pardo Bazán. Prerequisite: Major in Spanish or consent of instructor. Three units.

4202. The 19th Century Spanish Literature: Drama

Selected readings from major dramatists of the 19th century. Prerequisite: Major in Spanish or consent of instructor. Three units.

4203. The 19th Century Spanish Literature: Poetry

Selected readings from the major poets of the 19th century. Prerequisite: Major in Spanish or consent of instructor. Three units.

4301. Contemporary Peninsular Readings: The Generation of '98

Study of the major poets, novelists and essayists of the Generation of '98. Prerequisite: Major in Spanish or consent of instructor. Three units.

4302. Contemporary Peninsular Readings: Novel and Essay

Study of the major novelists and essayists of the 20th century. Prerequisite: Major in Spanish or consent of instructor. Three units.

4303. Contemporary Peninsular Readings: Poetry and Drama

Major poets and dramatists of the 20th century. Prerequisite: Major in Spanish or consent of instructor. Three units.

4503. Proseminar in Hispanic Studies

Review of Spanish language, literature and civilization. Prerequisite: Major in Spanish with senior standing or consent of instructor. Three units.

4900. Individual Study

Two-four units.

4901. Directed Group Study

One-four units.

5101. Spanish Language and Methods for Elementary Teachers

Methodology in teaching Spanish at the elementary level. Particular stress will be given to improvement in linguistic skills. Prerequisite: One year of college Spanish and consent of instructor. Three units.

5102. Spanish Language and Methods for Elementary Teachers

Continuation of 5101. Prerequisite: Span. 5101 or consent of instructor. Three units.

5103. Spanish Language and Methods for Elementary Teachers

Continuation of 5102. Prerequisite: Span. 5102 or consent of instructor. Three units.

FOREIGN LANGUAGES**5950. Methods in the Teaching of Foreign Languages**

Methods, practice, and techniques in the teaching of modern foreign languages on the secondary level. Particular stress will be given to the audio-lingual and audio-visual approach. Prerequisites: Competence in at least one foreign language and consent of instructor. Three units.

HISTORY**I. Lower Division**

HWC 1001, 1002, 1003. History of Western Culture courses are listed at the front of the Bulletin under Interdivisional Programs in General Education.

1101. History of the United States to 1865

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 and American Institutions.) Four units.

1102. History of the United States Since 1865

A survey of American history from the Civil War to the present. (With Hist. 1101 meets statutory requirements in U.S. History and American Institutions.) Four units.

II. Upper Division**A. Ancient and Medieval****3100. Ancient History**

Greece and Rome from the ancient city-states and monarchies to the decline of the Roman Empire. Four units.

3115. Europe in the Early Middle Ages

Political, social, intellectual, and economic evolution of Europe from the decline of the Roman Empire to about 1050. Four units.

3116. Europe in the Later Middle Ages

A continuation of Hist. 3115. Europe from the 11th century to the 15th century. Four units.

B. Modern Europe**4125. The European Renaissance**

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. Four units.

4126. The Reformation Era

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. Four units.

4140. Early Modern Europe

Europe from 1600 to 1789. Post-Renaissance western Europe political and cultural development, including the Age of Enlightenment. Four units.

4150. The French Revolution and Napoleon

The French Revolution, 1789-1799, studied as a part of a pattern of democratic revolutions in Europe and America. Four units.

4160. Europe in the 19th Century

From Waterloo to Sarajevo. Development of dominant ideologies. Four units.

4180. Europe in the 20th Century

The transformation of traditional European institutions and values in the century of total war. Four units.

4200. Tudor and Stuart England

History of England from 1485 to 1689. The English Reformation and the growth of parliamentary institutions through the Glorious Revolution of 1688. Four units.

4201. England 1689-1815

English society in the time of the Enlightenment. The rise and growth of the British Empire through the American Revolution. The Napoleonic Wars. Four units.

4202. England Since 1815

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. Four units.

5210. History of Russia

Russia from the 16th century to the present. The internal problems and international relations emphasizing the importance of Russian history for an understanding of modern Soviet Russia. Four units.

C. Asia**3300. The Ancient Orient**

Introduction to traditional Oriental civilization from the earliest cities to the coming of the Western empire builders. Four units.

3301. Modern Asia

Oriental civilizations under the impact of the West, with emphasis on the development of China and Japan since the 19th century. Four units.

4310. Traditional China

Political, cultural, social history of China to the 19th century. Four units.

4311. Modern China

Revolutionary changes in 19th and 20th century China brought about by the Western impact. Four units.

4320. History of Japan

Japan from early times to the present, with emphasis on the modern period. Four units.

4330. History of India and Southeast Asia

India and the lands of southeast Asia from early times to the present; European dominion; achievement of independence; problems of national development. Four units.

4340. The Moslem World

History of the Islamic world from the seventh century to the present. Four units.

D. United States**3400. American History**

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.) Four units.

3410. The United States: Colonial Period

The thirteen colonies: European background, settlement and expansion, and development to the close of the Revolution. Four units.

3411. The United States: The New Nation

History of the United States from 1783 to 1850. The Confederation and the Constitution. Domestic and foreign problems of the new nation to 1845. Four units.

3412. Emergence of the United States as a World Power

The United States from 1850 to 1900. The Industrial Revolution in America, Civil War and Reconstruction, the age of "rugged individualism," and the rise of imperialism. Four units.

3413. Recent United States History

The United States from 1900 to the present. The Progressive movement, World War I, and the complex problems of the nation as a leading power in the 20th century. Four units.

3510. History of California

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. Four units.

4410. The American Revolution

The struggle for independence, 1763-1789. Intensive study of the causes of the American Revolution, the Confederation Period, and the Constitution. Four units.

4420. The Civil War

Study of the causes of the Civil War, the old South, sectional conflict, slavery, and the War. Four units.

4441. The New Deal Era

The Age of the Great Depression to World War II. Origins of the depression, Franklin Delano Roosevelt, and the New Deal. Four units.

4500. The Westward Movement

Westward expansion of the United States from 1763 to 1900; development of western states and effect on the history of the nation. Four units.

4510. Social and Intellectual History of the United States

The growth of American thought and social patterns from colonial times to the present. Four units.

4530. Diplomatic History of the United States to 1898

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. Four units.

4531. Diplomatic History of the United States Since 1898

Analysis of the foreign policies and diplomatic history of the United States from the Spanish-American War to the present. Four units.

E. Latin America**3600. Latin America: Colonial Period**

Discovery, conquest, and settlement of Spanish and Portuguese America; independence; evolution of society and institutions to 1825. Four units.

3601. Latin America: Since 1825

Political, economic, and social development of the Latin American nations in the 19th and 20th centuries. Four units.

4610. Mexico Since 1821

The development of Mexico since independence; evolution of political, economic, and social institutions. Four units.

4620. The A B C Powers

History of Argentina, Brazil, and Chile since independence. Four units.

F. General**4000. Contemporary World Problems**

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. Four units.

4030. Introduction to Historiography

A critical study of the writings of the great historians. Four units.

4031. Proseminar in Historical Method

Introduction to the methods of historical research through the preparation of a research paper. Prerequisite: Senior standing. Four units.

4520. International Relations

See Pol. Sci. 4520. Four units.

4711. Development of Western Political and Social Thought

See Pol. Sci. 4711. Four units.

4712. Modern Democratic Thought

See Pol. Sci. 4711. Four units.

4900. Individual Study

One to four units.

Philosophy

4901. Directed Group Study
One to four units.

4990. Honors in History

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. Two to three units per quarter.

PHILOSOPHY

1000. Introduction to Logic

Introduction to traditional formal logic and to the elementary principles of symbolic logic. Four units.

2000. Introduction to Philosophy

Representative interpretations of man's place in the universe, studied through selections from the writings of the great philosophers. Five units.

2100. Ethics

Major types of ethical theory and their relation to social systems and institutions. Four units.

3001, 3002, 3003. History of Western Philosophy

Great philosophical systems and persistent problems in the history of ideas. Each course may be taken independently, but the full sequence is recommended.

3000. History of Ancient Philosophy. Four units.

3001. History of Medieval Philosophy. Four units.

3002. History of Modern Philosophy. Four units.

3150. Aesthetics

Introduction to the major aesthetic schools and theories. Prerequisite: one previous course in philosophy (excluding Phil. 1000) or consent of instructor. Four units.

3300. Philosophy of Religion

Nature and significance of religion and its place in human society and in the life of the self. Four units.

3400. Philosophy of Science

Methods and concepts of science and their philosophical significance. Four units.

3500. Philosophy of Law

Introduction to the main schools of jurisprudence and legal philosophy. Four units.

4055. Contemporary American Philosophy

Selected writings of the major American philosophers of the past century. Prerequisite: one previous course in philosophy (excluding Phil. 1000) or consent of instructor.

4060. Contemporary European Philosophy

Selected writings of the major European philosophers of the past century. Prerequisite: one previous course in philosophy (excluding Phil. 1000) or consent of instructor.

4900. Individual Study

One to four units.

4901. Group Study

One to four units.

5000. Philosophy of Education

Foundational course in philosophy of education. Examination of philosophical issues in contemporary education. Four units.

DIVISION OF SCIENCE AND MATHEMATICS

Professors P. V. Peterson (Head), DeVries, Groody, Guthrie (Chairman, Department of Physics), Heath, Lutt, Purdy, Purvis, Resnikoff (Chairman, Department of Statistics), Sawrey, Smith (Chairman, Department of Biological Sciences), Southard (Chairman, Department of Mathematics), Woods (Chairman Department of Chemistry); Associate Professors Cogswell, Colburn, Grillos, Hancock, LaForce, Summers, Whitehead, Whitney; Assistant Professors Altman, Causey, Cherry, Cummings, Deacon, Fickas, McGinnis, Monson, Palmer, Peckham, G. Peterson, M. Smith, Tracewell, Zhivadinovich; Instructors Evens, Ferguson, Jensen, Motta, Russell, Whitmore.

CURRICULA OFFERED

Baccalaureate Degree

Biological science (B.S.)
Chemistry (B.A., B.S.)
Mathematics (B.S.)
Physics (B.A., B.S.)
Physical Science (B.S.)

Master's Degree

Mathematics (M.S.)

Minors

(See adviser for requirements)
Biological Science (Biology, Botany or Zoology)
Mathematics
Physical Science (Chemistry, Physics or Physical Science)
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 below may arrange from one to five units 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.

Biological Science

BIOLOGICAL SCIENCE MAJOR

I. Complete the 76-unit requirement in general education which is required for 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.

II. Complete the following requirements in the major:

	Units
Principles of Biology	5
General Chemistry	15
Organic Chemistry	5-15
General Botany	6
College Mathematics	5-10
General Physics	12
General Zoology	6
<i>Upper Division</i>	
Genetics	4
Cellular Physiology or Anatomy and Physiology	4-8
Senior Seminar	3
General Ecology	6
Approved Science Electives	20-39
	<hr/> 110

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

Recommended Program for the Biological Science Major

	Units		
	F	W	S
Principles of Biology, Biol. 1000	5		
General Chemistry, Chem. 1101	5		
Math or General Education	6-7		
General Botany, Bot. 1001	3		
General Chemistry, Chem. 1102	5		
Math or General Education	7-8		
General Botany, Bot. 1102	3		
General Chemistry, Chem. 1103	5		
General Education	8-9		

Second Year

General Physics, Phys. 2001	4		
Organic Chemistry, Chem. 3301	5		
General Education	7-8		
Organic Chemistry and/or General Education	9-10		
General Physics, Phys. 2002	4		
General Zoology, Zool. 1001	3		
Organic Chemistry and/or General Education	9-10		
General Zoology, Zool. 1002	3		
General Physics, Phys. 2003	4		

Biological Science

Units		
F	W	S
5		
3-6		
3-6		

Third Year

Genetics, Biol. 2500	4-8
Applicable Science Elective	3-6
General Education and/or Elective	6-9
Cell Physiology, 4100 or Anatomy and Physiology AP 4100 or AP 3301, 3302	3-6
Applicable Science Elective	10-12
General Education and/or Elective	3-6

Fourth Year

Senior Seminar, Biol. 4801	1
Applicable Science Elective	5-8
General Education and/or Elective	4-7
Senior Seminar, Biol. 4802	1
General Ecology, Biol. 4461	3
Applicable Science Elective	5-8
General Education and/or Elective	4-7
Senior Seminar, Biol. 4803	1
General Ecology, Biol. 4462	3
Applicable Science Elective	3-6
General Education and/or Elective	6-9

CHEMISTRY MAJOR

I. Complete the 76-unit requirement in general education which is required for all majors. Students completing this major will have satisfied 14 of the 19-unit general education requirement in science and mathematics.

II. Complete the following requirements in the major:

Lower Division	B.S.	B.A.
General Chemistry	15	15
Quantitative Analysis	6	6
Mathematics		
Basic Analysis *	5	5
Analytic Geometry-Calculus	20	12
Geology	-	4
Physics	20	16
Physical Science electives	-	11-15
General Education	33	23-27

Upper Division

Organic Chemistry	15	10
Physical Chemistry	15	5
Advanced Inorganic	5	-
Instrumental Analysis	3	-
Advanced Chemistry Electives	9-23	-
Minor Electives	0-14	-
Physical Science or Free † Electives	-	43-37
Foreign Language **	18	-
General Education (other than for. lang.)	20	35-39

Total

198 193

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

** 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.

† Maximum of 25 free electives units.

