



CALIFORNIA STATE COLLEGE /
FULLERTON

CATALOG: '69-70

\$1 PLUS TAX

GENERAL CATALOG

and

ANNOUNCEMENT OF COURSES

1969-70



CALIFORNIA STATE COLLEGE,

FULLERTON

800 North State College Boulevard, Fullerton, California
(714) 870-2011 92631

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Effective Date: September 15, 1969

COMPLIMENTARY COPY

Cover design by Mark Witten

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ANNUAL CALENDAR

1969

JANUARY							JULY						
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1970

JANUARY							JULY						
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MARCH							SEPTEMBER						
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SUMMER SESSION 1969—First Session

April 14, Monday—	
June 2, Monday.....	Inclusive dates for early summer session registration
June 16, Monday.....	First summer session begins—registration and classes
July 4, Friday.....	Independence Day (holiday—all offices closed)
July 25, Friday.....	First summer session ends

SUMMER SESSION 1969—Second Session

July 28, Monday.....	Second summer session begins—registration and classes
September 1, Monday.....	Labor Day (holiday—all offices closed)
September 5, Friday.....	Second summer session ends (effective date of graduation for those completing requirements)

FALL SEMESTER 1969**February 1 to July 1, 1969**

Period for filing applications for admission to the fall semester 1969 for all new students and former students not in attendance during the spring semester 1969. Applicants are urged to file early in the period in view of probable enrollment limitations. Applications will be closed when enrollment quotas are filled, or July 1, whichever is earlier.

September 15-19,	
Monday-Friday.....	Faculty and student orientation—advisement week (semester begins)
September 16-18,	
Tuesday-Thursday.....	Registration
September 18, Thursday.....	Last day to register without late registration fee.
	Application deadline for baccalaureate degree candidates for graduation, June 1970 and September 1970
September 22, Monday.....	Classes begin
October 13, Monday.....	Columbus Day (holiday—all offices closed)
November 11, Tuesday.....	Veterans Day (holiday—all offices closed)
November 27-28,	
Thursday, Friday.....	Thanksgiving recess (all offices closed)
December 1, Monday.....	Deadline for January 1970 master's degree candidates to request a graduation check.
December 1, Monday.....	Applications for admission for spring semester 1970 due in admissions office
December 22, Monday.....	Christmas recess begins
January 5, Monday.....	Classes resume
January 14, Wednesday.....	Last day of classes
January 15-16,	
Thursday-Friday.....	Examination study days
January 19, Monday.....	Semester examinations begin
January 28, Friday.....	Semester examinations end (semester ends) (effective date of graduation for those completing requirements)

September 15 to December 1, 1969

Period for filing applications for admission to the spring semester 1970 for all new students and former students not in attendance during the fall semester 1969. Applicants are urged to file early in the period in view of probable enrollment limitations. Applications will be closed when enrollment quotas are filled, or July 1, whichever is earlier.

February 2-6, Monday-Friday	Faculty and student orientation—advisement week (semester begins)
February 3-5, Tuesday-Thursday	Registration
February 5, Thursday	Last day to register without late registration fee. Application deadline for baccalaureate degree candidates for graduation January 1971
February 9, Monday	Classes begin
February 12, Thursday	Lincoln's Birthday (holiday—all offices closed)
February 23, Monday	Washington's Birthday (holiday—all offices closed)
March 23, Monday	Spring recess begins
March 30, Monday	Classes resume
April 6, Monday	Martin Luther King, Jr., memorial observance
April 9, Thursday	Deadline for June 1970 master's degree candidates to request a graduation check.
April 9, Thursday	Deadline for requests by graduate students planning completion of master's degrees first summer session 1970 for certificates.
April 24, Friday	Day of the Titan
May 27, Wednesday	Last day of classes
May 28-29, Thursday, Friday	Examination study days
June 1, Monday	Semester examinations begin
June 5, Friday	Semester examinations end
June 5, Friday	Commencement (semester ends) (effective date of graduation for those completing requirements)

SUMMER SESSION 1970—First Session

April 13, Monday-	
June 1, Monday	Inclusive dates for early summer session registration
June 15, Monday	First summer session begins—registration and classes
July 24, Friday	First summer session ends

SUMMER SESSION 1970—Second Session

July 27, Monday	Second summer session begins—registration and classes
September 4, Friday	Second summer session ends (effective date of graduation for those completing requirements)

	M	T	W	Th	F		M	T	W	Th	F
Sept.	1	2	3	4	5	Feb.	<u>2</u>	3	4	5	6
	8	9	10	11	12		9	10	11	12	13
	<u>15</u>	16	17	18	19		16	17	18	19	20
	22	23	24	25	26		23	24	25	26	27
Oct.	29	30	1	2	3	Mar.	2	3	4	5	6
	6	7	8	9	10		9	10	11	12	13
	13	14	15	16	17		16	17	18	19	20
	20	21	22	23	24		23	24	25	26	27
	27	28	29	30	31	Apr.	30	31	1	2	3
Nov.	3	4	5	6	7		6	7	8	9	10
	10	11	12	13	14		13	14	15	16	17
	17	18	19	20	21		20	21	22	23	24
	24	25	26	27	28	May	27	28	29	30	1
Dec.	1	2	3	4	5		4	5	6	7	8
	8	9	10	11	12		11	12	13	14	15
	15	16	17	18	19		18	19	20	21	22
	22	23	24	25	26		25	26	27	28	29
Jan.	29	30	31	1	2	June	1	2	3	4	<u>5</u>
	5	6	7	8	9		8	9	10	11	12
	12	13	14	15	16		15	16	17	18	19
	19	20	21	22	<u>23</u>		22	23	24	25	26
	<u>26</u>	<u>27</u>	<u>28</u>	<u>29</u>	<u>30</u>		29	30			
Total Number Classroom Days	14	14	15	13	13	= 69	14	15	15	13	14 = 71

Antique figures = Holidays
| Semester begins
| Semester ends
Italic figures = Additional days when classes are not in session
Gothic figures = Final examinations
[] = Week between semesters

TRUSTEES OF THE CALIFORNIA STATE COLLEGES

Ex Officio Trustees:

Donald Reagan, R.A. _____ State Capitol, Sacramento 95814
Governor of California and President of the Trustees
J. Bricker, R.S. _____ State Capitol, Sacramento 95814
Lieutenant Governor of California
Earl Warren, A.B., M.A., Ed.D. _____ State Capitol, Sacramento 95814
State Superintendent of Public Instruction
Henry T. Mosier, _____
Chancellor of the California State Colleges

ORGANIZATION AND ADMINISTRATION

Appointments are for a term of eight years, starting January 1 of each year in person-
ment. Names are listed in order of expiration of the term.

BOARD OF TRUSTEES OFFICE OF THE CHANCELLOR THE CALIFORNIA STATE COLLEGES ADVISORY BOARD

Thomas Marlow, A.B. (1971)
P.O. Box 174, Chico 95927
Jack S. Ruffo, LL.B. (1971)
15 North First Street, San Francisco 94104
Guy Weaver, B.S. (1973)
P.O. Box 19, Hayward 94541
Daniel H. Risher, B.A. (1973)
604 Pine Street, Long Beach 90801
George D. Hays, A.B. (1975)
111 Dulane Street, San Francisco 94134
James F. Yeecher, A.B., LL.B. (1975)
110 Sausalito Street, San Francisco 94104
Max L. Gray, B.A., LL.B. (1975)
1900 First National Bank Building, San Diego 92101
William A. Norris, B.A., LL.B. (1977)
600 South Grand Avenue, Los Angeles 90017
Edward C. Lee, B.A. (1979)
195 12th Street, Oakland 94612
Lars M. Jorgensen (1979)
10000 South Alameda, Los Angeles 90034
Jedley Seim, A.B., M.A. (1976)
P.O. Box 1390, Monterey 93940
Carl L. Weber, B.S. (1975)
1540 Teller Road, Livermore 94550
Lester Heyman (1977)
3431 Dallas Street, Los Angeles 90014
V. O. Weisbach, B.S., LL.B. (1977)
1295 Fourth Street, San Rafael 94901

TRUSTEES

OF THE CALIFORNIA STATE COLLEGES

Ex Officio Trustees

Ronald Reagan, B.A.	State Capitol, Sacramento	95814
Governor of California and President of the Trustees		
Ed Reinecke, B.S.	State Capitol, Sacramento	95814
Lieutenant Governor of California		
Max Rafferty, A.B., M.A., Ed.D.	721 Capitol Mall, Sacramento	95814
State Superintendent of Public Instruction		
Robert T. Monagan, B.A.	State Capitol, Sacramento	95814
Speaker of the Assembly		
Glenn S. Dumke, A.B., M.A., Ph.D., LL.D., L.H.D.	5670 Wilshire	
Chancellor of the California State Colleges	Boulevard, Los Angeles	90036

Appointed Trustees

Appointments are for a term of eight years expiring March 1 on dates in parentheses. Names are listed in order of accession to the board.

Charles Luckman, LL.D., A.F.D.	(1974)
9220 Sunset Boulevard, Los Angeles 90069	
Theodore Meriam, A.B.	(1971)
P.O. Box 370, Chico 95927	
Albert J. Ruffo, LL.B., B.S. in E.E.	(1971)
675 North First Street, Suite 1200, San Jose 95112	
Mrs. Philip Conley, B.A.	(1972)
3729 Huntington Boulevard, Fresno 93702	
E. Guy Warren, B.A.	(1973)
P.O. Box 59, Hayward 94541	
Daniel H. Ridder, B.A.	(1975)
604 Pine Street, Long Beach 90801	
George D. Hart, A.B.	(1975)
111 Sutter Street, San Francisco 94104	
James F. Thacher, A.B., LL.B.	(1970)
310 Sansome Street, San Francisco 94104	
Alec L. Cory, B.A., LL.B.	(1973)
1900 First National Bank Building, San Diego 92101	
William A. Norris, B.A., LL.B.	(1972)
609 South Grand Avenue, Los Angeles 90017	
Edward O. Lee, B.A.	(1974)
595 16th Street, Oakland 94612	
Earle M. Jorgensen	(1970)
10650 South Alameda, Los Angeles 90054	
Dudley Swim, A.B., M.A.	(1976)
P.O. Box 1590, Monterey 93940	
Karl L. Wentz, M.S.	(1976)
5565 Tesla Road, Livermore 94550	
E. Litton Bivans	(1977)
2431 Dallas Street, Los Angeles 90031	
W. O. Weissich, B.S., LL.B.	(1977)
1299 Fourth Street, San Rafael 94901	

Trustees

Officers of the Trustees

Governor Ronald Reagan
President
Daniel H. Ridder
Vice Chairman

Theodore Meriam
Chairman
Chancellor Glenn S. Dumke
Secretary-Treasurer

Appointed Trustees
Appointments are for a term of eight years expiring March 1 on dates in parentheses. Names are listed in order of accession to the board.

Charles Luckman, LL.D., A.L.D. (1974)
9239 Sunset Boulevard, Los Angeles 90069
Theodore Meriam, A.B. (1971)
P.O. Box 170, Chico 95927
Albert J. Rebo, LL.B., B.S. in E.E. (1971)
677 North First Street, Suite 1100, San Jose 95112
Mr. Philip Conkey, B.A. (1972)
3729 Huntington Boulevard, Fresno 93703
E. Guy Warren, B.A. (1973)
P.O. Box 19, Hayward 94541
Daniel H. Ridder, B.A. (1972)
604 First Street, Long Beach 90801
George D. Hitt, A.B. (1972)
111 Sutter Street, San Francisco 94104
James F. Tuckner, A.B., LL.B. (1970)
110 Sansome Street, San Francisco 94104
Alice L. Cory, B.A., LL.B. (1972)
1900 First National Bank Building, San Diego 92101
William A. Norris, B.A., LL.B. (1972)
609 South Grand Avenue, Los Angeles 90017
Edward O. Lee, B.A. (1974)
185 18th Street, Oakland 94612
Earle M. Jorgensen (1970)
10850 South Alameda, Los Angeles 90024
Dudley Swain, A.B., M.A. (1970)
P.O. Box 1290, Monterey 93940
Earl L. Weems, M.S. (1970)
1555 Tesla Road, Livermore 94550
E. Linton Bivans (1972)
3641 Dallas Street, Los Angeles 90031
W. O. Weisbach, B.S., LL.B. (1972)
1292 Fourth Street, San Rafael 94901

OFFICE OF THE CHANCELLOR OF THE CALIFORNIA STATE COLLEGES

5670 Wilshire Boulevard, Los Angeles 90036

213 938-2981

Glenn S. Dumke	Chancellor
Raymond A. Rydell	Executive Vice Chancellor
Russell G. Whitesel	Vice Chancellor, Academic Affairs
Harry E. Brakebill	Vice Chancellor, Business Affairs
C. Mansel Keene	Assistant Chancellor, Faculty and Staff Affairs

THE CALIFORNIA STATE COLLEGES

California State College, Bakersfield
615 California Avenue
Bakersfield 93304
Paul F. Romberg, President
805 327-9101

California State College, Dominguez
Hills
809 East Victoria Street
Dominguez Hills 90247
Leo F. Cain, President
213 532-4300

California State College, Fullerton
800 North State College Boulevard
Fullerton 92631
William B. Langsdorf, President
714 870-2011

California State College, Hayward
25800 Hillary Street
Hayward 94542
Ellis E. McCune, Interim President
415 538-8000

California State College, Long Beach
6101 East Seventh Street
Long Beach 90804
Carl W. McIntosh, President
213 433-0951

California State College, Los Angeles
5151 State College Drive
Los Angeles 90032
John A. Greenlee, President
213 224-2011

California State College,
San Bernardino
5500 State College Parkway
San Bernardino 92407
John M. Pfau, President
714 887-6311

California State Polytechnic College
Kellogg-Voorhis
3801 West Temple Avenue
Pomona 91766
Robert C. Kramer, President
213 964-6424

California State Polytechnic College,
San Luis Obispo
San Luis Obispo 93401
Robert E. Kennedy, President
805 546-0111

Chico State College
Chico 95926
Robert E. Hill, President
916 343-4411

Fresno State College
Shaw and Cedar Avenues
Fresno 93726
Frederic W. Ness, President
209 487-9011

Humboldt State College
Arcata 95521
Cornelius H. Siemens, President
707 822-1771

Sacramento State College
6000 J Street
Sacramento 95819
———, President
916 454-6011

San Diego State College
5402 College Avenue
San Diego 92115
Malcolm A. Love, President
714 286-5000

San Fernando Valley State College
18111 Nordhoff Street
Northridge 91324
James W. Cleary, President
213 349-1200

San Francisco State College
1600 Holloway Avenue
San Francisco 94132
S. I. Hayakawa, Acting President
415 469-9123

San Jose State College
125 South Seventh Street
San Jose 95114
Robert D. Clark, President
408 294-6414

Sonoma State College
1801 East Cotati Avenue
Rohnert Park (Cotati) 94928
Ambrose R. Nichols, President
707 795-2011

Stanislaus State College
800 Monte Vista Avenue
Turlock 95380
Alexander Capurso, President
209 634-9101

THE CALIFORNIA STATE COLLEGES

The 19 campuses of the California State Colleges, spanning the state from Humboldt County in the north to San Diego in the south, represent the largest system of public higher education in the Western Hemisphere and one of the largest in the world. Current enrollment exceeds 212,000 full-time and part-time students. The faculty and administrative staff number approximately 10,000.

Each college in this system, with a geographic and curricular character of its own, offers a basic program in the liberal arts. Course offerings leading to the bachelor's and master's degree and a limited number of joint doctoral degrees are designed to satisfy existing student interests while serving the educational and professional requirements of the state.

The California State Colleges are dedicated to rigorous academic standards. The primary faculty responsibility is the instructional process, with recognition of the necessary role of research in institutions of higher education.

Responsibility for the California State Colleges is vested in the Board of Trustees, appointed by the Governor, and its administrative officer, the Chancellor. The Trustees and the Chancellor set broad policy for the colleges while delegating responsibility for implementation to the colleges. A statewide Academic Senate, made up of representatives elected by the faculty at each college, recommends academic policy to the Board of Trustees through the Chancellor.

While the oldest of the colleges, San Jose State College, was founded over a century ago, the California State Colleges system under an independent Board of Trustees was created by the Donahoe Act of 1960.

The California State Colleges are now in a dynamic period of development. Prior to World War II there were seven State Colleges with a peak total enrollment of 13,000. Since 1947, twelve new colleges have been established and sites have been selected for new campuses in Ventura, San Mateo and Contra Costa counties. Enrollment in the system is expected to reach 300,000 by 1980.

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COLLEGE ADMINISTRATION

THE COLLEGE

ADMINISTRATION

OBJECTIVES AND HISTORY

SPECIAL PROGRAMS AND SERVICES

RESEARCH CENTERS AND CLINICS

STUDENT PERSONNEL SERVICES

ADMINISTRATION

COLLEGE ADMINISTRATION

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Dean, School of Business Administration and Economics	Jack W. Coleman
Dean, School of Education	Eugene L. McGarry
Dean, School of Engineering	Robert G. Valpey
Dean of Educational Services and Summer Sessions	Gerhard E. Ehmann
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Registrar	Mildred H. Scott
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Counselor	Daniel T. Kawakami
Counselor	Treva Sudhalter
Counselor	Jack Russell
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Foreign Student Adviser	Louise Lee
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Associate Dean of Students and Director of Student Activities	T. Roger Nudd
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Staff Physician.....	Iris O. Moremen, M.D.
Staff Psychiatrist.....	Robert A. Rounds, M.D.
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	Charles A. Povlovich, Associate Dean
	Hazel J. Jones, Associate Dean
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Art Department	Gerald D. Samuelson
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Chemistry Department.....	Andrew F. Montana
Communications Department.....	J. William Maxwell
Drama Department.....	James D. Young
English Department.....	M. John Wagner
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Geography Department.....	Gertrude M. Reith
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Philosophy Department.....	Paul C. Hayner
Physics Department.....	Raymond V. Adams
Political Science Department.....	Ivan L. Richardson
Psychology Department.....	Robert E. Edwards
Science and Mathematics Education Department.....	George C. Turner
Sociology Department.....	F. James Davis
Speech Department	Lee E. Granell

<i>School of Business Administration and Economics</i>	Jack W. Coleman, Dean
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	John D. Lafky, Associate Dean
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Economics Department.....	Levern F. Graves
Finance Department	Sylvia Lane
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Marketing Department.....	Frank L. Roberts
Quantitative Methods Department.....	Herbert C. Rutemiller

<i>School of Education</i>	Eugene L. McGarry, Dean
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Director of Athletics.....	John E. Caine

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Premedical Committee

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Ronald M. Bristow
Richard C. Gilbert
Richard A. McFarland

Andrew F. Montana
Helen L. Morton, M.D.
Mildred H. Scott
Donald D. Sutton

The president of the college and the chairman of the Faculty Council are ex officio members of all faculty committees.

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OBJECTIVES AND HISTORY

OBJECTIVES OF CALIFORNIA STATE COLLEGE, FULLERTON

The main functions of an institution of higher learning are to disseminate and advance knowledge. The philosophy which guides an institution can limit or promote the successful achievement of these objectives. Therefore, from its inception, the college has directed its educational program toward the fullest possible development of the individuals who participate in it. For both faculty and students this entails a commitment to high standards of scholarship, a comprehensive rather than a narrow approach to major areas of study, and a concern with research and other creative activity.

The college holds to the belief that an enduring educational experience must be founded upon exploration of our cultural heritage, through basic studies in the liberal arts and sciences, and that it can and should at the same time prepare for success in a chosen occupation or profession. Accordingly, the required general education program has as its objective the development in each student of:

1. The effective use and interpretation of the written and spoken language.
2. An understanding of the wide range of human endeavor and accomplishments in liberal arts and sciences, their interrelationships, and the various choices and values they represent.
3. An understanding of information and principles in some areas of the liberal arts and sciences in sufficient depth to encourage critical and creative thought and expression.
4. A spirit of inquiry into the past and into the future, in order to cope with conditions in the continually changing world.
5. An understanding of the rights, privileges and responsibilities of citizenship in the community and nation, and of effective participation in today's world.

In addition, the college requires of all students who are candidates for a degree—whatever their special purpose—the pursuit of a subject major.

(For specific details, see page 71).

HISTORY OF CALIFORNIA STATE COLLEGE, FULLERTON

Orange County is situated on a coastal plain southeast of the City of Los Angeles. A decade ago the county was regarded as being one of rural characteristics, with emphasis on the production of oranges and other citrus fruits. Today it is referred to as one of the fastest growing counties in the nation, having multiplied its population almost five times in the last fifteen years. Orange County reached the one million mark in population in 1963, to make it the third most populous county in California. The median age of the population is 26.6 years, and 42 per cent are less than 20 years of age. Much of the county is still rural, the county having a population density of 1.37 persons per acre. There are sections, however, that are as dense as 16.64 persons per acre. Every indication points to continued growth, with a predicted population of two million by 1980. Thousands of acres of irrigated agricultural land have been converted to subdivisions, business and industry,

freeways, and schools. The electronics industry is the leader in growth among industries and businesses in the county.

California State College, Fullerton, was established by act of the Legislature under the terms of Chapter 1681 of the Statutes of 1957. On March 13, 1958, the Public Works Board selected the site of the college, located in the northeast section of the City of Fullerton. It now consists of 225 acres, and is bounded on the north by Yorba Linda Boulevard, on the west by State College Boulevard, on the south by Nutwood Avenue, and on the east by the Orange Freeway. The college is located within five miles of 60 percent of the industry and within 10 miles of 70 percent of the population of Orange County. It is also within easy driving range of Orange County beaches and mountains, and of the other cultural centers of southern California and their recreation and entertainment areas.

Dr. William B. Langsdorf was appointed president of the college on January 16, 1959, and with two aides came to Fullerton on March 2, 1959, to begin planning for the opening of the new college. Arrangements were made with the Fullerton Union High School District to lease quarters for the college administrative offices on the Fullerton Union High School campus, and to hold classes at the Sunny Hills High School for the 1959-60 school year.

During the first decade the official fall enrollment grew from 452 to 11,020 individuals. Enrollment is expected to surpass 30,000 students in 1978 and peak at 35,000 in the 1980s.

In the fall of 1960, the college opened classes on its own campus where it occupied 12 temporary buildings. The first permanent building, the Letters and Science Building, was occupied in 1963. The Music-Speech-Drama Building was completed in 1964, the Physical Education Building in 1965, the Library and Audiovisual Center in 1966, the Commons, 1967. Other permanent buildings will be opened in approximately the following order: Humanities-Social Sciences Building and Art Center, 1969; Administration-Business Administration Building, 1970; Engineering Building, 1971; and Education Building, 1972. Additional buildings are being planned for the future.

ACCREDITATION

The college is fully accredited by the Western Association of Schools and Colleges, California State Board of Education, the American Association of Collegiate Schools of Business, and the National Association of Schools of Music.

SPECIAL PROGRAMS AND SERVICES

INTERNATIONAL PROGRAMS

The California State Colleges offer academic year programs of study at a number of distinguished universities abroad. For 1969-70 the cooperating universities are: University of Aix-Marseille, France; Free University of Berlin and University of Heidelberg, Germany; The Hebrew University of Jerusalem and Tel Aviv University, Israel; University of Florence, Italy; Waseda University, Tokyo, Japan; University of Granada and University of Madrid, Spain; University of Stockholm and University of Uppsala, Sweden; National University, Taiwan. Academic work successfully completed at the cooperating universities abroad may be applied toward the degree requirements of the college in accordance with college regulations.

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

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

Cost to the student includes round trip transportation from San Francisco to the host university, room and board for the academic year, and medical insurance. In 1969-70 these costs are: France, Germany, Spain, \$2,300; Israel, Taiwan, \$2,000; Italy, Japan, Sweden, \$2,500. Payments may be scheduled throughout the year.

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

Application for the 1970-71 academic year should be made early in the fall semester of 1969. Detailed information may be obtained at the counseling center, or by writing to the Office of International Programs, the California State Colleges, 1600 Holloway Avenue, San Francisco 94132.

LATE AFTERNOON AND EVENING CLASSES

The educational program of the college is offered continuously from 8 a.m. until 10 p.m., Monday through Friday. Classes held during the late afternoon and evening hours are part of the regular college offering and are taught by the college faculty.

Students enrolling in these classes must have met all admission requirements of the college, including the filing of an official application for admission, the filing of complete official transcripts from other schools and colleges, and in the case of lower division applicants, the completion of required tests for admission.

A class schedule, listing all classes meeting in the late afternoon and evening hours, may be obtained at the Titan Bookstore.

SUMMER SESSION

Nature of the Summer Sessions

The summer session is designed to meet the needs of students who are interested in the enrichment of their educational background as well as completing requirements for a degree or credential. Summer session courses are the equivalent of college courses offered in the fall and spring semesters, and apply toward graduation and residence requirements as well as teaching credential requirements. Day-time and evening classes have been scheduled. Many courses have prerequisite requirements which students must meet. Master's degree work is also offered.

The college in 1969 will conduct two six-week summer sessions, from June 16 through July 25, and from July 28 through September 5. There also will be a number of two-week and three-week workshops running concurrently. In addition to much of the regular curriculum, summer offerings include special workshops and seminars for teachers and other professional groups. A program of recreational activities is planned to serve a wide variety of interests.

A tuition fee of \$22.50 per unit is charged plus an Associated Students membership fee of \$6 per person. The summer session class schedule announcing all courses is published in March, and may be obtained by writing the dean of summer sessions. Information may be obtained at any time by telephoning (714) 870-2611, or by visiting the college summer sessions office.

Admission to the Summer Sessions

Although the quality of the program and most of the course offerings are the same as in the regular session, the college does not require an advance application or transcripts from students registering for credit courses in the summer session. However, students must be high school graduates and are expected to have satisfied the prerequisites for the courses in which they register. Admission to summer session does not grant admission to the regular session. Admission to the summer sessions is completed at registration.

Authorized Student Load

Students may enroll for a total program not to exceed one unit per week of attendance. Furthermore, students may earn a total number of college credits not to exceed the number of weeks required to earn those credits. This means that, for example, two two-unit two-week workshops meeting during the same two-week period cannot be taken simultaneously.

EXTENSION PROGRAM AND SERVICES

The college cooperates with all community agencies (business and professional associations, chambers of commerce, school districts, industrial firms, economic and cultural groups, city and county governmental units, etc.) in the development of educational programs. These activities may be classes, conferences, institutes, workshops, seminars or they may be consultant services, depending upon the need. In this manner, the college provides opportunities for the professional, vocational, and cultural improvement of persons unable to pursue an academic program in residence.

Extension Courses. Off-campus extension courses may be planned for those wishing to earn college credit and under certain conditions this credit may be applied toward a degree or a teaching credential. Extension offerings are equivalent in level and quality to residence courses. These courses may be modified and designed to

College Library

meet the particular needs of certain groups and may be initiated at various times during the year. Any adult may enroll in an extension course, provided he meets the prerequisites of the course. Matriculation is not required. Refer to the section in this catalog on fees and expenses for information on fees.

Persons wishing information about organizing an extension course or about current extension offerings should address inquiries to the director of extension.

Conferences and Institutes. The college is interested in taking an active part in the development of conferences and institutes. The conference director, in cooperation with the respective academic departments and schools will work with agency representatives in planning the program, selection of a competent staff, and the general conduct of the conference.

Requests for information or assistance with particular educational problems which might be met through the extension program should be directed to the conference director.

THE COLLEGE LIBRARY

The college library is housed in the first and fourth through sixth floors of the new Library Building completed in the summer of 1966. The total space occupied by the library is approximately 115,000 square feet. As collections and enrollments grow, the library will occupy the remaining two floors of the building. The floors now available are designed to seat approximately 1,625 persons and to house about 205,000 volumes, besides related materials. Group study rooms, typing rooms, study carrels, seminar rooms, and individual and group music listening rooms are available. The library has facilities for Xerox and Filmac copying.

The main book collection will contain 245,000 volumes at the beginning of the 1969-70 academic year. During the year about 56,000 volumes will be added. The library also has about 9,000 volumes of sample elementary and secondary textbooks and juvenile literature, and a collection of about 20,000 pamphlets and other ephemera.

The library is a selective depository for U.S. government documents. This collection will reach a total of nearly 80,000 items in the course of the academic year. The library is also a depository for California curriculum materials, which will reach about 3,800 items during the year, and for California state documents.

In addition to these collections the library has about 9,000 reels of microfilmed U.S. government documents, chiefly State Department records, but also including such items as the Congressional Record and various presidential papers; about 21,000 reels of other microfilmed materials, mostly files of newspapers and periodicals, and about 10,000 volumes on micro-opaque cards and sheet microfilm. Readers for these materials are available adjacent to their storage area on the fourth floor.

The library subscribes to about 4,000 periodicals. In addition to the filmed back-files mentioned above, the periodicals collection contains about 10,000 bound volumes.

Besides attempting to build a balanced collection of basic works, the library, as a part of its development program, has concentrated its efforts in several subject areas. As a result, relatively strong collections are now available in such fields as World War II, international relations since 1870, Kant, Shakespeare, Melville, Joyce, historiography and historical bibliography, ichthyology, and contemporary music. As the result of a gift, a special collection of about 1,200 volumes on angling is also available. These collections will increase in strength and number during the next several years.

Library hours are posted in the elevator lobby and at other convenient locations in the building. A library handbook is available at the reference desk, where professional librarians are on duty at all times to aid students and faculty in the use of library resources.

AUDIOVISUAL CENTER

The Audiovisual Center is located in the basement of the Library Building and occupies approximately 20,000 square feet. Services to faculty and students include use of all types of audiovisual equipment and materials (motion pictures, filmstrips, instructional kits, tape recordings and study prints); campuswide distribution of AV materials and equipment upon request, rental of films from major rental libraries in the United States; for faculty: production of transparencies, embossographs, charts, posters and diagrams; production of three-dimensional media; and all types of still and motion photography. Eight preview rooms and four audition rooms are available for faculty and student use.

COMPUTER CENTER

The present computing facilities include an IBM 1620, Model 2, with an IBM 1311 disc drive and other peripheral equipment. This facility is used for instruction, research and administrative applications. Instruction on computers is offered by several departments in the college. Scheduled processing of students' programs is available several times daily. The Computer Center maintains a large library of computer programs and offers consulting facilities.

A CDC 3300 computer located at a regional center in Los Angeles also is available for use by the college. The college will replace its present computer with third generation equipment during 1969.

INSTRUCTIONAL TELEVISION CENTER

The Television Center is housed in the TV Studio of the Music-Speech-Drama Building and includes a large professional television studio, control rooms, and storage rooms. Television service available to the college community include (1) videotaping facilities and use of professional broadcast cameras and allied television equipment in the television studio and (2) a complete portable camera and videotape system available on or off campus for instructional use.

PREMEDICAL-PREDENTAL COMMITTEE

Student counseling with respect to preprofessional programs in medicine, dentistry and other health sciences as well as professional school admission problems are the concern of this committee. (See membership listing, page 25.) All students wishing to prepare for dental or medical careers should register in the Office of the Dean of Letters, Arts and Science.

PREMEDICAL PREPARATION

Medical schools are currently seeking applicants with as broad and liberal an educational experience as possible. They recommend that applicants pursue collegiate major programs which are of vital interest to the student. However, all medical schools require a basic minimal training in the natural sciences which includes the following course work:

- one year of general biology or zoology with laboratory
- one semester of embryology or comparative anatomy
- one year of inorganic college chemistry including qualitative analysis with laboratory
- one semester of quantitative analytical chemistry with laboratory
- one semester of organic chemistry with laboratory
- one year of college physics with laboratory

College Foundation

Most medical school applicants complete a baccalaureate degree program prior to beginning their medical training. However, applications to medical school are processed normally at the termination of the sixth semester (junior year). The medical college admission test, required of all medical school applicants, is taken normally during the Spring of the sixth semester (junior year). The prospective medical school applicant should therefore normally plan to complete the above natural science minimal requirements by the end of the junior year. Thus he should begin inorganic chemistry in his freshman year in order to satisfy the prerequisite requirements for the advanced courses in chemistry.

Since medical school admissions are limited, the best prepared applicants are likely to have an advantage. Many medical schools recommend certain courses in the natural sciences in addition to those listed above in the minimal requirements. The prospective applicant is advised to consult the catalogs of those medical schools to which he anticipates applying for additional recommended preparatory subjects. He is further advised to consult a member of the Premedical Committee for assistance in planning his total collegiate program and to obtain copies of optimal programs from the Chairman of the Premedical Committee.

THE CALIFORNIA STATE COLLEGE, FULLERTON FOUNDATION

The California State College, Fullerton Foundation, was established and incorporated in October 1959 to provide essential student and faculty services which cannot be provided from state appropriations; to supplement the program and activities of the college in appropriate ways; and to assist otherwise the college in fulfilling its purposes and in serving the people of the State of California—especially those of the area in which the school is located.

Services provided by the foundation include the operation of various college auxiliary organizations including the bookstore, residence halls, and food service; business administration of scholarship and student loan funds; sponsored research programs; and certain institutes.

The foundation's overall policies are administered by a board of trustees made up of members of the college faculty, administration and community leaders.

RESEARCH CENTERS AND CLINICS

CENTER FOR RESEARCH IN BUSINESS, ECONOMICS, AND THE COMMUNITY

The Center for Research in Business, Economics, and the Community provides:

- (1) School of Business Administration and Economics and other faculty with additional opportunity to participate in research activities in order to improve and reinforce teaching and professional competence;
- (2) Professional research and consultation services to the local area normally considered as being serviced by the college, including private business, labor, agriculture, and local government agencies;
- (3) Educational services, e.g., seminars and conferences, to improve the level of understanding and competence of local decision-makers in specialized areas relating to business administration and economics; and
- (4) A focus, through research, for the education of students and citizens in the business and economic problems of the local community, and for the involvement of faculty in such educational programs.

The operations of the Center are carried out by constituent institutes, programs, and projects for which the Center provides overall leadership and coordination. The institutes are long-term, continuing organizations designed to operate in selected major problem and functional areas of strategic significance and concern to the School. Programs and projects within the Center are organized to carry on work outside the Institutes' area of interest, which are a smaller scale and for a shorter time-span.

Currently included within the Center for Research in Business, Economics, and the Community are: the affiliated Center for Economic Education; the Real Estate Research Institute; the Technological Studies Institute; and the Joint Institute for Urban Studies.

Center for Economic Education

The Center for Economic Education is one of many such centers at colleges and universities in the United States working with the national Joint Council on Economic Education to expand economic understanding. Center programs include (1) services to schools and colleges, individual educators, and the community; (2) research and professional training; and (3) operation of an economic education information center. The Center consists of a broadly based executive policy board; an administrative staff; and formally organized groups of participating users. Although operating autonomously, the Center is affiliated with the Center for Research in Business, Economics, and the Community.

Real Estate Research Institute

The Real Estate Research Institute conducts a continuing research program, with special emphasis on urban development in Orange County. Studies are undertaken in cooperation with various public and private agencies, including the University of California, but primary funding is from the Department of Real Estate of the State of California. Opportunities exist for student participation in the various research activities.

Governmental Studies

Technological Studies Institute

The Technological Studies Institute conducts an interdisciplinary program of technological studies including research activities closely integrated with special course offerings and a library collection on technology. Research activities include study of methodology and techniques for measuring and analyzing technological change and its economic and social impacts; study of technology transfer and applications; and analysis of impacts of technological change on individuals, industries and society. Curriculum activities of the program are coordinated through the Interdisciplinary Center of the College and courses included in the program are listed with that Center's courses in the Catalog.

Joint Institute for Urban Studies

The Joint Institute for Urban Studies represents a cooperative effort by California State College, Fullerton and the University of California, Irvine to study the processes and problems of urban development with special reference to Orange County.

CENTER FOR GOVERNMENTAL STUDIES

The Center for Governmental Studies is part of the Department of Political Science's expanding research and teaching activities. Established in 1965, the center has four major functions: first, to collect and make available fugitive governmental and political materials; second, to assist local government agencies and citizen groups in the study of local governmental problems; third, to provide students with instruction and experience in research techniques and methodology; and fourth, to provide facilities for community institutes and seminars.

SPEECH AND HEARING CLINIC

The College Speech and Hearing Clinic operates as a nonprofit California State College Foundation agency. In addition is an off-campus clinical program for graduate students that involves experiences within medical and paramedical settings. The primary purpose of the clinics both on campus and off campus is to provide opportunities for teaching, service and research. College students receive clinical experience and opportunity for observation.

LABORATORY FOR PHONETIC RESEARCH

The Laboratory for Phonetic Research operates under the direction of the Program in Linguistics and provides facilities for student and faculty research in the acoustic analysis of speech. The Laboratory publishes completed projects in its series of research reports and through the ERIC Document Reproduction Service.

TUCKER WILDLIFE SANCTUARY

The Tucker Wildlife Sanctuary operates as a nonprofit California State College Foundation agency. The sanctuary provides for (1) a program of continuing educational service to the community; (2) a research center for biological field studies; (3) a facility for teacher education in nature interpretation and conservation education; and (4) a center for training students planning to enter into the public service field of nature interpretation.

STUDENT PERSONNEL SERVICES

Student Personnel Services at the college are administered from the Office of Admissions and Records, the Office of Relations with Schools, the Counseling and Testing Center, the Activities Office, Housing Office, the Office of Placement Services, and the Student Health Center. Collateral responsibilities include foreign student advising, coordination of the California State Colleges international student programs, selective service and veterans' affairs, and financial aids. Coordination of this general program rests with the dean of students.

RELATIONS WITH SCHOOLS

The Office of Relations with Schools administers a collegewide program to articulate college curricula with other colleges and schools and to offer preadmission guidance to prospective students, their parents, and school counselors. The college believes this program should be vigorously pursued so students may (1) choose the kind of college experience appropriate for them and (2) may have the proper academic preparation for the curricula of this college.

STUDENT ACTIVITIES

ACTIVITIES

The college recognizes the important role of student activities in education. The activities program represents a variety of areas intended to serve every student according to his interest, ability and available time.

All registered students are members of Associated Students of California State College, Fullerton. The Associated Students are governed through the executive, legislative, and judicial branches of the Associated Students organization. The president and commissioners constitute the executive branch which has the responsibility for the development and administration of the program, including such activities as publications, religious clubs, intercollegiate athletics, intramural athletics, forensics, and music. The Associated Students Senate has full responsibility for legislation by which this program is directed and for the allocation of student funds for the program. The judicial branch serves as the legal body for interpretation of the constitution and enforcement of Associated Student policies.

Student Organizations

Student organizations are encouraged and aided by the college whenever students express a desire for activities which add to their educational opportunities. As a relatively young institution, the development of new organizations to serve the needs of a growing student population is rapid. More than 70 organizations are now recognized, including one local and six national social fraternities, one national and three local social sororities, departmental professional fraternities, and many service, special interest and religious groups.

Student Publications

The college newspaper, the *Titan*, is published three times a week as a product of the journalism classes and financed by the Associated Students. In addition, a handbook is available for use by organizations in the development and operation of their program. The *Titan Illustrated*, a literary magazine, is also published by students.

Housing

Student News Bureau

The Student News Bureau was organized in 1960 to provide the outside press with news of student activities on the campus. It is financed by a budgeted allocation from Associated Students.

Athletics

The intercollegiate athletic program consists of teams in baseball, basketball, cross country, golf, gymnastics, soccer, swimming, tennis, track and field, water polo and wrestling. Football will be added to the program in 1970. A year-round program of intramural activities includes basketball, badminton, flag football, handball, softball, tennis and wrestling, swimming and weight lifting.

The college is a member of the California Collegiate Athletic Association (CCAA).

All athletic teams compete under rules of the National Collegiate Athletic Association (NCAA).

Intramural Activities

The intramural program is conducted on a seasonal basis and involves a variety of athletic and recreational activities for both men and women. Rules and regulations which govern participation in the intramural program are available in the Office of the Director of the Intramural Program or in the Office of Student Activities.

Extramural Activities

Participation by women in extramural volleyball, basketball, tennis, swimming, track, and golf is provided through membership in the Extramural Coordinating Council of Southern California and the American Recreation and Athletic Federation for College Women.

College Recreation Association

Individual recreation opportunities in weight training, swimming, handball, volleyball, basketball and badminton are available through membership in the College Recreation Association to members of the student body, faculty and staff.

HOUSING

The college provides housing for 573 unmarried students in two modern co-educational residence halls located adjacent to the campus. Designed for educational living, the halls have study areas, lounges for informal discussions, classrooms and a library. Social and recreational facilities which include a basketball court, volleyball court, barbeque pit and swimming pool are provided for the students' enjoyment.

Rooms are mostly four-person occupancy; however, a few small doubles are also available. Each room has its own private bath. The buildings are fully air-conditioned and carpeted. A dining hall is conveniently located for resident students.

The Residence Hall Directors and Resident Advisers of each hall attempt to promote a social, cultural and educational program which supports and expands the classroom experience. The resident has the opportunity to study, assume responsibility through hall government, and discuss serious topics of the day with guest speakers. A new program in experimental education, Project Titan, was begun in the fall semester of 1967. Regularly scheduled college classes are scheduled in the residence hall in order to promote a meaningful dialog between faculty members and students in an informal setting.

The Housing Office maintains listings of apartments and houses for students and faculty who are interested in off-campus living. For students looking for roommates, a bulletin board with names of persons currently with an apartment to share is also provided. Further information regarding housing may be obtained by contacting the Housing Office.

STUDENT HEALTH SERVICES

The purpose of the Student Health Center is to help keep the student in class by providing high quality medical service early in the course of an illness, to provide a healthy and sanitary environment on campus in which to live and study, to stimulate better health awareness among the students, and to educate them to the high standards of good therapeutic and preventive care.

The Student Health Center is in Room 580 of the Letters and Science Building and is open from 8:45 a.m. to 4:30 p.m. each weekday that classes are in session. No staff is available for night or weekend services, and there are no off-campus calls made at any time. Special care and time are given to sympathetic counseling of both emotional and physical problems. Several physicians and nurses are continuously on duty during the day to care for emergencies and for the treatment of illnesses and injuries.

Among the services presently offered are the following:

1. Diagnosis and treatment of the usual medical and surgical problems.
2. Physical examinations as required.
3. Emergency care.
4. Routine immunizations.
5. Laboratory facilities.
6. Followup care as may be recommended by the student's private physician within the scope of available facilities.
7. Electrocardiograms.
8. Physical therapy treatment.
9. Medical counseling.
10. Psychiatric counseling and diagnosis.
11. Specialists' diagnostic services when directly referred by the Student Health Center.

All fees for care in the Student Health Center, unless otherwise specifically stated, have been prepaid by the State of California and by the student's registration fee. All undergraduates and all graduates registering for *more than 6 units* of credit are eligible for all or any of the health services offered. *Emergency* service is available to everyone on campus.

Health, Accident, Hospital Insurance

All students are urged to carry this type of insurance. An excellent policy at a low premium is available to all students through the Associated Students' Business Office.

All students living in college-sponsored housing, and foreign students, are required to be covered by this policy.

PLACEMENT SERVICES

A centralized Placement Office is maintained with responsibilities for assisting students in finding both part-time and career employment. The college believes that it best serves both the student and employers only when its graduates have been placed in the professions for which they are prepared and trained.

Counseling and Testing Services

Part-time Placement

Students wishing part-time jobs either on or off campus are eligible to receive the assistance of the office if they are taking seven units or more. New students may receive service as soon as they have notice of their admission to the college. Secretarial skills are in great demand; but calls for schoolbus drivers, custodians, teacher aids, draftsmen, waiters, clerks, youth and recreation leaders, sitters, gardeners, etc., are received. If students must augment their resources while going to school they are encouraged to limit their work hours to approximately 10 per week.

Business, Industry, and Government Placement

The Career Placement Interviewer assists graduating seniors and graduate students seeking career employment in business, industry, or public service through personal counseling in defining occupational preference, providing active job leads and making up résumés.

In addition, the Placement Center makes arrangements for the on-campus recruitment program which brings the employers to the students. Also available through the center are applications for computerized job placement service operated by the College Placement Council. It is called GRAD (Graduate Résumé Accumulation and Distribution) and it is for the CSCF alumni seeking new professional opportunities.

Located in the Placement Center is the Career Library with an ever-expanding selection of resource materials on career opportunities. Federal, state, county, city and armed forces brochures and applications are also available for student access.

The Placement Center serves as liaison office for the Peace Corps, the military and VISTA offering counseling and information brochures to any interested student.

Educational Placement

Students in the teacher education, pupil personnel services, supervision, or administration curriculum of the college, who are in the final semester of a credential program, or who are in student teaching or directed field work, are eligible to register and receive the services of the Placement Center, chief of which is help in establishing a professional employment file. Such registrants are supplied information in openings and helped to establish their candidacies in the school districts and educational institutions.

Students who are not in the student teaching program but who are completing their credential program at the College are also eligible for service. This includes those about to receive their master's degree, who plan to apply for a junior college credential.

COUNSELING AND TESTING SERVICES

Counseling

Students who need assistance with such concerns as choosing an academic major or vocational goal, with study skills, or with personal problems affecting their academic progress may obtain help through the Counseling Center. The staff of professionally trained counselors and psychologists has available a variety of resources including occupational information files, special testing materials, college catalogs, and directories of various kinds to assist the student.

The Counseling Center also maintains contact with agencies and professional persons in the community to whom students may be referred.

Counseling services are available only to fully matriculated, registered students.

Testing

Collegewide testing programs are coordinated and administered by the Testing Center. These include college admissions tests and general tests for graduate school admission. In addition, the Testing Center provides advice and consulting services to instructional departments in the development and administration of admission, selection, and placement tests for use by a specific department.

The Testing Center also conducts ongoing research on the validity and appropriateness of tests used in college testing programs.

Testing requirements for students seeking admission are listed in the admissions section of the catalog. Students seeking information about testing requirements for specific instructional programs should inquire in the appropriate instructional division or the Counseling and Testing Center.

Foreign Students

Special services for foreign students are coordinated by the foreign student adviser. These services include aid with problems concerning visa status and employment; orientation to academic procedures and requirements; advisement related to finances, social standards, and customs; and to resources and opportunities offered by campus and community.

International Programs

Information concerning study opportunities for American students in foreign universities is available in the Counseling Center. The foreign student adviser coordinates the selection of students applying for admission to one of the international programs operated by the California State Colleges in France, Germany, Israel, Italy, Japan, Spain, Sweden, or Taiwan.

NEW EDUCATIONAL HORIZONS

New Educational Horizons is an innovative educational program concerned with the expansion of higher educational resources to meet the needs of *all* students. Through direct focus on the disadvantaged student, it hopes to attain pertinent information that can be disseminated to education in general to effectuate the development of a system that is democratic, flexible and capable of serving the pluralistic society in which it exists.

FINANCIAL AID

Scholarships

A limited number of scholarships are available for outstanding students. Qualified students should obtain scholarship applications from the Financial Aid Office, and return by April 15 for the fall semester and December 15 for the spring semester. Scholarship applications are evaluated by the Financial Aids Review Committee. Awards are based on scholastic record, financial need and personal qualifications. Some scholarships are limited to students majoring in specified disciplines. Departmental recommendations weigh heavily in such cases.

Scholarships offered by California State College, Fullerton are made possible by interested organizations, business firms and individuals. Recent contributors to the scholarship program include:

Alpha Chi Omega Sorority

Bert Noble Foundation

California Congress of Parents and Teachers, Inc.

Financial Aid

CSCF Computer Center Scholarship Fund
CSCF Staff Women's Organization
California State Employees Association (CSCF Chapter)
California State Firemen's Association
Donna Cherry Memorial Scholarship
Edward Mittleman Memorial Scholarship
Epsilon Lambda Chapter, Epsilon Sigma Alpha Sorority
Friends of the College Music Scholarship
Fourth District, California Parents and Teachers Association
Fullerton Rotary Club
Gamma Phi Beta Sorority (Orange County Alumnae)
Junior Women's Civic Club of Garden Grove
Kappa Delta Phi Sorority
Kiwanis Club of Greater Fullerton
La Habra Junior Women's Club Scholarship
Los Amigos Club of Fullerton
Lowell Joint Education Association Scholarship
Mr. and Mrs. Rodney Coulson (President's Award)
Mu Phi Epsilon Scholarship Fund
Music Teachers Association of Orange County
National Women Accountants Scholarship Fund
Orange County Engineering Council Scholarship
Roberta King Maxwell Memorial Scholarship Fund
Sadie Landon Memorial Music Scholarship Fund
Sheryl Cummings Memorial Scholarship Fund
Society of California Accountants (Orange County Chapter)

Loans

The generosity of organizations and individuals enables the college to offer short-term loans to students who meet unexpected financial difficulties of a temporary nature. Loans from these funds are made for various periods of time and to specified categories of students, according to college regulations and the wishes of the donors. The prime purpose of these loans is to meet educationally related expenses, and thus loans cannot be made for the purposes which are normally financed by private lending institutions. Application for a short-term loan may be made at any time during the school year.

The following is a listing of the loan funds available during the 1969-70 school year:

Altrusa Club of Fullerton Loan Fund
Betty Casault Memorial Loan Fund
Brea Rotary Club Loan Fund
California Retired Teachers Association (Laura Settle Fund)
CSCF Faculty Women's Club Loan Fund
Gerald D. Hudson Memorial Loan Fund
Gordon S. Fyfe Memorial Loan Fund
James Merrick Memorial Loan Fund
Juliann Ashford Memorial Loan Fund
Kenneth G. Ryhal Memorial Loan Fund
Laura E. Imhoff Memorial Loan Fund
Marcella Fisk Memorial Loan Fund
Michael R. Young Memorial Loan Fund
Pan-Hellenic Club of Northern Orange County Loan Fund
Rossmoor Women's Club Loan Fund

Rotary Club of Fullerton, Foreign Students Loan Fund
Soroptimist International Club of Fullerton Loan Fund
Student Emergency Loan Fund
Trust-Davis Memorial Loan Fund
Wilma Doig Steen Memorial Loan Fund
Zonta Club of Fullerton Loan Fund

National Defense Student Loans

California State College, Fullerton joins with the federal government and the State of California in making long-term, low-interest loans available to students under the National Defense Education Act. Details and applications are available at the Financial Aid Office. Deadlines for submissions of applications are December 1 for the spring semester, April 1 for the summer sessions and June 1 for the fall semester.

All unmarried applicants under age 25 are required to file a Parents' Confidential Statement with the College Scholarship Service, Box 1025, Berkeley 94701, designating California State College, Fullerton as one of the recipients. The Parents' Confidential Statement assists the college to evaluate financial need, and, since it must be on hand before the loan application can be acted upon, early submission is advised. These forms can be obtained at most secondary schools or at the Financial Aid Office.

United Student Aid Funds

Long-term loans are also available under the United Student Aid Funds program to assist students who have completed their freshman year. United Student Aid Funds, Inc., a private, nonprofit corporation, will endorse loans to students upon recommendation by the college.

A maximum of \$1,000 per year, or a combined total of \$3,000 may be borrowed for undergraduate or graduate education. The loan is repaid in 36 monthly installments, beginning the fifth month after the student leaves school. Maximum interest rate is 6 percent simple. Applications and additional information are available at the Financial Aid Office.

Federal Insured Loan Program

The college cooperates with the Federal Government and private lending institutions in making guaranteed loans available to full-time students. A loan recipient under this program must meet the following qualifications:

- a. have an adjusted family income of less than \$15,000 per year
- b. be a full-time student
- c. be enrolled and in good standing at the college or accepted for enrollment.

The interest on these loans may not exceed 7 percent per annum on the unpaid balance. The United States Office of Education will pay all interest while the student is enrolled as a full-time student and 3½ percent thereafter. Repayment ranges from 5 to 10 years following graduation, according to arrangements made with the lender. Applications and further information may be obtained from the Financial Aid Office.

College Work-Study Program

The college cooperates with the Federal Government in providing work-study jobs. Students who can establish "need eligibility" may work up to 15 hours a week during the school year and up to 40 hours in the summer. Under this program there are on-campus opportunities such as library and instructional aides, clerks, computer center aides, and laboratory and research assistants. Off-campus jobs in

Financial Aid

nonprofit community agencies include teacher aides, recreation leaders, office trainees, and administrative interns. Interested students should consult the Financial Aid Office for eligibility requirements.

Educational Opportunity Grants

Federal funds have been made available to the College to use in making grants to undergraduate students who display "exceptional financial need" and who would otherwise be unable to continue their education. These grants range from \$200 to \$800 per year and are non-repayable. These grants are always awarded in conjunction with other forms of aid, and thus a Parents' Confidential Statement is required. Deadlines are the same as for the National Defense Student Loans.

Combined Intern-teaching and Master's Degree:

A National Science Foundation supported program in biology was started in 1967. This program permits a limited number of qualified biology teachers to attend CSCF a half-day, each day, for two academic school years, in order to complete the regular master's degree in biology. These teachers receive their full salaries from their school districts. Concomitantly, an equal number of qualified graduate students also seeking a master's degree in biology are provided with stipends which permit them to continue their own graduate work, replace the teacher during these half days (as intern teachers), and complete the Standard Teaching Credential with specialization in secondary school teaching. Additional coursework in science education is required through consultation with the Department of Science and Mathematics Education.

ADMISSION TO THE COLLEGE

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

ADMISSION AS A FRESHMAN

An applicant who has completed the minimum college entrance requirements under one of the following conditions is eligible for admission as a freshman to the College of Arts and Sciences (ACT) is required.

California High School Graduates—A high school graduate who has completed the minimum college entrance requirements under one of the following conditions is eligible for admission as a freshman to the College of Arts and Sciences (ACT) is required.

An applicant who is a graduate of a California high school or a high school

high among the upper one-third of California high schools or has completed the minimum college entrance requirements under one of the following conditions is eligible for admission as a freshman to the College of Arts and Sciences (ACT) is required. The minimum college entrance requirements are computed by averaging the scores of the total SAT score, or by averaging the scores of the SAT and ACT scores, adding the results to 10 times the composite score of the ACT, and dividing the result by 11. The minimum college entrance requirements are based upon the last three years of high school work in mathematics, science, and English. The minimum college entrance requirements are based upon the last three years of high school work in mathematics, science, and English. The minimum college entrance requirements are based upon the last three years of high school work in mathematics, science, and English. Examples of the test score needed with a given grade point average for admission.

ADMISSION TO THE COLLEGE REGISTRATION ACADEMIC ADVISEMENT

Grade point average

3.30 and above
2.80
2.40
2.00
1.90 and below

SAT/ACT score

Highs with no essay
400/10
710/22
840/30
and higher

Nonresidents Graduating From High Schools in Other States or Possessions

An applicant who is a nonresident for census purposes and who is a graduate of a high school in another state or a U.S. possession must have an eligibility index which would place him among the upper one-third of California high school graduates. For 1969-70, the minimum required eligibility index is 1.00 using the SAT (826 with the ACT) and is calculated as in the previous section.

Graduates of High Schools in a Foreign Country

A graduate of a foreign high school must have preparation equivalent to that required of eligible California high school graduates. The college will carefully review the previous record of all such applicants and will those with previous academic success equivalent to that of eligible California high school graduates will be admitted. Such applicants are not required to take either the SAT or the ACT tests. Ordinarily, the college does not accept foreign student applicants directly from foreign countries.

ADMISSION TO THE COLLEGE

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

ADMISSION AS A FRESHMAN

An applicant who has had no college work will be considered for admission under one of the following provisions. Except as noted, submission of the results of the Scholastic Aptitude Test (SAT) or the American College Test (ACT) is required.

California High School Graduates and Residents

An applicant who is a graduate of a California high school or a legal resident for tuition purposes must have a grade point average and total score on the SAT or composite score on the ACT which provides an eligibility index placing him among the upper one-third of California high school graduates. For 1969-70 the minimum eligibility index is 3,072 using the SAT (741 with the ACT). It is computed by multiplying the grade point average by 800 and adding the result of the total SAT score, or by multiplying the grade point average by 200 and adding the result to 10 times the composite ACT score. The grade point average is based upon the last three years and does not include physical education or military science. The table below does not cover every case, but gives several examples of the test score needed with a given grade point average to be eligible for admission.

Grade point average

3.20 and above

2.80

2.40

2.00

1.99 and below

SAT/ACT needed

Eligible with any score

832/19

1152/27

1472/35

Not eligible

Nonresidents Graduating From High Schools in Other States or Possessions

An applicant who is a nonresident for tuition purposes and who is a graduate of a high school in another state or a U.S. possession must have an eligibility index which would place him among the upper one-sixth of California high school graduates. For 1969-70, the minimum required eligibility index is 3,402 using the SAT (826 with the ACT) and is calculated as in the previous section.

Graduates of High Schools in a Foreign Country

A graduate of a foreign high school must have preparation equivalent to that required of eligible California high school graduates. The college will carefully review the previous record of all such applicants and only those with promise of academic success equivalent to that of eligible California high school graduates will be admitted. Such applicants are not required to take either the SAT or the ACT tests. Ordinarily, the college does not accept foreign student applicants directly from foreign countries.

Admission of Undergraduate Transfers

Non-high-school Graduates

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

High School Students

A student enrolled in high school as a senior will be considered for enrollment in certain special programs if he is recommended by his principal and his preparation and ability are such that in the judgment of the college, the probability of his academic success is equivalent to that required of eligible California high school graduates. Such admission is only for a given program and does not constitute the right to continued enrollment.

Other Applicants

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

Recommended Preparation

Overall excellence of performance in high school subjects and evidence of academic potential provide the best bases for predicting success at California State College, Fullerton. While no course pattern is required, the applicant to be prepared properly to undertake a full program of studies and particularly to pursue the required program in general education, is strongly encouraged to include the following subjects in his preparation for college work at Fullerton: college preparatory English; foreign language; college preparatory mathematics; college preparatory laboratory science; college preparatory history or social science, or both; and study in speech, music, art, and other subjects contributing to a general academic background.

ADMISSION OF UNDERGRADUATE TRANSFERS

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 degree-granting 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 (grade C on a five-point scale) or better in the total program attempted and must be in good standing as noted above.

An applicant who does not meet the requirements set forth above may be found eligible for admission on probation with advanced undergraduate standing if, in the opinion of the proper college authorities, he is likely to succeed in an academic program.

ADMISSION OF GRADUATE STUDENTS

An applicant who has completed a four-year college course and holds an acceptable baccalaureate degree from an accredited institution, or who has

completed equivalent academic preparation as determined by the college, will be admitted as an unclassified graduate student. Such admission does not constitute acceptance to graduate degree curricula. For information about requirements and procedures for admission to graduate degree courses of study (classified graduate status) see page 69 of this catalog.

ADMISSION OF FOREIGN STUDENTS

At the present, the college usually does not accept foreign student applicants directly from foreign countries, with certain very rare exceptions. Only two categories of foreign students will normally be accepted:

- (1) Those who have completed a two-year transfer program in a junior college in the United States with a good academic record.
- (2) Those who have completed a bachelor's degree in an accredited college in the United States and wish to enroll as graduate students.

Application procedures are the same as for other students, except that foreign language transcripts must be accompanied by certified English translations.

THE SUMMER SESSION STUDENT

Although the quality of the program and most of the course offerings are the same as in the regular session, the college does not require an advance application or transcripts from students registering for credit courses in the summer session. However, students must be high school graduates and are expected to have satisfied the prerequisites for the courses in which they register; in addition, students are expected to file a request to register in the summer session. Admission to summer session does not grant admission to the regular session.

COMMON ADMISSION AND INTRASYSTEM TRANSFER

New Students

An applicant admitted to a California State College under regular admission criteria (as a first-time freshman, graduate of a high school in the United States or its possessions; undergraduate transfer; unclassified graduate student) is eligible for admission to another State College in the same term. An applicant to a California State College may request the transfer of his admission file to another state college without payment of an additional application fee. However, admission to any state college is dependent on the fulfillment of application procedures, application deadlines, and space and program availability.

Intrasystem Transfer

A student at a California State College who is eligible to continue at that college is eligible to enroll at any other state college, provided he is in good standing and has a "C" average at the first institution, and applies for intrasystem transfer at least 10 days prior to the close of admission at the second state college. However, transfer to another state college is subject to space and program availability. Application for intrasystem transfer may be made to the Office of Admissions and Records at either state college.

A student on probation at the first state college may apply for intrasystem transfer as above. However, admission to the second state college will be subject to the policies and procedures governing probationary admission at the second state college.

READMISSION OF FORMER STUDENTS

A student previously enrolled in the college, planning to return after an absence of one or more semesters, must file a new application for admission in accordance with procedures set forth below. The application fee of \$10 is required if the student was not enrolled in either of the two semesters prior to the semester to which he is seeking admission or if he was enrolled in another institution during his absence from California State College, Fullerton. Unless a leave of absence was granted, catalog requirements at the time of readmission will apply.

Former Students in Good Standing

A student who left the college in good standing will be readmitted provided any academic work attempted elsewhere since the last attendance does not change his scholastic status. Transcripts of the record of any work attempted in the interim are required.

Former Students Who Were on Probation

A student on probation at the close of his last enrollment will be readmitted on probation provided he is otherwise eligible. The student must furnish transcripts of any college work taken during his absence.

Former Students Who Were Disqualified

The readmission of a previously disqualified student is by special action only. Ordinarily the college will consider an application for reinstatement only after the student has remained absent for a minimum of one semester following disqualification and has fulfilled all recommended conditions. In every instance, readmission action is based on evidence, including transcripts of study completed elsewhere subsequent to disqualification, which in the judgement of the college warrants such action. If readmitted, the student is placed on scholastic probation.

PROCEDURES FOR ADMISSION

All prospective students, whether for part-time or full-time programs of study in day or evening classes, must file an application for admission and other required documents within the announced filing period. Applicants must be formally admitted to the college to enroll in classes. Because of probable enrollment limitations prospective students are advised to file applications for admission early in the filing period.

How to apply:

1. Submit a completed application for admission, including the statement of residence, within the announced filing period accompanied by the required application fee of \$10.
2. Request required transcripts of record of all previous scholastic work from each school or college attended. The transcripts must be sent by the issuing institution directly to

Office of Admissions and Records
California State College, Fullerton
800 North State College Boulevard
Fullerton, California 92631.

The transcripts required are

—for undergraduates—

- (a) the high school transcript, and
- (b) a transcript from each college or university attended. Undergraduate applicants for a teaching credential must submit two copies of the transcript from each college or university attended;

—for graduates—

- (a) applicants for unclassified graduate standing with no degree or credential objective must submit a transcript from the college or university where the baccalaureate was earned.
- (b) applicants for a master's degree or teaching credential, or both, must submit two copies of the transcript from each college or university attended.

All students are advised that they should also have a complete set of college transcripts for their personal use at all times of advisement.

All transcripts must be received directly from the issuing institution to be considered official and cannot be returned to the student. Foreign language transcripts must be accompanied by certified English translations.

3. If required, submit the scores from either the Scholastic Aptitude Test or the American College Test. Scores are required for all undergraduate applicants with fewer than 60 completed semester units of study (90 quarter units).

Statement of Residence

All applicants for admission to the College must file a Statement of Residence with their application. Students in continuous attendance during successive semesters are not required to complete this form after the initial filing unless there has been a change in their status. Students are held responsible for reporting any change in residence status to the Office of Admissions and Records. Any interruption in attendance requires a new Statement of Residence before re-entrance.

The determination of residence status is governed by laws found in the Government Code and the Education Code, and by court cases interpreting these statutes. For admission and tuition purposes "a resident student" means any person who has been a bona fide resident of the State of California for more than one year immediately preceding the opening of the semester. The residence determination date is established by the Board of Trustees.

Normally, the legal residence of an unmarried minor is that of his parents. Exceptions to the rules on residency determination, or waivers of nonresident tuition, apply under certain conditions for exchange students, a child or spouse of an academic or administrative employee of the California State Colleges, a minor child of an active member of the Armed Forces stationed in California, and full-time teachers in the public schools holding a valid credential and pursuing instruction for required certification qualification for their current position.

Admission to Credential Programs

Admission to the college as a student does not constitute admission to the teaching credential program. Students who plan to work toward teaching credentials must apply to the School of Education following procedures available from the School of Education.

Procedures for Admission

Cancellation of Admission

A student who is admitted to the college for a given semester but who does not register in the specified semester will have his admission canceled. The student must file a new application form when he again seeks admission and must follow the complete application procedure and meet the then current admission requirements.

Honors at Entrance

Honors at entrance are awarded to both freshmen and transfer students who have demonstrated outstanding achievement in past academic work. For first-time freshmen with no previous college units earned, a grade-point average of 3.5 on a 5-point scale must be earned in the coursework considered for admission to the college. Students who have completed fewer than 60 college semester units of credit must meet the grade-point average criteria for first-time freshmen and must also have earned a 3.5 grade-point average on all this past college work attempted. Students who have completed 60 or more semester college units are eligible if a grade-point average of 3.5 is earned in all college work completed.

Undergraduate Entrance Testing Requirements

All undergraduate students, who have completed fewer than 60 semester or 90 quarter units of college work, are required to submit scores from either one of two national testing programs before eligibility for admission to the college can be determined. This requirement does not affect undergraduate students who have previously attended California State College, Fullerton and who have submitted ACT or SAT scores at the time of their first admission.