Illustrative Program for the Chemistry Major—B.S.

First Year

	Units		
	F	W	S
General Chemistry, 1101	5		
Basic Analysis, 1301	5		
General Education	7		
General Chemistry, 1102		5	
Anal. Geom.-Calculus, 1302		4	
Physics, 1011		4	
General Education		4	
General Chemistry, 1103		5	
Anal. Geom.-Calculus, 1303		4	
Physics, 1012		4	
General Education		4	

Second Year

	F	W	S
Quant. Analysis, 2201	3		
Anal. Geom.-Calculus, 2301	4		
Physics, 2011	4		
General Education	5		
Anal. Geom.-Calculus, 2302		4	
Quant. Analysis, 2202		3	
Physics, 2012		4	
General Education		5	
Anal. Geom.-Calculus, 2303		4	
Physics, 2013		4	
General Education		8	

Third Year

	F	W	S
Organic Chemistry, 3301	5		
Physical Chemistry, 4501	5		
German	4		
Other General Education	3		
Organic Chemistry, 3302		5	
Physical Chemistry, 4502		5	
German		4	
Other General Education		3	
Organic Chemistry, 3303		5	
Physical Chemistry, 4503		5	
German		4	
Other General Education		3	

Fourth Year

	F	W	S
Instrumental Analysis, 4240	3		
Adv. Chem. Electives	6		
German	3		
General Education	4		
Adv. Inorganic Chem., 4151		5	
Adv. Chem. Electives		5	
German		3	
General Education		3	
Adv. Chem. Electives		3	
General Education		12	
		4	

MATHEMATICS MAJOR

I. Complete the 76-unit requirement in general education which is required for 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:

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

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28

Teaching Option

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

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28

Total upper division mathematics

40

III. Pre-secondary teaching candidates must also complete (a) the requirements for admission to teacher education; (b) the upper-division professional courses in teacher education which are required; (c) the requirements for a teaching minor, 6 units of which may be taken in the graduate year; (d) Math. Ed. 5040, 4 units.

THE MASTER OF SCIENCE DEGREE IN MATHEMATICS

The College offers the degree of Master of Science in Mathematics. Eligible students may choose one of the following three options:

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

In general, the programs are open to graduates of accredited institutions who have completed at least twenty quarter units of approved upper division mathematics courses, although persons who select the second or the third of the above options will be expected to have completed units in excess of twenty. The interested students 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. A description of courses offered by the Mathematics Department may be found elsewhere in this Bulletin.

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.

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); and
- (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 (at least 12 of this 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, e.g. Math 4120 Introduction to Modern Higher Algebra or Math 6120—Algebraic Structures or equivalent.
 - (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

- I. Complete the 76-unit requirement in general education which is required of 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.

II. Complete the following requirements in the major:

<i>Lower Division</i>	<i>Units</i>
Mathematics	20-25
General Chemistry	15
Quantitative Analysis	6-9
General Physics	20
Biology	5-10
Physical Science Electives	5-10
<i>Upper Division</i>	
Approved Physical Science Electives	21-39

Total 110

- III. Secondary teaching candidates must complete (a) the requirements for admission to teacher education; (b) the upper-division professional courses in teacher education which are required; (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

	<i>Units</i>		
	<i>F</i>	<i>W</i>	<i>S</i>
First Year			
Math Anal. or G.E.	5-6		
Gen. Chemistry, 1101	5		
Phys. Geol. or G.E.	5		
Anal. Geom. and Calc., 1302	4		
Gen. Chem., 1102	5		
Gen. Physics, 1011	4		
G.E.	3-4		
Anal. Geom. and Calc., 1303	4		
Gen. Chem., 1103	5		
Gen. Physics, 1012	4		
G.E.	3-4		
Second Year			
Anal. Geom. and Calc., 2301	4		
Quant. Anal., 2201	3		
General Physics, 2011	4		
Biology, 1000	5		
Anal. Geom. and Calc., 2302	4		
Quant. Analysis, 2202	3		
General Physics, 2012	4		
Science Electives	0-5		
G.E.	0-5		
Anal. Geom. and Calc., 2303	4		
Quant. Anal., 2203 or G.E.	3		
General Physics, 2013	4		
Science Electives	0-5		
G.E.	0-5		
Third Year			
Phys. Sci. Electives	4-6		
G.E. and/or Electives	10-12		
Phys. Sci. Electives	3-6		
G.E. and/or Electives	10-13		
Phys. Sci. Electives	3-6		
G.E. and/or Elect.	10-13		

Physics

	Units		
	F	W	S
Fourth Year			
Phys. Sci. Electives	4-7		
G.E. and/or Electives	9-12		
Phys. Sci. Electives	3-7		
G.E. and/or Electives	9-12		
Phys. Sci. Electives	4-7		
G.E. and/or Electives	9-12		
PHYSICS MAJOR			
I. Complete the 76-unit requirement in general education which is required of all majors. Students completing this major will have satisfied 14 of 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:			
<i>Lower Division</i>	<i>B.S.</i>	<i>B.A.</i>	
General Physics	20	20	
General Chemistry	15	15	
Mathematics	25	25	
General Mathematics Analysis			
Analytic Geometry and			
Calculus			
<i>Upper Division</i>			
Analytic Mechanics	9	9	
Electricity and Magnetism	9	9	
Introduction to Atomic Structure	4	4	
Radioactivity and Nuclear Structure	4	4	
Thermodynamics and Kinetic Theory	4		
Intermediate Physics Laboratory	3	3	
Physical Optics	4	4	
Electronics	6		
Physics Electives	12-15	9	
General Education *	62	62	
Free Electives	15-18	22	
Total	195	186	

Illustrative Program for the Physics Major

	Units		
	F	W	S
First Year			
Basic Analysis, 1301	5		
Gen. Chem. and Qual. Anal., 1101	5		
Electives—G.E.	6		
Anal. Geom. and Calculus, 1302	4		
Gen. Chem. and Qual. Anal., 1102	5		
General Physics, Phys. 1011	4		
Electives—G.E.	3		
Anal. Geom. and Calculus, 1303	4		
General Physics, Phys. 1012	4		
Gen. Chem. and Qual. Anal., 1103	5		
Electives—G.E.	3		

* Includes 9 units of foreign language.

Physics

	Units		
	F	W	S
Second Year			
Anal. Geom. and Calculus, 2301	4		
General Physics, Phys. 2011	4		
Electives—G.E.	8		
Anal. Geom. and Calculus, 2302	4		
General Physics, Phys. 2012	4		
Electives—G.E.	8		
Anal. Geom. and Calc., 2303	4		
General Physics, Phys. 2013	4		
Electives—G.E.	8		
Third Year			
Analytic Mechanics, 3311	3		
Electronics, 3511	3		
Electricity and Magnetism, 3331	3		
Electives—Physics or G.E.	8		
Analytic Mechanics, 3312	3		
Electronics, 3512	3		
Electricity and Magnetism, 3332	3		
Electives—Physics or G.E.	8		
Analytic Mechanics, 3313	3		
Thermo. and Kinetic Theory, 3320	4		
Elec. and Magnetism, 3333	3		
Electives—Physics or G.E.	7		
Fourth Year			
Intro. to Quantum Mechanics, Phys. 4420	4		
Applied Math. for Engineers (or equivalent)	3		
Physics Electives or G.E.	9		
Intro. to Atomic Structure, 4150	4		
* Intermediate Physics Lab., 4181	1-3		
Physics Electives or G.E.	11		
Radioactivity and Nuclear Structure, 4160	4		
Physical Optics, 3210	4		
* Intermediate Physics Lab., 4182	1-3		
* Intermediate Physics Lab., 4183	1-3		
Physics Electives or G.E.	11		

DESCRIPTION OF COURSES

ANATOMY AND PHYSIOLOGY

(See also Biology, Botany, Entomology, Zoology)

3300. Human Anatomy and Physiology

Introduction to structure and function of human systems. Appropriate for all students desiring understanding of the human body. Prerequisite: Biology or zoology. 3 hrs. lect., 3 hrs. lab. Four units.

3301, 3302. Anatomy and Physiology

Introduction to structure and function of human systems. Prerequisites: General biology or zoology. Organic chemistry recommended; 3301 prerequisite to 3302. 3 hrs. lect., 3 hrs. lab. Four units each.

* Minimum requirement is 3 units in this series. Units in excess of this count as part of the physics electives.

Biology

4100. Cellular Physiology

Living activities of cells and tissues including nutrition, response, growth and reproduction; unique problems in different groups of organisms. Prerequisites: General biology or zoology and botany; general chemistry; organic chemistry is recommended. 2 hrs. lect., 6 hrs. lab. Four units.

ASTRONOMY

1000. Descriptive Astronomy

A nonmathematical course with emphasis on aspects of interest to the prospective or in-service teacher. 5 hrs. lect. Five units.

BIOLOGY

(See Also Anatomy and Physiology, Botany, Entomology, Zoology)

1000. Principles of Biology

Fundamental structures and functions of living organisms, including cellular organization, nutrition, respiration and photosynthesis, control mechanisms, reproduction, heredity, and evolution. Not open to students having credit for a college course in general biology, botany or zoology. 4 hrs. lect., 3 hrs. lab. Five units.

2500. Genetics

The basic mechanisms of gene transmission, fundamental structure of genes and chromosomes, gene action in relationship to genetically coded information. Prerequisite: General biology, or botany and zoology. 5 hrs. lect. Five units.

3300. Microbiology

The general biology of major groups of microorganisms including their morphology, metabolism, reproduction, genetics, and ecology. Prerequisites: General biology or botany and zoology, general chemistry; organic chemistry recommended. 4 hrs. lect., 6 hrs. lab. Six units.

3500. Evolution

Historical development of theories on the origin of species, the impact of 20th Century genetics on evolutionary theory; with consideration of the course of evolution. Prerequisite: Genetics. 3 hrs. lect. Three units.

4100. Microtechnique

Theory and practice in the preparation of living and fixed organisms and tissues for microscopic study, with emphasis on histochemistry. Prerequisites: General biology, or botany and zoology, general chemistry, and one other course in the biological sciences. 1 hr. lect., 6 hrs. lab. Three units.

4220. Marine Biology

A study of local marine organisms with emphasis on structural and functional adaptations to the sea as a specialized environment. Prerequisite: General biology, or zoology and botany. 2 hrs. lect., 3 hrs. lab., field trips. Three units.

4270. Limnology

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: General biology, or botany and zoology, and general chemistry, 2 hrs. lect., 6 hrs. lab. Four units.

4450. Biogeography

Origin, development, and the distribution of the major plant and animal units of the world, with emphasis on the Western United States. Prerequisite: General biology or botany and zoology. 3 hrs. lect. Three units.

4461, 4462. General Ecology

Study of the relationship of plants and animals to each other and their environment. Prerequisite: General botany and zoology or equivalent; chemistry and

Botany

physics recommended; 4461 prerequisite to 4462. 4461, 3 hrs. lect.; 4462, 1 hr. lect., 6 hrs. lab. and/or field trips. Three units each.

4800. Development of Biological Concepts

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. 2 hrs. lect., 2 hrs. discussion. Three units.

4801, 4802, 4803. Senior Seminar

Major areas of current biological research will be considered with emphasis on theoretical and practical research as carried on in university, industrial and governmental Bay Area laboratories. Prerequisite: Senior standing as a biology major, or permission of instructor. 1 hr. Lecture-discussion. One unit each.

4900. Individual Study

One-four units.

BOTANY

(See also Anatomy and Physiology, Biology, Entomology, Zoology)

1001. General Botany

An introduction to the fundamental principles of plant life, with major emphasis on the structure, development, and function of seed plants. Prerequisites: Biol. 1000 or equivalent. 2 hrs. lect., 3 hrs. lab. Three units.

1002. General Botany

A survey of the plant kingdom, including the fundamentals of classification, structure, development, function, and reproduction. Prerequisite: Bot. 1001 or equivalent. 2 hrs. lect., 3 hrs. lab. Three units.

3000. Survey of the Plant Kingdom

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 majors in biology. 2 hrs. lect., 3 hrs. lab. Three units.

3101. Morphology of the Non-vascular Plants

A comparative study of the structure, development and phylogeny of the algae, fungi, lichens and bryophytes. Prerequisite: General botany or equivalent. 3 hrs. lect., 3 hrs. lab. Four units.

3102. Morphology of the Vascular Plants

A comparative study of the structure, development, and phylogeny of the club mosses, horsetails, ferns and seed plants. Prerequisites: General botany or equivalent. 3 hrs. lect., 3 hrs. lab. Four units.

4200. Plant Anatomy

A microscopic study of the structure and development of plant tissues, with major emphasis upon the anatomy of the seed plants. Prerequisites: General botany and Bot. 3102 or equivalent. 3 hrs. lect., 3 hrs. lab. Four units.

4300. Plant Taxonomy

Study of the principles of plant taxonomy. Field and laboratory studies of native seed plants. Prerequisite: General botany or equivalent. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

4310. Mycology

The identification, ecology, and study of representative groups of fungi. Prerequisites: General botany or equivalent and Bot. 3101. 2 hrs. lect., 3 hrs. lab., field trips. Three units.