Tests will be administered at established test centers. Dates that tests are given and location of established test centers may be obtained from high school and junior college counseling offices, the Testing Office at this college or by writing to the testing services. The addresses of the testing services are:

American College Testing Program, P.O. Box 21-4127, Sacramento 95821
College Entrance Examination Board, Box 1025, Berkeley 94701

To take one of these tests:

1. Obtain a registration form and a *Student Information Bulletin* from your high school or junior college counselor, from one of the addresses above, or from the College Testing Center. Select a test center near your home from the list printed in the *Bulletin*.
2. Send the completed registration form and the appropriate test fee to the proper address. Do not send to the Fullerton campus.
3. Have your ACT or SAT scores reported to the Testing Center, California State College, Fullerton. These scores should be received before the deadline for application. Use the appropriate code number for score reports.

If you have already taken either the ACT or SAT send \$1 to the appropriate testing agency and request that your scores be reported to the Testing Center. Use appropriate code number when requesting such reports, and provide complete information concerning testing date, test center, name and address changes, etc. These test scores when included on high school or college transcripts are not acceptable.

Health Requirements for Admission

Undergraduate and graduate students registering for more than six units of credit must, upon admission, submit completed health history and physical examination forms. In addition, evidence of a negative chest X-ray taken within 12 months before their registration must be presented. A tuberculin skin test may be

obtained in lieu of an X-ray at the Student Health Center. Evidence of a smallpox vaccination within the past five years is also required.

Undergraduate and graduate students registering for six units or less of credit in any one semester must comply with the following:

1. Filing a minimum informational form with the health center.
2. Presenting evidence of a negative chest X-ray or a negative tuberculin skin test, signed by a physician, nurse, or public health department official and dated not more than 12 months prior to the date of registration at California State College, Fullerton.
3. Evidence of a smallpox vaccination within the past five years.

All of any of the following laboratory services may be completed at the Student Health Center for a charge of \$1: VDRL, urinalysis, hemotocrit, tuberculin skin test and smallpox vaccination.

All health requirements must be satisfactorily completed before the student will be allowed to complete registration. It is urged that the health clearance be obtained before the date of registration as this will conserve the student's registration time in considerable measure.

EVALUATIONS

Evaluation of Transfer Credits

The Office of Admissions will evaluate previous college work in terms of its relationship to the requirements of California State College, Fullerton. All degree candidates will be issued a credit summary during the first semester of attendance which serves as a basis for determining specific remaining requirements for the student's specific objectives.

Once issued to a student, the evaluation remains valid as long as the student enrolls at the date specified, pursues the objective specified, and remains in continuous attendance. The student will not be held to additional graduation requirements unless such requirements become mandatory as a result of changes in the California Administrative Code or the California Education Code. If the student does not remain in continuous attendance and has not applied for and been granted a formal leave of absence, the evaluation issued upon readmission will specify the remaining requirements for the student's specific objectives.

In view of the foregoing regulations, the student should notify the Office of Admissions immediately if he changes the objective specified in his evaluation. While the evaluation for a student remains valid, the student is held responsible for complying with all changes in regulations and procedures which may appear in subsequent catalogs.

Acceptance of Credit

Credit for work completed at accredited institutions will be accepted toward the satisfaction of degree and credential requirements at the college within limitations of residence requirements, junior college transfer maximums, and course applicability.

General Policy

Transfer credit is not limited to those courses which precisely parallel the courses offered at the college. Credit is normally granted for all courses completed at other accredited institutions which reasonably correspond to one of the various curricula described in this catalog. Courses which do not appear to correspond with offerings at the college are ordinarily not granted transfer credit. Courses in vocational or shop-type courses, and remedial courses are examples of courses

Evaluations

not accepted for transfer credit. Students who have completed work at professional schools in the field of art or music or similar fields may expect a reduction in credit if the work completed carries a credit value in excess of that normally allowed for corresponding courses or areas at the college.

Transfer of Credit From a Junior College

Upper division credit is not allowed for courses taken in a junior college. Credential credit is not allowed for courses in professional education taken in a junior college. This does not invalidate credit for preprofessional courses taken at a junior college, such as introduction to education, art or design, arithmetic, or music for classroom teachers. After a student has completed 70 units of college credit, whether at a junior college or a four-year institution, or at both, no further junior college units will be accepted for unit credit.

Credit for Military Service

Students who have been in active military service for at least a year may be granted six units of undergraduate credit. Courses taken in service schools may be given credit on the basis of an evaluation which determines that they are of college level. Any credit for military experience will be given only upon request. Records verifying such experience must be filed with the Office of Admissions.

Credit for Extension and Correspondence Courses

The maximum amount of credit through correspondence and extension courses which may be allowed toward the bachelor's degree is 24 units, of which not more than 12 may be transferred from another college or university.

Credit by Advanced Placement

Students who have successfully completed courses in the advanced placement program (defined as receiving a score of 3, 4 or 5) shall be granted credit toward graduation, advanced placement in the college's sequence courses, and credit for curriculum requirements.

Credit by Examination

Students may be granted credit for a course toward graduation and to meet curriculum requirements by the satisfactory completion of a *challenge examination* in that course requirement. The examinations are to be comprehensive and administered by the department in which the course is offered. Well in advance of the *challenge examination* the student will secure written approval of his major adviser and the chairman of the department in which the course is offered. Upon the successful completion of the examination, the notation on the permanent record of the student will be made as "CR" for the course. "CR" is to indicate credit for the course with a passing grade. Upon failure of the examination, the notation on the permanent record of the student will be made as "No CR" for the course. Credit by examination may not be used to fulfill the minimum residence requirements. The *challenge examination* for any course may be attempted only once. A maximum of 30 credits can be earned by *challenge examination*, including those achieved by advanced placement.

College Level Examination Program

The college will consider examination results from the College Level Examination Program of the College Entrance Examination Board for placement and credit. Study is currently underway to establish specific policy on placement and credit in degree curricula for those who complete one or more examinations in the College Level Examination Program. Further information about this program may be obtained from the Office of Relations with Schools.

REGISTRATION

Orientation

An orientation program for new students is conducted at the beginning of the registration period each semester. At this time, information relating to academic planning, student services and activities, and other aspects of college life as well as opportunities for student questions are provided.

Registration

Registration is the final step in enrollment. When a student has been admitted by the Office of Admissions, he should obtain a *Class Schedule* before the beginning of each term. The *Class Schedule* contains details regarding courses offered and the registration schedule. Students consult with their advisers during registration.

At registration, every student is required to file a program card with the Office of the Registrar. The filing of a program card by the student and its acceptance by the college obligates the student to perform the designated work to the best of his ability. All undergraduates are urged to declare a major at the earliest practicable time and not later than at the time they have completed 60 units of college work. Registration is not official until fees have been paid, and no student is allowed to attend classes until all steps in the registration process have been completed.

Late Registration

The last day to register late each semester will be announced in the *Class Schedule*. Late registrants will find themselves handicapped in arranging their programs and must pay a \$5 late registration fee in addition to regular fees.

Change of Program

Each student is responsible for the program of courses he selects and lists when he registers. Changes may not be made thereafter without the filing of a change of program form in the Office of the Registrar. All applications for courses dropped or added cost a \$1 change of program fee. No classes may be dropped during the last four weeks of instruction, although complete withdrawal from college is still possible.

Concurrent Enrollment

A student enrolled at the college may enroll concurrently for additional courses at another institution only with advance written approval from the student's academic adviser on official forms filed in the Office of the Registrar. Permission will not be granted when the study load in the proposed combined program exceeds the units authorized at this college.

Auditors

A properly qualified student may enroll in classes as an auditor. The student must meet the regular college admission requirements and must pay the same fees as other students. An auditor may not change his registration to obtain credit after the last date to add courses to the study list. An auditor is not permitted to take examinations in the course.

VETERANS

California State College, Fullerton is approved by the Bureau of Readjustment Education, State Department of Education, to offer programs to veterans seeking benefits under state and federal legislation. All students seeking veterans benefits must have a degree or credential objective.

Applications for benefits should be filed well in advance of the semester in which the veteran plans to use these benefits in order to have the authorization at the time of registration.

SELECTIVE SERVICE

Male students requiring certification of student status for selective service purposes may request the Office of Admissions and Records to submit SSS Forms 103, 109, or 109A, to their local boards. The college requires that undergraduate students register for and complete 12 units a semester to be considered full time for this purpose. Graduate students who register for and complete nine units of study may be considered full time provided at least three units are 500-level courses.

All students are advised that by enrolling each consecutive term at the minimal level to qualify for full-time certification they may not achieve the degree and credential programs within the time limit allowed by the Selective Service System.

RESERVE OFFICERS' TRAINING CORPS

California State College, Fullerton, does not have a Reserve Officers' Training Corps program. However, a two-year program is available to eligible male students through cooperation with the University of Southern California where an Air Force ROTC program is conducted. For complete information, write the Professor of Aerospace Studies, University of Southern California, Los Angeles 90007.

FEES AND EXPENSES

Application fee (nonrefundable) _____ \$10.00

Registration Fees**Regular students (more than 6 units)**

Materials and service fee	_____	\$51.00
Associated Students fee	_____	9.00
College Union fee	_____	8.00
Total per semester	_____	\$68.00

Limited students (1-6 units)

Materials and service fee	_____	\$26.00
Associated Students fee	_____	4.00
College Union fee	_____	4.00
Total per semester	_____	\$34.00

Music studio lesson fee

Per lesson _____ \$1.00 to \$10.00

Summer Session fees

Per unit or fraction of unit	_____	\$22.50
Associated Students fee	_____	2.00
College Union fee	_____	4.00

Extension fees

Per unit or fraction of unit _____ \$18.00-36.00

Other Fees or Charges

Nonresident tuition fee (in addition to fees required of resident students, except for enrollment in extension or summer session)

15 units or more per semester	\$445.00
Less than 15 units, per unit or fraction of unit	30.00
Nonresident foreign students (in addition to fees required of resident students)	
15 units or more per semester	\$127.50
Less than 15 units, per unit or fraction of unit	8.50
Late registration fee (in addition to other fees listed above)	5.00
Check returned from bank for any cause	2.00
Change of program fee	1.00
Transcript fee (no charge for first copy)	1.00
Failure to meet administrative required appointment or time limit	2.00

Auditors pay the same fees as others

Fees are subject to change by the Trustees of the California State Colleges

Refund of fees

Upon withdrawal from college, the materials and service fee may be refunded if written application for refund, on forms provided by the college, is submitted to the Registrar not later than 14 days following the day of the term that instruction begins; provided that the amount of \$10 shall be retained to cover the cost of registration. Late registration fees, change of program fees and application fees are not refundable.

The entire fee may be refunded if a student is unable to continue his registration because of a college regulation or because of compulsory military service. Application for refund under such circumstances may be made at any time before the date when the student receives any academic credit for the courses for which he is registered.

The difference between the applicable materials and service fee, less \$5, may be refunded if the unit load of the student is reduced to a lower materials and service fee category within the 14 days following the day of the term that instruction begins.

Parking fees

Semester pass (nonreserved spaces):

Regular student	\$13.00
Limited student (1-6 units)	6.00
Coin operated gate, per admission	.25
Summer session, each six-week period	5.00

Typical Student Expenses

Although each student must determine his own budget in keeping with his individual needs and resources, the college does provide an estimate for what is considered one semester's minimum expenses for a single student. Not included are transportation costs, since distance from home varies with each student.

Fees and Expenses

	Students living in campus residence halls	Commuting students
Materials and service fee *	\$51	\$51
Associated Students fee	9	9
Parking and health insurance fees	22	22
Room and board (17 meals per week)	555	---
Books and supplies †	75	75
Clothing	50	50
Miscellaneous	100	100
College Union fee	8	8
	<hr/>	<hr/>
	\$870	\$315

* Out-of-state students add \$445. Music students add \$70 to \$96 for music lesson fee.
† Art and engineering students should budget additional funds for supplies.

Registration Fees

Regular students (more than 6 units)	Registration fee (nonresident)
Materials and service fee	Registration fee (resident)
Associated Students fee	Registration fee (limited student)
College Union fee	Registration fee (join operation)
Total per semester	Registration fee (summer session)
Materials and service fee	Registration fee (summer session)
Associated Students fee	Registration fee (summer session)
College Union fee	Registration fee (summer session)
Total per semester	Registration fee (summer session)
Materials and service fee	Registration fee (summer session)
Associated Students fee	Registration fee (summer session)
College Union fee	Registration fee (summer session)
Total per semester	Registration fee (summer session)
Materials and service fee	Registration fee (summer session)
Associated Students fee	Registration fee (summer session)
College Union fee	Registration fee (summer session)
Total per semester	Registration fee (summer session)
Materials and service fee	Registration fee (summer session)
Associated Students fee	Registration fee (summer session)
College Union fee	Registration fee (summer session)
Total per semester	Registration fee (summer session)

ACADEMIC ADVISEMENT

All undergraduate students working toward a degree or credential are assigned an adviser in the major field. Those seeking a credential will also be assigned a professional adviser in the School of Education.

Graduate students in all instructional areas except education will be assigned a major adviser. In education, all will have a professional adviser. Those students seeking a credential for teaching secondary schools will be assigned both a professional adviser and a major adviser.

California State College, Fullerton believes its students have the capability to plan their schedules and to make a selection among available sections of a course. Such matters are the proper responsibility of the student and not of his adviser.

Advisers are assigned by department chairmen. The adviser is basically a resource person who will help the student plan his academic program so that he meets the requirements of the major or credential objective in the most desirable manner. While the adviser can provide valuable information and suggestions to the student, the ultimate responsibility for the program the student plans and the courses he chooses lies with the student himself.

GENERAL REGULATIONS
GRADUATION REQUIREMENTS FOR
BACHELOR'S DEGREE
THE PROGRAM OF MASTER'S DEGREES

ENROLLMENT DEFINITIONS AND REGULATIONS

Unit of Credit

Each college semester unit represents three hours of college work per week for a semester. Courses are of three types:

- (1) Lecture—one hour in class plus two hours of study.
- (2) Laboratory—two hours of class plus one hour of study.
- (3) Laboratory—three hours in class.

Some courses may combine two or more of these types.

Classification in College

Undergraduate students who have completed 3-29% semester units of work are listed as freshmen, 30-59% semester units as sophomores, 60-89% as juniors, and 90 or more as seniors.

Transfer of Credits

Credits earned at other colleges may be transferred to this college. The student must apply for admission to this college and have the credits evaluated by the Registrar.

Students who have completed 30 or more semester units of college work may be admitted to this college as sophomores. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 60 or more semester units of college work may be admitted to this college as juniors. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 90 or more semester units of college work may be admitted to this college as seniors. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 120 or more semester units of college work may be admitted to this college as graduates. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 150 or more semester units of college work may be admitted to this college as postgraduates. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 180 or more semester units of college work may be admitted to this college as doctoral students. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 210 or more semester units of college work may be admitted to this college as postdoctoral students. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 240 or more semester units of college work may be admitted to this college as postgraduate students. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 270 or more semester units of college work may be admitted to this college as postgraduate students. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 300 or more semester units of college work may be admitted to this college as postgraduate students. The Registrar will evaluate the credits and determine the student's classification.

REGULATIONS

GENERAL REGULATIONS

GRADUATION REQUIREMENTS FOR

BACHELOR'S DEGREE

THE PROGRAM OF MASTER'S DEGREES

Undergraduate students may be permitted to enroll as a graduate level (500) student if:

- (a) They are within 9 units of completion of graduation requirements, or
- (b) They are exceptionally qualified seniors whose undergraduate work in the related field or fields has been of 3.5 grade-point average or better, and whose cumulative overall grade-point average is at least 3.25.

Each case shall require specific approval by the chairman of the department in which the course is offered and by the chairman of the student's major department.

Graduate level (500) courses taken under (a) above may be applied as a graduate program.

Graduate level (600) courses taken under (b) above may be applied to the student's graduate program only.

Students who have completed 30 or more semester units of college work may be admitted to this college as sophomores. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 60 or more semester units of college work may be admitted to this college as juniors. The Registrar will evaluate the credits and determine the student's classification.

Students who have completed 90 or more semester units of college work may be admitted to this college as seniors. The Registrar will evaluate the credits and determine the student's classification.

GENERAL REGULATIONS

ENROLLMENT DEFINITIONS AND REGULATIONS

Unit of Credit

Each college semester unit represents three hours of college work per week for one semester. Courses are of three types:

- (1) Lecture—one hour in class plus two hours of study.
- (2) Activity—two hours of class plus one hour of study.
- (3) Laboratory—three hours in class.

Some courses may combine two or more of these types.

Classification in College

Undergraduate students who have completed 0-29½ semester units of work are classified as freshmen, 30-59½ semester units as sophomores, 60-89½ semester units as juniors, and 90 or more as seniors.

Study List Limits

A student is normally permitted to enroll in a maximum of 16 units each semester (engineering students are excepted), with 12 units considered the *minimum* full-time load. However, upon written approval of his adviser, the student may carry additional units. The foregoing limits apply to undergraduate students attending college on a full-time basis. Students with outside responsibilities are strongly advised to reduce their program of study. The minimum full-time program of study for graduate students as defined in the "Graduate Policies and Procedures" section of this catalog.

Undergraduate Students Taking Graduate Level Courses

Graduate level (500) courses are organized primarily for graduate students. Undergraduate students may be permitted to enroll in a graduate level (500) course if:

- (a) They are within 9 units of completion of graduation requirements, or
- (b) They are exceptionally qualified seniors whose undergraduate work in the related field or fields has been of 3.5 grade-point average or better, and whose cumulative overall grade-point average is at least 3.25.

Such cases shall require specific approval by the chairman of the department in which the course is offered and by the chairman of the student's major department.

Graduate level (500) courses taken under (a) above may be applied to a graduate program.

Graduate level (500) courses taken under (b) above may be applied to the undergraduate program only.

GRADING PRACTICES

Grading System

Satisfactory grade

	Grade-point value
A	4
B	3
C	2
Cr or P	None assigned

Grading Practices

Unsatisfactory grade		Grade-point value
D	_____	1
F	_____	0
NR (No Report)	_____	0
Special grade		
E (Incomplete)	_____	0
AU (Auditor) (no credit toward degree or credential)	_____	None assigned
W (Passing withdrawal)	_____	None assigned
NP (not passed—no credit)	_____	None assigned

With the exception of the grades of E, AU, W, P, NP, and Cr, all units attempted are computed in the student's grade-point average.

Incomplete Work

A grade of E may be given only when, in the opinion of the instructor, a student cannot complete a course during the semester of enrollment *for reasons beyond his control*. Such reasons are assumed to include: illness of the student, or of members of his immediate family, extraordinary financial problems, loss of outside position, and other such exigencies. In assigning a grade of E, the instructor will file with his department a statement of the specific requirements for completion of coursework. Such requirements will not include or necessitate retaking the course. This statement will also include a provisional grade indicating the quality of work completed at that time, and the instructor's designation of the time limit allowed for completion of course requirements. Upon later completion of the course requirements, or upon expiration of the time limits for completion of course requirements, the instructor shall initiate a change to a grade of A, B, C, D, P, NP, or F. Instructional departments will determine procedures for completion of course requirements and assigning grades for such completed course work, in those special circumstances where the instructor is no longer available.

Grade Reports to Students

A report of the final grades assigned in classes is sent to each student at the end of each semester.

Student Writing

Students will be required to demonstrate, in all classes where written expression is appropriate, their ability to write clearly and correctly about the materials of the course. Ability of a student to demonstrate writing proficiency shall be used as a part of the final grade determination in any course.

Examinations

Final examinations are required in all courses and are given at times scheduled by the college. No examination may be scheduled for a class at another time unless approved by the dean of the school. No makeup final examination will be given except for reason of illness or other verified emergencies.

Grade-Point Averages; Repetition of Courses

Grade-point averages are calculated by dividing grade points earned by units attempted. Work attempted at all institutions, including California State College, Fullerton, is included in all-college calculations. Work attempted at other institutions may not be included in CSCF-only averages.

When any course is repeated both grades are considered in computing grade-point averages. However, successful repetition of a course originally passed carries no additional unit credit towards a degree or credential.

TRANSCRIPTS

Upon request to the Office of the Registrar, each student will be provided with one official copy of his college record without charge. A charge of \$1 will be made for each additional transcript requested by the student. No transcript will be supplied for college work taken in other institutions.

CONTINUOUS RESIDENCY REGULATIONS

Good Standing

"Good standing" indicates that a student is eligible to continue or to return, and is free from financial obligation to the college and from disciplinary action. A student under academic or disciplinary disqualification is not eligible to receive a statement of "good standing" on transcripts issued by the college.

Election of Regulations

A student remaining in continuous attendance in regular sessions and continuing on the same curriculum in a state college may, for purposes of meeting graduation requirements, elect to meet the graduation requirements in effect either at the time of his entering the curriculum or at the time of his graduation therefrom, except that substitutions for discontinued courses may be authorized or required by the proper college authorities.

Leave of Absence

A student may petition for a leave of absence and if approved may upon his return continue under the catalog requirements that applied to his enrollment prior to the absence. Except in the case of required military service a leave of absence may be granted for a maximum of one year. Illness and compulsory military service are the only routinely approved reasons for a leave of absence.

Policy on Grades for Withdrawal

Students are obliged to notify the Office of the Registrar of changes in their programs involving dropped classes. Failure to file an official change may result in a penalty mark being recorded. Through the sixth week of instruction in the semester no record of enrollment will be made of dropped classes. After six weeks students are expected to complete all courses in which they are enrolled. However, for reasons of ill health or other unforeseen problems the student may drop a class, or classes, and receive a grade (W—withdrawal, or F—failure) by obtaining the signature of the professors involved and filing the change with the Office of the Registrar on the forms provided.

Ordinarily, classes may not be dropped during the last four weeks of instruction, although complete withdrawal from college is still possible.

Complete Withdrawal From College

Students who wish to withdraw from the college must complete a withdrawal-from-college card. See section on refund of fees for possible refunds. No student may withdraw after the date shown on the college calendar as the last day of instruction. Complete withdrawal from college is accomplished by following the procedures for dropping classes in addition to procedures for withdrawal.

STUDENT HONORS

Dean's List

Academic achievement is recognized with the publication each semester of a list of students whose grade-point average for the previous term has been 3.5 or better. Students are notified in writing by the dean of students when they have earned this distinction. Eligibility is based on a minimum of 12 units of course work.

Honors at Graduation

Honors at graduation have been defined by the Faculty Council in three classifications:

With honors	GPA 3.5
With high honors.....	GPA 3.85
With highest honors.....	GPA 4.0

PROBATION AND DISQUALIFICATION

Academic Probation

Academic probation serves to identify and to bring to the attention of appropriate college authorities a student who is experiencing academic difficulties.

A student shall be placed upon academic probation if either his cumulative grade-point average or his grade-point average at California State College, Fullerton falls below 2.0 (grade of C on five-point scale). The student shall be advised of probation status promptly and, except in unusual instances, before the end of the first week of instruction of the next consecutive enrollment period.

A student shall be removed from the probation list and restored to clear standing when he earns a cumulative grade-point average of 2.0 (C) in all academic work attempted, and in all such work attempted at California State College, Fullerton.

Academic Disqualification

A student on academic probation shall be subject to academic disqualification if:

1. As a lower division student (fewer than 60 semester hours of college work completed) he falls 15 or more grade points below a 2.0 (C) average on all college units attempted or in all units attempted at this college.
2. As a junior (60 to 89½ semester hours of college work completed) he falls 9 or more grade points below a 2.0 (C) average on all college units attempted or in all units attempted at this college.
3. As a senior (90 or more semester hours of college work completed) he falls 6 or more grade points below a 2.0 (C) average on all college units attempted or in all units attempted at this college.

A graduate student (unclassified or classified) shall be disqualified if he falls below a 2.0 (C) average in all units attempted at this college as a graduate student.

Student Conduct

The college properly assumes that all students are in attendance to secure a sound education and that they will conduct themselves as mature citizens of the campus community. *Compliance with all regulations of the college is therefore expected.* If, however, on any occasion a student or an organization is *alleged to have compromised accepted college policies or standards, appropriate judiciary procedures shall be initiated through the established college judicial process.* Every effort will be made to encourage and support the development of self-discipline and control by students and student organizations. The dean of students, aided by all members of the faculty and advised by the Student Affairs Committee of the faculty, is

responsible to the President of the College for the behavior of students in their relationships to the college. The President in turn is responsible to the Chancellor and the Trustees of the California State Colleges who themselves are governed by specific laws of the State of California.

RIGHT OF PETITION

Students may petition for review of certain college academic regulations when unusual circumstances exist. In such instances, students are requested to file a petition on a form designated for this purpose in the Office of Admissions and Records. All petitions must first be reviewed and signed by the student's adviser. Action will then be taken on the petition and the student will be notified of this decision. A copy of the action will also be placed in the student's folder in the Office of the Registrar.

Students also have the right to appeal certain disciplinary actions taken by appropriate college authorities. Regulations governing original hearings and appeal rights and procedures have been carefully detailed to provide maximum protection to both the individual charged and the college community. Information about the operation of the judicial system involving student discipline may be obtained in the Office of the Dean of Students.

GRADUATION REQUIREMENTS FOR THE BACHELOR'S DEGREE

A student is eligible for graduation if he is in good standing and fulfills the following requirements:

1. General Education

To be eligible for the bachelor's degree from California State College, Fullerton, the candidate shall have completed a minimum of 50 semester units of general education including at least six units in upper division courses. The courses in general education shall be distributed in the following manner:

	Units
(a) Social sciences.....	12
The social sciences shall include required instruction in U.S. history (Hist 170A or Hist 170B), U.S. Constitution and California state and local government and American ideals (Pol Sci 100. If U.S. Constitution requirement fulfilled, Pol Sci 311 meets state and local government requirement), and courses in anthropology, economics, geography, history, political science, sociology, and similar fields. Courses must be selected from three or more of these fields.	
(b) Natural sciences.....	9
The natural sciences shall include at least one course selected from the physical sciences and at least one from the biological sciences. The physical sciences include astronomy, chemistry, geology and physics. The biological sciences include biology, botany, physiology and zoology.	
(c) Humanities.....	12
The humanities shall include a year of instruction in college-level English composition and literature. The remaining units may be chosen from the following subject fields: comparative literature, communications, English, philosophy, and intermediate or advanced courses in French, German, Spanish, or other foreign languages.	
(d) Fine and applied arts.....	9
The fine and applied arts shall include a course in oral communication. Additional courses shall be chosen from the following subject areas: art, drama and music.	
(e) Psychology.....	3
This should be the standard introductory course in psychology.	
(f) Economics or mathematics.....	3
Either a course in college mathematics which would have as its prerequisite a minimum of two years of high school mathematics or its equivalent, or a college-level introductory course in economics will meet this requirement.	
(g) Health and physical education.....	2
A minimum of two units required by completing two semesters of activity courses which include instruction in health education. Not more than one activity course within any one semester may be counted toward general education. Credit in intercollegiate athletics courses may meet not more than one semester of the college general education requirement in physical education. Not more than six units of credit in physical education activities courses, including intercollegiate	

athletics, may be applied toward credit for graduation. (A student under 25 years of age at the time of admission to the college is required to take both semesters of the requirement.)

Total	Units 50
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All baccalaureate degree programs of the college will be expected to meet the college general education requirements. However, for certain degree programs, other than the bachelor of arts degree, where accreditation or certification may require a higher proportion of professional course work, the general education requirements as set forth by Title 5, California Administrative Code, may be substituted for the college general education requirements, after due consideration of the alternative possibility of expanding the required number of units in the particular degree program.

For 1969-70, transfer students certified under provisions of Title 5, California Administrative Code, as having met the 40-unit minimum general education-breadth requirements will be required to complete 10 additional units in general education selected from two or more sections (a) through (g) above. The six unit upper division requirement is applicable to transfer students.

2. Units

(a) Total units

A minimum of 124 semester units is required for graduation with a bachelor of arts degree. The Bachelor of Science in Engineering requires a minimum of 136 semester units.

(b) Upper division units

Completion of a minimum of 40 units of upper division credit is required.

(c) Resident units

Completion of a minimum of 24 semester units in residence is required. At least one-half of these units must be completed among the last 20 semester units counted toward the degree. Extension credit, or credit by examination, may not be used to fulfill the minimum residence requirement.

3. Scholarship

(a) A grade-point average of 2.0 or better is required on all units attempted, including those accepted by transfer from another institution.

(b) A grade-point average of 2.0 or better is required on all units in the major.

(c) A grade-point average of 2.0 or better is required on all units attempted at California State College, Fullerton.

4. Major

Completion of all requirements for a major as specified by appropriate college authority is required.

5. Multiple Majors and Second Baccalaureate Degrees

Second Majors

Within the units required for the baccalaureate it is possible for a student to complete the requirements for more than one major within a degree program when the additional major is within the degree program of the first major. The student shall declare the additional major with the appropriate department not later than the beginning of the student's final year of study. The completion of additional majors will be noted at the time of graduation by appropriate entries on the academic record and on the commencement program.

Bachelor's Degree

Second Baccalaureate

(a) First degree completed elsewhere, second at CSCF

Students seeking a bachelor's degree from CSCF after having received a baccalaureate from another institution may qualify for graduation with the approval and recommendation of the faculty upon completion of the following:

- (1) general education requirements
- (2) all requirements in the major field of study
- (3) residence and scholarship requirements

(b) Two baccalaureates from CSCF

A student completing a baccalaureate program at CSCF will have completed the general education, residence, and scholarship requirements. With the approval and recommendation of the faculty, he may qualify for a second baccalaureate under the following circumstances:

- (1) The second field of study is offered in a different program (e.g. bachelor of arts to bachelor of science)
- (2) At least 24 units are earned in residence beyond the requirements for the first degree
- (3) All requirements of the major are fulfilled

Units included in second baccalaureate programs may not apply to graduate degrees or credential programs.

6. Minor

Completion of a minor field is *not* required for the baccalaureate degree at this time.

7. Graduation Requirement Check

A candidate for graduation should file an application for a graduation requirement check in the Office of the Registrar during registration of the semester prior to the semester in which he expects to graduate. No graduation requirement check should be requested unless and until the senior has completed 100 semester hours and a substantial portion of his major requirements (including the current work in progress). If the candidate does not complete the requirements in the semester indicated, *he must request a second graduation check indicating the new date.*

8. Approval and Recommendation by the Faculty of the College

THE PROGRAM OF MASTER'S DEGREES

Master's degree programs offered at California State College, Fullerton are listed on page 77 and are described in the appropriate section of this *Catalog* under "College Curricula." Program descriptions and additional information are contained in the *Graduate Bulletin*, copies of which are available in the Office of Admissions and the Graduate Office.

Master's degrees in other areas are under consideration and will be announced when approved.

GENERAL REQUIREMENTS FOR THE MASTER'S DEGREE

General requirements for the master's degree are 30 semester units of approved coursework completed within seven years with a 3.0 (B) minimum grade-point average. Of the 30 units of approved coursework:

1. No less than 24 shall be completed in residence.
2. No less than 12 shall be in graduate (500-level) courses.
3. No more than a total of six shall be in extension and/or transfer credit.
4. No more than six shall be allowed for a thesis, if appropriate.
5. Six shall be in related fields outside the department or concentration.

Some type of final evaluation, near the end of the student's work toward his master's degree, is required. It may be a thesis, a project, a comprehensive examination, or any combination of these.

Each student's program for a master's degree (including his eligibility, classified status, candidacy, and award of the degree) must be approved by an adviser, school or department committee, and the Dean of Graduate Studies.

STANDARDS FOR GRADUATE STUDY

Graduate study deals with more complex ideas and demands more sophisticated techniques, searching analysis, and creative thinking than undergraduate study. The research required is extensive in both primary and secondary sources and the quality of writing expected is high. The student is advised to consider these factors when deciding upon the amount of coursework to be undertaken during any one semester.

STEPS IN THE MASTER'S DEGREE PROGRAM

1. Admission to the College
2. Declaration of Objective
3. Securing Transcripts
4. Taking Appropriate Tests
5. Informal Advisement
6. Classified Status (admission to a program)
7. Advancement to Candidacy (after 12 units with a B average)
8. Successful Fulfillment of Study Plan Requirements
9. Final Steps
 - a. Request for check on completion of requirements (see note below)

Master's Degree

- b. Thesis or project approval and arrangements for binding and microfilming (if appropriate)
- c. Written and/or oral examination (if appropriate)

(Note that master's degrees are awarded only in January and June. Students completing requirements by the end of the first summer session and desiring certificates of completion must meet the same deadline for requesting a check on completion as June graduates.)

GRADUATE POLICIES AND PROCEDURES

The following are in addition to other policies and procedures applying to both undergraduates and graduates described elsewhere in this *Catalog* and in the appropriate class schedule. Students are advised also to consult the *Graduate Bulletin*.