4400. Principles of Plant Physiology

The life processes of the higher plants: soil and water relations, photosynthesis, metabolic activities, growth regulators, development and reproduction. Prerequisites: General botany and a year course in general chemistry. Organic chemistry is strongly recommended. 3 hrs. lect., 6 hrs. lab. Five units.

4600. Economic Plants

A study of the significance of plants in the development of human culture. 5 hrs. lect. Five units.

4900. Individual Study

One-four units.

5100. Plant Ecology

The relationships of plants to climate, soil, and other organisms. Prerequisites: General botany and general ecology. Plant physiology is strongly recommended. 1 hr. lect., 6 hrs. lab., field trips. Three units.

CHEMISTRY**1100. Introductory Chemistry**

An elementary course covering the 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. 3 hrs. lect., 6 hrs. lab., discussion. Five units.

1101, 1102, 1103. General Chemistry and Qualitative Analysis

Fundamental principles of chemistry with emphasis on inorganic compounds. Qualitative analysis is begun during the second quarter. Prerequisites: Satisfactory performance in H.S. chem., two years of H.S. math.; H.S. physics recommended. Placement examination covering H.S. chem. and algebra to determine eligibility; (Chem. 1101 is prerequisite to Chem. 1102; Chem. 1102 is prerequisite to Chem. 1103.) 3 hrs. lect., 6 hrs. lab., problem session. Five units each.

2201, 2202, 2203. Quantitative Analysis

Principles and practice of elementary gravimetric and volumetric chemical analysis; emphasis on instrumental and physical methods of analysis during the third quarter. Prerequisite: Chem. 1103. (Chem. 2201 is prerequisite to Chem. 2202, and Chem. 2202 is prerequisite to Chem. 2203.) 1 hr. lect., 6 hrs. lab. Three units each.

3301, 3302, 3303. Organic Chemistry

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 synthesis. Prerequisite: Chemistry 1103. (Chem. 3301 is prerequisite to Chem. 3302, and 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.) 3 hrs. lect., 6 hrs. lab. Five units each.

4151, 4152. Advanced Inorganic Chemistry

A study of atomic structure, valence and bonding with laboratory experience in the preparation and properties of selected inorganic compounds. Prerequisite: Physical chemistry 4501 or permission of instructor; (Chem. 4151 is prerequisite to Chem. 4152.) Chem. 4151, 4 hrs. lect., 3 hrs. lab.; 4152, 3 hrs. lect., 6 hrs. lab. Five units each.

4240. Instrumental Methods of Analysis

Theory and application of instrumental methods in chemical analysis. Laboratory experiments in physical and instrumental methods of analysis of inorganic and organic substances. Prerequisites: Quantitative analysis, organic chemistry. 1 hr. lect., 6 hrs. lab. Three units.

4311, 4312. Qualitative Organic Analysis

Identification of unknown organic compounds with emphasis on the use of microtechniques; discussion of modern quantitative and instrumental methods, with special regard to the identification of natural products. Prerequisite: Chem. 3303 or equivalent. (Chem 4311 is prerequisite to Chem. 4312.) 1 hr. lect., 6 hrs. lab. Three units each.

4321. Advanced Organic Chemistry (I)

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. 3 hrs. lect. Three units.

4322. Advanced Organic Chemistry (II)

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. 3 hrs. lect. Three units.

4323. Advanced Organic Chemistry (III)

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. 3 hrs. lect. Three units.

4401, 4402, 4403. Biochemistry

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, and Chem. 4402 is prerequisite to Chem. 4403.) 3 hrs. lect., 6 hrs. lab. Five units each.

4500. Introductory Physical Chemistry

An introductory study of the principles of physical chemistry. The fundamental physical laws, theoretical principles and mathematical relations in chemistry. Prerequisites: Quantitative analysis, Chem. 3301, general physics, college algebra or consent of instructor. 4 hrs. lect., 2 hrs. discussion. Five units.

4501, 4502, 4503. Physical Chemistry

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: General chemistry, calculus, introductory physics. (Chem. 4501 is prerequisite to Chem. 4502; Chem. 4502 is prerequisite to Chem. 4503.) Course 4501, 5 hrs. lect.; Chem. 4502, 3 hrs. lect., 6 hrs. lab.; Chem. 4503 same as Chem. 4502. Five units each.

4511, 4512. Elements of Chemical Thermodynamics

Discussion of the principles of chemical thermodynamics applied to solutions, surfaces and electrochemical systems. Prerequisite: Chem. 4503. (Chem. 4511 is prerequisite to Chem. 4512.) 2 hrs. lect. Two units each.

4610. Industrial Chemistry

Fundamental principles and applications of important chemical processes. Prerequisites: Chem. 3303, Quantitative Analysis. 3-4 hrs. lect., 4-6 hrs. field trips. Five units.

4900. Individual Study

One-five units.

4910. Special Problems in Chemistry

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. Two to five units.

CONSERVATION

4380. Conservation of Natural Resources

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. 5 hrs. lect. Five units.

ENTOMOLOGY

(See also Anatomy and Physiology, Biology, Botany, Zoology)

4100. Insects and Man

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. 2 hrs. lect., 3 hrs. lab. Three units.

4210. General Entomology

Introduction to the anatomy, biology, ecology and identification of western insects; emphasis on local forms. Techniques of collecting, rearing and preserving insects. Prerequisite: A course in the biological sciences. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

4230. Insect Identification

Collection and preparation of specimens, classification of insects, principles of taxonomy, and entomological literature. Prerequisite: A course in the biological sciences. 2 hrs. lect., 6 hrs. lab. Four units.

4310. Medical Entomology

Insects and related arthropods as transmitters of disease, public health problems arising from insects not transmitting disease. Prerequisites: A course in entomology or permission of the instructor. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

4410. Agricultural Entomology

The biology, ecology, identification, distribution and control of insects attacking agricultural crops and stored products. Prerequisites: A course in entomology or permission of the instructor. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

GEOLOGY

1101. Physical Geology

An elementary study of the earth, including materials, structure, internal conditions and physical and chemical processes. Prerequisite: Geol. 1102 must precede or be taken concurrently. 3 hrs. lect., 1 hr. discussion-quiz. Four units.

1102. Physical Geology Laboratory

An elementary study of rocks and minerals, topographic and geologic maps. Field trips. Prerequisite: None, or Geol. 1101 can be taken concurrently. 3 hrs. lab. One unit.

3201. Historical Geology

Evolution of continents, oceans, mountain systems and other features of the earth; development of animals and plants. Prerequisite: Geol. 1101 or equivalent plus Geol. 3202 (may be taken concurrently). 3 hrs. lect., 1 hr. discussion-quiz. Four units.

3202. Historical Geology Laboratory

Collecting, identifying and categorizing fossils; use of fossils. Prerequisite: Geol. 1101 or equivalent. 3 hrs. lab. One unit.

3300. Principles of Geology

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. 1100 or equivalent. Four units.

3510. Paleontology

History and classification of fossil animals with emphasis on marine invertebrates. Methods of interpretation of fossils. Prerequisite: Permission of instructor. 3 hrs. lect., 6 hrs. lab. Five units.

3610. Mineralogy and Crystallography

Recognition of minerals by their physical properties and crystal form; morphology and classification of crystal structure; introduction to x-ray techniques. Prerequisite: Geol. 1101 or equivalent. 2 hrs. lect., 9 hrs. lab. Five units.

3710. Petrology

Origin, occurrence and classification of common rocks; emphasis on hand lens identification. Prerequisite: Permission of instructor. 2 hrs. lect., 9 hrs. lab. Five units.

3810. Structural Geology

Structural features of sedimentary, metamorphic rocks; deformation of the earth's crust; applied practice in laboratory methods. Prerequisite: Permission of instructor. 3 hrs. lect.; 6 hrs. lab. Five units.

4100. Principles of Geomorphology

Analysis of land forms; 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 or more field trips required. Prerequisite: Geol. 1101, 4 hrs. lect., 3 hrs. lab. Five units.

4310. Geology of California

An overview of the geologic history and development of the physical features of California. Prerequisite: Geol. 1101 or equivalent. 2 hrs. lect., 3 hrs. lab. Three units.

4410. Economic Geology

A study of the mineral resources of economic importance. Prerequisite: Geol. 1101 or equivalent. 3 hrs. lect., 6 hrs. lab. Five units.

4810. Field Geology

Introduction to geologic field methods and instruments. Preparation of geologic maps of local area, writing of geologic reports. Prerequisite: Permission of instructor. 1 hr. lect., 6 hrs. lab. Three units.

4900. Individual Study

One-five units.

1060. Mathematics of Finance

Simple and compound interest; discount, depreciation and amortization; study of annuities and other mathematical aspects of financial transactions. Prerequisite: Intermediate algebra or equivalent. Four units.

1110. Elements of Mathematical Logic

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. Four units.

1301. Basic Analysis

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. Five units.

1302, 1303; 2301, 2302, 2303. Analytic Geometry and Calculus

Analytic geometry, differential and integral calculus, with applications. Each course has its predecessor(s) as prerequisite(s). Four units each. Prerequisite for 1302: Math. 1301 or intermediate algebra, trigonometry and acceptable score on department placement test.

2100. Finite Mathematics

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. Five units.

2300. Review of Calculus

Comprehensive review of calculus for students who need a refresher course before proceeding to more advanced courses in mathematics. Prerequisite: Math. 2303 or equivalent. Three units. (Credit cannot be granted toward a mathematics major or a bachelor's degree.)

2301, 2302, 2303. See Math. 1302**3000. Concepts of Mathematics**

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. Five units.

3101, 3111. Foundations of Mathematics

The nature of mathematics; mathematical logic; axiomatic bases for numbers and number systems; bases of geometries. Prerequisite to each: Calculus. Four units each.

3110. Theory of Polynomial Equations

Nature, limits, location, and approximation of roots. Theorem of Sturm, elements and applications of determinants and matrices, symmetric functions, transformations of equations. Prerequisite: Calculus. Three units.

3120. Linear Algebra and Matrices

Linear transformations and matrices. Algebra of matrices and vectors. Determinants and systems of linear algebraic equations. Applications to geometry, physics, etc. Prerequisites: Two courses in calculus or consent of instructor. Five units.

3130. Set Theory

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. 5 units.

3201, 3202, 3203. Higher Geometry

3201 emphasizes advanced aspects of plane and solid Euclidean geometry, including foundations, 3202 Non-Euclidean geometry, 3203 synthetic and analytic projective geometry. Prerequisite: Calculus, Math. 3201, 3201. Four units each.

3320. Differential Equations

A beginning course in ordinary differential equations. Prerequisite: Math. 2303 or equivalent. Five units.

3331. Differential Equations I

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.) Three units.

3332. Differential Equations II

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.) Three units.

3400. Selected Topics From Applied Mathematics for Engineers

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. Three units.

3450. Linear Programming

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. Three units.

3500. Probability and Statistics

Basic laws of probability. Distributions, moments, sampling and central limit theorem. Prerequisite: Math. 2303 or equivalent. Five units.

3600. Number Theory

Euclid's algorithm, prime numbers, congruences, theorems of Fermat and Euler, quadratic residues. Prerequisite: Calculus. Four units.

3700. Introduction to Digital Computer Programming

Study of the process of coding of problems for an automatic digital computer with some emphasis on the logical aspects. Prerequisite: One year of college mathematics or consent of instructor. Four units.

3750. Basic Numerical Analysis

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. Five units.

4021. Structures of Arithmetic, Algebra and Geometry

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. Four units.

4022. Structures of Arithmetic, Algebra and Geometry

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. Four units.

4040. History of Mathematics

The historical development of mathematical ideas and techniques. Prerequisite: Calculus or consent of instructor. Four units.

4100. Mathematical Logic

The propositional calculus and its completeness. Boolean algebras. Functional calculi of various orders. Theorems of Godel and Henkin. Prerequisite: Senior standing in mathematics or consent of instructor. 5 units.

4120. Introduction to Modern Higher Algebra

An introduction to abstract algebraic structures, including number systems, groups, rings, fields, integral domains and the algebra of classes. Prerequisite: Math. 3120. Five units.

4200. Elementary Metric Differential Geometry

Topics in classical differential geometry of curves and surfaces. Prerequisite: Math. 2303 or equivalent. 5 units.

4320. Vector Analysis

Vector algebra, differentiation, and integration; gradient, divergence, curl; curvilinear coordinates. Prerequisite: Math. 3320. Five units.

4331, 4332. Advanced Calculus

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. Five units each.

4340. Introduction to Complex Variables

Introduction to theory of functions of complex variables. Prerequisite: Math. 3320. Five units.

4360. Introductory Topology

Beginning course in topological methods in analysis, standard theorems in topology, bicontinuous transformations, topological spaces, metric spaces. Prerequisite: Math. 4332 or consent of instructor. Four units.

4730. Numerical Methods in Ordinary Differential Equations

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. Five units.

4750. Numerical Methods of Approximation

Study of 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. Four units.

4760. Numerical Matrix Inversion and Decomposition

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. 3120 and 3700 or consent of instructor. Five units.

4900. Individual Study

One-four units.

5020. Content of Elementary School Mathematics

Mathematical background to arithmetic; meanings, history, applications. Designed to help potential elementary school teachers understand mathematics. Three units.

5101. Numbers and Number Systems

Study of 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. 3 units.