Applicability of Catalog and Graduate Bulletin Regulations

A student remaining in continuous attendance in regular sessions and continuing in the same curriculum may elect to meet the degree requirements in effect either at the time of his classification or at the time of the completion of degree requirements, except that substitutions for discontinued courses may be authorized or required by the proper College authorities.

Admission From Nonaccredited Schools

A student who is a graduate of a nonaccredited school must apply for admission as an undergraduate to complete requirements for a bachelor's degree from this institution. However, once admitted, a student in this category who gives evidence of unusual promise and superior background may petition the school or department concerned for reclassification as an unclassified graduate student, and if the petition is granted he may then proceed in the graduate program.

Grade-Point Average Standards

The required GPA for admission to a master's degree program (classified status) varies with the department or school. Consult school or department descriptions of programs elsewhere in this *Catalog* and in the *Graduate Bulletin*. However, a student must have earned a 3.0 average in all postbaccalaureate coursework taken at this College plus such transfer courses as are applied to his study plan. Exception to this rule may be granted by a school or department in response to a student petition only if it is evident that courses whose grades are not to be computed in the GPA are inapplicable and inappropriate to the degree program.

The 30 semester units of approved coursework required for the degree must be completed with a 3.0 (B) minimum grade-point average. If a student approaches the completion of the degree requirements with less than a 3.0 average, he may request a change in his study plan to add no more than six units of coursework in order to achieve at least a 3.0 average (see "Changes in Study Plan," as follows). If a student's average at any time falls below such a level that it cannot be raised to a 3.0 within the prescribed limits of coursework, he has in effect withdrawn himself from his master's program.

Tests Required for Admission to Master's Degree Programs

Although a graduate student may be admitted to the College in unclassified graduate status without taking tests, most of the master's degree programs require the student to take certain tests, usually some part of the Graduate Record Examination, before he can be considered for classified status. See program descriptions in this *Catalog* for the types of tests required. The GRE tests are nationally administered and are given only a few times a year on specified dates. A current list of

these dates is available at the Office of Counseling and Testing, school and department offices. The student must make written application for the tests on a form available at the above offices which must be submitted by the application deadline. Since test results are measured against those of students who normally take the tests in their senior year and since they are required before the student can be admitted to a degree program (that is, become a classified student), the taking of the tests should not be deferred.

Limitation on Preclassification Coursework

No more than nine units of postgraduate work taken prior to classified status at California State College, Fullerton may be applied to a student's master's degree study plan. Students who receive postgraduate credit for courses taken during their final semester as a senior may accumulate as many as 12 units.

Inapplicable Courses

Courses numbered 100 to 299 and in the 700 series cannot be credited toward a master's degree. Courses numbered 300 to 399 do not give graduate credit unless included on an approved graduate study plan.

CR, S, or P Grades

The applicability of courses to the master's degree study plan in which grades CR, S, or P are given will be determined by each school or department. If it is determined that such work is applicable, unit credit toward the degree may be given but neither the units nor grades will be factors in GPA computations. It should be further noted that, according to College regulations, CR grades for challenge examinations may not be used to meet residence requirements. Therefore, if such grades are included in the study plan they must be considered as part of the maximum of six units which may be transferred from other colleges or earned in extension.

Theses and Projects

When a thesis is required, the approved original bound copy and a microfilm of it must be deposited in the College Library. An abstract, of not more than 150 words, must accompany the thesis, and will be published in the journal, *Master's Abstracts*. Arrangements for the binding, microfilming and publication of the abstract must be completed by the end of the semester in which the degree is to be granted and are made through the College Foundation Office. The fee for microfilming, publication of the abstract, and the archival copy is \$18 (for theses with more than 240 pages there is an additional charge). The fee for binding is \$7.50. When a project is required, it will be filed with the school or department of the degree program. Some record of the project, or the project itself, is preserved in the school or department and, when appropriate, in the College Library. When the school or department recommends, a project or its written record may be treated as a thesis. The thesis and where appropriate the project must conform in matters of style and format to the rules in "Form of Master's Thesis," duplicated instructions available in school or department offices, the Graduate Office, and the Library Reference Room. Since adherence to these rules must be checked and approved, students are advised to consult the Library adviser (in the Reference Room) well in advance of the final typing of the thesis.

Changes in Study Plan

The student must complete the courses shown on his approved study plan on file in the Graduate Office and in the school or department office with at least a 3.0 (B) GPA. If a student wishes to make a change in his study plan, he should

Master's Degree

file the appropriate form (copies available in the Graduate Office, departments and schools) in the school or department of his master's degree prior to registration. The recommendation for a change must be signed by his adviser. No course for which a grade has been assigned may be removed from a study plan.

Minimum Full-Time Load

Ordinarily, nine units of course work a semester shall constitute a minimum full-time program for graduate students, provided at least three units are in 500-level or higher courses.

Courses Over Seven Years Old

All coursework for the master's degree must be completed within seven years of the date when all the requirements for the degree are completed, except that the College, at its option, may extend the time for students who pass a comprehensive examination in the relevant course. Requests to take such comprehensive examinations should be made to school or department graduate studies committees.

Graduate Assistantships, Fellowships, and Financial Aids

There are a limited number of appointments as graduate assistants available to outstanding graduate students who are working on graduate degree programs. These may pay up to \$1,100 per semester. If interested, consult the chairman of the department in which degree study is being taken. Teaching fellowships are not currently available.

The State of California each year awards a certain number of graduate fellowships (payment of fees only). Qualified students who are residents of California may make application for these through the Financial Aids Office.

For information concerning other financial aids and part-time placement services, see pages 39 and 37, respectively.

Waiver of Nonresident Tuition Fee

Worthy graduate students who are not residents of California may, under certain circumstances, obtain a waiver of the nonresident tuition fee. Forms for this purpose are available at the Admissions and Records Office.

International Study

The college participates in the California State Colleges' program of study abroad. Under this program, limited studies taken at designated foreign universities, when arranged in advance, may be applied toward the requirements of a degree awarded by CSCF. It is important that plans be completed several months before starting such a program. For details consult the foreign student adviser.

Second Master's Degree

A graduate student desiring to work for a second master's degree from CSCF must request the school or department concerned and the Graduate Council for permission to enter a curriculum leading to the second master's degree. If the request is granted the student must as a minimum satisfy all prerequisites and all requirements of the new degree program. Approval of candidacy for the second degree will be given only after the first degree has been awarded.

Postgraduate Credit for Seniors

Students in the last semester of their senior year may petition on a form available in the Office of Admissions and Records to receive postgraduate credit for such current coursework as is not required for the bachelor's degree. The applicability of such coursework to a master's degree program must be determined by separate

action by the appropriate school or department. Usually the student must have attained graduate standing and applied for classified status before this latter action is accomplished.

Enrollment in 500-Level Courses by Seniors

A senior may take a 500-level course if he is within nine units of completion of graduation requirements and with the specific approval of the chairman of the department or dean of the school in which the course is offered and by the chairman or dean of the student's major department or school. Postgraduate credit and applicability of such coursework to a master's degree is determined as indicated under "Postgraduate Credit for Seniors."

A senior who is not within nine units of graduation may take a 500-level course only if in addition to the approval of the appropriate chairmen or deans he also has a minimum GPA of 3.5 in the field or fields of his intended graduate program and of 3.25 overall. Under these circumstances, postgraduate credit may not be given for a 500-level course.

CURRICULA

COLLEGE CURRICULA

California State College, Fullerton offers the following baccalaureate degree programs which are described on the pages listed:

	Page		Page
Anthropology	81	B.A. History	106
Art	81	B.A. Linguistics	106
Biological science	87	B.A. Mathematics	109
Business administration	138	B.A. Music	111
Ceramics	90	B.M. Music	113
Communications	93	B.S. Music	116
Comparative literature	96	B.S. Political science	116
Drama	97	B.S. Political science	117
Earth science	124	B.S. Political science	117
Economics	144	B.S. Political science	123
Engineering	173	B.S. Political science	123
English	100	B.A. Sociology	128
French	103	B.A. Spanish	133

COLLEGE CURRICULA

The following master's degree programs are offered:

	Page		Page
Anthropology	82	M.A. English	120
Art	86	M.A. Foreign languages	120
Biology	89	M.A. Geography	122
Business administration	140	M.A. History	127
Communications	96	M.A. Mathematics	127
Drama	99	M.A. Music	128
Economics	145	M.S. Physical education	128
Education (with emphasis in elementary education, reading, school administration, school counseling or special education)	162	M.A. Political science	131
Engineering	177	M.P.A. Public administration	131
		M.A. Psychology	133
		M.A. Social sciences	135
		M.A. Sociology	139
		M.A. Speech	142

California State College, Fullerton is accredited by the California State Board of Education for providing the following credentials:

- Standard teaching credential with specialization in elementary school teaching.
- Standard teaching credential with specialization in secondary school teaching.
- Standard teaching credential with specialization in junior college education.
- Standard teaching credential with specialization, in lieu of subject, in the teaching of exceptional children in the area of mentally retarded children.
- Standard teaching credential with specialization, in lieu of subject, in the teaching of exceptional children in the area of speech and hearing handicapped children.
- Restricted teaching credential to teach the trainable mentally retarded.
- Restricted teaching credential to teach the educable mentally retarded.
- Standard designated services credential with a specialization in pupil personnel services.
- Standard supervision credential.

COLLEGE CURRICULA

California State College, Fullerton offers the following baccalaureate degree programs which are described on the pages listed:

	<i>Page</i>		<i>Page</i>
B.A. Anthropology	81	B.A. History	106
B.A. Art	83	B.A. Linguistics	108
B.A. Biological science	87	B.A. Mathematics	109
B.A. Business administration	138	B.A. Music	113
B.A. Chemistry	90	B.M. Music	115
B.A. Communications	93	B.A. Philosophy	116
B.A. Comparative literature	96	B.S. Physical education	166
B.A. Drama	97	B.A. Physics	117
B.A. Earth science	124	B.A. Political science	120
B.A. Economics	144	B.A. Psychology	122
B.S. Engineering	173	B.A. Russian area studies	103
B.A. English	100	B.A. Sociology	128
B.A. French	103	B.A. Spanish	103
B.A. Geography	105	B.A. Speech	130
B.A. German	103		

The following master's degree programs are offered:

	<i>Page</i>		<i>Page</i>
M.A. Anthropology	82	M.A. English	102
M.A. Art	86	M.A. Foreign languages	104
M.A. Biology	89	M.A. Geography	105
M.B.A. Business administration	140	M.A. History	107
M.A. Communications	96	M.A. Mathematics	110
M.A. Drama	99	M.A. Music	115
M.A. Economics	145	M.S. Physical education	167
M.S. Education (with emphasis in elementary education, read- ing, school administration, school counseling or spe- cial education)	162	M.A. Political science	121
M.S. Engineering	177	M.P.A. Public administration	121
		M.A. Psychology	123
		M.A. Social sciences	127
		M.A. Sociology	129
		M.A. Speech	132

The college is accredited by the California State Board of Education for programs leading to the following credentials:

1. Standard teaching credential with specialization in elementary school teaching.
2. Standard teaching credential with specialization in secondary school teaching.
3. Standard teaching credential with specialization in junior college teaching.
4. Standard teaching credential with specialization, in lieu of minor, in the teaching of exceptional children in the area of mentally retarded children.
5. Standard teaching credential with specialization, in lieu of minor, in the teaching of exceptional children in the area of speech and hearing handicapped children.
6. Restricted teaching credential to teach the trainable mentally retarded.
7. Restricted teaching credential to teach the educable mentally retarded.
8. Standard designated services credential with a specialization in pupil personnel services.
9. Standard supervision credential.

SCHOOL OF LETTERS, ARTS AND SCIENCE

Dean: Miles D. McCarthy

DEPARTMENT OF ANTHROPOLOGY

Associate: Unreiner

Visiting Professor: Leder (chairman)

Assistant Professors: Christensen, Jocelyn-Maudesville, Joseph, See

Visiting: Katz, Tadlock

BACHELOR

LETTERS, ARTS AND SCIENCE

The major in anthropology is designed for students desiring a broad generalist background, students preparing to be teachers, and students preparing for graduate work in anthropology and related specializations.

Requirements

General: Students must complete the following requirements:

Courses in Anthropology

Twenty-three units must be taken in anthropology. Of a group of twenty-four courses in anthropology 201, 202, 203, 301, 401, 410, 415 and 430 are required. That course is selected from area offerings in the field: Anthropology 121, 112, 204, 116, 140, 147, 150, 360, and 361. Two courses are required from the natural/scientific courses in the field: Anthropology 313, 403, 406, 411, 412, 415, 416, 430, 431, 432, 435, 439, 430, 450, 453, and 460. (The courses marked * are cross-listed with other departments and programs. They may be used to satisfy the major requirement for either the courses in anthropology, or related courses.)

Minimum units

Related Courses

Twelve upper division units are to be taken in the related social sciences field: economics, geography, history, political science, sociology, and psychology, as approved by the major adviser. Advanced work in biological sciences, the natural and applied arts, and the humanities may be substituted for these units by students with specialized interests with the approval of their adviser. Students interested in specializing in anthropological linguistics are urged to take credits from the college's interdisciplinary program in linguistics. Students interested in special work in physical anthropology are urged to take some of the following additional science courses: 161 Principles of Zoology, 312 Genetics, 401 Organisms and Environment, 404 Physiology, 424 Evolution, 463 Comparative Vertebrate Anatomy, 464 Animal Ecology, and 471 Natural History of the Vertebrates. Students interested in studying in primitive art are urged to take study of East and Southeast Asian Art 412 Art of Non-European Africa 444 Art of North American Indians 462 Art of Mesoamerica; 471 Art of Central and South America.

Minimum units

SCHOOL OF LETTERS, ARTS AND SCIENCE

Dean: Miles D. McCarthy

DEPARTMENT OF ANTHROPOLOGY

Professor: Untereiner

Associate Professor: Leder (chairman)

Assistant Professors: Christensen, Joesink-Mandeville, Joseph, See

Lecturers: Katz, Tatlock

BACHELOR OF ARTS IN ANTHROPOLOGY

The major in anthropology is designed for students desiring a broad generalist background, students preparing to become teachers of social sciences, and students preparing for graduate work in anthropology and in advanced areal and international specializations.

Unit Requirements

The required minimum for the major is 45 units, in addition to those taken for the general education requirement, distributed as follows:

Courses in Anthropology

Thirty-three units must be taken in anthropology, 24 in upper division courses. Anthropology 201, 202, 203, 301, 401, 410, 470 and 480 are required. One course is required from areal offerings in the field: Anthropology 321, 322, 325, 328, 340, 345, 347, 350, 360, and 361. Two courses are required from theoretical/institutional courses in the field: Anthropology *313, 403, *406, 411, 413, 415, *416, 420, 421, *422, 423, 425, 428, 429, 430, 450, *453, and 460. (The courses marked * are cross-listed with other departments and programs. They may be used to satisfy the major requirement for: either the courses in anthropology; or related courses.)

Minimum units 33

Related Courses

Twelve upper division units are to be taken in the related social science fields of economics, geography, history, political science, sociology, and psychology, to be approved by the major adviser. Advanced work in biological science, the fine and applied arts, and the humanities may be substituted for these units by students with specialized interests with the approval of their advisers. Students interested in specializing in anthropological linguistics are urged to take courses from the college's interdisciplinary program in linguistics. Students interested in specializing in physical anthropology are urged to take some of the following Biological Science courses: 161 Principles of Zoology; 312 Genetics; 361 Mammalian Anatomy and Physiology; 424 Evolution; 463 Comparative Vertebrate Anatomy; 465 Animal Ecology; and 471 Natural History of the Vertebrates. Students interested in specializing in primitive art are urged to take many of these Art courses: 451 Oceanic Art; 452 Art of Non-European Africa; 461 Art of North American Indians; 462 Art of Mesoamerica; 471 Art of Central and South America.

Minimum units 12

Minimum total units for the major..... 45

Anthropology

Students considering advanced professional careers in research, teaching, or applications of anthropology are urged to explore and sample widely from course offerings in the other social sciences, the biological and natural sciences and the humanities and arts. Through a judicious selection of these courses it is hoped that Anthropology majors will broaden their interests and diversify and develop their skills in working towards a variety of individualized career objectives.

Teaching Minor in Anthropology

The minor in anthropology is intended as a second field for persons completing a major in another discipline in preparation for a teaching credential. Twenty-one units must be taken in anthropology; 15 of these in upper division courses. Anthropology 201 or 203 and 202 and 301 are required. Two additional courses must be selected from areal offerings in the field: Anthropology 321, 322, 325, 328, 340, 345, 347, 350, 360, and 361. Another course must be selected from theoretical/institutional courses in the field: 313, 403, 406, 411, 413, 415, 416, 420, 421, 422, 423, 425, 428, 429, 430, 450, 453, and 460. A final course must be either Anthropology 401 or 480.

MASTER OF ARTS IN ANTHROPOLOGY

The program for this degree provides advanced study of general anthropology as well as research and other learning experiences for students with specialized areas of interest or competence.

Prerequisites

Admission to the program requires:

a) A B.A. degree with a minimum of 24 units in anthropology including the following courses or their equivalents:

Ant 201 Introduction to Physical Anthropology *or*

Ant 203 Introduction to Archaeology

Ant 202 Introduction to Cultural Anthropology

Ant 301 World Ethnography

Ant 401 Ethnographic Field Methods

Ant 410 Language and Culture

Ant 480 History of Anthropology

One areal course (e.g. Ant 328, Peoples of Africa)

One theoretical or topical course (e.g. Ant 415, Culture and Personality)

Reading courses and special examinations may be substituted for some of these prerequisites by the department.

b) A GPA of 3.0 (B) for all work taken in anthropology.

c) Evaluation and acceptance by the graduate study committee.

Students with limited subject or grade deficiencies may be considered for admission to the program upon completion of additional courses, selected by the graduate study committee, with at least a 3.0 (B) average.

Program of Study

The study plan for the degree must include the following:

- | | |
|---|-------|
| 1. Ant 501 Methodology of Anthropological Research..... | Units |
| 2. Ant 502 Contemporary Theories in Anthropology..... | 3 |
| 3. Ant 597 Project <i>or</i> Ant 598 Thesis..... | 3 |
| 4. Two additional graduate seminars in anthropology..... | 6 |
| 5. Upper division or graduate work in anthropology..... | 6 |
| 6. Upper division or graduate work in related fields..... | 6 |

Any adviser-approved 300- or 400-level course taken as a graduate student may be used for requirements 5 and 6. Ant 599 Independent Graduate Research may be used for requirement 5.

For continuation in the program an average of 3.0 (B) for all work in the study plan must be maintained. A thesis or a project or in unusual cases two projects must be completed for the degree. Normally a student will register for thesis or project two times, for 3 units each semester.

For further information, consult the Department of Anthropology.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF ART

Professors: Dietz, Hein, Ivy, Olsen, Partin, V. Smith

Associate Professors: Kerciu, Samuelson (chairman)

Assistant Professors: Ching, Evjenth, Gleeson, Jordan, Lagerberg, Lyon, Mack, Myers

Instructor: Curran

Lecturers: Henry, James

The Department of Art offers a program which includes the several fields of art history, theory, and appreciation; drawing, painting, sculpture; design, and crafts; and art education. The broadest objective of the program is to contribute to the intellectual, social, and creative development of the student as he prepares for citizenship in a democratic society. More specifically, the art program provides opportunities for students: (1) to develop a knowledge and understanding of those general principles of visual organization and expression basic to all forms and fields of art; (2) to develop a critical appreciation and understanding of historical and contemporary art forms through a study of these principles as they relate to the range of artistic production of mankind; (3) to use these general principles as a means to express more clearly their ideas, thoughts, and feelings in the creation of visual forms; (4) to develop those understandings and skills needed to pursue graduate studies in the field, to teach art in the schools, or to qualify for a position in business and industry as an art specialist.

Undergraduate curricula leading to the bachelor of arts degree have been designed to meet the specialized needs of the following groups: (1) students who wish to study art as an essential part of their personal and cultural development; (2) students seeking vocational competence in art; (3) students planning to teach art at the secondary level who wish either a teaching major or minor in art; and (4) students planning to teach in the elementary schools who wish to have art as either an academic major or minor.

To qualify for a baccalaureate degree with a major in art, students must have a C average in all courses required for the degree. No credit toward the major will be allowed for specific major courses in which a grade of D is obtained. As is customary, the Art Department reserves the right to hold projects completed by a student for class credit for a period of three years.

MAJOR IN ART FOR THE BACHELOR OF ARTS DEGREE

Five course programs have been planned to meet the individual needs and interests of students working for the bachelor of arts degree with a major in art.

In the development of specific course offerings which make up these programs, it has been the concern of the art faculty to see that each program contains: (1) basic courses in art history, theory, appreciation, and studio practice which have as their primary focus the study of those general principles of visual organization

and expression underlying all fields of art; (2) more specialized courses which provide for adequate preparation in depth in a single field of art. The teaching of art history, theory, and criticism is not confined to courses bearing that title. Rather, each studio course involves theory as well as the practice of art, includes as part of its content the study and reference to related historical art forms, and has as part of its purpose the development of those critical abilities which are necessary to a valid evaluation and appreciation of the art expressions of man.

Plan I provides for an emphasis in the area of art history, theory, and appreciation and is particularly recommended for those students who wish to pursue graduate studies in art history or museology.

Plan II is designed for those students who prefer a studio-type program with an area of specialization selected from the following: (1) design; (2) crafts; (3) drawing and painting, or (4) sculpture.

Plan III is for those students who wish to meet the requirements of the standard teaching credential with specialization in secondary teaching.

Plan IV is for those students who wish to meet the requirements of the standard teaching credential with specialization in elementary teaching.

Plan V is for those students who wish to meet the requirements for teaching in junior college.

All five plans require a minimum of 48 units in art or approved related courses with a minimum of 24 units of upper division in art except for Plan IV which requires a minimum of 36 units of art including a minimum of 24 units of upper division in art.

In addition to the requirements listed below for the major, students must meet the other college requirements for a bachelor of arts degree (see page 66). Students following Plans III and IV also must meet any specific requirements for the desired teaching credential (see section in catalog for School of Education). Graduate students who plan to meet the requirement for a standard teaching credential with specialization in secondary school teaching with a major in art must complete six units in art as approved by the major adviser on and beyond the specific course requirements listed in Plan III before they can be recommended by the Art Department for student teaching.

Students following Plan III divide their student teaching between two semesters and register for three units of credit each semester. (See prerequisites and course description for Art Education 749.)

PLAN I: ART HISTORY AND APPRECIATION EMPHASIS

	Units
<i>Lower Division:</i> Art history and appreciation (9 units); art structure (3 units); approved electives (12 units) in: art, anthropology, drama, foreign languages, history, literature, music or philosophy _____	24
<i>Upper Division:</i> Art history and appreciation (24 units), including a minimum of 3 units in special studies and coverage of four of the following fields: primitive, classical, medieval, renaissance, baroque, modern, Oriental, American _____	24
Reading knowledge of one modern foreign language	
Comprehensive examination in art history	

PLAN II: STUDIO EMPHASIS

	Units
<i>Lower Division:</i> Art history and appreciation (9 units); drawing and painting including life drawing (9 units); design and crafts (6 units) _____	24
<i>Upper Division:</i> Art history and appreciation (6 units); area of specialization (12 units); art electives (6 units) _____	24

PLAN III: TEACHING EMPHASIS**(Secondary)**

Lower Division: Art history and appreciation: Art 201A, B (6 units); Art 111 (3 units); drawing and painting: Art 107A, B (6 units); Art 117 A, B, C or equivalent (3 units); design: Art 103, 104 (6 units); crafts: 106A (3 units); required elective: Communications 218A, Introduction to Photography (2 units) 29

Upper Division: Art History and appreciation: Art 411 or 412 (3 units); drawing and painting: Art 307A (3 units); design Art 313A, 323A and 453A (8 units); sculpture: Art 316A (3 units); crafts: Art 305A (3 units); upper division art electives (4 units) 24

Fifth Year Credential Program: In the five-year program for the standard teaching credential, secondary, to be eligible for consideration for student teaching by the art faculty, the student must meet the following requirements:

1. Be assigned by the Art Department Chairman to a faculty adviser in art concerned with teacher education.
2. Fulfill credential requirements listed in the *College Catalog* within the School of Education for the curriculum on secondary school teacher education.
3. Meet requirements listed under Plan III, Teaching Emphasis (Secondary) for the bachelor's degree in Art.
4. Complete Art 380 and Art Ed 441, Ed 311 and Ed 340 prior to enrollment in Art Ed 442.
5. Complete six additional upper division or graduate level units in art in an area of emphasis as part of the 30 units required beyond the bachelor's degree.
6. Obtain recommendation of the faculty adviser in art concerned with teacher education.
7. Submit a portfolio of art work to be evaluated by the art faculty.

PLAN IV: Teaching Emphasis**(Elementary)**

Lower Division: Basic course in art history and appreciation, drawing and painting including life drawing (1 unit), design and crafts 12

Upper Division: Art history and appreciation (6 units); drawing and painting (3 units); design (3 units); crafts (3 units); electives (9 units) 24

PLAN V: TEACHING EMPHASIS**(Junior College)**

Lower Division: Same as Plan II.

Upper Division: Same as Plan II.

See Junior College Teacher Education Program, page 154.

MINOR IN ART FOR THE BACHELOR OF ARTS DEGREE

A minimum of 24 units is required for a minor in art for the bachelor of arts degree of which a minimum of 10 units must be in upper division courses. Included in the program must be a basic course in each of the following areas: (1) art history and appreciation; (2) design; (3) drawing and painting; and (4) crafts. Those students planning to qualify for a standard teaching credential with specialization in elementary or secondary teaching and art for a minor must obtain approval from the Art Department for the courses selected to meet the upper division requirements for a minor in art.

MASTER OF ARTS DEGREE IN ART

The program of studies leading to the master of arts degree in art provides a balance of theory and practice for those who desire to teach art or wish to develop a sound basis for continued advanced work in this field. The program offers each student the opportunity to expand his intellectual and technical resources and to acquire greater richness and depth in terms of creative understanding and achievement in one of the following areas of concentration: (1) drawing and painting (including printmaking); (2) crafts (including ceramics); (3) design; and (4) sculpture.

Prerequisites for the Program

Prerequisites to the program include:

- (1) an undergraduate major in art or 24 units of upper division art including at least 12 units of upper division study in the elected area of concentration with a GPA of 3.0 or better;
- (2) Portfolio Review—before any units may apply to the approved study program for the degree, the student must arrange for a faculty committee evaluation of the student's background and review of creative work. Portfolio review dates are May 1 for the following fall semester, and December 1 for the following spring semester of each year. Arrangements may be made through the Art Office to meet these deadlines.
- (3) completion not later than the first semester of the aptitude test of the Graduate Record Examination.

Program of Studies

The degree program requires 30 units of graduate study approved by the student's graduate committee of which 15 must be 500 level courses. The 30 units are distributed as follows:

	<i>Units</i>
1. 500 level courses in art	15-21
A. Core courses in art, history, philosophy, analysis and criticism	9
(1) Art 500: Graduate Seminar in Art (3 units)	
(2) Art 501: Graduate Seminar in Art History and Appreciation (6 units)	
(On the recommendation of the adviser, the student may substitute 3 units in Philosophy 311, Philosophy of Art, or a 400 number art history course as partial fulfillment of this requirement.)	
B. Course work in the area of concentration selected from one of the following areas	6
(1) Drawing and painting	
(2) Crafts	
(3) Design	
(4) Sculpture	
C. Project or thesis	3-6
2. Additional courses	9-12
A. 500- and/or 400-level courses in art to extend the student's field in depth	6
B. 500-, 400- and/or 300-level courses either in courses outside the art department related to the student's special area of interest or in courses within the art department outside the area of concentration to expand the student's field in breadth	3-6
Total	30

All courses must be completed with a B average, and all courses in the area of concentration must be graded B or better. The Art faculty reserves the right to retain an example from the student's Master's exhibit for the college collection.

For further information, consult the Department of Art.

Also see "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF BIOLOGICAL SCIENCE

Professors: Bradshaw, Brattstrom, McCarthy,* McCleary, Sutton (chairman), Turner

Associate Professors: P. Adams, Barish, Bright, Rothman, Walkington

Assistant Professors: Greenfield, McClanahan, McWilliams, Weintraub

Lecturer: Rosenberg

The Department of Biology offers a program leading to the bachelor of arts degree in biology for students preparing to enter graduate and professional schools, for those preparing to teach, and for those preparing for careers in industry and government service.

It is the conviction of the faculty in biology that the purposes of all these students can best be served by building their curricula on a core of courses fundamental to the science of biology. This core curriculum includes biological principles, ecology, genetics, microbiology, and physiology.

In considering the curricula beyond this core of subjects, the faculty in biology has agreed that the interests and goals of individual students can best be satisfied through individual counseling rather than through prescribed programs. After discussion with their advisers, students will elect those upper division courses which will satisfy their individual interests and professional goals. Eight units of electives must be in one area of interest (e.g., biology, botany, microbiology, or zoology) and four units in another area.

To qualify for a baccalaureate degree in biological sciences, students must have a C average in all courses required for the major including those in the related sciences. No credit toward the major will be allowed for biology courses in which a grade D is obtained. A proficiency in one modern foreign language (Russian, Spanish, German, French, others by petition) is required. A reading comprehension of a second modern foreign language is strongly recommended for students planning graduate study leading to the Ph.D. degree. This requirement is normally met by completing three semesters of a college foreign language with a C grade or better or by taking a foreign language for two years in high school and one semester of intermediate language in college with a minimum of a C grade in the college course.

Advanced students will be permitted to enroll in Biological Science 499, Independent Study. All full-time upper division students are expected to attend the departmental seminars.

The Department of Biology also offers a curriculum for students majoring in other fields who wish to minor in biology.

BACHELOR OF ARTS DEGREE IN BIOLOGICAL SCIENCE

One hundred twenty-four units including general education (see page 66), foreign language, 38 units in biology courses, and supporting courses in physical sciences and mathematics. The supporting courses must include one year of inorganic college chemistry including qualitative analysis with laboratory, two semesters

* College administrative officer.

Biological Science

of organic chemistry with laboratory, one semester of college mathematics, and one year of college physics with laboratory.†

Minimum Course Requirements for the Major ‡

Lower Division

Biological Science	Units	
101 Elements of Biology	5	
141 Principles of Botany	4	
161 Principles of Zoology	4	
	<hr/>	
	13	13

Upper Division

Biological Science	Units	
311 Microbiology	4	
312 Genetics Lecture	3	
315 Molecular Biology	4	
Electives—14 units, of which 4 must be a course in Ecology and 4 must be outside area of emphasis	14	
	<hr/>	
	25	25
		<hr/>
		38

SUGGESTED EIGHT-SEMESTER PROGRAM OF MAJOR IN BIOLOGICAL SCIENCE

Semester I		Semester II	
	Units		Units
Engl 101 Comp. and World Lit.	3	Engl 102 World Lit. and Comp.	3
Bio Sci 101	5	Bio Sci 141 Prin. Botany	4
Chem 101A Gen. Chemistry	5	Math 150A, or Math 120	3-4
Lang 203 or Hist 170A		Chem 101B Gen. Chemistry	5
U.S. History	3		
	<hr/>		<hr/>
	16		15-16
Semester III		Semester IV	
Physics 211A	4	Physics 211B	4
Bio Sci 161 Prin. Zoology	4	Bio Sci 315 or Bio Sci 311	4
Pol Sci 100 or other General		Bio Sci elective	4
Education Course	3	General Education	3
Math 150B or elective	4		
	<hr/>		<hr/>
	15		15
Semester V		Semester VI	
Bio Sci 311 or Bio Sci 315	4	Chem 301B, 302A, 302B Organic Chem	5
Chem 301A Organic Chem.	3	For Lang or electives	5
Bio Sci 312 Genetics	3	Psych 101 Introd. Psych.	3
General education	6	General education	3
	<hr/>		<hr/>
	16		16

† Those students seeking careers in biology at the Ph.D. level and careers in medicine should take a full year of organic chemistry, a year of analytical geometry and calculus, and quantitative chemistry with laboratory.

‡ Substitutions in the program may be made for transfer students and others upon the recommendation of the adviser and the approval of the department chairman.

Semester VII

Bio Sci—upper div. electives.....	8
For Lang or electives.....	5
General education	3
	<hr/>
	16

Semester VIII

Bio Sci—upper div. elective	4
For Lang or electives.....	3
Electives	6
General education	3
	<hr/>
	16

Two one-unit physical education courses are suggested during the first two semesters to fulfill the general education requirement.