5103. Introduction to Sets and Symbolic Logic

Basic elements of symbolic logic and sets, simple connectives, compound statements, syllogism, interrelationships between sets and logic; the nature of proof. 3 units.

5105. Introduction to Algebraic Concepts

Beginning development of algebraic principles and processes from properties of the real numbers, the "why's" of elementary algebra; the nature of proof. 3 units.

5107. Introduction to Geometric Concepts

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. 3 units.

5109. Elements of Matrix Algebra

Introduction to matrices and linear algebra; elementary properties, inverses, the algebra of vectors. 3 units.

6120. Algebraic Structures

Internal and external laws of composition. Homomorphisms. Groups. Rings and ideals. Structure theorems. Modules. Fields and field extensions. Introductory homological algebra. Prerequisite: Consent of instructor. 5 units.

6260. Algebraic Topology

Index theory. The Jordan curve theorem. Introduction to homological algebra. Polyhedra and abstract simplicial complexes. Simplicial homology and cohomology. Invariance theorems. The Lefschetz fixed-point theorem. Dimension. Introduction to homotopy theory. Prerequisite: Consent of instructor. Five units.

6331. Theory of Ordinary Differential Equations

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. Five units.

6340. Introduction to Advanced Complex Analysis

Theory of analytic functions of one complex variable, Cauchy's integral formula, analytic continuation, calculus of residues, multiple-valued functions. Prerequisite: Math. 4340. Five units.

6350. Introduction to Advanced Real Analysis

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. Five units.

6360. Topological Foundations of Analysis

The choice axiom and its equivalent forms. Topological spaces. The separation axioms. Connectedness and compactness. Continuous functions and homeomorphisms. Metric spaces and the theorems of Baire and Urysohn. Product and quotient spaces. Introduction to linear topological spaces. Prerequisite: Consent of Instructor. 5 units.

6370. General Theory of Measure and Integration

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. Five units.

MATHEMATICS EDUCATION**4020. Teaching Mathematics in Elementary Schools**

A study of the curriculum, teaching methods and content in elementary school mathematics. Prerequisite: Math. 3000 or Math. 5020 or equivalent, Math 4021. Three units.

5040. Teaching Mathematics in Secondary Schools

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. Three units.

METEOROLOGY**1400. Weather and Climate**

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. 4 hrs. lect. Four units.

NATURE STUDY**3391. Nature Study**

Natural history in the field and laboratory with topics from trees, weeds, fall insects, water birds, reptiles, amphibians and conservation. Offered in Fall quarter. Prerequisite: Basic course in biology. 2 hrs. lect., 6 hrs. lab. and/or field trips. Four units.

3392. Nature Study

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. Offered in Winter quarter. Prerequisite: Basic course in physical science. 2 hrs. lect., 6 hrs. lab. and/or field trips. Four units.

3393. Nature Study

Natural history in the field and laboratory with topics from land birds, mammals, spring insects and flowers, shrubs and nature activities. Offered in Spring quarter. Prerequisite: Basic course in biology. 2 hrs. lect., 6 hrs. lab. and/or field trips. Four units.

PHOTOGRAPHY**4500. Introductory Photography**

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. 2 hrs. lect., 3 hrs. lab. Three units.

4900. Individual Study

Two-four units.

PHYSICAL SCIENCE**1340. Principles of Physical Science**

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. 4 hrs. lect., 3 hrs. lab. and problem session. Five units.

4900. Individual Study

One-four units.

5000. Analysis of Physical Science Concepts

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. 3 hrs. lect. Three units.

PHYSICS**1011, 1012, 2011, 2012, 2013. General Physics**

1011. *Mechanics*. Uniform and accelerated motion, force, work, momentum and energy. Prerequisite: Math. 1302. (Concurrent enrollment)

1012. *Heat and Sound*. Temperature, introduction to kinetic theory of matter, wave motion. Prerequisites: Phys. 1011, Math. 1303. (Concurrent enrollment)

2011. *Electricity and Magnetism*. Electric charges and currents, magnetism, induced currents, electric oscillations; atomic origin of electromagnetic phenomena. Prerequisite: Phys. 1012, Math. 2301. (Concurrent enrollment)

2012. *Light*. Reflection and refraction of light, Huyghen's principle, lens and mirror systems, interference and diffraction. Prerequisites: Phys. 2011, Math. 2302. (Concurrent enrollment)

2013. *Modern Physics*. Experimental basis of quantum theory; atoms, nuclei, x-rays, atomic structure, radioactivity. Prerequisites: Phys. 2012, Math. 2303. (Concurrent enrollment)

3 hrs. lect., 3 hrs. lab. each. Four units each.

2001, 2002, 2003. Introduction to Physics**2001. Mechanics, Heat and Sound**

Uniform and accelerated motion, force, work, momentum and energy. Temperature, kinetic theory of matter, wave motion. Prerequisite: Math. 1301 or equivalent.

2002. Electricity and Magnetism

Electric charges and currents, magnetism, induced currents, electric oscillations. Prerequisite: Physics 2001.

2003. Light and Modern Physics

Reflection and refraction of light, Huyghen's principle, lens and mirror systems, interference and diffraction, atoms, nuclei, X-rays, atomic structure, radioactivity. Prerequisite: Physics 2002. 3 hrs. lect., 3 hrs. lab each. Four units each.

2500. Basic Electronics

An introduction to the design, use and analysis of electronic instruments such as electron tubes, amplifiers and power supplies. 4 hrs. lect. Four units.

3210. Physical Optics

The phenomena of diffraction, interference and polarization of light and their applications. Prerequisite: Physics 2013. 4 hrs. lect. Four units.

3311, 3312, 3313. Analytic Mechanics

Fundamentals of statics, kinematics, dynamics of rigid bodies, introduction to Lagrange's and Hamilton's equations. Prerequisites: Physics 2013, Math 3320, or consent of instructor. Phys. 3311 is prerequisite to Phys. 3312; Phys. 3312 is prerequisite to Phys. 3313. 3 hrs. lect. Three units each.

3320. Thermodynamics and Kinetic Theory

The equations of state and thermodynamic functions, including the first and second laws. Basic laws governing the behavior of gas molecules, including the Maxwell-Boltzmann distribution. Prerequisite: Phys. 2013 or equivalent. 4 hrs. lect. Four units.

3331, 3332, 3333. Electricity and Magnetism

Theory of electrostatics, magnetostatics, magnetism, steady and varying currents, electron theory and electromagnetic waves. Prerequisite: Phys. 2013, Math 3320 or consent of instructor. 3331 is prerequisite to 3332; 3332 is prerequisite to 3333. 3 hrs. lect. Three units each.

3511, 3512. Electronics

Primary emphasis is on physics instrumentation. Some topics covered are: circuit analysis, properties of electron tubes, power supplies, amplifiers, feed-back, multi-vibrators. Prerequisite: Phys. 2013. 3 hrs. lect. Three units each.

3530. Physical Electronics

Theory and design of vacuum tubes, electron optics, electrostatic and magnetic fields, space charge effects, nuclear particle accelerators. Prerequisite: Phys. 3511 or consent of instructor. 4 hrs. lect. Four units.

4150. Introduction to Atomic Structure

An introduction to atomic physics, treating cathode rays, the electron, black body radiation, photoelectric effect, structure of the atom and spectra. Prerequisite: Phys. 2013. 4 hrs. lect. Four units.

4160. Radioactivity and Nuclear Structure

Discovery of radioactivity, nature of radioactivity, alpha, beta, and gamma rays, theory of transformation, artificial transmutations, nuclear structure, nuclear reactors. Prerequisites: Phys. 4150 or equivalent. 4 hrs. lect. Four units.

4170. Nuclear Physics

Natural and artificial radioactivity, nuclear transformations, nuclear structure, magnetic moments, nuclear radiations, mesons, high energy physics. Prerequisite: Phys. 4160, or consent of instructor. 3 hrs. lect. Three units.

4181, 4182, 4183. Intermediate Physics Laboratory

The use and calibration of precision electrical instruments and electronic devices. Selected experiments in atomic structure, nuclear physics, solid state physics and optics. Individual research projects. Prerequisite: consent of instructor. One to three units each.

4410. Introduction to Solid State Physics

Crystal structures, dielectric, thermal and mechanical properties, metals and semi-conductors, superconductivity, mechanical properties. Prerequisites: Phys. 4170, or equivalent. 4 hrs. lect. Four units.

4420. Introduction to Quantum Mechanics

Physical ideas and mathematical formulation of quantum mechanics, with applications to atomic and molecular systems. Prerequisites: Phys. 3333, or equivalent. 4 hrs. lect. Four units.

4610. Mathematical Techniques in Physics

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). Prerequisite: Math 3332 or equivalent. 4 hrs. lect. Four units.

4900. Independent Study

Two-four units.

SCIENCE EDUCATION**4020. Science in the Elementary School**

Discussions, techniques, projects appropriate to the teaching of science in the elementary schools. Prerequisite: Completion of general education requirement in science. 2 hrs. lect., 3 hrs. lab. Three units.

5050. Advanced Science Education

Practice in preparing and presenting science lessons. Prerequisite: previous instruction in science education or consent of the instructor. Three units.

5100. Science in the Secondary School

Curriculum, materials, A-V techniques, content, and methods for secondary school science. Prerequisite: Consent of instructor. 2 hrs. lect., 3 hrs. lab. Three units.

STATISTICS**1500. Elements of Probability and Statistics**

Descriptive statistics; measures of central tendency, variation, correlation. Elementary discrete probability, sampling and sampling distributions. Tests of statistical hypotheses. Role of statistics in scientific research. Prerequisite: One year of high school algebra. 5 units.

4001. Statistical Analysis I

Descriptive statistics and probability. Prerequisite: College algebra or equivalent. Four units.

4002. Statistical Analysis II

Sampling, distributions, test of significance and correlational methods. Prerequisite: Stat. 4001 or equivalent. Four units.

4003. Statistical Analysis III

Introduction to analysis of variance. Prerequisite: Stat. 4002 or equivalent. Four units.

4900. Individual Study

Two-four units.

ZOOLOGY

(See also Anatomy and Physiology, Biology, Botany, Entomology)

1001. General Zoology

The comparative anatomy, physiology and behavior of representative invertebrate types adapting them for life in the major environments. Prerequisite: Biol. 1000 or equivalent. 2 hrs. lect., 3 hrs. lab. Three units.

1002. General Zoology

An introduction to vertebrate zoology emphasizing structural and functional adaptations to diverse environments. Prerequisite: Biol. 1000 or equivalent. 2 hrs. lect., 3 hrs. lab. Three units.

3000. Survey of the Animal Kingdom

Introduction to the anatomy, physiology, classification, and evolution of the major animal phyla. Prerequisite: Biol. 1000 or equivalent. Not open to majors in biology. 2 hrs. lect., 3 hrs. lab. Three units.

3101. Vertebrate Zoology: Coldbloods

The natural history of fishes, amphibians and reptiles including biology, morphology, classification, identification and techniques of collecting and preserving specimens with emphasis on western forms. Prerequisite: General zoology or equivalent. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

3102. Vertebrate Zoology: Warmbloods

The natural history of birds and mammals including biology, morphology, classification, identification and techniques of field study with emphasis on western forms. Prerequisite: General zoology or equivalent. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

3300. Invertebrate Zoology

The advanced study of the anatomy, physiology, systematic relationships and probable evolution of invertebrate groups, excluding insects. Prerequisites: General biology or general zoology. 2 hrs. lect., 6 hrs. lab. Four units.

3600. General Embryology

Anatomy and physiology of development, principally as exemplified by the vertebrates, including fertilization, morphogenetic movements, differentiation and organogenesis. Prerequisite: General biology or general zoology or consent of instructor. 3 hrs. lect., 6 hrs. lab. Five units.

3610. Vertebrate Anatomy

Gross and microscopic structure of representative vertebrates, emphasizing the evolutionary history of the major organ systems. Prerequisite: General embryology or consent of instructor. 3 hrs. lect., 6 hrs. lab. Five units.

4141. Reptiles and Amphibians

The biology, ecology, distribution and identification of reptiles and amphibians with emphasis on western forms. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

4142. Mammals

The anatomy, classification, ecology and distribution of mammals, with emphasis on western species. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

4143. Birds

The biology, ecology, distribution and identification of birds with emphasis on western forms. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

4144. Fishes

The biology, ecology, distribution and identification of fishes, with emphasis on western forms. 2 hrs. lect., 6 hrs. lab., field trips. Four units.

4320. General Parasitology

An introduction to parasitism; emphasis on the structure, physiology, life histories and pathology of parasitic animals other than arthropods. Prerequisites: General biology or zoology. 2 hrs. lect., 6 hrs. lab. Four units.

4900. Individual Study

One-four units.

DIVISION OF SOCIAL AND BEHAVIORAL SCIENCE

Anthropology, Geography, Journalism, Political Science, Psychology, Sociology

Professors Merrifield (head), Burke, Edmison, Freitag (Chairman, Department of Political Science), Fry, Geiser (Chairman, Department of Sociology), Lawton, Sawrey (Acting Chairman, Department of Psychology), Shaudys, Thomas (Chairman, Department of Geography-Anthropology); Associate Professors Blawie, Strong; Assistant Professors Babladelis, Carter, Crowell, Forbes, Gothberg, Jay, Kallgren, Mechanic, Michelson, Nayar, Segal, Winslow, Wright; Instructor Clarke; Lecturer in Communications B. Peterson.

CURRICULA OFFERED

Baccalaureate Degree

Social Science (B.A.) (An interdivisional major; see also Humanities and Business and Economics Divisions.)
 Language Arts (B.A.) (An interdivisional major; see Humanities for details.)
 Political Science (B.A.)
 Psychology (B.A.)

Minors (See advisers for requirements)

Anthropology
 Asian Studies (Interdivisional)
 Economics (See Business and Economics Division for details.)
 English-Journalism (See Humanities for details.)
 Geography
 History (See Humanities for details.)
 Journalism (Communications)
 Language Arts (See Humanities for details.)
 Political Science
 Psychology
 Sociology

PURPOSES

The division offers instruction in anthropology, geography, journalism, political science, psychology and sociology, leading to the baccalaureate degree in political science, psychology, and social science; and for purposes of general education.

In addition to upper and lower division courses for general education purposes in the above fields, the division cooperates with other divisions in the History of Western Culture, 1001, 1002, 1003; in Comparative Studies in Asian Cultures, 2001, 2003, 2005; and in the Junior and Senior Symposia, 3801-4801. Majors in this division are referred to these courses listed under Inter-divisional programs.

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, social work, as well as graduate work in selected fields.

Requirements:

- I. Complete the 76-unit requirement in general education which is required for all degrees.
- II. Complete the following:
 A concentration of 28-quarter hours of upper-division work in *one* of the following eight fields: anthropology, economics,* geography, history,** journalism-communications, political science, psychology and sociology. Three other supporting fields of 7-9 quarter hours each in the social sciences, history, or economics.
 The remaining courses (normally 4-8 quarter hours) to be distributed among one or two of the above named fields, or social science.
 It is recommended that a course in statistics be included in the program.
 It is recommended that a senior seminar (Social Science 4000) be included in the program.
 It is recommended that appropriate course work leading to a functional reading knowledge of a modern foreign language be a part of this requirement.
- III. The total program of not less than 60-quarter hours, of which not less than 48 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. Course work used to retire general education requirements may not be used to satisfy major requirements.
- IV. For the baccalaureate major in preparation for the Standard Teaching Credential with a Specialization in Secondary Teaching (taken during the fifth year), candidates select either history or political science as the area of the teaching major. Secondary candidates also must complete the requirements for admission to teacher education, the requirements in professional education, a course in the teaching of social science in the secondary school, and a teaching minor. Secondary credential candidates are referred to the Division of Education for details of the secondary credential program.

Illustrative Program for the Social Science Area Major

(Core concentration in Geography—one of 8 possible choices)

	Units		
	F	W	S
<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	
P.E. 1010, 1011—Physical Education Activity	½	½	5
Phys Sci 1340—Principles of Physical Science			
Eng 1002/Sp 1002—Expos. & Rhetoric/Oral & Writ. Exp.			3
Meteo 1400—Weather and Climate			4
P.E. 1101—Health and Physical Activity			3
Total	14½	14½	15

Second Year

Asia 2001-3-5—Comparative Studies of Asian Cultures	4	4	4
Geog 2100—Princ. of Physical Geography	4		
P.E. 2010, 2011—Physical Education Activity	½	½	

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

** See adviser for applicable courses in Division of Humanities.

Social Science

	Units		
	F	W	S
Econ 2301-2302—Principles of Economics	4	4	
Psych 2000—General Psychology I	4		
Geog 2300—Principles of Cultural Geography		4	
Art 1110—Introduction to Art		3	
Speech 1003—Fundamentals of Speech		3	
Geol 1101—Physical Geology		4	
Geol 1102—Physical Geology Lab		1	
Anthro 2000—Principles of Anthropology		4	
Total	16½	15½	16

Third Year

Math 3000—Concepts of Mathematics	5
So Sci 3001—Social Science I	4
Anthro 3010—Social Anthropology	4
Photo 4500—Introductory Photography	4
So Sci 3002—Social Science II	4
Geog 4100—Principles of Geomorphology	5
Geog 3520—Greater California	4
Hist 3510—History of California	4
Symp 3801—Junior Symposium	3
Geog 3000—World Land Problems	4
Geog 3500—Geography of North America	4
Stat. 1500—Elements of Probability and Statistics	5
Total	17
	17
	16

Fourth Year

Geog 3500 or 3800 series—Regional course or field course	4
Hist 4510—Social & Intellectual Hist of US	4
Pol Sci 4730—American Political Thought	4
Elective	4
Pol Sci 4520—International Relations	4
Anthro 3510—Ethnology of North America	4
Geog 4310—Political Geography	4
Symp 4801—Senior Symposium	3
Hist 4000—Contemporary World Problems	4
Geog 3800 or 3500 series—Field course or regional course	4
Elective	4
Total	16
	16
	15

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 variations outside of the Western tradition. Geography is the study of spatial distributions and space relations on the earth's surface as the environment of man. The Department's attention is focussed 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

Anthropology, Geography

surface, and (2) the effects of man's changes in his physical, biotic, and cultural habitat in determining the course of human development.

Programs are offered in two core fields in the Social Science Area major: anthropology and geography, with 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, cultural attaché, 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.

Social Science Area Major

An illustrative program for the Social Science Area major with geography as the core field, for the student seeking a general liberal arts education, is shown on the preceding page. The considerable breadth across the physical and biological sciences, the social sciences, and the humanities is to be noted. For the student going on to graduate school in geography, the program would be modified to include a modern foreign language (French or German). For the student seeking an elementary teaching credential, the program would be modified to include elective courses in art, music, health, mathematics, and science; possibilities are offered for a teaching minor in either physical science or history.

A program for the Social Science Area major with anthropology as a core field also is offered. Copies of an illustrative program are available upon request at the Division or Department office.

ANTHROPOLOGY CORE

Required Courses

Lower Division: Anthro. 2000 (prerequisite to all upper division courses)
Upper Division: Anthro. 3010, 3500, 3510, 4100, 4110, 4700
One of: Cultural Ecology 4600, 4700

Recommended Courses

Lower Division: History of Western Culture 1000-1001-1002
Comparative Studies in Asian Cultures 2001-2003-2005
Biology 1000, 2500
Geography 2100, 2300
Geology 1101, 1102
Psychology 2000, 2010
Sociology 2000
Statistics 1500

Upper Division: Anatomy 3300; Biology 3500; Economics 4100, 4110, 4510; English 4060; Geography 3000, 3810, one or more regional courses (3500 series); Geology 3201, 3202; History—one or more courses on U.S., Asia, or Latin America; Philosophy 4010; Psychology 3500, 3520; Social Science 3001, 3002; and Sociology 4100, 4110, 4120.

GEOGRAPHY CORE

Required Courses

Lower Division: Geog. 2100 (Physical Geography), and Geog. 2300 (Cultural Geography).
Upper Division: Geog. 3000, 4310; three of: Geog. 3500, 3510, 3520, 3530, 3570, and one of: Geog. 3800, 3810.

Anthropology

Recommended Courses

Lower Division: History of Western Culture 1000-1001-1002; Comparative Studies in Asian Cultures 2001-2003-2005; Anthropology 2000; Biology 1000; Economics 2301, 2302; Geology 1101, 1102; Meteorology 1400; Physical Science 1340; and Statistics 1500

Upper Division: Anthropology 3010 plus one or more regional courses; Botany 4450, 4600; Geology 3201, 3202; History—one or more courses; Photography 4500; Political Science 4520; and Social Science 3001, 3002.

Teaching Minor (30 quarter units=8 courses)

In Anthropology: 2000, 3010, 3500, 3510, 4100, 4110, 4700, plus one of: Cultural Ecology 4600, 4700.

In Geography: 2100, 2300, 3000, 3500, 3520; plus two of: 3510, 3530, 3570; and one of 3800, 4100, 4310.

General Education Courses

Lower Division: Anthropology 2000; Geography 2000

Upper Division: Anthropology 3010; Geography 3000

DESCRIPTION OF COURSES

ANTHROPOLOGY

2000. Principles of Anthropology

A survey and analysis of man and culture: including archaeology, the physical distinctiveness and evolution of man, races, the influence of language upon culture, and the nature of culture. Four units (3 hrs. lecture, 1 hr. discussion). Offered each quarter.

3010. Social Anthropology

Theories and schools in social anthropology; community studies, integration, functionalism, psychological aspects. Prerequisite: Anthro. 2000 or consent of instructor. Four units.

3500. Archaeology of North America

Prehistory of the Indians of North America together with some basic principles and methods of archaeology. Prerequisite: Anthro. 2000 or consent of instructor. Four units.

3510. Ethnology of North America

The material and social characteristics of Indian tribes; impact of the European upon these tribes. Prerequisite: Anthro. 2000 or consent of instructor. Four units.

4100. Peoples of Africa

A cultural survey of the peoples of Africa south of the Sahara. Tribal divisions and relationship, customs, arts, industry, beliefs, and contemporary problems. Prerequisite: Anthro. 2000 or consent of instructor. Four units.

4110. Peoples of Latin America

An analysis of past and present Indian and peasant cultures of Latin America. Prerequisite: Anthro. 2000 or consent of instructor. Four units.

4700. Problems of Culture Change

Problems arising from the contact of industrial societies with nonindustrial societies. Prerequisite: Anthro. 2000 or consent of instructor. Four units.

CULTURAL ECOLOGY

4600. Case Studies of Underdeveloped Areas

Character and influence of international technical assistance in promoting land and social reform. Prerequisite: Courses in geography and anthropology or consent of instructor. Four units.

Geography

4700. Technological Inventions

Origin, development, spread, and influence of basic technological inventions. Prerequisite: Courses in anthropology and geography or consent of instructor. Four units.

4900. Directed Reading

Two-four units. Prerequisite: consent of instructor.

GEOGRAPHY

2000. Introduction to Geography

Aims and methods of geography; analysis of interactions among the physical, biotic, and cultural components which contribute to the regional patterns of the earth's surface. 3 hrs. lec., 2 hrs. activity. Not open to those having Geography 2100 or 2300. Four units.

2100. Principles of Physical Geography

Analysis of the major components of the physical environment, including landforms, climate, vegetation, water resources, and soils. Required for geography core in Social Science Area major and for geography teaching minor; not open to those having Geog. 2000. Four units.

2300. Principles of Cultural Geography

Study of the basic elements of cultural geography, including the types of settlement, land-use patterns, population densities. Prerequisite: Geog. 2100. Required for geography core in Social Science Area major and for geography teaching minor. Four units.

3000. World Land Problems

Effect 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. Four units.

3500. Geography of North America

Analysis of the physical environment and relevant historical factors which helped to shape the present cultural environment of North America. Special emphasis will be placed on western North America. Prerequisite: Geog. 2100 or 2300. Four units.

3510. Geography of Latin America

A study of the landforms, climate, vegetation and cultural geography of Latin America. Prerequisite: Geog. 2100 or 2300. Four units.

3520. Greater California

Factors that have helped to change the landscape of greater California. Exploration, settlement, and the contribution of various national and ethnic groups to the culture history of California and Northwestern Mexico. Prerequisite: Geog. 2100 or 2300. Four units.

3530. Geography of Africa

A study of the landforms, climate, vegetation, and cultural geography of Africa. Prerequisite: Geog. 2100 or 2300. Four units.

3570. Geography of South Asia

A study of the environmental and cultural diversity and homogeneity of South Asia with emphasis on regional interrelations, developmental potentialities, and the economic-geographic problems of the individual countries. Prerequisite: Geog. 2100 or 2300. Four units.

3800. Field Geography of the San Francisco Bay Region

The historical, economic, industrial, and physical geography of the San Francisco Bay region. Prerequisite: Geog. 2100 or 2300 and consent of instructor. Four units.

3810. Field Geography of California

The physical and cultural geography of selected regions of California. Prerequisite: Geog. 2100 or 2300 and consent of instructor. Four units.

4100. Principles of Geomorphology

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 or more field trips required. Prerequisite: Geology 1101. 4 hrs. lect., 3 hrs. lab. Cross-listed with Geology 4100. Five units.

4310. Political Geography

The viability, internal coherence, and external connections of politically organized units (nation states, dependent territories, minor civil divisions, and special purpose regions) in relation to their physical, biotic, and cultural morphology and function on the earth's surface. Four units.

4900. Directed Reading

Two-four units. Prerequisite: Consent of instructor. Two-four units.

JOURNALISM**2401, 2402, 2403. News Reporting and Writing**

Introduction to the basic essentials of gathering and analyzing information for accurate, and precise presentation; preparing features, news articles and editorials; interviewing; coverage of speeches and public meetings. Units: 3-3-3.

3210. Mass Media of Communication

(See Creative Arts Division for description.)

3211. College Newspaper Laboratory

A laboratory experience with instruction. Class members constitute the staff of the college newspaper. Prerequisite: A college journalistic writing course or consent of instructor. 2 to 6 hrs. lab. One to three units. May be repeated for total of nine units.

3400. Advanced Journalistic Writing

Coverage of various news beats, feature, news and editorial writing; staff work on the college newspaper. Prerequisite: A lower-division course in news writing. Four units.

3700. History and Development of the Mass Media

A study of 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. Four units.