Minimum Requirements for Biological Science Minor †

Biological science	<i>Units</i>
101, 141, 161 Principles.....	13
424 Evolution <i>or</i>	
312 Genetics <i>or</i> 313 Human Genetics	3
311 General Microbiology	4
361 Mammalian Anatomy and Physiology <i>or</i>	
315 Molecular Biology <i>or</i>	
444 Plant Physiology	4
	<hr/>
	24

MASTER OF ARTS IN BIOLOGY

General Characteristics

The program for this degree is based on the assumption that modern science necessitates broad preparation through the master's level of training. It permits breadth of preparation and at the same time concentration in an area such as botany, microbiology or zoology. In design it offers sufficient breadth and depth to strengthen the student's academic understanding and improve his competence for (a) advanced graduate work toward the doctoral degree in biological science, (b) teaching at all levels—elementary, secondary, and junior college, (c) technological work in the health sciences, (d) participating in research programs, (e) entering the field of public health service, and (f) participating in various field service and conservation positions with both the state and national governments.

Prerequisites

Prerequisite to entering the program is a B.A. in Biology at CSCF or equivalent coursework with a GPA of at least a 3.0 in the major and related science courses. Satisfactory scores on the aptitude test of the Graduate Record Examination are also required. Students may be admitted provisionally with limited subject or grade deficiencies, but such deficiencies must be removed by completing additional courses, selected in conference with the adviser, with at least a B average.

Programs of Study—Thesis or Examination

A student who meets the prerequisites may apply for Classified Graduate status. He must file a program of study, either (1) a thesis study plan or (2) an examination study plan.

The thesis study plan must include 30 units of adviser-approved graduate work, at least 12 of which must be at the 500 level. The study plan may include six units of graduate level medical biology taken in an approved clinical laboratory school. All study plans must include Bio Sci 599 (Independent Graduate Research), and Bio Sci 598 (Thesis), and at least one departmental seminar. Twelve units must be distributed between *two* of the following areas: biology, botany, microbiology,

† Substitutions in the program may be made for transfer students and others upon the recommendation of the adviser and the approval of the department chairman.

or zoology. An added six units must be outside the principal area. Further electives may be possible. Required is a thesis or a published paper, or a paper accepted for publication, acceptable to the adviser and committee, covering a field or laboratory research problem. A final oral examination on his research is also required.

The examination study plan for the degree must include 30 units of adviser-approved graduate work, at least 12 of which must be at the 500 level. All study plans must include between 3 and 6 units of Bio Sci 599 (Independent Graduate Research), and must include at least two department seminars. Twenty units must include coursework in the four areas of biology, botany, microbiology, and zoology. In addition a student must pass a written comprehensive examination, and an oral examination of from 1 to 3 hours.

For more detailed information or advisement, students should consult the chairman of the Biological Science Department, or the graduate coordinator of the Biological Science Department.

Also see "The Program of Master's Degrees," page 69 and the *Graduate Bulletin*.

DEPARTMENT OF CHEMISTRY

Professor: Bryden, Shields *

Associate Professors: Janota, Langworthy, Montana (chairman), Prenzlów, Spenger, Wong

Assistant Professors: Baur, Belloli, Dorer, Hiegel, Huotari, Willis

The curriculum is planned to provide thorough instruction in the basic principles and concepts of chemistry for students who will (1) advance to graduate work in chemistry; (2) teach in the science programs of secondary schools; (3) seek employment in industry or government; or (4) pursue a chemistry minor of fundamental courses in chemistry in support of other areas such as physics and biology.

To qualify for a baccalaureate degree in chemistry, students must have a C average in all courses required for the majors including those in the related sciences. A reading proficiency in one modern foreign language (Russian, German, French) is required. This requirement may be met by taking either four semesters of college foreign language or three semesters of college foreign language provided the third semester is a course in Scientific French, German, or Russian. Under unusual circumstances the requirement may be met by examination upon approval by the Department Chairman. Examinations will be given in October and March of each academic year. For details of examination procedure, apply at Department office. A reading comprehension of a second modern foreign language is strongly recommended for students planning graduate study leading to the Ph.D. degree.

No credit toward the major will be allowed for specific major courses in which a grade D is obtained. A placement test will be given to students in the Department of Chemistry to determine whether they are ready to start Chemistry 101A.

BACHELOR OF ARTS IN CHEMISTRY

The Bachelor of Arts degree is granted under two plans: Plan A should be selected for those students planning a professional career in Chemistry (graduate

* College administrative officer.

work or chemical industry) and Plan B, for those students who are candidates for professional schools as medicine, dentistry, etc., or those planning careers in secondary education.

PLAN A

Required courses in Chemistry:

Courses	Units
Gen Chem (101A,B)	10
Quant Chem (312)	4
Org Chem (305A,B)	10
Physical Chem (371A,B)	6
Phys Chem Lab (441)	4
Adv Inorg (425)	3
Instru. Anal (411)	4
Indep. Study (499) or Senior Research (495)	2
Electives (at least one lecture or lecture lab course)	3
Total units	46

Related areas (*satisfies the general education requirement in physical science, mathematics and biology*):

	Units
Physics (221A,B,C); 222A,B	13
Mathematics (150A,B, 250 and 291)	15
Biology	5
Total Units	33

Total units in Science and Mathematics	79
General Education units, not including 12 units of physical science, mathematics, and biology (see the general education requirements page 66)	38
Undesignated units	7
Total units for the B.A. degree in Chemistry (Plan A)	124

PLAN B

Required courses in Chemistry:

Courses	Units
Gen Chem (101A,B)	10
Quant Chem (312)	4
Org Chem (305A,B)	10
Phys Chem (371A,B)	6
Phys Chem Lab (441)	4
Adv Inorg (425)	3
Ind Study (499) Senior Rsch (495)	2
Total units	39

Related areas (*satisfies the general education requirements in physical science, mathematics, and biology*):

	Units
Physics (211A,B) or (221 A,B) (222A,B)	8-10
Mathematics (150A,B, 250)	12
Biology	5
Total units	25-27

Total units in Science and Mathematics	62-64
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Chemistry

General Education units, not including 12 units of physical science, mathematics, and biology (see the general education requirements page 66)

Undesignated units

Total units for the B.A. degree in Chemistry (Plan B)

38

24-22

124

MINOR IN CHEMISTRY

A minimum of 24 acceptable units of chemistry, including organic chemistry (8) and physical chemistry (6), are required for a chemistry minor.

Suggested Eight Semester Program for a Major in Chemistry (Plan A)

First Semester (Freshman)

Units

Chem 101A Gen. Chem.	5
Math 150A Anal. Geo. and Calc.	4
Eng 101 Composition and Lit.	3
Hist 170A or 170B U.S. History	3
PE Phys. ed. activity	1
	<hr/>
	16

Second Semester (Freshman)

Units

Chem 101B Gen. Chem.	5
Math 150B Anal. Geo. and Calc.	4
Phys 221A, 222A Fund. Physics	5
Eng 102 Lit. and Composition	3
PE Phys. ed. activity	1
	<hr/>
	18

Third Semester (Sophomore)

Chem 305A Org. Chem.	5
Math 250 Inter. Calc.	4
Physics 221B, 222B Fund. Physics	5
Pol Sci 100 Amer. Government	3
	<hr/>
	17

Fourth Semester (Sophomore)

Chem 305B Org. Chem.	5
Math 291	3
Physics 221C Fundamental	
Physics	3
Bio Sci	5
	<hr/>
	16

Fifth Semester (Junior)

Chem 371A Physical Chem.	3
For Lang Mod. For. Lang.	5
General education courses	3
Chem 312 Quant. Chem.	4
	<hr/>
	15

Sixth Semester (Junior)

Chem 371B Physical Chem.	3
Elective in chemistry	2-4
For Lang 102 Mod. For. Lang.	5
General education courses	5
	<hr/>
	15-17

Seventh Semester (Senior)

Chem 441 Phys. Chem. Lab.	3
Chem (495 or 499)	2-3
Chem 425 Adv. Inorg.	3
For Lang 203 or 303	3
General education courses	4
	<hr/>
	15-16

Eighth Semester (Senior)

Chem 411 Instr. Anal.	4
Elective in chemistry	2-3
General education courses	9
	<hr/>
	15-16

This type of schedule allows the student to elect his last semesters according to the branch of chemistry which attracts him the most.

Below are listed the possible electives which would be available during the student's last three semesters in residence.

Possible elective in the sixth semester:

Chem 403 Anal. of Org. Cmpds.

Possible electives during the seventh and/or eighth semester:

Chem 403 Anal. of Org. Cmpds.

Chem 421A, B Gen. Biochem.

Chem 422A, B Gen. Biochem. Lab.

- Chem 427 Prep. Techniques
- Chem 431 Adv. Org.
- Chem 451 Quantum Chem.

Suggested Program for a Major in Chemistry (Plan B)

This program is essentially the same as under Plan A except the number of required chemistry, mathematics and physics courses is reduced. A student planning on a career in teaching will, in addition, fulfill requirements of the School of Education.

DEPARTMENT OF COMMUNICATIONS

- Professor: Maxwell (chairman)
- Associate Professors: Alexander, Smythe
- Assistant Professors: Johnson, Mastroianni
- Instructor: Lawrence
- Lecturer: Overbeck

The department offers a major in communications with emphases in advertising, news communication (journalism), photocommunication, public relations, technical communication, and telecommunication.

The M.A. program in Communications is designed to provide advanced study in communications and related disciplines for those who wish to teach, engage in research, or follow professional careers in the mass media of communication.

The communications major helps to prepare those desiring various careers related to mass communication—careers that may involve newspapers and magazines, television and radio, advertising, public relations, photography, industrial or governmental communications, and teaching. Also, because of the program's emphasis on general principles of communication, it can serve well those with aspirations for administrative work in many areas of business, industry, government and education. Additionally, communication courses will benefit those who wish a better understanding of the functions of the mass media in a democratic society.

BACHELOR OF ARTS DEGREE IN COMMUNICATIONS

Requirements: A combined total of 48 units—36 within the Communications Department and 12 collateral units* in other departments, as follows:

Communications Core (21 units)

The courses in the core are required of all students majoring in communications.[†]

- Comm 101 Reporting and Writing (3)
- Comm 102 Reporting and Writing (3)
- Comm 333 Mass Communication in Modern Society (3)
- Comm 407 Communication and the Law (3)
- Comm 425 History and Philosophy of American Mass Communication (3)
- Comm 426 World Communication Systems (3)
- Comm 427 Seminar on Current Issues in Mass Communication (3)

* Some flexibility may be permitted in collateral units, depending on the student's preparation in these areas.

† Because of extensive need for mathematics and science in the technical communication emphasis, some variation will be permitted, through advisement only, to include additional mathematics and science in the program. Collateral units in other departments will exceed 12 for this emphasis, but total units required for the major will not exceed 48.

Communications

EMPHASIS FOR COMMUNICATIONS MAJORS

Every communications major must select an area of emphasis and complete the courses in it.

‡ Advertising	Units
Comm 353 Advertising Copy and Layout.....	3
Comm 356 Advertising Production (1,1).....	2
Comm 218A Introduction to Photography.....	2
Comm 354 Retail Advertising	3
Comm 439 Mass Media Internship.....	2
Comm 451 National Advertising Campaigns	3

Collateral Requirements in Other Departments

Art 103 Two-dimensional design	3
Engl 303 The Structure of Modern English.....	3
Mktg 351 Principles of Marketing.....	3
Phil 310 Ethics	3

News Communication (Journalism)

Comm 338 Newspaper Production	3
Comm 332 Copy Editing and Makeup.....	3
Comm 335 Reporting of Public Affairs.....	3
Comm 218A Introduction to Photography.....	2
Comm 218B Communications Photography	2
Comm 439 Mass Media Internship.....	2

Collateral Requirements in Other Departments

Econ 403 Comparative Economic Systems.....	3
Engl 462 Modern British and American Novels.....	3
Hist 476 United States Since 1933.....	3
Psych 351 Social Psychology	3

* Photocommunication

Comm 218A Introduction to Photography.....	2
Comm 218B Communications Photography	2
Comm 306 Photographic Production	2
Comm 319 Documentary Film Production	3
Comm 375 The Documentary Film.....	3
Comm 358A Publications Production	2
Comm 439 Mass Media Internship	2

Collateral Requirements in Other Departments

Art 103 Two-dimensional Design	3
Art 338A Creative Photography	3
Econ 201 The American Economy.....	3
Psych 351 Social Psychology	3

Public Relations

Comm 361 Theory and Practice of Public Relations.....	3
Comm 463 Public Relations Methods.....	3
Comm 465 International Public Relations	3
Comm 358 Publications Production	2
Comm 218A Introduction to Photography.....	2
Comm 439 Mass Media Internship.....	2

* This emphasis is still in its developmental stage. Other courses are being prepared for inclusion in it.
 ‡ This emphasis is still in its developmental stage. Other courses are being prepared for inclusion in it.

Collateral Requirements in Other Departments

Econ 403	Comparative Economic Systems	3
Engl 303	The Structure of Modern English	3
Mgmt 341	Principles of Management	3
Psych 351	Social Psychology	3

*** Technical Communication**

Comm 332	Copy Editing	3
Comm 334	Feature Article Writing	3
Comm 401	Report Writing	3
Comm 403	Technical Writing	3
Comm 404	Advanced Technical Writing and Editing	3

Collateral Requirements in Other Departments

Physics 211A	Elementary Physics	4
Physics 211B	Elementary Physics	4
QM 361	Business and Economic Statistics	3
QM 364	Computer Logic and Programming	3

*** Telecommunication**

Comm 380	Introduction to Radio and Television	3
Comm 371	Radio-television News and Public Affairs	3
Comm 375	The Documentary Film	3
Comm 218A	Introduction to Photography	2
Comm 319	Documentary Film Production	3
Comm 439	Mass Media Internship	2

Collateral Requirements in Other Departments

Drama 382	Television Techniques	3
Engl 303	The Structure of Modern English	3
Psych 351	Social Psychology	3
Spch 333	Business and Professional Speaking	3

MINOR IN COMMUNICATIONS

This minor offers a basic core of writing and publication courses for teacher candidates and others who wish some training in communications.

Requirements: A combined total of 21 units, as follows:

Lower division (maximum of 7)

- Comm 101 or 102 (3)
- Comm 218A and 218B (2, 2)

Upper division (minimum of 14 units)

- † Comm 331 or equivalent (3)
- Comm 333 (3)
- Comm 338 (3)
- Comm 358A or 358B (2)
- Comm 425 (3)

TEACHER CREDENTIAL REQUIREMENTS

Communications majors who are teacher candidates should complete the communication core and the news communication (journalism) emphasis. This program has been declared to be academic by the State Board of Education. Prospective

* This emphasis is still in its developmental stage. Other courses are being prepared for inclusion in it.
 † Some variation in these requirements may be permitted on the basis of professional experience or interest.

Comparative Literature

teachers must complete Communications 358AB as part of their major requirements. These candidates must have their minor approved by the chairman of the Communications Department and must complete the required professional education courses in addition to their major and minor requirements. (See "Journalism Education," page 240.)

MASTER OF ARTS IN COMMUNICATIONS

The Master of Arts in Communications is designed to provide advanced study in communications and related disciplines, and to develop a research emphasis in one of the following: advertising, journalism education, news, photo-communication, public relations, technical communication, or telecommunication.

Such study will enable the graduate of the program to apply advanced communications concepts and skills in careers that may involve newspapers and magazines, television and radio, advertising, public relations, photography, and technical and scientific communications. Communications abilities are also highly applicable to administrative careers in industry, government and education. Students completing the Communications M.A. with a journalism education research emphasis are eligible for journalism teaching positions in high school or junior college.

Prerequisites

Students must possess a baccalaureate degree and have completed a basic core of courses in communications as prerequisites to the M.A. program. Before admission to classified graduate status, students must take the Graduate Record Examination Aptitude Test.

Program of Studies

Students are required to complete 30 units of approved studies, including 18 units in graduate level communications courses. Six of the 18 units of graduate level courses are applicable to research for a thesis or project. In addition, students must satisfy a "collateral field requirement" in a related discipline.

For further information, consult the Department of Communications. Also see "The Program of Master's Degrees," page 69 and the *Graduate Bulletin*.

BACHELOR OF ARTS IN COMPARATIVE LITERATURE

(An Interdisciplinary Program)

The program in Comparative Literature is an interdisciplinary program directed by the Committee on the Program in Comparative Literature. The Committee is responsible for formulating curriculum policies, approving courses, and advising students. Courses in Comparative Literature are taught by faculty from the English Department and other departments whose courses are approved by the Committee. The Chairman of the English Department administers the program. The major in comparative literature provides professional competence and personal enrichment for students with an exceptional concern and appreciation for the study of the interrelationships between the languages and literatures of various civilizations from the dawn of mankind to the present. The program offers courses in the study of literature with special emphasis on the global interrelatedness of literary form and content, theory and philosophy, genres and movements, providing an insight into the developments and backgrounds of mankind's worldwide cultures and literatures. The literary works are read in English or English translations and the courses conducted in English.

Upper Division Requirements

- (A) 15 units selected from courses listed under comparative literature.
- (B) 3 units of French, German, Italian, Russian, or Spanish selected from course numbers 431, 441, 451, 461, or any other 400 course approved by the adviser.
- (C) 6 units selected from courses listed under English and numbered 300 or above
- (D) 3 units of either History 415A or History 110A.
- (E) 9 units selected from any 300 or 400 literature course in comparative literature, English, French, German, Italian, Russian, or Spanish.

Total: 36 units.

Majors in comparative literature are strongly advised to include in their program courses in related areas, such as art, anthropology, drama, history, linguistics, philosophy.

Students must consult with an adviser in comparative literature through the Department of English before submitting their individual courses of study for approval by the Committee on the Program in Comparative Literature.

DEPARTMENT OF DRAMA

Professor: Young (Chairman)

Associate Professors: Duerr, Kuni, Zeltzer

Assistant Professors: Ellmore, Henry, Keller, Lollich, Mee, Pickering, Seethaler

Instructor: Odle

Lecturer: Cavan

The Department of Drama program includes the several fields of playwriting, oral interpretation, acting-directing, technical theatre, theatre history and theory, radio-television and dance. Specifically, the course work is arranged to provide opportunities for students (1) to develop an appreciation for the theatre; (2) to become aware, as audience or participants of the shaping force of the theatre in society; (3) to improve the understandings and skills necessary for work in the theatre as a profession; (4) to prepare for teaching theatre; and (5) to pursue graduate studies.

Any course in which the student receives less than C cannot be credited towards the major in drama. In addition to the course requirements, all students majoring in drama must participate in the casts or crews for a minimum of eight theatre productions, assignment to be determined by area emphasis, in consultation with the adviser.

MAJOR IN DRAMA FOR THE BACHELOR OF ARTS DEGREE

Four course programs have been planned to meet the individual needs and interests of students working for the bachelor of arts degree with a major in drama.

Plan I is for those who wish to study drama as a cultural contribution or who wish to pursue graduate degrees in drama with emphasis in theatre history and theory. It is strongly recommended that students electing this plan support the major with approved electives from art, drama, music, foreign languages, literature, philosophy, or speech.

Plan II is designed to develop the necessary competency for pursuing drama as a profession, or for pursuing graduate degrees in drama with an emphasis in an area of concentration other than history of the theatre. Areas of concentration

Drama

are: playwriting; acting-directing; interpretation; radio-television, technical theatre and dance.

Plan III meets the requirements of the standard teaching credential with specialization in elementary teaching.

Plan IV meets the requirements of the standard teaching credential with specialization in secondary or junior college teaching. A minor is required and will be selected with the aid of the departmental adviser.

All four plans require a minimum of 36 units in drama with a minimum of 24 units of upper division in drama.

In addition to the requirements listed below for the major, students must meet the other college requirements for a bachelor of arts degree. Students following Plans III and IV also must meet any specific requirements for the desired teaching credential (see section in catalog for School of Education). Graduate students who plan to meet the requirements for a standard teaching credential with specialization in secondary teaching and a major in drama must complete or be enrolled in six units in drama as approved by the major adviser beyond the specific course requirements listed in Plan IV before they can be recommended by the Drama Department for student teaching.

PLAN I: THEATRE HISTORY AND THEORY EMPHASIS

Lower Division: Acting or stage movement, technical theatre, costume or makeup, oral interpretation.

Upper Division: Drama 370 A or B, Fundamentals of Directing (3 units); Drama 473AB, World Drama (6 units); Drama 475AB, History of the Theatre (6 units); Drama 477, Contemporary Critical Techniques (3 units); electives, (6 units) 24

PLAN II: PROFESSIONAL EMPHASIS IN AN AREA OF CONCENTRATION

Lower Division: Same as in Plan I.

Upper Division: In one of the following areas of concentration:

Playwriting—Drama 364, Seminar in Playwriting (6 units), or Drama 364 (3 units) and Drama 383, Radio and TV writing (3 units); Drama 468 A or B, Experimental Theatre (3 units); Drama 370AB, Fundamentals of Directing (6 units); Drama 475AB, History of the Theatre (6 units); Drama 473AB, World Drama (6 units); Drama 477, Contemporary Critical Techniques (3 units) 30

Oral Interpretation—Drama 311, Oral Interpretation (3 units); Drama 314AB, Reading Theatre (6 units); Drama 473A, World Drama (3 units); Drama 475AB, History of the Theatre (6 units); electives (6 units in upper division drama courses) 24

Acting-Directing—Drama 370AB, Fundamentals of Directing (6 units); Drama 363AB, Intermediate Acting, or Drama 470AB, Directing (6 units); Drama 473AB, World Drama (6 units); Drama 475AB, History of the Theatre (6 units); Drama 374, Dance (2-4 units); Drama 468AB, Experimental Theatre or Drama 463AB, Advanced Acting (6 units) 32-34

Radio-Television—Drama 370AB, Fundamentals of Directing (6 units); Drama 380, Introduction to Radio and TV (3 units); Drama 382, TV Techniques (3 units); Drama 383, Radio & TV Writing (3 units); Drama 475AB, History of the Theatre (6 units); Drama 484, Educational Television Production (3 units); collateral requirements in Communications Department (6 units related to radio and television) 30

Dance—Drama 374AB, Dance Theatre and Production (4 units); Drama 377A or B, Stage Costuming (2 units); Drama 475AB, History of the Theatre (6 units); Drama 370A, Fundamentals of Directing (3 units); Drama 376A, Stagecraft (2 units); Drama 363A, Intermediate Acting (3 units); Drama 473AB, World Drama (6 units); Drama 474, Special Studies in Dance (2 units) 28

Technical Theatre—Drama 376AB, Advanced Stagecraft (4 units); Drama 377A or B, Stage Costuming (2 units); Drama 370A, Fundamentals of Directing (3 units); Drama 475AB, History of the Theatre (6 units); Drama 386, Stage Lighting (2 units); Drama 478, Rehearsal and Performance (1 unit); Drama 488AB, Advanced Scene Design (6 units) 24

PLAN III: TEACHING EMPHASIS
(Elementary)

Lower Division: Same as Plan I

Upper Division: Drama 311, Oral Interpretation, (3 units); Drama 314A, Reading Theatre (3 units); Drama 374A, Dance Theatre and Production, (2 units); Drama 377, Stage Costuming (2 units); Drama 402, Dramatic Activities for Children (3 units); Drama 403, Children's Theatre, (3 units); Drama 475A, History of Theatre, (3 units); electives (5 units) 24

PLAN IV: TEACHING EMPHASIS
(Secondary or Junior College)

Lower Division: Drama 211, Introduction to Oral Interpretation (3 units); Drama 263A or B, Beginning Acting (3 units); Drama 276A or B, Beginning Stagecraft (2 units); Drama 286, Design for the Theatre (3 units); Drama 285A, Theatrical Makeup (1 unit); Drama 377A, Stage Costuming (2 units) 14

Upper Division: Drama 370AB, Fundamentals of Directing (6 units); Drama 386, Stage Lighting (2 units); Drama 450, Theatre Management (2 units); Drama 472, American Theatre (3 units); Drama 473AB, World Drama (6 units); Drama 475AB, History of Theatre (6 units) 25

MINOR IN DRAMA

The minor in drama consists of 23 units, 12 of which must be in upper division.

Lower Division: Drama 211, Introduction to Oral Interpretation (3 units); Drama 263A or B, Beginning Acting (3 units); Drama 276AB, Beginning Stagecraft (4 units); Drama 285A, Theatrical Makeup (1 unit).

Upper Division: Drama 314AB, Reading Theatre (6 units); OR Drama 370AB, Fundamentals of Directing (6 units); Drama 473 A or B, World Drama (3 units); Drama 475A or B, History of the Theatre (3 units).

Candidates for the secondary teaching credential who wish to minor in drama must obtain approval from the Drama Department. Students minoring in drama must participate in the casts or crews for a minimum of four theatre productions. Students must also enroll for Drama 442, Teaching Drama in the Secondary School, 2 units.

MASTER OF ARTS IN DRAMA

The master of arts degree in drama is designed to provide a program of coordinated graduate studies built on the framework of the undergraduate preparation; to provide added incentive for intellectual growth reflected in improvement in teaching and professional recognition; and to provide a sound basis for continued graduate study in the field of drama. The student is expected to demonstrate a high degree of intellectual and creative competence and to demonstrate

English

mastery of his field of concentration in one of the areas of emphasis in drama: (1) theatre history, (2) dramatic literature and criticism, (3) acting and directing, (4) playwriting, (5) technical theatre, (6) oral interpretation, (7) radio and television, (8) dance, (9) children's theatre.

Prerequisites

In addition to the college requirements, students admitted to this program must have earned 24 upper division units in drama. Students will complete an oral interview before being admitted to a program of studies.

Program of Studies

The degree study plan in drama will include at least 30 units of adviser-approved graduate studies, 15 units of which must be in 500-level courses. Each program will have 24 units in drama; a core of 6 units (Drama 500, Introduction to Graduate Study—taken very early in the program, and Drama 598, Thesis); and six units of adviser-approved supporting courses in related fields in other departments. Before the degree is granted each student will pass an oral and written examination.

For further information, consult the Department of Drama. Also see "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF ENGLISH

Professors: Cummings, Jones,* McNelly, Obler, Ramsay, Salz, Schneider, Sears, Wagner (chairman), Watkin

Associate Professors: Austin, Cox, Greenwood, Haaker, Hodges, Huebner, Hughes, Rubinstein, Scott, Scoufos, Sharma, Tumas

Assistant Professors: Edwards, Epstein, Friend, Gilde, Heinze, Hengeveld, Miller, Oleyar, Petalas, Pitkin, Seller, Shapiro, Spangler

Instructors: Antonelli, Cabanel-Evans, Fuller, Hayden, Kilker, Mauch

Lecturers: deFrance, Farmer, Hipolito, Lynn, Romotsky

The English department offers courses designed to acquaint the student with the nature and development of our language, with the literatures of England and America, and with the disciplines involved in the various kinds of writing. Except for the required freshman English offerings, courses in world literature in English translation are listed separately, under Comparative Literature. In addition the Department of English offers some specialized professional courses for the preparation of teachers. On the senior and graduate levels, various opportunities are provided for seminar work and independent study.

English 101 and 102 or their equivalents or the consent of the instructor is a prerequisite to all English and comparative literature courses numbered 200 and above.

BACHELOR OF ARTS DEGREE: ENGLISH MAJOR

Requirements: A total of 36 units beyond English 101 and 102 or their equivalents, with the following distribution:

Lower Division (maximum of 9 units)

May include survey courses in British, American, or World Literature.

Basic Course (3 units)

201 Analysis of Literary Forms

Upper Division (minimum of 27 units)

Language and composition (minimum of 3 units), selected from the following:

301 Advanced Composition

* College administrative officer.

- 303 The Structure of Modern English
- 490 History of the English Language

American Literature:

- 321 American Literature to Whitman
- 322 American Literature from Twain to the Moderns

Major Author Courses (9 units)

- 333 Chaucer
- 334 Shakespeare
- 341 Milton

Period courses (minimum of 6 units, at least 3 in a period preceding the Romantic Movement) selected from the following:

- 335 Elizabethan and Jacobean Drama
- 336 Elizabethan Poetry and Prose
- 337 Seventeenth Century Poetry and Prose
- 342 The Age of Reason in English Literature
- 343 The Romantic Movement in English Literature
- 344 The Literature of the Nineteenth Century after 1830
- 345 The Development of the English Novel through Jane Austen
- 346 The Development of the Nineteenth-Century English Novel
- 462 Modern British and American Novels
- 463 Contemporary British and American Novels
- 464 Modern British and American Drama
- 466 Modern British and American Poetry

Transfer students should consult with their advisers who may recommend the granting of further credit for lower division work completed at other institutions.

Electives to complete a minimum of 36 units selected from additional courses in language and composition, period courses, literary criticism, senior seminars, and comparative literature. Comparative literature offerings are listed separately, but count toward an English major.

A program of literary studies gains in perspective through the study of history, sociology, philosophy, and psychology. These fields offer vital lifelines which nourish and deepen understanding of literature. Students of literature are strongly advised to include such courses in their program, particularly in the areas of philosophy and psychology.

English majors who intend to pursue graduate study are urged to acquire proficiency in at least one foreign language. Note: Freshmen intending to major in English should complete two years of course work in a foreign language, or demonstrate equivalent accomplishment by transfer or by examination.

MINOR IN ENGLISH

Requirements: a total of 21 units.

Lower Division (maximum of 9 units)

201, 211, 212, or any lower division course beyond English 101 and 102 or the equivalent.

Lower Division electives (3 units)

Upper Division (minimum of 12 units), including:

American Literature (minimum of 3 units), selected from the following:

- 321 American Literature to Whitman
- 322 American Literature from Twain to the Moderns

Language and composition (minimum of 3 units), selected from the following:

- 301 Advanced Composition

Foreign Languages and Literatures

303 The Structure of Modern English

490 History of the English Language

Major Author Courses (minimum of 6 units)

334 Shakespeare

333 Chaucer or

341 Milton

MASTER OF ARTS IN ENGLISH

To qualify for admission to the program for the M.A. in English (classified graduate status) a student must hold a bachelor's degree in English from an accredited institution at which he has maintained at least a 3.0 grade point average in the major courses; or if he holds a bachelor's degree in another major, he must have completed 24 units of upper-division course work in English with at least a 3.0 grade point average. If the student lacks the prerequisite number of English courses, he must make them up before he may begin work in the master's degree program, earning at least a 3.0 in such make-up coursework. In the event that the student's G.P.A. in prerequisite English courses is less than 3.0, he may be allowed to take from 6 to 9 units of probationary, adviser-approved coursework. If his G.P.A. in these probationary courses is 3.0 or better, he may be admitted (classified) and the courses, if appropriate, may be applied to the master's program.

A student is required to have two years of one foreign language at the college level or 6 units of study in comparative literature. If taken as graduate work, these 6 units may be applied to the master's degree under "units in subjects related to English."

Program:

Minimum units in courses restricted to graduate students (500 series)..... 18

Maximum units in specified upper-division courses in English 6

Units in subjects related to English 6

Total 30

During his last semester or session, the student must enroll in Independent Graduate Research (English 599) as one of his "500" courses. At the conclusion of this course he will take the written comprehensive examination for the master's degree.

Note: The student is strongly advised to take the steps necessary for admission to the program before registering for his first graduate courses. Part of the admission process is to confer with the graduate adviser, who will analyze prerequisites and designate those courses which will apply to the degree program. Courses taken by an unclassified student do not necessarily apply toward a degree. At the time the student achieves classified status, no more than 9 units of postgraduate coursework may be applied to the master's degree program.

For further information, consult the Department of English.

Also see "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF FOREIGN LANGUAGES AND LITERATURES

Professors: Kline (chairman), Mathieu

Associate Professors: Arana, Feldman, Merrifield, Shapley, Van Ginneken

Assistant Professors: Boarino, Cartledge, Mayer, Vasari, Zimmermann

Instructors: Peña, Tussing

Lecturers: Bloom, Cochrum, Curiel, Vacherot, Valade

Foreign Languages and Literatures

The program of the Department of Foreign Languages and Literatures is designed to meet the needs of several types of students, including those who seek a liberal arts education with an emphasis on a foreign language and its literature; those who intend to teach at the elementary, secondary, or college level; those who plan to use foreign languages in professional careers; or those who desire to pursue graduate studies. The program emphasizes high standards of achievement in the practical use of the language, in the study of its literature and its culture, in the mastery of applied linguistics, and in methodology of teaching, the latter acquired in part through apprenticeship.

A student may enroll at any point in the sequence of courses for which his previous study has prepared him. A proficiency examination will be administered to all incoming students early in Orientation Week.

Two awards are available annually to students majoring in this department: (1) a cash award to the winner of the F. F. Beer Annual Essay Contest in French, German and Spanish; (2) a cash award, given by the Club Los Amigos of Fullerton, to an upper division student who is a prospective teacher of Spanish and whose scholarship merits recognition.

MAJOR IN A FOREIGN LANGUAGE

Three options are offered: French, German or Spanish. Requirements: Courses 101, 102, 203, 204, 213, 214, or their equivalents completed satisfactorily; plus a minimum of 24 units of upper division courses, including 317, 375, 431, 441, 451, 461.

Attention is directed to the courses in foreign literatures in translation listed elsewhere in this catalog under Comparative Literature. These courses may not be counted toward a major in a foreign language.

MINOR IN A FOREIGN LANGUAGE

Requirements: Courses 101, 102, 203, 204, 213, 214, or their equivalents, completed satisfactorily; plus nine units in upper division courses selected in consultation with the adviser. Minor concentrations are offered in French, German, Portuguese, Russian and Spanish.

MAJOR IN TWO FOREIGN LANGUAGES

Two options are offered: Romance Languages Major (French and Spanish) and Germanic-Romance Languages Major (German and French or Spanish). A student electing the double major must fulfill all the requirements for a Major in a Single Language and, in addition, the requirements for a Minor in a Single Language.

MAJOR IN LINGUISTICS

Requirements for the bachelor of arts degree in linguistics are listed on page 108.

CREDENTIAL PROGRAMS

All prospective teachers, before being admitted to a credential program, must pass a proficiency examination in which their skills of listening, speaking, reading, writing and knowledge of linguistic principles will be tested. The examination is administered twice yearly, in September and February. Students should make arrangements with the Department to take the test during their senior year or during the first semester of their fifth year.

STANDARD TEACHING CREDENTIAL WITH A SPECIALIZATION IN ELEMENTARY TEACHING

Students who are candidates for the standard teaching credential with a specialization in elementary teaching must also complete the professional requirements, including Foreign Languages Education 432 and 433.

Foreign Languages and Literatures

STANDARD TEACHING CREDENTIAL WITH A SPECIALIZATION IN SECONDARY EDUCATION

The credential program is the same as for the liberal arts major, with the following additional requirements:

Foreign Languages Education 442;

French or German or Spanish Applied Linguistics 466;

plus six units in the major language selected with the approval of the adviser and taken in the senior year or thereafter at the 400 and 500 level.

INTERNATIONAL PROGRAMS

In accordance with recommendations made by the Modern Language Association of America, the Department of Foreign Languages and Literatures encourages all majors interested in a teaching career to participate in a study-abroad program. This will enable a student to perfect his mastery of the language and afford him additional insights into the foreign culture. To this end, the California State Colleges International Programs offer a wide variety of study opportunities on the junior, senior and graduate level. Language majors are, however, required to complete a minimum of three literature courses at the 400 level on the Fullerton campus. For further information, see page 39.

THE LANGUAGE LABORATORY

Students enrolling in courses 101, 102, 203, 204 are required, in addition to the regular class periods, to practice for the minimum of prescribed time in the language laboratory. The 30-station laboratory operates like a library; students may use it at a time most convenient to them, preferably every day in sessions of 15 to 30 minutes. Further details will be announced by each instructor and by the supervisor of the language laboratory.

Students are invited to make use of the collection of literary and cultural recordings in French, German, Portuguese, Russian and Spanish available in the language laboratory.

MASTER OF ARTS IN FOREIGN LANGUAGES

The degree of master of arts in foreign languages, with concentrations in French, German, or Spanish, requires a minimum of 30 semester units beyond the bachelor's degree. A candidate presenting a B.A. which has fewer than 24 upper division units in the major, or is otherwise inadequate, normally will be required to take additional courses to build a full undergraduate major before beginning the graduate program. The 30 units in the graduate program are distributed as follows:

	Units
Language and linguistics courses (minimum of 9 on 500 level)	12
Literature courses (minimum of 6 on 500 level)	12
Subjects in an approved related field	6
Minimum total	30

A part of the 30 units may be assigned to a thesis.

The candidate for the master of arts degree must consult a graduate adviser before beginning his program. He must take the Graduate Record Examination (aptitude and advanced test in the language area) before being admitted to classified graduate status.

For further information, consult the Department of Foreign Languages and Literatures.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF GEOGRAPHY

Professor: Earick

Associate Professors: Helin, Reith (chairman), Sutton

Assistant Professors: Ketteringham, Pettyjohn

Instructor: Sager

BACHELOR OF ARTS IN GEOGRAPHY

The major in geography provides knowledge concerning variety and change in the earth's physical foundation and in man's economic, cultural and political relationship to that foundation. In doing so it contributes to a broad, liberal education and furnishes sound preparation for employment in business, planning, and government service. The field also provides a foundation for teaching on the elementary and secondary levels and for advanced geographic study on the graduate level leading to university and college teaching and research.

Unit Requirements

The major consists of at least 36 units of geography, including no more than 13 units of lower division work and excluding all work applied toward the general education requirement. To fulfill the major a student must complete, with no grade lower than a C, the geography core (Geography 100, 206, 210 and 233) and a 24 unit concentration in upper division geography, including at least one course from each of the following groups:

Physical: 312, 323

Human: 450, 453, 463, 464, 471, 472, 481, 483

Technique: 475, 478, 479, 490

Regional: 431 through 439, 445

TEACHING MINOR IN GEOGRAPHY

The minor in geography is intended as a second field for persons completing a major in another discipline in preparation for a teaching credential. It is designed to give a basic understanding of earth science and geographic relationships helpful to the classroom teacher. The program provides a balance between the physical and social sciences.

Required Courses

Geography Core. (Geography 100, 206, 210 and 233)

One course from each of the following groups: physical, human and regional.

MASTER OF ARTS IN GEOGRAPHY

This program provides advanced study in geographic concepts, techniques and methods. Through seminars and research it develops the analytical and interpretive abilities of the student, and provides requisite background for employment in teaching, government and business.

Prerequisites:

Admission to the program requires the equivalent of 27 semester units of geography distributed as follows: (1) nine units in introductory geography; (2) three units in upper division physical geography; (3) six units in upper division human geography; (4) six units in upper division techniques; and (5) three units in upper division regional geography. A 3.0 (B) average in all geography courses is required prior to classification in the program. Course or grade deficiencies may be made up with consent of the *departmental* graduate committee. Students are to complete the Graduate Record Examination (advanced geography test) prior to classification.

History

Program of Study:

After completion of all prerequisites and removal of deficiencies, if any, the student is reviewed for classification into the program by the *departmental* graduate committee. On acceptance, an official study plan is developed in consultation with the *student's* graduate committee. Requirements for the degree include:

	Units
Geography 500 Seminar in the Evolution of Geographic Thought	3
Other seminars in geography	6-9
Geography 597 Project or Geography 598 Thesis	6
Elective upper division or graduate geography, including three units of technique	9-6
Upper division or graduate work in related fields	6
Total	30

Candidacy is attained on the satisfactory completion, i.e., B or better in all, of 12 approved units of work, including at least three units in a 500-level geography seminar. A written or oral examination may be required for advancement to candidacy. Each candidate normally prepares two three-unit research projects, but, if recommended by the *student's* graduate committee, he may substitute a six-unit thesis. Students interested in foreign area studies are expected to demonstrate a proficiency in a suitable foreign language.

For further information, consult the Department of Geography.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF HISTORY

Professors: Beck (chairman), Brown,* Langsdorf,* Povlovich *

Associate Professors: de Graaf, Etue, Feldman, Giacomakis, Onorato, Pivar, Putnam, Sailor, Toy *

Assistant Professors: Baker, Bellot, Breese, Flickema, Hansen, Hardy, Hunter, Jordan, Nagle, Shin, Van Deventer, Weleba, Woodard, Zatko

Lecturers: Shumway, Stewart

BACHELOR OF ARTS IN HISTORY

The undergraduate major in history is designed to provide an understanding of the present through a careful study of the past. This major may be pursued to fulfill various professional and cultural objectives common to a liberal arts program. It serves, especially, as a preparation for teaching, law, government, and other public services, and as the foundation for advanced study at the graduate level.

The major is composed of a minimum of 24 units in the upper division, plus the basic courses in world civilizations (History 110A-110B) and United States History (History 170A-170B). The basic courses may also be used to meet general education requirements. Students majoring in history are encouraged to include in their lower division programs some work in such fields as anthropology, economics, geography, literature, philosophy, political science and sociology.

Students intending to do graduate work in history should acquire a reading knowledge of at least one foreign language appropriate to the pursuit of advanced research in a field of history.

The 24 units of upper division courses required for the major must include:

History 399 Historiography (3 units)

* College administrative officer.

Six units in United States history

Six units in European history (from ancient Greece to modern times)

Six units in the history of Asia, Africa, and Latin America

TEACHING MINOR IN HISTORY

The teaching minor in history is composed of at least 20 units in history exclusive of the general education requirements:

Recommended teaching minor:	Units
World civilization (or equivalent)	6
Upper division work in history	15
Total	21

MASTER OF ARTS IN HISTORY

General Characteristics:

The Master of Arts in History is designed to improve the student's academic and professional competence for educational services at the elementary, secondary and junior college levels as preparation for advanced graduate work toward the doctoral degree in history. It is relevant to various other specialties in public or private enterprise and general cultural or community service. The program aims to deepen the student's understanding of the present through a careful study of the past.

Prerequisites:

Prerequisite to this master's degree is an undergraduate major in history with at least a GPA of 3.0 in the upper division history courses. Each student's background and record are evaluated by the adviser. Satisfactory scores on the aptitude test and the advanced test in history of the Graduate Record Examination are required.

Students with limited subject, grade, or breadth deficiencies may be considered for admission to the program upon completing courses approved by the Graduate Coordinator in History in addition to those required for the degree, with at least a B average.

Program of Study:

Of the 30 units of adviser-approved graduate courses on the study plan for the degree, 15 must be in appropriate work at the 500-level, and six must be in other supportive social sciences or related fields. The required courses are:

Hist 501 Seminar in the Content and Method of History (3 units);

Hist 590 History and Historians (3 units);

Hist 598 Thesis (3 or 6 units) *or*

Hist 599 Independent Graduate Research

A final oral examination on the thesis or a written comprehensive examination as approved by the Graduate Coordinator will be required. Students in this program must demonstrate a broad cultural understanding of one or more foreign countries of import to the master's degree study program. This requirement may be met by a reading knowledge of an appropriate foreign language or an approved selection of comparative studies (12 units post B.A.), but the method must be approved by the student's adviser. In certain programs an examination in statistics may be substituted for the language requirement.

For further information, consult the Department of History.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

THE INTERDISCIPLINARY CENTER

The Interdisciplinary Center has been established to encourage and develop a variety of courses and programs which often crosscut the established disciplines. Such courses may involve the interrelating and synthesizing of ideas, methods, or factual materials from two or more fields of knowledge. In addition to the courses being offered by the established departments and sponsored by the Center, there are currently some dozen courses offered by the Center itself (see page 236). The Center hopes to increase these offerings and is expecting to sponsor a Faculty Interdisciplinary Seminar to which students may be invited.

For information write to the Director, Dr. Paul C. Obler, Interdisciplinary Center.

BACHELOR OF ARTS IN LINGUISTICS (An Interdisciplinary Program)

The degree in linguistics is an interdisciplinary program administered by the Department of Foreign Languages and Literatures in collaboration with the Departments of Anthropology, English, Philosophy, and Speech through their representatives on the Linguistics Committee.

This program is designed for students with an exceptional interest in and aptitude for the study of the systems of human communication. It enables the undergraduate student to perceive the function of language in the development of civilization; to understand the essential relationships between language and thought and language and culture; to gain substantial familiarity with the structure of foreign languages as well as English; to observe several types of linguistic structures; and to become conversant with the historical study of language and formal techniques and theoretical foundations of linguistic analysis. The program will enable the student with linguistic and philological interests to grasp the scope of the entire field and, in addition, to determine more accurately the most meaningful concentrations in graduate study.

Lower Division Requirements

One year of Latin or Greek (6)

Anthropology 202 Introduction to Cultural Anthropology (3)

Philosophy 210 Logic (3)

Upper Division Requirements (minimum of 30 units)

Linguistics 406 Descriptive Linguistics (3)

Linguistics 530 Historical Linguistics (3)

Linguistics 490 Linguistics in Relation to Other Disciplines (1-4)

Linguistics 410 Language and Culture (3)

English 490 History of the English Language (3)

317 course in a modern foreign language (3)

Linguistics 341 Phonetics (3)

Linguistics 404 General Semantics (2)

Linguistics 375 The Philosophy of Language (3)

One elective (or more) from the following:

Mathematics 305 Elements of Set Theory (3)

Quantitative Method 364 Computer Logic and Programming (3)

Psychology 161 Elementary Statistics (3) or

Mathematics 335 A, B Probability and Mathematical Statistics (3)

Speech 403 Speech Development (3)

English 303 Structure of Modern English (3)

Mathematics 304 Mathematical Logic (3)

400 course in a modern foreign language (3)

- Philosophy 368 Symbolic Logic (3)
 Linguistics 402 Phonetic Analysis of Speech (3)
 Linguistics 499 Independent Study (1-3)

Students must consult with an adviser in linguistics through the Department of Foreign Languages and Literatures, before establishing their individual course of study.

DEPARTMENT OF MATHEMATICS

Professors: Ames (chairman), Gilbert

Associate Professors: Benson, Egbert, V. J. Klassen, V. M. Klassen, Sandberg, Stiel

Assistant Professors: Beck, Buchman, Dinerstein, Marley, Miller, Zee

BACHELOR OF ARTS DEGREE IN MATHEMATICS

The program of studies in mathematics offers courses stressing the understanding of mathematical concepts and the axiomatic approach. A sufficient variety of courses is given to satisfy the needs of:

- (1) The proficient student aiming toward graduate study,
- (2) The student planning to use mathematics in a career in industry and government service,
- (3) Preprofessional students in other science areas,
- (4) The prospective elementary and secondary teacher. (See special programs of study below.)

In addition to mathematics, the major in the regular program will be required to pursue a year of general college physics with a calculus prerequisite.

The department encourages the study of a modern foreign language. Each major is expected to complete with at least a C average a semester of German, French, Russian, Spanish or its equivalent. In particular those students considering graduate work should complete the 203 or 303 course in German, French, or Russian.

No credit toward the major will be allowed for specific major courses in which a grade of D is obtained. To qualify for a baccalureate degree in mathematics, students must have a C average in all courses required for the major including those in the related sciences.

A placement test is given to students in the Department of Mathematics to determine their readiness to start the calculus.

The basic courses in mathematics may also be used to meet the general education requirements.

Major Program in Mathematics

<i>Required courses:</i>		<i>Units</i>
Math 150A,B	Analytic Geometry and Calculus	8
Math 250	Intermediate Calculus	4
Math 291	Linear Algebra	3
Math 306	Vector and Tensor Analysis	} (choice)..... 3
Math 307	Elementary Differential Geometry	
Math 302	Modern Algebra	3
Math 350A,B	Advanced Calculus	6
Math 407	Abstract Algebra	} (choice of three)..... 9
Math 412	Complex Analysis	
Math 414	Topology	
Math 450	Real Analysis	
	Any other 400-level course in mathematics	3
		<hr/> 39

Mathematics

Minor Program in Mathematics

A mathematics minor shall consist of 20 units of coursework selected from the courses offered by the Mathematics Department. They must include Mathematics 291 and at least six upper division units from the Mathematics Department. Each course must be completed with a grade C or better.

Option in Mathematics for Teacher Education for Elementary or Secondary Education

	Units
Math 150A-B Analytic Geometry and Calculus.....	8
Math 250 Intermediate Calculus	4
Math 291 Linear Algebra	3
Math 302 Modern Algebra } (choice).....	3
Math 330 Number Theory }	
Math Ed 311 Fundamental Concepts of Mathematics—Algebra.....	3
Math Ed 312 Fundamental Concepts of Mathematics—Geometry.....	3
Math 315 Euclidean Geometry } (choice).....	3
Math 320 Projective Geometry }	
Math 335A or B Probability and Mathematical Statistics.....	3
Electives in mathematics, 300 courses or higher.....	9
	<hr/> 39

Grade requirements and foreign language requirements for the candidate in the option for teacher education are as above. Furthermore, he may choose either the year of physics with the calculus prerequisite or a semester each of chemistry for science majors and a semester of physics with a calculus prerequisite.

Minor Program in Mathematics for Teacher Education

A. For elementary education the minor shall consist of 20 units of course work selected from the course listings in mathematics and mathematics education. These courses must include Mathematics 150B and Mathematics Education 303A,B.

B. For secondary education the minor shall consist of 20 units of course work selected from the course listings in mathematics and mathematics education. These courses must include Mathematics 291 and six units of upper division courses in mathematics or mathematics education.

MASTER OF ARTS IN MATHEMATICS

General Characteristics:

The M.A. in Mathematics is designed to provide advanced study for students interested in continuing studies for a Ph.D. in mathematics, junior college teaching and mathematical analysis in industry.

Prerequisites:

Prerequisites to the program include:

- (1) possession of a baccalaureate degree from an accredited institution;
- (2) an undergraduate major in mathematics or a combination of courses and work experience which the student's graduate committee evaluates as satisfactory preparation.

Students with limited preparation or grade deficiencies may be considered for admission to the program, upon completion of committee-approved courses with at least a B average.

Program of Study:

The degree program requires 30 units of graduate study approved by the student's graduate committee. Sixteen of these units must be 500-level mathematics courses. Each student will be required to take electives to insure competence in algebra, analysis, topology and geometry. Nine units will be required outside the student's major field of interest which may consist of algebra, analysis, topology, geometry or applied mathematics.

Proficiency in reading mathematics literature in an adviser-approved foreign language will be required before advancement to candidacy and before the department will recommend the awarding of the degree, the candidate must pass examinations (written and/or oral) designed to test his competence in the course work he has taken.

For more detailed information or advisement, students should communicate with the Chairman of the Department of Mathematics.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF MUSIC

Professors: Gray,* Landon (chairman), Lewis, Thorsen

Associate Professors: Fuszek, Kreter, Michalsky, Reims

Assistant Professors: Charlton, Karson, Kincaid, McCarty, Paul, Remsen, Vaughan

Instructors: Chadwick, Unruh

Lecturer: Minor

Lecturers in applied music (part time): Bloch (clarinet), Caudill (string bass), Chassman (violin, viola), Fleming (trombone), Goodwin (percussion), Henderson (french horn), Howard (flute), Imry (guitar), Kemalyan (voice), Kidd (trumpet), Lustgarten (cello), Moritz (flute), Muggeridge (oboe), Nowlin (bassoon), Olsson (voice), Plummer (violin), Remsen (harp), Stockhammer (flute), Voorhies (piano), Weaver (piano), Shaffer (organ).

The Department of Music offers courses in music for both majors and non-majors. The fundamental purpose of the music major curriculum leading toward the baccalaureate degree is to provide the necessary training in each of the related aspects of music such as its history and literature, theoretical studies, and musical performance. Such a program of studies is based on the need to provide serious students with a core curriculum which will prepare the individual in such areas as (a) the knowledge of the history and relationships of music as an art form, (b) a comprehensive and analytical understanding of musical literature, (c) a working knowledge of music theory and structure, (d) a high degree of competence in a performing field, and (e) a specialization within the major.

The music program is designed to educate:

1. Students in general, in terms of composite minors, music minors, or broad offerings in the humanities or liberal arts.
2. Students preparing to teach in the elementary and/or secondary schools, with a major field concentration in music (special music teachers).
3. Students preparing to teach in the elementary schools with a major field concentration in music (classroom teachers).
4. Students preparing to teach in the junior colleges and four-year colleges with a major field concentration in music.

* College administrative officer.

Music

5. Students other than music majors preparing to teach as classroom teachers in the elementary schools.
6. Students wishing to prepare for various vocations in music, such as:
 - a. Church music directors and organists
 - b. Teachers of music in private studios
 - c. Music librarians
 - d. Professional performers of music
 - e. Composers and arrangers
 - f. Industrial and recreational music directors

REQUIREMENTS OF THE DEPARTMENT OF MUSIC

Note: Special requirements are available in detail from the office of the Department of Music.

1. Placement examinations in basic piano, voice, theory, and performance will be given all music majors at the time of entrance to the college. Students deficient in any of these areas will be expected to take additional work as recommended by the faculty adviser.
2. Music majors will be expected to declare a principal area of performance with the approval of the department chairman and faculty adviser, no later than the beginning of the junior year. It will be expected that each student will prepare for suitable development within this major area of performance, culminating in the successful presentation of a senior recital before he may be approved for graduation. The following steps should be taken as a part of this preparation:
 - a. Declaration of an area of performance concentration (voice, piano, instrument, or combination solo instrument or voice and conducting) at the time of entrance to the college.
 - b. Demonstration of performance progress before a faculty jury each semester.
 - c. Appearance in at least one minor recital or an assisting performer at least once each semester.
3. All music majors are required to participate in a major performance group (band, orchestra, or chorus) each semester of the regular school year. Students who are wind or percussion instrument majors in their applied field must register for band (or orchestra if designated by instrumental faculty) every semester; string majors must register for orchestra every semester; voice majors must register for chorus every semester. Music education majors whose performance area is piano or organ should be assigned to one major performance group by academic adviser. Exceptions to this requirement may be made only by action of the music faculty.
4. Instrumental and piano majors are required to take part in small ensembles for a minimum of two semesters.
5. The major area of performance concentration for major in music requires work in applied music, as follows:
 - a. Piano, voice and instrumental majors—must complete a minimum of 8 semesters of applied music in the major field of concentration, leading toward the successful presentation of a senior recital in the major performance field.
 - b. Choral or instrumental conducting majors—must complete a minimum of eight semesters of applied music in the major field of performance concentration, in addition to a minimum of six units in conducting, leading

toward the successful presentation of a joint recital in the major performing field or a conducting recital or both.

- c. A functional piano examination will be taken at the beginning of the junior year by all music majors.
 - d. Composition majors must complete a minimum of eight units, including: Mu 322A, B; Mu 370 (2-4 units); Mu 371 (2 units). This course of study will culminate in the successful completion of a composition recital, for the B.A. degree.
6. Senior transfer students entering California State College, Fullerton with a major in music, or graduate students in music entering to complete credential requirements are expected to complete a minimum of one semester of successful upper division work in music before they may be approved for directed teaching. Required courses and competencies expected of all the college music majors must be satisfied before endorsement by the faculty committee for acceptance in the credential program.
 7. Elementary credential candidates majoring in music (B.A. in Music) are required to complete 2 units of Mu 499 in the semester immediately preceding Student Teaching and to take Mu 599 for one unit concurrently with Student Teaching. Normally, both courses will be taken in the student's graduate year.
 8. All music majors will be expected to attend a weekly departmental organization class (Mu 400) each semester of enrollment.

MUSIC DEGREE PROGRAMS

The Department of Music offers a variety of courses and programs leading to baccalaureate and graduate degrees in teaching and the professions. These degrees may be earned in two degree patterns. It is possible to elect suitable concentration within these specializations in such areas as applied music, composition, conducting, music education, and music history and literature.

BACHELOR OF ARTS IN MUSIC

This program prepares students in either (1) music history and literature, or (2) music for elementary classroom teachers.

The music history and literature specialization provides suitable preparation for advanced degrees in musicology and for certain preprofessional goals, including the fields of musical acoustics, music therapy, ethnomusicology, library science in music, and music in industry and recreation.

The emphasis for classroom teaching is not designed for the music specialist in public schools (see Bachelor of Music) and would require additional course work in some areas if used as preparation for most graduate degrees in music.

The bachelor of arts in music shall consist of no fewer than 45 units, of which at least 25 shall be in the upper division. The following minimum requirements are basic to this degree objective:

Music Requirements:

Lower Division

	<i>Units</i>
Music Theory (Mu 111A,B; 211A,B)	12
Music History and Literature (251)	3
Applied Techniques (including ensemble, principal instrument or voice)	4
Total	19

Music

Upper Division

	Units
Music Theory	6
(Note: Majors in musicology must include Mu 312A,B (4), counterpoint, and Mu 321A, Form and Analysis, or Mu 323A, Orchestration)	
Music History and Literature (Mu 351A,B).....	6
Specialization in the major and general electives in music.....	14
<i>Music History and Literature</i>	<i>* Classroom Teaching</i>
<i>Emphasis</i>	<i>Emphasis</i>
Must include two period or specialized music history and literature courses.....	Must include Mu 333, Music and Child Development.....
4 units	3 units
Total	26
Total, lower and upper division	45

Allied Requirements:

Music History and Literature Emphasis

1. An academic minor 20
(by approval of the academic adviser and the department)
To provide suitable preparation in academic disciplines outside the field of music in such areas as
(a) liberal arts studies;
(b) supportive courses for advanced degrees in musicology; and,
(c) preprofessional goals
2. Foreign language, to be satisfied by one of the following:
(a) four years study of foreign language at the secondary school level,
(b) a pass examination given by the Department of Foreign Languages and Literatures, or
(c) completion of the second semester of the 10-unit beginning course in foreign language.

Classroom Teacher Emphasis

1. Diversified studies in academic areas appropriate for classroom teachers such as English, literature, mathematics, science, art, drama, social sciences, foreign language, and physical education and health by consultation with the major and professional advisers.
2. A course in diction or foreign language.
(May be satisfied by a minimum of 1 semester of foreign language or Mu 390, Diction for Singers)
3. Completion of Ed 311, Ed 331 and admittance to Teacher Education.

BACHELOR OF MUSIC

This degree program is for the development of persons specializing in performance and applied music techniques.†

* Elementary credential candidates must take a minimum of two units each of piano and voice (nonprincipal) and pass satisfactorily the junior level proficiency in each.

† This program also can prepare the student for a teaching career as a music specialist in the public elementary or secondary schools and junior colleges of California. The music education emphasis is a five year program leading toward the Standard Teaching Credential, Secondary School Teaching Specialization. Holders of this credential, secondary specialization, may teach music in either or both secondary and elementary public schools of California. For complete professional education requirements, see School of Education section. In the post-graduate year, students must complete the music education techniques block (Mu Ed 441, 442, 443 and 449) before admission to student teaching.

The music major, professional degree program, shall consist of no fewer than 64 semester units, of which at least 36 shall be in the upper division. The following minimum requirements are basic to this degree objective.

Lower Division		Units
Music Theory (Mu 111A,B; 211A,B)	_____	12
Music History and Literature (Mu 251)	_____	3
† Applied techniques:		
Principal instrument or voice	_____ 8 }	12
Major performance ensemble	_____ 4 }	
Total	_____	27
Upper Division		
Music Theory (Mu 312A, 321A, 322A, 323A)	_____	8
Music History and Literature (Mu 351A,B)	_____	6
Applied techniques:		
Principal instrument or voice	_____ 4 }	8
Major performance ensemble	_____ 4 }	
† Specialization in the major (to be selected in consultation with and with the approval of the academic adviser) from appropriate areas of:		
Chamber or allied performance ensembles	_____ 2 }	15
Composition, conducting, and/or performance	_____ 13 }	
Total	_____	37
Total, lower and upper division		64

MINOR IN MUSIC

The minor in music may be used as an appropriate area of study by persons whose majors are in other fields, or may be used to satisfy minor field requirements for elementary or secondary teaching credentials. A maximum of 12 units from the lower division may be included in work counted toward the music minor. The music minor requires a minimum preparation of 20 units.

		Units
Composite of Lower Division and Upper Division		
Theory of Music (selected from Mu 101, 111A,B, 211A,B or any 300- or 400-level theory classes for which student is qualified)	6
Music History and Literature (Mu 100, 251, 350 or courses at the 400 or 500 level for which student is qualified)	4-6
Applied Techniques (including ensemble, conducting, piano or voice, orchestral instruments, and principal instrument or voice)	8-10
Note: Students expecting to use the minor for teaching must complete four units (two courses) of Mu 281 a-e, Orchestral Instruments and a minimum of two units in an ensemble appropriate to their area of specialization.		
Total		20

MASTER OF ARTS IN MUSIC

The program of studies leading to the master of arts in music provides advanced studies in breadth as well as in an area of graduate specialization. The program is further intended to provide advanced course work with a suitable balance in

† Music education lower division emphasis will include principal instrument or voice—4 units; functional piano and/or voice—4 units. Upper division emphasis will include conducting—6 units; and orchestral instruments—8 units.

Philosophy

such music studies as theory, composition, history, literature and advanced applied techniques. There are suitable graduate specializations in the areas of history and literature of music; advanced applied techniques; theory-composition; and music education.

The master of arts in music is especially designed for teachers and supervisors of music; persons intending to specialize in applied fields in the pursuit of occupational goals; individuals preparing for college teaching; and persons intending to pursue advanced degrees beyond the master's level.

Prerequisites for Admission to the Program

The student must have a baccalaureate degree with a major in music (or the equivalent of a major, i.e., 24 upper division courses in music). Opportunity is given the student to remove deficiencies by taking certain prescribed courses. Such courses cannot be applied to the master's degree program. The student must also take the aptitude and advanced music tests of the Graduate Record Examination and pass the graduate music placement-proficiency examination.

Requirements for the Degree

The degree program requires 30 units of graduate study, no more than nine of which shall be outside the field of music, and at least 12 of which must be in 500-level courses in the major. The student will take Mu 500 (Graduate Studies in Music, two units) early in his program, and must include at least four units in history and literature of music, four in advanced techniques, two in theory composition, and an added six units in one of the above, or in music education, as an area of specialization. A thesis or project is required, for which three units may be granted. In addition, each program will include at least six units of study outside the field of music, but supportive to the program. Each program is individually designed in conference with the adviser.

For further information, consult the Department of Music.

Also see "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

FEES FOR APPLIED MUSIC

Studio lesson fee, half-hour lessons (one unit) and examination, per lesson, \$1 to \$10.

DEPARTMENT OF PHILOSOPHY

Professors: Alamshah, Becker,* Hayner (chairman)

Associate Professor: Silvers

Instructors: Cronquist, Hitchcock

Lecturer: Cox

BACHELOR OF ARTS DEGREE IN PHILOSOPHY

The major in Philosophy is designed to provide the undergraduate student with (1) information about the achievements of the world's outstanding philosophers in the analysis and resolution of philosophic issues, and (2) some measure of skill in analyzing and resolving such issues as they arise in his own areas of interest. Courses in Philosophy are selected to provide both breadth and depth in exploring and analyzing philosophic concerns.

* College administrative officer.

Requirements for the Major:

A. A minimum of 30 units in Philosophy.

B. *Lower Division* (Maximum of 6 units beyond general education requirements).

1. Philosophy 290 (3)

2. Philosophy 291 (3)

Note: Students who have taken their lower division work elsewhere will be given credit for equivalent coursework. Up to 6 units of such coursework may be allowed for credit at the discretion of the department.

C. *Upper Division* (Minimum of 24 units)

1. Philosophy 300 (3)

2. Philosophy 301 (3)

3. At least 9 units at the 400 level, to include:

a. At least one seminar, (3)

b. Philosophy 499, and (3)

c. A 400 level elective other than a seminar. (3)

A program in philosophy profits greatly through the study of literature, psychology, and the social sciences. Students of philosophy are advised to supplement their studies in philosophy with coursework offered in these fields. Philosophy majors are urged to acquire proficiency in a foreign language.

MINOR IN PHILOSOPHY**Requirements for the Minor:**

A. A minimum of 21 units in Philosophy.

B. *Lower Division* (Maximum of 9 units beyond general education requirements).

1. Philosophy 290 (3)

2. Philosophy 291 (3)

C. *Upper Division* (Minimum of 12 units)

1. Philosophy 300 (3)

2. Philosophy 301 (3)

DEPARTMENT OF PHYSICS

Professors: Adams, R. (chairman), Blend

Associate Professor: Dittman

Assistant Professors: Bengtson, Cooperman, Crowley, Johnston

BACHELOR OF ARTS DEGREE IN PHYSICS

The program leading to the bachelor of arts in physics provides the fundamental instruction basic to the needs of the student who is preparing (1) to teach in elementary or secondary schools, (2) to undertake graduate work in physics or related fields, (3) to pursue additional collegiate studies leading to professional degrees in dentistry, law, medicine, nursing, and other professional, related areas, and (4) to seek employment in technical and applied fields.

The faculty is concerned that the student of physics shall have adequate education in other liberal arts subjects, including foreign language. Through curriculum requirements and through elective subjects, the physics student will be expected to have a broad education in traditional liberal arts subjects, the several sciences, and mathematics. In particular, the student is urged to make his selections of elective courses outside the field of physics.