4220. Newspaper and Advertising Layout

Instruction and practice in preparing pictures, copy, and layouts for newspapers and newspaper advertising; use of mat service. Prerequisite: Consent of instructor. Five units.

4500. Editing

Editing theory and practice; standards employed for editing copy for newspapers, trade journals, industrial publications and magazines. 3 hrs. lect., 2 hrs. lab. Prerequisite: A lower division course in news writing. Four units.

4600. Press Management

Analysis of newspaper organization, economics, and business operation. Circulation, advertising, promotion, and production problems. Field trips to observe community newspaper operations. Prerequisite: Jour. 4220. Three units.

4650. Publications Internship

On-the-job experiences with newspapers, industrial publications and other commercial organs in the area. 20 hrs. weekly. Prerequisite: Department approval. Five units.

4700. Public Opinion and the Mass Media

Critical study of the influence of the mass media upon public opinion; propaganda techniques and their uses; mechanics of polling; examination of editorial policies of representative publications. Four units.

4900. Individual Study

Two-four units.

5200. Advising School Publications

Methods and curricula for prospective elementary and secondary school teachers in supervising school newspaper and yearbook staffs. Study of problems of organization, finance, personnel, instruction, and promotion of school publications. Prerequisite: Consent of instructor. 3 hrs. lect., 2 hrs. lab. Four units.

DEPARTMENT OF POLITICAL SCIENCE**PURPOSES**

The major in Political Science 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.

Requirements

- I. Complete the 76-unit requirement in general education which is required for the B. A. Degree.
- II. Complete the following requirements in the major:
 - A. The completion of 40 quarter units in political science, including: Political Science 2010, *Introduction to Government*; Political Science 2020, *National Government in the United States*; and, Political Science 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.
 - 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, if appropriate for the student's professional objective; if the student's professional objective is in the field of international relations, a modern language will be required.

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. Political Science 1201-1202. May not apply toward the major.
2. History 1101-1102. May not apply toward the major.
3. Political Science 3100 or Political Science 3110 and Political Science 4120 plus approved tests or courses on U. S. History, institutions and ideals. Political Science 3100 may not apply toward the major.

A. American Government and Politics**1201, 1202. American Political Institutions**

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. Four units each, total eight units.

2020. National Government in the United States

An analysis of 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. Four units.

3100. American National, State and Local Government

Studies of 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. Four units.

3111. The American Executive

An analysis of 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. Four units.

3112. American Legislatures and Legislation

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. Four units.

4120. State and Local Government and Politics

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. This course satisfies the California State and Local Government requirement. Four units.

4130. Urban Governments

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. Four units.

4310. Political Parties and Pressure Groups

An analysis of political parties and pressure groups: History; organization and operation; influence in nominations and elections and upon executive legislative branches of national, California state and local governments. Four units.

B. Comparative Government**3210. Comparative Government**

Analysis of 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. Four units.

4220. Government and Politics of Western Europe

An analysis of the political ideas and institutions of the major Western European nations: England, France, Germany, Italy. Four units.

4222. Government and Politics of the USSR

An analysis of 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. Four units.

4241. Governments of Asia: India and Pakistan

Analysis of the political ideas and institutions of these countries. Attention is given to the cultural contexts from which their political systems developed with emphasis upon contemporary governmental structure, functions and political processes. Four units.

4242. Governments of Asia: China and Japan

Analysis of the political ideas and institutions of these countries. Attention is given to the cultural contexts from which their political systems developed with emphasis upon contemporary governmental structure, functions and political processes. Four units.

C. Public Law**3410. Law and Society**

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. Four units.

4441. American Constitutional Law

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. Four units.

4442. American Constitutional Law

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. Four units.

5450. Administrative Law

An analysis of 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. Four units.

D. International Relations**4000. Contemporary World Problems**

(See History for description.) Four units.

4505. American Foreign Policy

An analysis of 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. Four units.

4520. International Relations

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. Four units.

4530. Diplomatic History of the United States

(See History for description.) Four units.

4540. Principles of International Law

Analysis of sources, function, evolution and principles of international law; the law-making and adjudicatory agencies; the delegation of legislative and executive powers. Four units.

4550. International Organization

Historical survey and evaluation of international organizations; emphasis on the League of Nations and the United Nations with its specialized agencies; role of the U. S. in those organizations. Appraisal of factors tending to strengthen and weaken the UN; major problems confronting international organizations. Four units.

Political Science

E. Political Theory

4711. Western Political and Social Thought

Development of political and social ideas in western thought from the Greek city-state to the 20th century; emphasis on the development of democratic concepts. Five units.

4712. Modern Democratic Thought

Analysis of political and social ideas in western thought since 1800; emphasis on development of democratic political philosophy. Five units.

4720. Communist Ideologies

Analysis of communist doctrine as developed from Marx through the Lenin, Stalin and Khrushchev eras, and the revisionist movement in China, Europe. Four units.

4730. American Political Thought

Analysis of the dominant political theories in the development of American political thought, within the framework of American history and social institutions. Impact of these ideas upon contemporary America. Four units.

F. Public Administration

4800. Public Administration

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. Four units.

4810. Public Personnel Administration

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. Four units.

4820. Public Financial Administration

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. Four units.

G. General

2010. Introduction to Government

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. Four units.

5900. Independent Study

Two-four units.

5910. Political Science Seminar

Contributions of natural and social science theories, methods, results for political science; scope and method of political science; individual research on selected topics. Two-four units.

Illustrative Program for the Political Science Major

	Units		
	F	W	S
<i>First Year</i>			
Pol.Sci. 1201—American Political Institutions	4		
HWC 1101—The Ancient & Medieval World	5		
P.E. 1100—Health & Physical Act.	3		
Psych. 2000—General Psychology	4		
Pol.Sci. 1202—Amer. Political Institutions		4	
HWC 1102—The Renaissance & Early Mod. Times		5	

Political Science

	Units		
	F	W	S
P.E. 1010—Fund. of Physical Activity		½	
Biology 1000—Principles of Biology		5	
HWC 1103—The Modern Western World		5	
Phy.Sci. 1340—Intro. to Phys. Science		5	
P.E. 1011—Fund. of Physical Education		½	
GE elective		4	
	16	14½	14½

Second Year

Pol.Sci. 2010—Introduction to Government	4
Phil. 1000—Symbolic Logic	4
P.E. 1020—Fundamentals of Phys. Educ.	½
Asia 2001—Patterns of Asian Cultures	4
Music 2111—Music Listening	3
Pol.Sci. 2010—Nat'l Government in U.S.	4
Eng. 2700—Introduction to World Literature	4
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
Eng. 2704—Intro. to World Literature	4
Asia 2005—Asian Societies in the Modern World	4
Eng. 1202—Expository Writing	4
	15½
	16½
	16

Third Year

Pol.Sci. 3410—Law & Society	4
Pol.Sci. 4520—International Relations	4
Jr. Symp. 3801—Junior Symposium	3
Soc. 2010—Social Problems	4
Pol.Sci. 4130—Urban Governments	4
Soc. 3430—Urban Problems	4
Hist. 4530—Diplomatic History of US	4
Elective	4
GE elective—Phys. Sci-Math (GE)	4
Pol. Sci. 4240—Gov. and Pol. of Asia	3
Elective	5
Conser. 4380—Conservation	
	15
	16
	16

Fourth Year

Sr. Symp. 4901—Sr. Symposium	3
Pol.Sci. 4711—History of Pol. and Social Thought	5
Econ. 4100—Internat. Economics	4
Elective	4
Pol.Sci. 4730—American Political Thought	4
Elective	12
Pol.Sci. 5910—Seminar	4
Elective	12
	16
	16
	16

DEPARTMENT OF PSYCHOLOGY**Purposes**

The major in Psychology leads to the Bachelor of Arts degree. The purposes of the program are: (1) undergraduate preparation for continuing study at the graduate level; and (2) to offer a program of study to those whose purpose is to gain a scientific understanding of behavior as part of a general liberal arts education.

PSYCHOLOGY MAJOR**Requirements**

I. Complete the 76-unit requirement in general education required for all degrees.

II. The Major:

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; tests and measurement. The following departmental requirements are in addition to the college's basic requirements for the B.A. degree.

Required courses:

1. a. Psy. 2000 *, 2010, 3100 and 4390.
b. Two courses from the following: Psy. 4801, 4802, 4803, 4804.
c. Two courses from the following: Psy. 4200, 4210, 4300.
d. One course from the following: Psy. 4220, 4310, 4320, 4340, 4350, or the choice not taken under option c.
e. One course from the following: Psy. 3500, 4403, 4410, 4610.
f. Two courses from the following: Psy. 4401, 4402, 4730, 4700, 4790, Statistics 4003.
2. Stat. 4001 *, 4002; Biol. 1000 * or equivalent.
3. An additional course from one of the following options depending upon the student's special area:
 - (i) A course from either 1-1-c or 1-1-d (experimental psychology).
 - or (ii) A course from 1-1-e (personality and social).
 - or (iii) A course from 1-1-f (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.

DESCRIPTION OF COURSES**PSYCHOLOGY****2000. General Psychology I**

An introduction to the scientific study of basic processes underlying human and animal behavior: sensation and perception, learning and thinking, motivation and emotion. Four units.

2010. General Psychology II

A survey of method, content, and theory in the scientific study of behavior. Selected problems of psychology will be viewed in terms of the experiments by which they have been investigated. Prerequisite: Psy. 2000. Four units.

* May be used to discharge general education requirement.

3100. Experimental Psychology I

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 will be dealt with in terms of experimental methodology. Prerequisites: Psy. 2010, Stat. 4001. Five units.

3500. Social Psychology

A study of current theory and research on the individual in society, small groups, and interpersonal interaction. Such topics as socialization, social structure, attitude formation, and group structure will be considered. Prerequisite: Psy. 2010. Four units.

3510. Attitude and Opinion Surveys

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: Psy. 3500. Four units.

3520. The Psychology of Small Groups

Group development; leadership roles; interpersonal interaction in a group setting; types of group atmosphere; research designs and critiques of small group behavior; sociodrama. Prerequisite: Psy. 3500. Four units.

3710. Personnel Selection

Techniques, tests, administration and evaluation of programs for the selection and placement of personnel. Prerequisite: College algebra and elementary statistics or consent of instructor. Four units.

4200. Conditioning and Learning

Basic principles and results of conditioning and learning experimentation. Prerequisite: Psy. 3100. Four units.

4210. Theories of Learning

A survey of theories of learning with emphasis upon the experimental work arising from alternative conceptual systems. These systems will be discussed in terms of their underlying assumptions and their methodological approaches to research problems. Prerequisite: Psy. 4200. Psy. 4300 is recommended. Four units.

4220. Thinking and Problem Solving

Psychological processes involved in problem solution. Survey of experimental research and theories dealing with concept formation and thought processes. Prerequisite: Psy. 3100. Four units.

4300. Motivation

Nature of primary and secondary drives. Critical analysis of the concept of motivation in relation to behavior, learning and performance. Prerequisite: Psy. 3100 or consent of instructor. Four units.

4310. Comparative Psychology

Basic psychological processes in relation to animal behavior. Prerequisite: Psy. 3100. Four units.

4320. Physiological Psychology I

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: Psy. 2010 and Physiology 3300. Four units.

4330. Physiological Psychology II

Continuation of Psychology 4320. Prerequisite: Psy. 4320. Four units.

4340. Perception

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: Psy. 3100. Four units.

4350. Heredity and Behavior

A consideration of genetic and environmental determinants of behavior and psychological characteristics of animals and humans. Prerequisites: Psy. 2010, 3100 and an elementary statistics course. Four units.

4390. History and Systems of Psychology

Survey of historical developments in the emergence of modern scientific psychology. Contemporary theoretical systems will be discussed with emphasis on how they approach the recurring problems of psychology. Prerequisites: 12 units of upper-division psychology and senior standing. Four units.

4401. Math Methods in Behavioral Science I

Psychophysics and choice. Application of elementary probability theory and finite-state models to psychophysical behavior and the psychology of choice. Prerequisite: consent of instructor. Four units.

4402. Math Methods in Behavioral Science II

Learning and motivation. Application of linear-recursive models and Markov process models to problems in learning. Prerequisite: consent of instructor. Four units.

4403. Math Methods in Behavioral Science III

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. Four units.

4410. Behavior Pathology

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: Psy. 2010. Four units.

4451. Scientific Method in Psychology I

Logic of measurement. Definition of scientific events; analysis of variables, semantic relations, and measurement scales in behavioral studies. Prerequisite: consent of instructor. Four units.

4452. Scientific Method in Psychology II

Role of Theory. Study of logical and semantic criteria for construction or evaluation of theories of behavior. Prerequisite: consent of instructor. Four units.

4453. Scientific Method in Psychology III

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. Four units.

4610. Psychology of Personality

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: Psy. 5410 or equivalent. Four units.

4700. Psychological Testing

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. Four units.

4730. Tests and Measurement

Emphasis on the theories underlying the development, analysis, and evaluation of standardized and non-standardized tests. Consideration of principles of meas-

urement. Prerequisite: College algebra and elementary statistics or consent of instructor. Four units.

4790. Psychology of Individual Differences

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: Psy. 2010 or equivalent. Four units.

4801. Learning and Motivation Laboratory

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: Psy 3100 and consent of instructor. One-two unit. 3-6 hr. lab.