Physics

To qualify for the bachelor of arts in physics, students must have a C average in all courses required for the major, including those in mathematics and the related sciences. A proficiency in one modern foreign language (Russian, German, or French) is required. A reading comprehension of a second foreign language is strongly recommended for students planning graduate study leading to the Ph.D. degree. This requirement is normally met by completing two semesters of fundamental foreign language (10 units) plus one semester of scientific foreign language (3 units) with a grade of C or better in each course. Under unusual circumstances the requirement may be met by examination upon approval of the department chairman. Application must be made in the departmental office by October 15 for examination during the fall semester and by February 1 for examination during the spring semester.

No credit toward the major will be allowed for major courses in which a grade of D is received.

MINIMUM DEPARTMENTAL REQUIREMENTS FOR DEGREE *

Lower Division	Units
Freshman Seminar	1
General chemistry (satisfies general education physical science requirement)	10
Mathematics: analytic geometry and calculus (satisfies general education mathematics requirement)	12
Fundamental physics	13
Modern foreign language (Russian, German or French)	
Proficiency in one language required. (For details see paragraph above.)	
Upper Division Physics †	
431 Electricity and Magnetism	3
441 Analytical Mechanics	3
411 Theory of Wave Motion	3
455 Introduction to Quantum Physics	3
453 Nuclear Physics or	
451 Modern Physics	3
416 Thermodynamics	3
481A Experimental Physics (electrical measurements and electronics)	3
481B Experimental Physics (mechanics, acoustics, physical optics, atomic spectra)	3
481C Experimental Physics (atomic and nuclear physics)	3
481D Experimental Physics (selected experiments in classical and modern physics)	3
Total (upper division)	30

Required Mathematics

Mathematics courses in addition to analytic geometry and calculus..... 9

MINOR IN PHYSICS

A minimum of 20 units of physics are required for a minor. These shall include 12 units of lower division physics (or equivalent as determined by the department of physics), and a minimum of 9 units of upper division physics, including a minimum of 3 units of Experimental Physics.

* Substitutions in the program may be made on approval by the department chairman.

† Theory courses will normally be taken in the order of listing. Laboratory courses will normally be taken in numerical order of course number.

Suggested Eight-semester Program for Major in Physics

Semester 1. Freshman		<i>Units</i>
Phys 101 Freshman Seminar	1	
Math 150A Analytic Geometry and Calculus	4	
Engl 101 Composition and World Literature	3	
For Lang 101 Fundamental Russian, German, or French	5	
Any required general education course	3	
Any physical education activity course	1	
		<hr/> 17
Semester 2. Freshman		
Math 150B Analytic Geometry and Calculus	4	
Engl 102 World Literature and Composition	3	
For Lang 102 Fundamental Russian, German, or French	5	
Phys 221A, 222A Fundamental Physics	5	
Any physical education activity course	1	
		<hr/> 18
Semester 3. Sophomore		<i>Units</i>
Math 250 Intermediate Calculus	4	
Phys 221B, 222B Fundamental Physics	5	
For Lang 203 Intermediate Russian, German, or French	3	
Chem 101A General Chemistry	5	
		<hr/> 17
Semester 4. Sophomore		
Math 291—Linear Algebra	3	
Phys 221C Fundamental Physics	3	
Any required general education course	3	
Any required general education course	3	
Chem 101B General Chemistry	5	
		<hr/> 17
Semester 5. Junior		
Upper division mathematics	3	
Phys 431 Electricity and Magnetism	3	
Phys 481A Experimental Physics	3	
Any required general education course	3	
Bsc 101 Elements of Biology	5	
		<hr/> 17
Semester 6. Junior		
Upper division mathematics	3	
Phys 441 Analytical Mechanics	3	
Phys 481B Experimental Physics	3	
Phys 411 Theory of Wave Motion	3	
Any required general education course	3	
Any required general education course	3	
		<hr/> 18
Total		18

Political Science

Semester 7. Senior

	Units
Phys 455 Introduction to Quantum Physics	3
Phys 481C Experimental Physics	3
Any required general education course.....	3
Any required general education course.....	3
Elective	3

Total 15

(Honor students may add Physics 491, Senior Report (1).)

Semester 8. Senior

Phys 416 Thermodynamics	3
Phys 453 Nuclear Physics <i>or</i>	
Phys 451 Modern Physics	3
Phys 481D Experimental Physics	3
Electives	6

Total 15

(Honor students may add Physics 492, Senior Report (2).)

GRADUATE WORK IN PHYSICS

The Physics Department offered three graduate courses in Physics in 1968-69, and it is expanding its graduate course offerings in 1969-70.

DEPARTMENT OF POLITICAL SCIENCE

Professors: Baldwin, Hyink *, Mason, Richardson (chairman)

Associate Professors: Bell, Foster, Kerschner

Assistant Professors: Brown, Feraru, Fisher, Harlow, Keller, Kim, M. Lepper, Sutphen, Yinger

BACHELOR OF ARTS IN POLITICAL SCIENCE

The undergraduate major in political science prepares students for teaching, government employment on the local, state and national level, foreign service, graduate work in political science, law school, or leadership in civic and political activities. Political science is also of value to prospective special librarians and journalists.

Unit and Course Requirements

The major consists of 30 units in political science of which at least 24 units must be in the upper division, plus 12 units in related departments taken with the approval of the adviser. These units are in addition to those meeting the general education requirements. Prospective majors are encouraged to take courses in anthropology, economics, geography, history, philosophy, psychology, sociology, and statistics.

All majors are required to take:

Political Science 100 (American Government)

Political Science 231 (Political Analysis)

Political Science 306 (Research Proseminar)

The public administration courses are designed to prepare students for public service careers with local, state and federal government agencies, and for graduate

* College administrative officer.

work in public administration. Students will have opportunities to study, observe, and serve as interns in governmental agencies in the area.

The prelaw student may work out an individual program in consultation with his adviser to meet the specific requirements for admission to the law school of his choice. Courses in related fields may include work in anthropology, economics, history, psychology, and sociology; also in accounting and report writing.

TEACHING MINOR IN POLITICAL SCIENCE

The teaching minor is composed of 21 units of political science, in addition to those meeting the general education requirements. Fifteen of these units must be taken from the courses required of all majors in political science.

MASTER OF ARTS IN POLITICAL SCIENCE

This degree is planned for students interested in advanced graduate work toward the doctoral degree in political science, for the professional improvement of high school and junior college teachers, government employees, personnel in the military services, and for individuals interested in civic and political leadership.

Prerequisites

A student desiring to enter the M.A. program must have completed a minimum of 24 hours of upper division work in political science and/or pertinent related fields, with a GPA of 3.0 as approved by the Graduate Coordinator. The aptitude test of the Graduate Record Examination is required, and the GRE Advanced Test in Government may also be required. A reading knowledge of a foreign language, a demonstrated knowledge of appropriate research methods (PS 306 or its equivalent), of statistics or computer programming or both will be required by the M.A. committee as preparation if pertinent to the student's professional needs.

Each student's record and background will be carefully evaluated before admission to classified status. Students may be considered for admission to the program with limited subject deficiencies which must be removed by taking courses or challenge examinations as approved by the Graduate Coordinator. Grade and subject deficiencies must be removed before admission to classified status. Courses taken to remove deficiencies may not be counted toward the requirements for the M.A. degree.

Program of Study

A student must design a study plan of 30 units of course work, subject to the approval of his M.A. committee (as part of the requirements for admission to classified status). At least 18 of these units must be in political science, of which 15 units, must be 500-level courses. Three to six units may be a thesis or project. A comprehensive final written examination and an oral examination are required.

No more than 9 units of postgraduate work taken prior to classified status may be applied to a student's master's degree program.

For advisement and further information, consult the Department of Political Science.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

MASTER OF PUBLIC ADMINISTRATION

General Characteristics:

The general objective of the program is to educate persons for the vital area of managing public agencies and functions. Within this, there are three specific objectives. First, to educate those who wish to enter a generalist career such as that of city manager, county manager, or city administrative officer. Second, to increase the competence of those already embarked on a general administrative career. Third, to aid functional specialists who feel the need for a broader education in

Psychology

administration due to promotion into an administrative position within the functional specialty. This would include employees in such areas as public works, planning, personnel, and finance.

Prerequisites

A student desiring to enter the program must have a bachelor's degree from an accredited institution with an undergraduate major in political science or a combination of courses and work experience which the M.P.A. coordinator evaluates as satisfactory experience. Additional prerequisites are a B average in the upper division courses in the student's major and satisfactory completion of the Aptitude Test of the Graduate Record Examination.

Students with limited subject or grade point deficiencies, but who have extensive experience in an administrative capacity, may be classified in the program after they have demonstrated their ability for advanced work by taking 6-9 units of approved courses with grades of not less than B. Such courses are in addition to those required on the graduate program.

Program of Study

The degree study plan must include 30 units of committee-approved coursework of which 15 must be at the 500 level. A minimum of 15 units must be in public administration, but the remainder may be assigned on an interdisciplinary basis from courses related to the needs of individual students. Unless the student has had acceptable governmental experience, he must undertake an internship (Political Science 429). Course requirements will include a thesis or project.

No more than 9 units of postgraduate work taken prior to classified status may be applied to a student's master's degree program.

For advisement and further information, consult the Department of Political Science.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF PSYCHOLOGY

Professors: Edwards (chairman), Lindley, Schmidt, Tsai

Associate Professors: Calhoun, Carlson, Dondis

Assistant Professors: Curtis, Jaffee, Krivanek, Lindner, McFarland, Newell

Lecturers: Ebersole, Thomas

BACHELOR OF ARTS IN PSYCHOLOGY

The major in psychology consists of 36 units of lower and upper division work designed for students (1) who want a sound background in psychology as a science, (2) who want a basic understanding of human behavior as a supplement to some other major course of study, and (3) those who wish to acquire a thorough undergraduate training in psychology in anticipation of graduate study.

Requirements for the Major

Lower Division

		Units
Psychology 101	Introductory Psychology	3
Psychology 161	Elementary Statistics	3
Psychology 202	Principles of Psychology	3

Upper Division

A minimum of 27 units of upper division work is required for a major in psychology. Fifteen units are required as follows:

	Units
Psychology 302 Experimental Psychology: Learning and Motivation	3
Psychology 303 Experimental Psychology: Sensation Perception <i>or</i>	
Psychology 321 Physiological Psychology	3
Psychology 351 Social Psychology <i>or</i>	
Psychology 331 Psychology of Personality	3
Psychology 461 Group Psychological Testing	3
Psychology 408 History of Psychology	3

A minimum of 12 additional units in psychology courses will be selected in consultation with the academic adviser. Not more than 3 units of Psych. 499, Independent Study, may be counted toward the major.

Recommended Related Courses

Courses from each of the following areas according to the student's interests:

- (1) social sciences; (2) physical sciences; (3) biological sciences; (4) mathematics; (5) humanities.

Students planning to do graduate work in psychology are advised to plan additional work in biological and physical sciences and to include at least a one-semester course in college mathematics. Undergraduate work in foreign languages is also recommended.

MASTER OF ARTS IN PSYCHOLOGY

This degree is planned to extend the body of psychological knowledge developed in the undergraduate major and result in the development of greater depth in understanding the content of psychology; increased skill in research capabilities; the professional reporting of research; potential career skills; and sound preparation for students planning to go on to advanced graduate work. On completion of this program, students will have a better understanding of the many and complex disciplines in psychology as well as an understanding of related behavioral and scientific areas of study.

Prerequisites

Students to be admitted to the program must: (1) meet the general prerequisites for graduate work formulated and recommended by the college; (2) have completed a bachelor's degree with a major in psychology or 24 units in upper division psychology including a course in statistics, a course in the history of psychology, an upper division laboratory course in psychology, at least two of the following courses: physiological psychology, learning, sensation and perception, motivation, and at least one of the following courses: social psychology, personality, developmental psychology; psychological testing; (3) have completed a course in college mathematics, a course in the biological sciences beyond the college's general education requirement, and a course in sociology or anthropology beyond the college's general education requirement; (4) have completed a baccalaureate degree with a 2.5 general average and a 3.0 average in psychology; (5) show satisfactory performance on the aptitude test and the advanced test in psychology, which are parts of the Graduate Record Examination.

Program of Study

The Master of Arts in Psychology requires a minimum of 24 units of approved graduate work in the major field, including the completion and acceptance by the Psychology Department Graduate Study Committee of a written thesis, plus six units of approved work for graduate credit from other related areas.

Science and Mathematics Education

The student, in consultation with an adviser on the staff of the Psychology Department, shall develop a program of studies which will be submitted to the Graduate Study Committee of the Department of Psychology for approval.

Course requirements for the M.A. in Psychology:

	Units	Totals
Psychology 500 Advanced General Psychology.....	3	
Psychology 510 Advanced Experimental Design.....	3	
Psychology 520 Seminar: Experimental Psychology.....	3	
Psychology 521 Seminar: Personality and Social Psychology..	3	
Psychology 598 Thesis.....	3-6	15-18
Related courses outside psychology.....	6	6
Elective courses in psychology.....	6-9	6-9
Total units for M.A. in psychology.....		30

Students will be required to pass a comprehensive examination in psychology in addition to satisfactory performance in the above courses.

For further information, consult the Department of Psychology.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF SCIENCE AND MATHEMATICS EDUCATION

Professors: Lay, Turner (Chairman)

Associate Professors: Fletcher, R. Lepper

Assistant Professors: Bachman, Williams, Woyski

Lecturers: Allan, Streitberger, Waian

The Department of Science and Mathematics Education offers three programs in the general science area: Earth Science Program, Nature Interpretation and Conservation Program; and the Science and Mathematics Education Program. Degrees and curricula offerings in each area are described below.

PROGRAM IN EARTH SCIENCES

BACHELOR OF ARTS IN EARTH SCIENCE

This program is designed to provide a broad foundation in the earth sciences to prepare students for (1) graduate work in one of the earth sciences, (2) teaching earth science in secondary and elementary schools, (3) employment in government and industry, and (4) other major fields supported by an earth science minor.

To qualify for the bachelor of arts in earth science, students must have a C average in all courses required for the major including those in related fields. No credit will be allowed toward the major for earth science courses passed with a grade of D. A proficiency in one modern foreign language (German, Russian, French, others by petition) is required. This requirement is normally met by completing one semester of readings in scientific foreign language (303) with a grade of C or better. Alternatives may be substituted by petition. Proficiency in English composition is required. This requirement is normally met by passing an upper division course in composition; the department may waive the requirement for students who consistently submit written work of superior quality.

Minimum Course Requirements for the Earth Science Major

Of the 124 units required for graduation, 36 units are in earth science, 45 units in related fields, 35 units in general education courses which are not included among the related fields, and eight units are undesignated.

The upper division units in earth science, Studies in Geoscience, are offered in four blocks which unify the major concepts of the geosciences. Each block consists of problems of increasing complexity designed to explore a wide variety of ideas and techniques. Each student may choose his own sequence of topics as he progresses through a block, and may progress at his individual rate. Although each student is required to take all the blocks, he is free to develop his special interests within the framework provided.

Courses in Earth Science

Lower Division

	Units
101 Physical Geology	4
102 Historical Geology	4
200 General Astronomy	4
Total	12

Upper Division

301 Studies in Geoscience	6
302 Studies in Geoscience	6
401 Studies in Geoscience	6
402 Studies in Geoscience	6
Total	24
Total	36

Courses in Related Fields

Mathematics 150A,B Anal. Geom. and Calculus	8
Chemistry 101A,B General Chemistry	10
Physics 221A,B and 222A,B Fundamental Physics	10
Biology 101 Principles of Biology	5
Geography 312 Geomorphology	3
Electives, chosen from related fields in consultation with major adviser	9
Total	45
General Education courses, not including those in related fields	35
Electives, undesignated	8
Total	124

RECOMMENDED PROGRAM FOR A MAJOR IN EARTH SCIENCE

High School Preparation

Mathematics—4 years, including trigonometry

Chemistry and/or Physics

Modern Foreign Language—3 years (German, Russian, or French preferred)

Alternate courses if high school preparation is deficient:

Trigonometry (junior college)

Chemistry 100 (3 units)

German 101 and 102 or Russian 101 and 102 (10 units)

Science and Mathematics Education

<i>Freshman I</i>	<i>Units</i>
English 101 Lit. & Comp.	3
Math 150A An. Geo. & Calc.	4
Chem 101A General Chem.	5
Earth Sci 101 Phys. Geol.	4
P.E.	1
	<hr/>
	17

<i>Sophomore I</i>	
Phys. 221 & 222A Funda.	5
Earth Sci 200 Gen. Astro.	4
Geog 312 Geomorphology	3
Gen. Education course	3
P.E.	0
	<hr/>
	15

<i>Junior I</i>	
Earth Sci 301 Studies in Geoscience	6
Elective in related field	3
Gen. Education courses	6
	<hr/>
	15

<i>Senior I</i>	
Earth Sci 401 Studies in Geoscience	6
Elective in related field	3
General Education course	3
Elective	3
	<hr/>
	15

<i>Freshman II</i>	<i>Units</i>
English 102 Comp. & Lit.	3
Math 150B An. Geo. & Calc.	4
Chem 101B General Chem.	5
Earth Sci 102 Hist. Geol.	4
P.E.	1
	<hr/>
	17

<i>Sophomore II</i>	
Phys. 221 & 222B Funda.	5
Biology 101 Principles	5
Gen. Education course	3
Gen. Education course	3
P.E.	0
	<hr/>
	16

<i>Junior II</i>	
Earth Sci 302 Studies in Geoscience	6
Elective in related field	3
Gen. Education courses	6
	<hr/>
	15

<i>Senior II</i>	
Earth Sci 402 Studies in Geoscience	6
General Education course	3
Elective	3
Elective	3
	<hr/>
	15

MINOR IN EARTH SCIENCE

A minimum of 20 units are required for a minor. These will typically include eight units of lower division earth science and 12 units of Studies in Geoscience. The topics for study shall be selected by the student in consultation with his minor adviser.

EMPHASIS IN NATURE INTERPRETATION AND CONSERVATION

In recognition of the need for education in nature interpretation and conservation the Department of Science and Mathematics Education is developing coursework in these disciplines. Much of the coursework for these areas will take place at the nearby Tucker Wildlife Sanctuary. This sanctuary has been designated as a Center for Research and Nature Interpretation. In addition to research and coursework, the sanctuary will provide a continuing public service to the community through its daily programs in nature interpretation. This service is provided by resident professor-naturalists and student-naturalists in training at the facility. School groups as well as adults are invited to attend the regularly scheduled programs.

Courses Presently Offered

- 460 Applied Conservation (4)
570 Elements of Nature Interpretation (3)

Additional courses leading to departmental certification in Conservation Studies and a possible graduate degree program are in preparation. Students interested in such coursework should contact the Department of Science and Mathematics Education for additional information.

PROGRAM IN SCIENCE AND MATHEMATICS EDUCATION

The Department of Science and Mathematics Education prepares students to teach in the areas of science and mathematics at the elementary and secondary levels, provides guidance for experienced teachers in the study and use of educational practices developed for the teaching of sciences and mathematics and helps teachers develop original ideas in their areas of specialization.

The offerings of this department include basic professional training courses required for teacher certification, advanced coursework in science and mathematics education, and certain academic content offerings designed especially for teacher preparation.

Requirements for teaching majors and minors in science and mathematics are listed under the respective academic departments.

REQUIRED COURSEWORK

The following courses offered by the Department of Science and Mathematics Education are required for teaching credential candidates.

Elementary School Credential Candidates—Any Major

- Math Ed 303A Fund. Concepts of Math.—Arithmetic
Sci Ed 310 Elementary Experimental Science

Secondary School Credential Candidates—Science

- Sci Ed 442 Teaching Science in the Secondary School
Sci Ed 749 Student Teaching in Science—Secondary

Secondary School Credential Candidates—Mathematics

- Math Ed 303A,B Fund. Concepts of Math.—Arithmetic
Math Ed 311 Fund. Concepts of Math.—Algebra
Math Ed 312 Fund. Concepts of Math.—Geometry
Math Ed 442 Teaching Mathematics in the Secondary School
Math Ed 749 Student Teaching in Mathematics—Secondary

MASTER OF ARTS IN SOCIAL SCIENCES

(An Interdepartmental Program)

The master of arts in social sciences allows a student to pursue advanced work in two related fields.* Selection may be made from the following: anthropology, economics, geography, history, political science, psychology, and sociology. The thirty (30) units approved by the graduate adviser, from the department of the student's first field, are to be arranged in one of the following unit blocks:

Two Fields:	First field	_____18 or 15	units
	Second field	_____12 or 15	units
		_____30 30	units

* Consult individual departments about prerequisites.

Sociology

Specific requirements include:

At least 12 units of graduate courses (500 level);

An upper division or graduate level course in research methods and bibliography in one of the social sciences;

Thesis or project (or approved papers prepared for graduate seminars, in lieu of a project)

Oral examination on the thesis or project and on the courses offered for the degree;

Completion of the aptitude test of the Graduate Record Examination;

The Advanced Test in Social Sciences of the Graduate Record Examination may be required.

There is no foreign language requirement, but certain fields may require work in statistics. An undergraduate major in social sciences, or 24 units of upper division courses in social sciences (approved by the adviser) with a GPA of at least 3.0 is required. The graduate adviser will be selected from the first field. In case of the 15-15 pattern, the adviser is chosen from the department in which the thesis or project is written.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF SOCIOLOGY

Professor: Davis (chairman)

Associate Professors: Hagedorn, Jacobson, Palisi, J. R. Smith, Works

Assistant Professors: Copp, Derenne, Franklin, Lackey, McComb, Mend, Poorkaj, Ransford, Tygart

Lecturer: Bell

BACHELOR OF ARTS IN SOCIOLOGY

The major in sociology provides knowledge concerning the structure and functioning of human society. It may serve as preparation for: (1) graduate study in sociology and careers in teaching and research, (2) employment or graduate study in social work, corrections and related careers, or (3) careers in business and industry, various areas of government service, and the study of law. Sociology has applications to a wide range of careers and to participation as a citizen.

Unit Requirements

The required minimum for the major is 42 units, in addition to those taken for the general education requirement, distributed as follows:

Courses in Sociology

Thirty units must be taken in sociology, 24 in upper division courses. Sociology 201 is required, and 3 additional units are acceptable from lower division offerings. The minimum of 24 upper division units must include 331A, 331B, 341, 481, and at least one of the following: 436, 470, 473, 477.

Minimum units 30

Related Courses

Twelve *upper division* units are to be taken in the related fields of anthropology, economics, geography, history, political science, and psychology, to be approved by the major adviser.

Minimum units 12

Minimum total units for the major 42

TEACHING MINOR IN SOCIOLOGY

For teaching credential purposes a minor consists of 21 units in sociology, distributed as follows:

	Credits
201	3
202 or 411 or 413 or 431	3
341 or 451	3
477 or 480 or 481	3
Electives in sociology	9
	<hr/>
	21

Social Welfare

Students seeking employment or graduate study in social work may major in sociology; but satisfactory preparation is also provided by other majors, such as psychology, anthropology, economics, or political science. The best preparation for a welfare position with the B.A. degree, or for graduate study in social work, is a broad background in the social sciences.

MASTER OF ARTS IN SOCIOLOGY

The program for this degree provides advanced study in general sociology. It offers an opportunity to broaden one's knowledge of society, to strengthen skills of sociological analysis, and to do research in depth in an area of particular interest. It may be used as preparation for study toward the doctorate in sociology, for junior college teaching, participation in research, or for a variety of positions in business and industry, corrections, the community, or government.

Prerequisites

Admission to the program requires a minimum of 18 upper division units in sociology, including the following courses or their equivalents:

331A Social Research Methods (design, collecting data, etc.)

331B Social Research Methods (elementary statistics)

341 Social Interaction

481 Sociological Theory

Also required is a GPA of 3.0 (B) for all work in sociology, a 2.5 average for all previous college work, and satisfactory performance on the aptitude test of the Graduate Record Examination. Students with limited grade or course deficiencies may be considered for admission to the program upon attaining a B average in courses approved by the Graduate Coordinator.

Program of Study

	Units
The study plan for the degree must include the following:	
1. Sociology 531 Methods and Measurements in Sociology	3
2. Sociology 581 Analysis of Sociological Theory	3
3. Sociology 598 Thesis	6
4. Any two graduate seminars in sociology (3 units each)	6
5. Upper division or graduate work in sociology	6
6. Upper division or graduate work in related fields	6
	<hr/>
	30

To complete the requirements, the candidate must successfully defend the thesis in an oral examination by a committee, and pass a written comprehensive examination.

Speech

For requirements "5" and "6" above, any adviser-approved 400-level or 300-level course taken as a graduate student may be used. Additional seminars, or Sociology 599, Independent Graduate Research, may be used for requirement "5", but not in lieu of the thesis. Normally the student will register for thesis two different times, for three units each semester.

For further information, consult the Department of Sociology.

Also see "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF SPEECH

Professors: Andersen, Fessenden, Long *, Nelson

Associate Professors: Good, Granell (Chairman), Kaplan, Nichols

Assistant Professors: Booth, Cockerham, Enell, Harris, Keele, Riley, Treon

Lecturer: Young

Course work in the Department of Speech is directed toward five goals: (1) to provide an understanding and appreciation of the importance of the role of oral communication in our society; (2) to provide professional training in such areas as teaching, business, law, and others where the ability to speak well and to communicate effectively is basic; (3) to prepare specialists in public address and in speech pathology and audiology; (4) to provide active intramural and intercollegiate forensic programs; and (5) to correlate school and community clinic experiences with the theory, principle, and history of speech pathology and audiology.

COURSE PROGRAMS

The major in Speech for the Bachelor of Arts degree requires a total of 36 units, 24 of which must be from 300- and 400-level courses.

Course programs are planned (1) to prepare students who seek to fulfill the liberal arts objectives of the college with an emphasis in the field of speech, (2) to prepare students who seek a standard teaching credential and (3) to prepare students who seek a program leading to the Restricted Credential authorizing service as a Speech and Hearing Specialist.

Major in Speech With Emphasis in Public Address

Lower Division Requirements:

A basic course in logic and evidence: Speech 235

The basic course in public speaking: Speech 231

Up to 6 units of electives selected from Speech 138, 202, 204, 211

Upper Division Requirements:

A course in discussion: Speech 324 or 424

A course in phonetics: Speech 341

An advanced course in public speaking: Speech 334

An advanced course in argument: Speech 335

A course in rhetorical history: Speech 434 or 436

Electives in public address, adviser approved, to complete the required 36 units

Major in Speech With Emphasis in Speech Pathology and Audiology

Lower Division Requirements:

The basic course in public speaking: Speech 231

6 units of electives selected from Speech 138, 202, 204, 211 or 235

* College administrative officer

Upper Division Requirements:

- A course in discussion: Speech 324 or 424
- A course in phonetics: Speech 341
- An advanced course in public speaking: Speech 334
- A course in speech science: Speech 340
- A general course in speech correction: Speech 342
- An advanced course in speech pathology: Speech 441
- A course in audiology: Speech 463
- Electives in speech pathology and audiology, adviser approved, to complete the required 36 units

STANDARD TEACHING CREDENTIAL PROGRAMS

General Elementary Credential

Lower Division Requirements:

- A minimum of 9 units to include Speech 202, 231, 235

Upper Division Requirements:

- Speech 301, 324 or 424, 334, 335, 341, 434 or 436 and 6 to 9 units of adviser approved electives

General Secondary Credential

Lower Division Requirements:

- Speech 138, 211 or 311, 231, 235

Upper Division Requirements:

- Speech 324 or 424, 334, 335, 338, 341, 434 or 436, 442 and 6 units of adviser approved electives

The fifth year is required for either of the above credential programs. Speech Education 442 must be taken by the student seeking the secondary teaching credential before he can be approved for student teaching.

For a junior college credential the student follows the program given for the secondary school credential. In addition, the Master of Arts degree in Speech is required.

Program Leading to the Restricted Credential Authorizing

Service as a Speech and Hearing Specialist

- I. Bachelor of Arts Degree—Major in Speech with emphasis in Speech Pathology and Audiology. (See Speech Major section, above)
- II. A fifth year of specialized preparation (full-time pursuit of upper division and/or graduate course work)
- III. Preparation must include a minimum of 65 semester hours of course work and clinical practice as follows:

Human Development and Bases for Speech, Hearing and Language, and Goals of Public Education:		Units
Speech 340—Speech Science		3
Speech 341—Phonetics		3
Speech 403—Speech and Language Development		3
Psych 361—Developmental Psychology (3) <i>or</i> Educ 312—Human Growth and Development (3)		3
Psych 311—Educational Psychology (3) <i>or</i> Educ 311—Psychological Foundations (4)		3-4
Speech 452—Therapeutic Procedures		3

Speech

Disorders of Speech, Hearing and Language Primary Field:

	Units
Speech 342—Survey of Problems in Communication	3
Speech 441—Speech Pathology: Non-Organic	3
Speech 443—Speech Pathology: Organic	3
Speech 451—Diagnostic Methods in Speech and Hearing	3
Speech 463—Audiology	3
Speech 464—Audiometry	3
Speech 465—Speech-Reading and Auditory Training	3
Speech 557—Articulation, Voice, Stuttering, Aphasia, etc. (3) repeated for a total of 9 units	9
	<hr/> 30

Related Areas:

Educ 471—Exceptional Children	3
Educ 452—Principles of Guidance (3) or Psych 321—Physiological Psychology (3) or adviser approved related courses	3
	<hr/> 6

Clinical Practice and Student Teaching in Speech and Hearing:

Speech 458—Clinical Practice	3
Speech 558 (a)—Advanced Clinical Practice	2
Speech 558 (b)—Advanced Clinical Practice	2
Speech 459—Clinical Practice and Student Teaching in Speech Correction and Lip Reading	4
	<hr/> 11

MINOR IN SPEECH

The minor for secondary teaching or junior college teaching is 22 units as follows: Speech 101 (not to be included as credit for minor), 138, 231, 235, 324 or 424, 334, 341 or 403, 434 or 436, and 442.

MASTER OF ARTS IN SPEECH

General Characteristics

This degree, with concentrations in public address or speech pathology and audiology, is a coordinated program of graduate studies to provide incentive for intellectual growth, to contribute to improvement in teaching and professional advancement, and to provide a sound basis for continued graduate study in speech. The student is expected to demonstrate a high degree of intellectual and creative competence, to evaluate critically, and to show mastery of his field of concentration.

Prerequisites

In addition to the college requirements, students admitted to this program must possess at least 24 semester units of upper division studies in speech and adviser-approved background studies supporting the area of emphasis: a minimum of 18 semester units must be in or directly related to the area of emphasis. To advance in the program, students must pass an oral qualification examination and demonstrate their effectiveness in graduate studies in the initial courses taken.

Program of Studies:

The degree study plan will include at least 30 units of adviser-approved graduate studies, 15 units of which must be in 500-level courses. Each program will have at least 15 units in one of the areas of concentration; a core of six units, to include Speech 500 (Introduction to Graduate Study—taken very early in the program), and Speech 597 (Project), Speech 598 (Thesis), or Speech 599 (Independent Research); and six units of adviser-approved supporting courses in related fields. A written comprehensive examination is required of all candidates.

For further information, consult the Department of Speech.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

BUSINESS ADMINISTRATION
AND ECONOMICS

SCHOOL OF BUSINESS ADMINISTRATION AND ECONOMICS

Dean: Jack W. Coleman

Department of Accounting

Professors: Coleman (acting chairman), Hirsch, Wiseman

Assistant Professors: Dennison, Woo

Assistant Professors: Coerman, Frys, Gustafson, Hardman, Lockett, Wassman

Lecturers: Whitney

BUSINESS ADMINISTRATION AND ECONOMICS

Assistant Professors: Cayton, Hirsch, Wassman

Associate Professors: Pickett, Schick, Tuckman

Lecturers: Bell, Chapman

Department of Finance

Assistant Professors: Alfynaryk, Roebuck, Sherans

Department of Management

Professors: Barnes, McCleod, Shaw

Associate Professors: Colgan, McKee, Shaul (chairman), Tuckman

Assistant Professors: Babcock, Baillie, Hall, Hill, Lockwood, Logan, Martin

Wiley

Lecturers: Hough, Kirpalani

Department of Marketing

Professors: Forrest, Roberts (chairman), T. Smith

Associate Professor: Lange

Assistant Professor: Busby

Lecturers: King, Layden, Lundstrom

Department of Quantitative Methods

Associate Professors: Blank, Jones, Stansfield (chairman)

Assistant Professors: Brown, Mitchell, Silver

Lecturers: Colman, Mueller

THE UNDERGRADUATE PROGRAM IN BUSINESS ADMINISTRATION AND ECONOMICS

Through a study of the various theoretical and practical working policies and procedures, the School of Business Administration and Economics affords a basic education for managerial and professional positions in business, government, and education. Although emphasis is given to theory, factual content which is vital in specific vocations such as accounting, economics, finance, marketing, management, and business education is provided to ensure entrance to these vocations in these fields with the expectation that they will advance in and expand their careers either to managerial positions or to staff positions in business, government, economics, education, and marketing and business education.