4802. Response Processes and Psychophysical Methods Laboratory

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: Psy. 3100 and consent of instructor. One-two unit. 3-6 hr. lab.

4803. Physiological Psychology Laboratory

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: Psy. 3100 and consent of instructor. One-two unit. 3-6 hr. lab.

4804. Social Psychology Laboratory

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: Psy. 3100 and consent of instructor. One-two unit. 3-6 hr. lab.

4900. Individual Study in Psychology (Honors)

Work by arrangement for honors students in psychology. Four units.

6700. Advanced Education Psychology

Systematic analysis of general principles of motivation and learning as applied to educational processes. Four units.

6720. Individual Mental Tests

Analyzes the concept of intelligence and its use in mental testing. Presents major types of tests, their uses and interpretation. Prerequisite: Psy. 5700 or equivalent. Four units.

DEPARTMENT OF SOCIOLOGY**PURPOSES**

The program in Sociology is offered as a core-field within the Area Major in Social Science. It consists of seven courses (28 quarter units), selected and arranged in sequence with the advice and counsel of the academic advisor. The program offers the student opportunities to pursue a number of educational objectives: 1) a behavioral science concentration, together with allied courses from at least three other social science fields, leading to further graduate studies; 2) a pre-professional preparation for use in social services and welfare, including correctional and rehabilitation work, social development and planning; 3) a general sociological pattern of study for participation in civic and voluntary organizations. (See Social Science Area Major description in this *Bulletin*).

The minor in Sociology is available to students wishing a concentration of work to supplement professional careers in business, foreign service, law, journalism, teaching and government, as well as for further graduate work in selected fields.

DESCRIPTION OF COURSES

SOCIOLOGY

A. General Introductory

2000. Introduction to Sociology

The development of culture and personality with emphasis on the impact of groups and institutions on man's social behavior. Four units.

2010. Social Problems

Study of social problems in such areas as family life, intergroup and intercultural relations, mental and physical health, crime, economy, government, conservation of natural resources and education. Prerequisite: Soc. 2000 or equivalent. Four units.

3100. Social Research

Basic theory of research as applied to social phenomena; interviewing, practical sampling, data recording, questionnaire construction, cartographic work and other empirical skills and tools. Prerequisite or co-requisite: Stat. 1500 or equivalent. Four units.

3310. History of Sociological Theory

Study and critical analysis of the ideas of major sociological thinkers such as Comte, Durkheim, Cooley, Weber, Mead and others. Prerequisite: Soc. 2000; 2010 or equivalent. Four units.

4900. Individual Study

Two-four units.

B. Social Organization

3400. Introduction to Social Organization

Systematic descriptive analysis of the principal institutions of society; family systems in relation to governmental, military, religious, economic, educational and ameliorative institutions and voluntary organizations. Field projects in particular institutions. Prerequisite: Soc. 2000 and 3100 or equivalents. Four units.

3410. Marriage and the Family

Study of the family as a social institution with emphasis on marriage and family problems peculiar to modern American urban society. Prerequisite: Soc. 2000; 2010 or equivalent. Four units.

3420. Religion and Social Conduct

The organizational structure of religion with special emphasis on the study of religious authority and leadership. Relationships between religion and other social institutions. Prerequisite: Soc. 2000; 2010 or equivalent. Four units.

4450. Urban Problems

Nature, causes, and results of urbanization in American culture. Emphasis on social problems arising from the growth and structure of metropolitan areas. Prerequisite: Soc. 2000; 2010 or equivalent. Four units.

4460. Social Stratification

Theory of social class, survey of American social classes. Changing indices of social differentiation, prestige, status and role. Prerequisite: Soc. 2000; 2010 or equivalent. Four units.

C. Social Change and Disorganization

3500. Social Change

Descriptive analysis of social change in technology, social institutions and systems of symbolism; social movements; field projects related to social change. Prerequisite: Soc. 2000 and 3100 for majors, or consent of instructor. Four units.

3540. Basic Criminology

A survey of causes of juvenile and adult crime, methods of prevention; current practices in correctional treatment of offenders on parole or probation and in institutions. Prerequisite: Soc. 2000; 2010 or equivalent.

4520. Minority Groups

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; 2010 or equivalent. Four units.

4530. Population Movements and Issues

Social causes of population trends, changing population structures, and geographical distribution of population. National population policies affecting relationships of population to resources and levels of living. Prerequisite: Soc. 2000; 2010 or equivalent. Four units.

D. Social Agency Administration

3700. Introduction to Social Services

A survey of social welfare and the functions of social work. The development of modern social work and the techniques of social work. Prerequisite: Soc. 2000; 2010 or equivalent. Four units.

3710. Social Legislation and Public Policy

The study of the social philosophy of democratic processes as related to legislation affecting social services. The impact of changing cultural values on public policy. Prerequisite: Soc. 2000; 2010 or equivalent. Four units.

SOCIAL SCIENCE

3001. Social Science I

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. Four units.

3002. Social Science II

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. Four units.

4000. Social Science Seminar

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. Four units.

5000. Teaching Social Science in the Secondary School

Curriculum, methods, audio-visual techniques, and content in social sciences, grades 7 through junior college. Prerequisite: consent of instructor. Three units.

FACULTY

HARCLEROAD, FRED F. (1959)	President B.A., 1939, M.A., 1942, Colorado State College; Ph.D., 1948, Stanford University
ALLISON, HARRY E. (1964)	Professor of Business Administration B.S., 1950, Pennsylvania State University; Ph.D., 1952, Harvard University
ALTMAN, ROBERT LEON (1962)	Assistant Professor of Chemistry A.B., 1952, New York University; Ph.D., 1959, University of Southern California
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
BABLADELIS, GEORGIA (1963)	Assistant Professor of Psychology B.A., 1953, University of Michigan; M.A., 1957, University of California; Ph.D., 1959, University of Colorado
BARCLAY, JAMES R. (1964)	Associate Professor of Education A.B., 1949, Sacred Heart College; A.M., 1956, Ph.D., 1959, University of Michigan
BARDELLINI, JUSTIN M. (1961)	Assistant Professor of Mathematics B.A., 1950, M.A., 1954, University of California. (Part time)
BARRETT, G. HAROLD (1963)	Assistant Professor of Speech and Drama B.A., 1949, M.A., 1952, College of the Pacific; Ph.D., 1962, University of Oregon
BARTLETT, HARRY R. (1962)	Assistant Professor of Music M.B., 1954, M.M., 1955, DePaul University. (Part time)
BATES, ROBERT E. (1963)	Director of Institutional Research; Professor of Geology B.A., M.A., 1932, Indiana University; Ph.D., 1949, Columbia University
BIELLA, ARNOLD P. (1960)	Head, Division of Humanities; Professor of English B.A., 1939, University of Colorado; M.A., 1940, State University of Iowa; Ph.D., 1954, Stanford University
BLACK, JAMES M. (1962)	Assistant Professor of Art B.S., 1951, M.S., 1952, University of Wisconsin; M.F.A., 1953, Cranbrook Academy of Fine Arts
BLAWIE, MARILYN-JUNE (Mrs.) (1959)	Associate Professor of Political Science B.A., 1952, University of Connecticut; J.D., 1955, University of Chicago Law School
BLOOMBERG, MAX ARTHUR (1963)	Librarian B.A., 1952, Texas Christian University; M.A., 1961, University of Denver
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
BROWN, DONALD J. (1963)	Director of Testing Services; Assistant Professor of Education A.B., 1953, University of California at Los Angeles; M.A., 1955, Chico State College; Ph.D., 1959, Ohio State University
BRYANT, JERRY H. (1963)	Assistant Professor of English B.A., 1951, M.A., 1955, Ph.D., 1959, University of California at Los Angeles
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
BURKE, JOHN THOMAS (1963)	Assistant Professor of Music B.M., M.M., 1941, Westminster Choir College. (Part time)
BURNETT, LEWIE W. (1962)	Chairman, Department of School Administration and Supervision; Professor of Education B.S., 1935, Central Washington State College; Ed.D., 1948, Stanford University
CAMBUS, JOHN (1963)	Assistant Professor of Speech and Drama B.A., 1952, M.A., 1953, Ph.D., 1959, Wayne State University
CARLSON, RUTH K. (Mrs.) (1959)	Associate Professor of Education A.B., 1932, M.A., 1944, Ed.D., 1959, University of California
CARTER, ERNEST J. (1963)	Assistant Professor of English B.A., 1955, University of Exeter, England; M.A., 1957, University of California at Los Angeles
CARTER, ROBERT M. (1961)	Assistant Professor of Sociology A.B., 1950, William and Mary; M.A., 1953, University of California. (Part time)
CAUSEY, ROBERT L. (1963)	Assistant Professor of Mathematics B.S., 1949, Western Kentucky State; M.S., 1951, University of Kentucky. (Part time)
CHAN, DAVID B. (1963)	Assistant Professor of History A.B., 1947, University of California; M.A., 1948, Columbia University; Ph.D., 1957, University of California
CHERRY, J. THEODORE (1963)	Assistant Professor of Mathematics B.S., 1953, M.S., 1956, Ph.D., 1959, St. Louis University. (Part time)
CLARK, EUGENE W. (1964)	Director of Placement A.B., Macalester College, 1949; M.S., 1951, Ph.D., 1962, University of California
CLARKE, WILLIAM C. (1962)	Instructor of Geography B.A., 1952, M.A., 1959, University of California

COGSWELL, HOWARD L. (1964)	Associate Professor of Biological Science B.A., 1948, Whittier College; M.A., 1951, Ph.D., 1962, University of California
COLBURN, IVAN P. (1960)	Associate Professor of Geology B.A., 1951, Pomona; M.A., 1953, Claremont College; Ph.D., 1960, Stanford University
COLE, ALBERT (1963)	Assistant Professor of Languages A.B., 1939, Washington and Lee University; M.A., 1942, University of Maryland. (Part time)
COMER, JAMES L. (1963)	Coordinator of Intramural and Intercollegiate Athletics; Associate Professor of Physical Education B.A., B.S., 1948, 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)	Associate Professor of English B.A., 1939, B.S., 1942, Texas College of Arts and Industries; Ph.D., 1952, Stanford University
CORY, NORMAN R. (1963)	Assistant Professor of Music B.S., 1938, B.M., 1939, Miami University; M.F.A., 1941, University of Oregon
CROWELL, JACKSON (1963)	Assistant Professor of Political Science A.B., Bowdoin, 1947; M.A., 1949, Ph.D., 1959, Fletcher School of Law and Diplomacy
CUMMINGS, JON C. (1964)	Assistant Professor of Geology B.S., 1952, M.S., 1956, Ph.D., 1958, Stanford University
CUMMINS, LEJEUNE (1963)	Assistant Professor of History A.B., 1950, M.A., 1951, Ph.D., 1964, University of California. (Part time)
DAVIDSON, MORRIE (1963)	Assistant Professor of Recreation A.B., 1950, M.A., 1958, San Francisco State College. (Part time)
DAVIES, GORDON F. (1960)	Associate Professor of Education B.E., 1948, University of Alberta; M.E., 1949, University of Oregon; Ed.D., 1962, Stanford University
DAVIS, JOHN K. (1961)	Assistant Professor of Art B.A., 1948, M.A., 1950, Central Washington State College
DEACON, LAWRENCE S. (1963)	Assistant Professor of Mathematics A.B., 1941, M.A., 1950, Ed.D., 1955, University of California. (Part time)
DEMPSTER, STUART R. (1963)	Assistant Professor of Music B.A., 1958, San Francisco State College. (Part time)
DENKE, FRANK R. (1961)	Assistant Professor of Music Chicago Musical College (Roosevelt University), 1950, Teachers Certificate. (Part time)
DESCOUIZIS, PAUL M. (1964)	Associate Professor of Foreign Languages M.A., 1951, Boston University; Ph.D., 1959, University of Maryland
DEVRIES, JOHN E. (1964)	Professor of Chemistry A.B., Hope College, 1941; Ph.D., University of Illinois, 1944
EBOCH, SYDNEY C. (1962)	Associate Professor of Education B.A., 1946, Pennsylvania State University; M.S., Ed.D., 1962, University of Southern California
EDMISON, LYLE D. (1959)	Dean of Students; Professor of Psychology B.A., 1950, M.A., 1951, Ph.D., 1955, University of Nebraska
ELLIOT, HUGH R. (1962)	Assistant Professor of Business Administration and Economics B.A., 1950, Harvard University; M.A., 1953, University of Chicago
ERICKSON, FLOYD R. (1959)	Director 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 B.M., 1932, M.M., 1936, University of Washington; Ed.D., 1955, University of Oregon
EVANS, G. EDWARD (1963)	Librarian II B.A., 1959, M.A., 1961, M.A., 1963, University of Minnesota
EVENS, MARTHA W. (Mrs.) (1961)	Instructor of Mathematics A.B., 1955, Bryn Mawr College; M.A., 1957, Radcliffe College. (Part time)
FERGUSON, VIRGINIA (1963)	Assistant in Biological Science California State College at Hayward. (Part time)
FICKAS, ERNEST T. (1964)	Assistant Professor of Mathematics A.B., 1959, M.A., 1961, University of California
FORBES, ROBERT L. (1960)	Assistant Professor of Social Science B.S., 1949, New York University; M.A., 1950, Harvard University
FREITAG, OTTO F. (1960)	Chairman, Department of Political Science; Professor of Political Science B.A., 1939, M.A., 1940, University of Denver; Ph.D., 1942, State University of Iowa
FRY, HILARY GLEN (1960)	Special Assistant to the President; Professor of Social Science B.S., 1948, University of Illinois; M.A., 1951, Ph.D., 1957, University of Chicago
FULLER, MILTON E. (1964)	Associate Professor of Chemistry B.S., 1948, Arizona State University; Ph.D., 1956, Northwestern University
GANZ, JUDITH (1963)	Instructor of English A.B., 1956, M.A., 1959, Ohio State College. (Part time)
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 California

Faculty

GILES, JOHN C. (1964)	Assistant Professor of Physics
B.Sc., 1955, University of Sheffield, England; Ph.D., 1958, University of Exeter, England	
GILES, MARY E. (Mrs.) (1961)	Assistant Professor of Foreign Languages
A.B., 1955, University of Idaho; M.A., 1957, State University of Washington; Ph.D., 1961, University of California	
GLASOW, GLENN L. (1961)	Assistant Professor of Music
B.A., 1948, M.A., 1948, Hamline University	
GLICKMAN, STEPHEN E. (1963)	Lecturer in Psychology
B.S., 1950, Brooklyn College; Ph.D., 1958, McGill University, Canada	
GOBIN, ROBERT J. (1963)	Assistant Professor of Physical Education
B.S., 1949, Ohio Northern University; M.Ed., 1959, Bowling Green State University	
GOESER, ISABELLE McCLUNG (Mrs.) (1962)	Assistant Professor of Music
B.A., 1943, State University of Iowa; M.A., 1949, Teachers College, Columbia University. (Part time)	
GOTHBERG, JOHN A. (1960)	Coordinator of Publications; Assistant Professor of Journalism
B.A., 1949, San Jose State College; M.A., 1950, Ed.D., 1963, Stanford University	
GRAY, GARY E. (1963)	Assistant Professor of Music
Eastman School of Music, Rochester. (Part time)	
GRILLOS, STEVE J. (1961)	Associate Professor of Biological Science
B.S., 1951, University of Denver; M.S., 1952, University of Wyoming; Ph.D., 1956, Oregon State University	
GROODY, TOM C. (1960)	Professor of Biological Science
B.S., 1936, Kansas State University; M.S., 1937, Ph.D., 1952, University of California	
GUMPERZ, ELLEN M. (1963)	Assistant Professor of History
B.A., 1958, Cornell University; M.A., 1960, University of California. (Part time)	
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	
HAGEN, H. STANLEY (1960)	Librarian
B.S., 1934, University of Oklahoma; M.S., 1938, Washington University; M.L.S., 1960, University of California	
HALL, JEANNE L. (Mrs.) (1960)	Assistant Professor of Speech and Drama
B.S., 1936, Northwestern University; M.A., 1938, University of Southern California. (Part time)	
HALL, ROBERT O. (1960)	Head, Division of Education; Professor of Education
B.S., 1939, M.S., 1941, Ed.D., 1954, University of Southern California	
HAM, EDWARD B. (1963)	Professor of Foreign Languages
B.A., 1922, Bowdoin University; M.A., 1923, Harvard University; Ph.D., 1927, Oxford University	
HANCOCK, JOHN D. (1960)	Associate Professor of Mathematics
B.A., 1948, University of Southern California; M.A., 1949, Stanford University; Ed.D., 1961, Stanford University	
HARRELL, JEAN GABBERT (1964)	Assistant Professor of Philosophy
A.B., 1943, University of California; Ph.D., 1950, Columbia University	
HARTER, B. WAYNE (1963)	Assistant Professor of Business Administration
A.B., 1947, M.B.A., 1949, Stanford University. (Part time)	
HEATH, HARRISON DUANE (1960)	Assistant Dean of Instruction; Professor of Biological Science
A.B., 1944, A.M., 1946, Ph.D., 1951, Stanford University	
HENDRICKSON, DALE (1960)	Assistant Professor of Education
B.S., 1950, M.S., 1954, University of Southern California; Ed.D., 1960, University of California	
HUPPERT, GEORGE (1962)	Assistant Professor of History
B.A., 1958, University of California; M.A., 1959, University of Wisconsin; Ph.D., 1962, University of California	
INBERG, CAROL (1963)	Assistant Professor of Business and Economics
A.B., 1943, M.B.A., 1960, University of California. (Part time)	
JAEGER, DANIEL J. (1960)	Librarian
B.A., 1950, University of Denver; M.A., 1955, University of Minnesota	
JAY, EDWARD J. (1964)	Assistant Professor of Anthropology
B.A., 1952, Queens College; M.A., 1958, Ph.D., 1963, University of Chicago	
JAY, RICHARD E. (1964)	Professor of Economics
A.B., 1946, M.A., 1947, Texas Christian University; Ph.D., 1953, LL.B., 1963, University of California	
JENSEN, JANE H. (1963)	Instructor of Mathematics
B.S., 1948, University of California. (Part time)	
JESSNER, PETER HANS (1964)	Assistant Professor of Mathematics
A.B., 1949, Harvard College; M.S., 1951, University of New Mexico; Ph.D., 1962, University of North Carolina	
JONES, TUDOR (1964)	Associate Dean of Students; Dean of Admissions and Records; Assistant Professor of Education
A.B., 1948, San Jose State College; M.A., 1951, Stanford University	

Faculty

JONES, WILLIAM E. (1963)	Associate Coordinator of Field Experience; Assistant Professor of Education
B.A., 1957, University of California; M.A., 1961, San Diego State College; Ed.D., 1963, University of California	
KALLGREN, JOYCE K. (1962)	Assistant Professor of Sociology
B.A., 1953, M.A., 1955, University of California. (Part time)	
KING, PEGGY A. (1963)	Assistant Professor of Education
B.A., 1943, M.A., 1957, Texas Christian University. (Part time)	
KJELSON, LEE R. (1960)	Professor of Music
B.M.E., 1948, M.M., 1951, University of Nebraska; Ph.D., 1957, State University of Iowa	
KREN, EDWARD B. (1961)	Assistant Professor of Music
B.A., 1941, M.A., 1951, University of Washington. (Part time)	
LA FORCE, RICHARD C. (1963)	Associate Professor of Physics
A.B., 1956, Ph.D., 1959, University of California	
LAWRENCE, PAUL F. (1960)	Professor of Education
B.S., 1935, State Teachers College of New Jersey; M.A., 1946, Ed.D., 1948, Stanford University	
LAWTON, WILLIAM C. (1963)	Professor of Sociology
B.A., 1933, M.A., 1935, University of Texas; Ph.D., 1955, University of Chicago	
LENKEY, MARYLL (1963)	Librarian II
M.A., 1958, Yale University; M.L.S., 1961, University of California	
LE PELL, CORBAN (1962)	Assistant Professor of Art
B.F.A., 1957, M.F.A., 1959, University of Wichita	
LEPORE, ALBERT R. (1959)	Dean of Instruction; Professor of Education
B.A., 1942, San Diego State College; M.A., 1949, Teachers College, Columbia University; Ph.D., 1960, Columbia University	
LEVINE, SEYMOUR (1962)	Associate Professor of Psychology
B.A., 1948, University of Denver; Ph.D., 1952, New York University. (Part time)	
LEWIS, JAMES S. (1962)	Assistant Professor of Music
B.M., 1948, M.M., 1950, Catholic University of America. (Part time)	
LINCOLN, LELAND R. (1962)	Assistant Professor of Music
B.M., 1948, M.M., 1949, Boston University. (Part time)	
LUTT, CARL J. (1960)	Director of Health Services; Professor of Biological Science
B.S.M., 1942, Creighton University; M.D., 1945, Creighton University School of Medicine	
MAHANEY, DAVID W. (1961)	Coordinator of Building Program; Lecturer in Engineering
B.S., 1937, Virginia Polytechnic Institute	
MAIERHOFFER, MARIE (1963)	Assistant Professor of Business Administration
B.S., 1953, M.A., 1956, New Mexico State University. (Part time)	
MARSH, JACK N. (1962)	Coordinator of Secondary Education; Professor of Education
B.A., 1939, San Jose State College; M.A., 1952, Ed.D., 1957, Stanford University	
MARSHALL, LYNN L. (1963)	Assistant Professor of History
B.A., 1954, M.A., 1957, Ph.D., 1962, University of California	
MARTIN, MARGERY M. (1962)	Assistant Professor of Physical Education
B.S., 1954, Valparaiso University; M.S., 1961, University of Wisconsin	
MARTIN, ROBERT C. (1962)	Chairman, Department of Speech and Drama; Professor of Speech and Drama
B.S., 1940, M.A., 1943, Ph.D., 1953, Northwestern University	
MARTIN, RUTH L. (Mrs.) (1960)	Assistant Professor of Education
A.B., 1926, M.A., 1955, University of California. (Part time)	
MATHEWS, ALFRED (1963)	Assistant Professor of Physical Education
A.B., 1954, M.A., 1958, University of California	
MAYER, FORREST L. (1960)	Associate Dean of Instruction; Professor of Business Administration
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McGINNIS, SAMUEL M. (1963)	Assistant Professor of Biology
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Faculty

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Faculty

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B.A., 1926, Beloit College; B.D., 1932, Union Theological Seminary	
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WOODS, MARION C. (1960)	Professor of Chemistry
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B.S.S., 1948, College of the City of New York; M.A., 1949, Teachers College, Columbia University; Ph.D., 1958, Columbia University	
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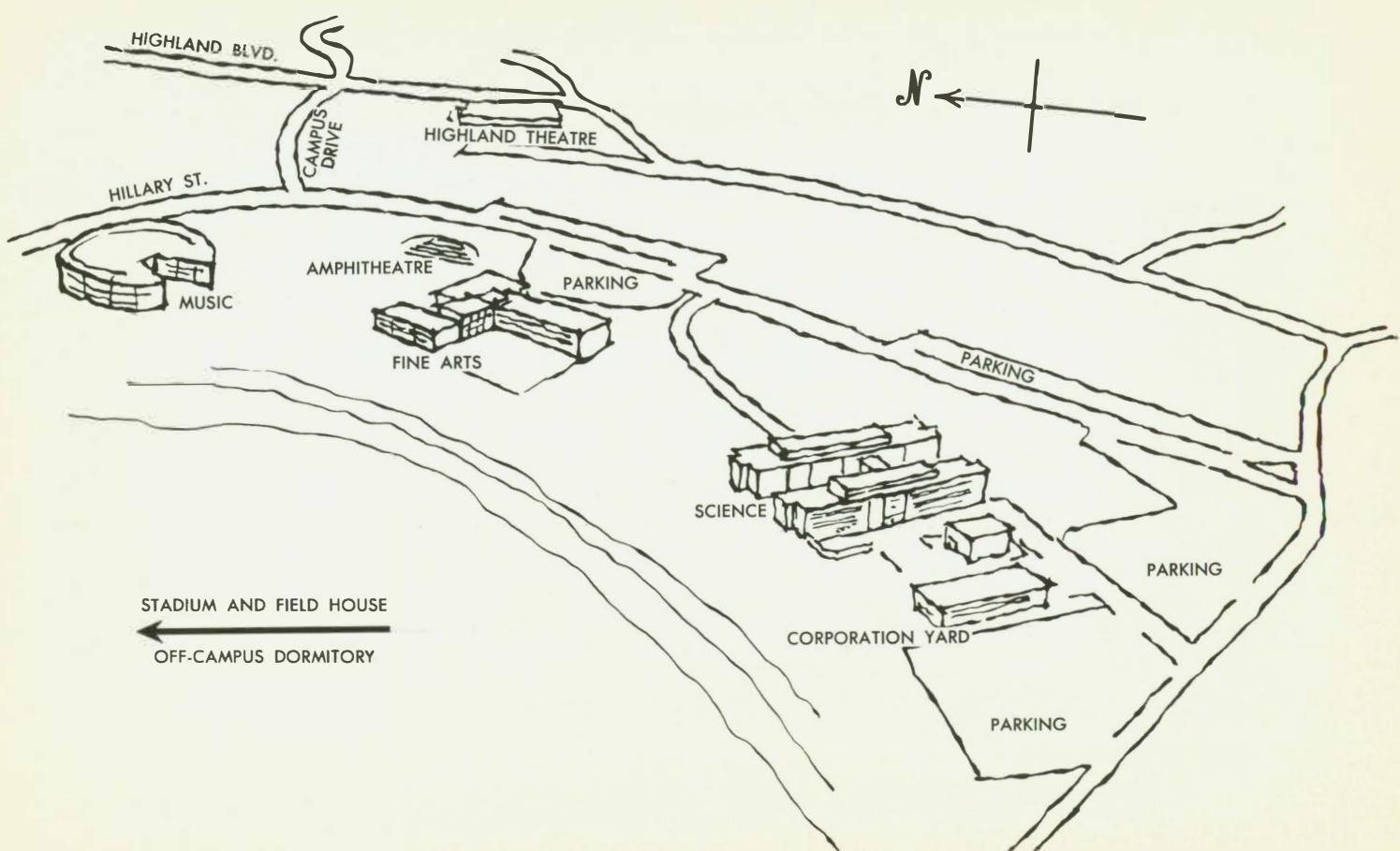
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