In our expanding, complex society, the student who obtains a degree in business and economics with breadth of understanding and vision is well prepared for the

SCHOOL OF BUSINESS ADMINISTRATION AND ECONOMICS

Dean: Jack W. Coleman

Department of Accounting

Professors: Coleman (acting chairman), Hirsch, Wiseman

Associate Professors: Dennison, Woo

Assistant Professors: Corman, Frye, Gustafson, Hardman, Lockett, Waxman

Lecturer: Whitney

Department of Economics

Professors: Graves, Klein (chairman), Phillips, Townshend-Zellner

Associate Professors: Kasun, Lafky, Pontney

Assistant Professors: Cayton, Dolp, Harlow, Horton, Lancaster, Michaels, Morkre,

Pickersgill, Schick, Thompson

Lecturers: Bell, Chapman, Young

Department of Finance:

Professor: Tsagris

Associate Professors: Lane (chairman), Nichols

Assistant Professors: Mlynaryk, Roebuck, Sharma

Department of Management

Professors: Barres, McCloud, Shaw

Associate Professors: Colgan, McKee, Shaul (chairman), Trego

Assistant Professors: Babcock, Baillie, Hall, Hill, Lockareff, Loubet, Merritt,
Wiley

Lecturers: Hough, Kirpalini

Department of Marketing:

Professors: Forrest, Roberts (chairman), T. Smith

Associate Professor: Lange

Assistant Professor: Busby

Lecturers: King, Layden, Lundstrom

Department of Quantitative Methods

Associate Professors: Blank, Joun, Rutemiller (chairman)

Assistant Professors: Brown, Mitchell, Sikes

Lecturers: Colman, Mueller

THE UNDERGRADUATE PROGRAM IN BUSINESS ADMINISTRATION AND ECONOMICS

Through a study of the various theoretical and practical business policies and procedures, the School of Business Administration and Economics affords a basic education for managerial and professional positions in business, government, and education. Although emphasis is given to theory, factual content which is essential in specific vocations such as accounting, economics, finance, marketing, management, and business education is provided to enable students to enter apprenticeships in these fields with the expectation that their education should expedite their progress, either to managerial positions or to staff positions as professional accountants, economists, educators, and marketing and business consultants.

In our ever-expanding, complex society, the managers of tomorrow must be men and women with breadth of understanding and vision. Students who concentrate

Business Administration

in a special area are encouraged to elect courses in other divisions of the college, particularly in the areas of the behavioral, social, and political sciences, and foreign languages. It is assumed that the first half of their college work toward a bachelor's degree represents a required basic education in communication, mathematics, a laboratory science, social science, and the humanities. With the broadening of our cultural and business horizons, it is desirable to become increasingly better versed in the language of our neighbors, Spanish, and in such languages as French, German, and Russian. Since the understanding of mathematics is becoming increasingly important in business and the social sciences, students who contemplate enrollment in either business administration or economics are encouraged to take four years of high school mathematics. College algebra, or three years of high school mathematics including a second course in algebra, will be a minimum prerequisite for entrance to the program.

If credits for either or both elementary accounting and principles of economics have not been earned, it will be necessary to enroll in these courses the first semester of the junior year.

Students enrolled in the school and working toward a college degree are subject to the general requirements of the college as to courses and credit hours required for graduation.

BACHELOR OF ARTS DEGREE IN BUSINESS ADMINISTRATION

The degree requirements are as follows:

1. Completion of a minimum of 50 semester credit hours in business administration and economics courses in the School of Business Administration and Economics, of which 35 semester credit hours must be upper division courses.
2. Completion of at least 15 semester credit hours in the School of Business Administration and Economics at the college.
3. Completion of the required core courses in the School of Business Administration and Economics.
4. Completion of 12 semester credit hours of required courses in an area of concentration to be selected by the student.
5. Completion of at least 62 semester credit hours in areas other than business administration and economics.
6. Students must attain at least a 2.0 grade point average (C average) in all college work attempted, in all courses taken in the School of Business Administration and Economics, and in his area of concentration.

CORE: The business administration and economics courses listed below are required of all students majoring in business administration:

Course	Units
Economics 100A-B, or 200 Principles of Economics	5-6
Economics 310 Intermediate Microeconomic Theory <i>or</i>	
Economics 320 Intermediate Macroeconomic Theory †	3
Quantitative Methods 265 Computer Programming and Applications	3
Accounting 201A-B Elementary Accounting	6
Finance 330 Business Finance	3
Management 341 Principles of Management	3
Management 346 Business Law	3
Marketing 351 Principles of Marketing	3
Quantitative Methods 361 Business and Economic Statistics	3

† Students should ascertain departmental requirement.

Quantitative Methods 462	Math Models in Business and Economics*	Units 3
Management 449	Seminar in Business Policies**	3

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AREAS OF CONCENTRATION FOR MAJORS IN BUSINESS ADMINISTRATION

A student in business administration should select an area of concentration by the second semester of the junior year and take the required courses in the area.

Accounting	Units
301A-301B Intermediate Accounting	6
302 Cost Accounting	3

And at least one of the following courses:

308 Federal Income Tax	3
401 Advanced Accounting	3
402 Auditing	3
407 Integrated Data Processing Systems	3

Economics	Units
310 Intermediate Microeconomic Theory	3
320 Intermediate Macroeconomic Theory	3
421 Monetary and Fiscal Policy	3
Management 446 Managerial Economics	3

Finance	Units
324 Money and Banking	3
331 Financial Analysis	3

And at least two of the following courses:

335 Investment Principles and Practices	3
336 Principles and Practices of Real Estate	3
337 Real Estate Finance	3
338 Real Estate Valuation	3
431 Capital and Money Markets	3
433 Problems in Business Finance	3

Management	Units
342 Production Operations Management	3
343 Personnel Management	3
444 Management of Systems	3
446 Managerial Economics	3

Marketing	Units
353 Marketing Administration	3
452 Marketing Research	3
459 Marketing Problems	3

A minimum of one of the following courses:

307 Distribution Costs	3
352 Principles of Retailing	3
354 Principles of Advertising	3
355 Credit and Credit Administration	3
356 Creative Motivation in Marketing	3

* Quantitative Methods majors will take QM 463 in lieu of QM 462; economics majors, QM 362.

** Students taking business economics as their area of concentration will take Econ 410—Government and Business—in lieu of Mgmt 449—Business Policies.

Business Administration

	Units
357 Industrial Purchasing	3
358 Physical Distribution	3
454 Advertising Problems	3
458 International Marketing	3

Quantitative Methods

Quantitative Methods majors are required to take Mathematics 150A, Calculus

461 Advanced Statistics	3
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At least three of the following courses:

364 Computer Logic and Programming	3
446 Computer Programming Theory	3
464 Computer Applications in Industry	3
465 Linear and Non-Linear Programming	3
467 Statistical Quality Control	3
Mktg 452 Marketing Research	3
Econ 440 Advanced Econometrics	3

BUSINESS EDUCATION

Students who wish to major in Business Administration in preparation for a career as a secondary school teacher in business subjects must meet the requirements of the School of Business Administration and Economics and the secondary school teacher education program including the requirements for the proper credential as outlined in the catalog.

The requirements for a major in this area are as follows:

1. The core requirements as set forth for all business administration majors, page 138.
2. Twelve hours of advanced work in one of the six areas of concentration:
 - a. Accounting
 - b. Economics
 - c. Finance
 - d. Management
 - e. Marketing
 - f. Quantitative methods
3. Completion of four to six credit hours of electives which may include secretarial studies* to meet the School of Business minimum requirement of 50 credit hours in business administration and economics courses.
4. A maximum of 12 credit hours in the secretarial field, including those applied as electives, may count toward the degree in business administration and economics.*
5. Completion of at least 62 credit hours in areas other than business administration and economics are required for the degree.

Education courses required for a credential will be detailed by the School of Education.

MASTER OF BUSINESS ADMINISTRATION

Applicants, as well as continuing students should read carefully the college requirements for master's degree programs, page 69.

Note: The School of Business Administration and Economics requires that a student include 6 units of 500-level coursework among the 12 units to be completed before advancement to candidacy.

* The college does not offer work in secretarial training, typewriting, or business machines. Consult the dean of the School of Business Administration and Economics to arrange for transfer of approved courses to satisfy these requirements.

The Programs for the M.B.A. Degree

The School of Business Administration and Economics offers two plans for the M.B.A. degree.

Plan I is a broad integrated program designed primarily for students with an undergraduate degree in a field other than business administration or economics. To insure breadth in the program, the student is not permitted to take more than nine units in any one functional area.

Plan II is an integrated program allowing some concentration in an area of specialization. Under this plan the student is required to complete 12 units in an area of concentration. It is designed primarily for students with baccalaureate degrees in business administration and economics.

The degree is earned by completion of 30 units in courses approved for graduate work with an overall grade-point average of not less than 3.0.

The M.B.A. degree can be achieved via three combinations:

- a. 30 units of coursework; or
- b. 27 units of coursework and an approved project; or
- c. 24 units of coursework and an approved thesis.

The procedural steps for admission to, and completion of, the Master of Business Administration degree follow:

ADMISSION REQUIREMENTS

1. Apply for admission to the college in unclassified graduate status and declare the objective to be an M.B.A. Plan I or an M.B.A. Plan II. If the student specifies the M.B.A. Plan II, he must also specify his area of concentration. This must be accomplished at the Office of Admissions and Records before the dates established in the college calendar.

2. Apply for admission to the M.B.A. program. Please read carefully page 69, and as indicated please secure informal advisement from the Graduate Office of the School of Business Administration and Economics. The informal advisement should occur at least three weeks prior to your first registration, but in any event during the first semester of work.

3. Complete the Admission Test for Graduate Study in Business before or during the first semester of residence.

Candidates for the M.B.A. degree must complete the prescribed coursework, must satisfactorily pass a comprehensive examination and must receive the endorsement of the faculty of the School of Business Administration and Economics.

PLAN I

Prerequisites

Acceptance into the program requires the completion of the following prerequisites or equivalent with a grade-point average of not less than 2.5.

	Units
*Math 120 Finite Mathematics <i>or</i>	
Math 150A Calculus	3
*QM 264 Computer Programming	1
Acctg 300 Accounting Fundamentals	3
Econ 300 Basic Economics	3
Fin 330 Business Finance	3
Mgmt 341 Principles of Management.....	3
Mgmt 346 Business Law	3
Mktg 351 Principles of Marketing.....	3
QM 361 Business and Economic Statistics	3
Total.....	25

* QM 265, Computer Programming and Applications, will satisfy both the mathematics requirement and the computer programming requirement.

Business Administration

CURRICULUM

The coursework required of all candidates (24 units) under this option is as follows:

	Units
Accounting	
Required	
+500 Industrial Accounting	3
501 Seminar in Administrative Accounting.....	3
Electives	
407 Integrated Data Processing Systems	3
502 Seminar in Accounting Theory.....	3
504 Seminar in Contemporary Managerial Accounting Problems	3
Other 400- and 500-level accounting courses	
Economics	
Required	
510 Competition, Monopoly and Public Policy	3
512 Comparative Economics Seminar	3
Electives	
511 Economic Problems and Public Policy.....	3
Other 400- and 500-level economics courses	
Finance	
Required	
532 Seminar in Corporate Financial Management.....	3
Electives	
533 Seminar in Financial Administration.....	3
534 Seminar in Financial Markets.....	3
535 Seminar in Investment Management.....	3
536 Seminar in Risk Management.....	3
Other 400 and 500 level finance courses	
Management	
Required	
544 Seminar in Organization Behavior, Theory, and Administration.....	3
Electives	
541 Seminar in Project Operations Problem Solving.....	3
542 Seminar in Labor Relations.....	3
543 Seminar in Personnel Administration	3
548 Seminar in International Management	3
549 Seminar in Policy Planning and Administration.....	3
Other courses at the 400 level that are approved	
Marketing	
Required	
551 Seminar in Marketing Problems.....	3
Electives	
452 Marketing Research	3
552 Seminar in Pricing and Price Policy.....	3
553 Seminar in Product Planning.....	3
554 Seminar in Promotion	3
555 Seminar in Marketing Research.....	3
556 Seminar in Consumer Behavior.....	3
559 Seminar in Marketing Thought and Concepts.....	3
Other 400- and 500-level marketing courses (except Marketing 459)	

† Accounting majors must substitute another acceptable course for Accounting 500.

Quantitative Methods

	<i>Units</i>
Required	
563 Statistical Decision Theory, <i>or</i>	
560 Operations Research	3
Electives	
446 Computer Programming Theory	3
461 Advanced Statistics	3
464 Computer Applications in Industry	3
465 Linear and Nonlinear Programming	3
561 Seminar in Operations Research	3
565 Seminar on Computers in Industry	3
566 Design of Experiments	3
Other 400- and 500-level courses	

PLAN II**Prerequisites**

Acceptance into the program requires the completion of the following prerequisites or equivalent with a grade-point average of not less than 2.5.

*Math 120 Finite Mathematics <i>or</i>	
Math 150A Calculus	3
*QM 264 Computer Programming	1
Acctg 201AB Accounting Principles	6
Econ 100AB Principles of Economics	6
Fin 330 Business Finance	3
Mgmt 341 Principles of Management	3
Mgmt 346 Business Law	3
Mktg 351 Principles of Marketing	3
QM 361 Business and Economics Statistics	3
Total	31

In addition to the prerequisites listed above, *each student will be held responsible to the department of his choice for the specialized undergraduate background (prerequisites) prescribed for that area of concentration.* The area of concentration shall be selected from accounting, finance, management, marketing, and quantitative methods.

CURRICULUM

The curriculum required of candidates under the M.B.A. Plan II is as follows:

- The required graduate core program in the Plan II M.B.A. shall be 15 to 18 units:

† Acctg 500 Industrial Accounting	3
Fin 532 Seminar in Corporate Financial Management	3
Mgmt 544 Seminar in Organizational Behavior, Theory, and Administration	3
Econ 512 Comparative Economics Seminar <i>or</i>	
Econ 510 Competition, Monopoly, and Public Policy	3
Mktg 551 Seminar in Marketing Problems	3
QM 563 Statistical Decision Theory, <i>or</i>	
QM 560 Operations Research	3

*QM 265, Computer Programming and Applications, will satisfy both the mathematics requirement and the computer programming requirement.

† Accounting majors will make arrangements with the Accounting Department and substitute an acceptable course.

- In addition to the graduate core, each student shall elect an area of concentration of at least 12 units to be approved by an adviser, the department chairman concerned, and the graduate coordinator. Candidates under the M.B.A. Plan II program are required to complete a total of 30 units.

For further information, consult the Graduate Coordinator in the School of Business Administration and Economics.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

BACHELOR OF ARTS DEGREE IN ECONOMICS

The economics major is designed to prepare students for positions in business education, and government, and for graduate work in economics and related disciplines.

Required of all students for the degree:

- Completion of 37 semester credit hours of courses in business administration and economics in the School of Business Administration and Economics, of which 24 semester credit hours must be in upper division courses.
- Completion of at least 15 semester hours in the School of Business Administration and Economics at the college.
- Completion of the major course requirements for economics majors, in the School of Business Administration and Economics. Students in economics are required to take Quantitative Methods 265 or equivalent as prerequisite to Quantitative Methods 361.
- Completion of at least 62 semester credit hours in areas other than business administration and economics.
- Students must attain at least 2.0 grade-point average (C average) in all college work attempted, and in all courses in the School of Business Administration and Economics.

Business administration and economics courses required of all students majoring in economics are listed below:

Lower Division

Course	Units
Econ 200 or 100A-B Principles of Economics.....	5-6
Acctg 201A-B Elementary Accounting	6
QM 265 Computer Programming and Applications.....	3
Total	14-15

Upper Division

Course	
Econ 310 Intermediate Microeconomic Theory.....	3
Econ 320 Intermediate Macroeconomic Theory.....	3
Econ 410 Government and Business.....	3
Econ 420 Money and Banking.....	3
QM 361 Business and Economic Statistics.....	3
QM 362 Introduction to Quantitative Methods in Economics.....	3
Nine hours of electives in Economics or in related fields approved by the student's adviser	9
Total	27

MINOR IN ECONOMICS

A minor in economics may be achieved by taking the following courses:

Economics	Units
200 or 100A-B Principles of Economics	5-6
310 Intermediate Microeconomic Theory	3
320 Intermediate Macroeconomic Theory	3
Electives	9
Total	20-21

MASTER OF ARTS IN ECONOMICS

The master of arts in economics is a part-time, evening (and late-afternoon) degree program, designed especially for candidates who will be employed full or part-time while working for the M.A. degree.

The procedural steps for admission to, and completion of, the Master of Arts in economics degree follow.

Admission Requirements

1. Apply for admission to the college in unclassified graduate status and declare the objective to be a Master of Arts in economics degree. This must be accomplished at the Office of Admissions before the dates established in the college calendar.

2. Apply for admission to the Master of Arts in economics program. Please read carefully page 69, and as indicated secure informal advisement from the Graduate Office of the School of Business Administration and Economics. The informal advisement should occur at least three weeks prior to your first registration, but in any event during the first semester of work. Specific admission requirements include:

- An overall grade-point average in all undergraduate work of not less than 2.7.
- Competency in mathematics through fulfillment of *one* of the following: Courses in college algebra and calculus; completion of California State College, Fullerton courses QM 265 and QM 362 (or equivalent); satisfactory completion of a mathematics proficiency test developed by the Department of Economics, comprising mathematical applications in economics.
- Satisfactory level of performance in a written examination in economics.
- Satisfactory level of performance on the Graduate Record Examination (Verbal and Quantitative), aptitude only.
- Interview.

Prerequisites

Acceptance into the program requires the completion of the following prerequisite courses, or equivalent:

1. *For students without an undergraduate major in economics (a grade-point average of not less than 3.0 in the following prerequisites is required):*

	Units
Principles of economics	6
Intermediate Microeconomic Theory	3
Intermediate Macroeconomic Theory	3
Statistics (analytical)	3
Money and banking	3
Government and business	3
Monetary and fiscal policy	3
Total	24

Economics

2. For students with an undergraduate major in economics: 24 semester units of work in economics or related courses (e.g., statistics), with a minimum grade-point average of 3.0. The 24 units must include the following courses or their equivalent, with a minimum grade of 3.0 in each course: Intermediate Microeconomic Theory, Intermediate Macroeconomic Theory, statistics, (analytic), money and banking.

Program

1. A core of 12 graduate units in economics is required:

	Units
Economics 502, Advanced Microeconomic Analysis.....	3
Economics 503, Advanced Macroeconomic Analysis.....	3
Economics 505, Methodology in Economic Research Seminar.....	3
Economics 506, Seminar in Micro- and Macro-Economic Applications (project required).....	3
Total	12

2. Electives*:

a. Elect one graduate course in economics (other than the required core courses, and outside the quantitative field)	3
b. Elect one upper-division or graduate-level course in quantitative or mathematical economics	3
c. Elect two upper division or graduate level courses in fields <i>other than</i> economics, yet related to economics and approved as part of the student's integrated program	6
d. Elect two upper division or graduate level courses both in economics or both in other related fields, or one in economics and one in other related fields	6
Total	18

For further information, consult the Graduate Coordinator in the School of Business Administration and Economics.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

* If nine or more units are taken in fields outside economics in elective areas c. and d., then three of these units must be at the graduate level.

SCHOOL OF EDUCATION

Dean: Eugene L. McGarry

Professors: Brockmann, Carr, Genshino, Gray, Denna,* Diaz (Art Education),
 Eising,* Ehmman,* Fierman, Gilmore, Hartig, Imhoff, Jones (English Educa-
 tion), Lake, Landon (Music Education), Lay (Mathematics Education), Mc-
 Garry,* McGarry, Schneider (English Education), Turner (Science Education)

Associate Professors: Alexander (Journalism Education), Bennett, Cox (English
 Education), Cosick, Donoghue, Feldman (Foreign Language Education), Fischer
 (Mathematics Education), Good (Speech Education), Gould, Holmes, Kravitz,
 Newton, R. Lepper (Science Education), McCulloch, Nelson, Priebe, Sica,
 Smith

Visiting Professors: Bachman (Mathematics Education), Bates, Gerten, Henry
 (English Education), Lyon (Art Education), McLaren, Moffatt, Posillon,
 Riedel, Simpson, Stark, Williams (Foreign Language Education)

Assistant: Chadwick (Music Education)

Adjuncts: Ferguson, Kane, Streibarger (Science Education)

EDUCATION

Major objectives of students:

1. Degree of Science in Education with concentration in elementary, intermediate,
 and instruction, school administration, school counseling, school education, or
 reading.
2. Service teacher education (elementary school, intermediate school, junior
 high, mentally retarded).
3. Service teacher education.
4. Vocational preparation of administrators and counseling personnel for the
 State schools.
5. Degree for the preparation of reading specialists.
6. Degree in physical education leading to the bachelor of science degree.
7. Completion of the general education requirements in physical education and
 health.
8. Degree of Science in Physical Education.

The School concentrates on the general principles of human learning, human
 behavior, human learning, individual differences, physical science, the school,
 the organization of our culture, the methods and materials employed with
 the teaching, school administration, school counseling, and the various and
 complex problems that confront administrators, teachers, counseling and other
 school workers in educational institutions. In addition to being published,
 materials and attending class sessions for presentations and discussions, many
 of the School's courses require field work in schools and other educational agencies.

PUBLICATIONS AVAILABLE FROM THE SCHOOL OF EDUCATION

1. Degree of Science in Education with concentration in elementary methodology
 and instruction.
2. Degree of Science in Education with concentration in reading.
3. Degree of Science in Education with concentration in school administration.
4. Degree of Science in Education with concentration in school counseling.

Administrative office

SCHOOL OF EDUCATION

Dean: Eugene L. McGarry

Professors: Brockmann, Carr, Coppolino, Croy, Denno,* Dietz (Art Education), Doane,* Ehmman,* Fierman, Gilmore, Hartsig, Imhoff, Jones (English Education), Lake, Landon (Music Education), Lay (Mathematics Education), McComb,* McGarry, Schneider (English Education), Turner (Science Education)

Associate Professors: Alexander (Journalism Education), Bennett, Cox (English Education), Cusick, Donoghue, Feldman (Foreign Language Education), Fletcher (Mathematics Education), Good (Speech Education), Gould, Holmes, Kravitz, Lemmon, R. Lepper (Science Education), McCullough, Nelson, Preble, Sica, Smith

Assistant Professors: Bachman (Mathematics Education), Bates, Gerfen, Henry (Drama Education), Lyon (Art Education), McLaren, Moffett, Powlison, Schmidt, Simpson, Stark, Williams (Science Education), Zimmerman (Foreign Language Education)

Instructor: Chadwick (Music Education)

Lecturers: Ferguson, Kane, Streitberger (Science Education)

The courses, programs, and services of the school are directed toward the following objectives of students:

1. Master of Science in Education with concentration in elementary curriculum and instruction, school administration, school counseling, special education, or reading.
2. Preservice teacher education (elementary school, secondary school, junior college, mentally retarded)
3. In-service teacher education
4. Professional preparation of administrative and counseling personnel for the public schools
5. Program for the preparation of reading specialists
6. Major in physical education leading to the bachelor of science degree
7. The portion of the general education requirements in physical education and health
8. Master of Science in Physical Education

Instruction concentrates on the central principles of human behavior, human development, human learning, individual differences, physical activity, the school as a basic institution of our culture, the methods and materials associated with effective teaching, school administration, school counseling, and the current and persistent problems that confront administrators, teachers, counselors and other professional workers in educational institutions. In addition to using published source materials and attending class sessions for presentations and discussions, many of the school's courses require field work in schools and other educational agencies.

PUBLICATIONS AVAILABLE FROM THE SCHOOL OF EDUCATION

1. Master of Science in Education with concentration in elementary curriculum and instruction.
2. Master of Science in Education with concentration in reading.
3. Master of Science in Education with concentration in school administration.
4. Master of Science in Education with concentration in school counseling.

* College administrative officer.

Education

5. Master of Science in Education with concentration in special education.
6. Admission to teacher education standards, instructions, application.
7. Admission to student teaching standards, instructions, application.
8. Program in elementary school teacher education.
9. Program in secondary school teacher education.
10. Program in junior college teacher education.
11. Program in teaching mentally retarded children.
12. Program in teaching children with speech and hearing handicaps.
13. Program in school administration and supervision.
14. Program in pupil personnel services.
15. Program for specialists in reading.
16. Program for Administrator Internship Program.

PRESERVICE TEACHER EDUCATION

ADMISSION TO TEACHER EDUCATION

To become a candidate for a teaching credential the student must be enrolled, in good standing, and must be admitted to "teacher education" in the Office of Admission to Teacher Education of the School of Education. Application for admission to teacher education should be filed during the first semester of the junior year or the first semester of attendance at the college, if the student enters with advanced standing.

Admission to teacher education is required of each student before he files the application for student teaching.†

A faculty committee will review information concerning the applicant's intellectual resources and mastery of important concepts in the common curricular areas of higher education, command of fundamental skills of communication (English language usage, written composition, speech, hearing, reading comprehension, handwriting, mathematical skills), scholarship, personality and character, interest in teaching, and health. Data related to these criteria are gathered from transcripts and records from other schools and colleges, group and individual tests, personality inventories, estimates of the potential of the applicant, and from the Student Health Center. Students should normally qualify for admission and be advised of their status during the second semester of the junior year or their first semester of attendance if they enter with advanced standing with degrees from accredited colleges.

Students who show weaknesses in any of the fundamental skills of communication are advised of their standing. If there are weaknesses in only one or two of the areas noted above, the student will be advised of refresher courses and given a specified time to meet the standard.

If the applicant has serious deficiencies in communication skills or does not meet the standards of mastery in the common curricular areas, personality and character, scholarship, interest in teaching, or health, the faculty committee will deny admission to teacher education.

The student must arrange to take the required battery of group and individual tests and inventories necessary to provide information needed by the faculty committee. The tests of breadth of understanding, reading, English usage, number skills, composition, handwriting, and personality are given by the School of Education for admission to teacher education; consult the Office of Admission to Teacher Education of the School of Education for dates.

The student who comes to CSCF to work toward a credential for teaching in a secondary school and who already has a bachelor's degree must, before he is ad-

† Exceptions will be made in the case of new transfer students.

mitted to teacher education, consult with an adviser in the major and must submit a statement, signed by the adviser, which indicates the following:

1. That the student's undergraduate preparation in his major is considered to be adequate for the credential sought, or
2. Specific courses which the student must complete to have a major adequate for the credential sought, and which he must complete before he will be admitted to student teaching. These may be in addition to the minimum of the six upper division or graduate units required in the major in the postgraduate year, or may, in part or in whole, satisfy this six unit minimum requirement.

Full details on standards and procedures for admission to teacher education are described in "Instructions and Standards for Admission to Teacher Education," which is available from the Office of Admission to Teacher Education School of Education.

STATUTORY REQUIREMENTS FOR CREDENTIALS FOR TEACHING

The curricular requirements for credentials for teaching in California elementary schools, secondary schools and junior colleges are included in the curricula descriptions. Upon the completion of the requirements, the student will submit an application for a credential to the State Department of Education in Sacramento. On these applications the student is asked about his citizenship status, his professional conduct, and he is asked to sign an oath of allegiance. He must also submit a health examination form signed by a qualified physician, two fingerprint-identification cards and the legal fee, which is currently \$20. The forms are available in the Credentials Office of the college.

PERSONNEL SERVICES FOR TEACHER EDUCATION STUDENTS

Advisement is available to any student seeking a public school credential and a bachelor of arts degree. During registration, the student should consult an adviser in the department in which he expects to major and an adviser in the School of Education who will help him select courses and build his program. A student from another institution should bring transcripts of previous work and a tentative selection of courses. Transferred education courses must be of upper division level and taken within the past 15 years to be applicable to upper division credential requirements.

TEACHER EDUCATION CURRICULA

California State College, Fullerton is accredited by the California State Board of Education for programs leading to the following credentials:

1. Standard teaching credential with specialization in elementary school teaching
2. Standard teaching credential with specialization in secondary school teaching
3. Standard teaching credential with specialization in junior college teaching
4. Standard teaching credential with specialization, in lieu of minor, in the teaching of exceptional children in the area of mentally retarded children.
5. Standard teaching credential with specialization, in lieu of minor, in the teaching of exceptional children in the area of speech and hearing handicapped children
6. Restricted teaching credential to teach the trainable mentally retarded.
7. Restricted teaching credential to teach the educable mentally retarded.
8. Standard designated services credential with a specialization in pupil personnel services.
9. Standard supervision credential.

The School of Education has administrative responsibility for teacher education. All curricula provide for completing the requirements for graduation with the bachelor of arts degree at the end of the usual four collegiate years and an addi-

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tional year of work to satisfy requirements for a teaching credential. Preparation for teaching in a junior college requires the master's degree. Details of the programs are provided in special brochures available from the School of Education or the Credentials Office. Information about the professional services authorized by the above credentials will be provided by professional advisers or the Credentials Office.

Curriculum in Elementary School Teacher Education *

The program leading to the recommendation for the standard teaching¹ credential with specialization in elementary school teaching includes the following:

1. A bachelor's degree from an approved institution.
2. A fifth year of college or university postgraduate education taken at the upper division or graduate level. (If the student does not complete all requirements, the credential may be awarded on the basis of partial fulfillment at the end of four or more years of work if he has a bachelor's degree from an approved institution and has completed the student teaching requirement.)
3. A minimum of 45 semester hours in five of the following six areas: (1) social sciences, (2) natural sciences, (3) humanities (excluding foreign languages), (4) fine arts, (5) mathematics, and (6) foreign languages. The humanities requirement must include a year of English and a course in advanced composition. (To prepare himself to meet professional responsibilities, an elementary school teacher education candidate should include in his program Art 100, Music 101, PE 123, PE 149, and Speech 101 or Speech 231.) These 45 semester hours of coursework for the credential can be met through the college general education requirements for the bachelor's degree with the proper selection of courses. (Not more than six hours of coursework taken to satisfy these requirements shall apply toward the fulfillment of the requirements for either a major or a minor.)
4. Three semester hours of coursework in the theory of the structure, arithmetic and algebra, or the real number system or three semester hours of coursework in calculus. (Math Ed 303A meets this requirement.)
5. One of the following:
 - a. A major consisting of at least 24 semester hours of upper division or graduate level courses in an academic subject matter area commonly taught in the public elementary schools. These majors are currently available for this specialization at the college: anthropology, art, biological science, chemistry, communications with a journalism emphasis, comparative literature, drama, economics, English, French, geography, German, history, linguistics, mathematics, music, philosophy, physics, political science, psychology, sociology, Spanish, speech. (Note: the specifications above are state minima, and do not necessarily satisfy requirements for a major for graduation from the college.)
 - b. A major and a minor, each of which is in a subject matter area commonly taught in the public elementary schools, and one of which is in an academic subject matter area. The academic major shall consist of at least 24 semester hours of upper division or graduate coursework. If the major is not an academic one, it shall consist of 28 semester hours of upper division or graduate coursework. (With a nonacademic major, i.e., business administration or physical education, only the major and minor subjects may be taught in kindergarten and grades 1 through 9.) This minor shall consist of a minimum of 20 semester hours of coursework. When the major is in an

* Regulations for the credential are subject to change by the State Board of Education; any curricular changes will be available in later college publications.

academic subject matter area specialized preparation in such areas as mentally retarded or speech and hearing handicapped may be substituted.

- c. Two minors in subject matter areas commonly taught in the public elementary schools and a major, other than education and educational methodology, not commonly taught therein. If the major is not in an academic subject matter area, each minor shall be in an academic subject matter area. If the major is in an academic subject matter area, one of the minors shall be in an academic subject matter area. These minors shall consist of a minimum of twelve semester hours course work. Specialized preparation in such areas as mentally retarded or speech and hearing handicapped may be substituted for one of the minors.
6. Courses selected from the following ones offered by academic departments as part of the basic preparation for elementary teachers. A minimum of three courses, selected with the approval of a professional adviser, must be completed before student teaching.
 - Art 380 Art and Child Development (3 units)
 - English 433 Children's Literature (3 units)
 - Math Educ 303B Fundamental Concepts of Mathematics (3 units)
 - Music 333 Music and Child Development (3 units)
 - PE 333 Physical Education and Human Development (3 units)
 - Sci Educ 310 Elementary Experimental Science (3 units)
7. Professional education requirements which are currently met by the following program:
 - Educ 311 Psychological Foundations of Education (4 units)
 - Educ 329 Fieldwork in Methods of Teaching in Elementary Schools (1 unit)
 - Educ 331 Elementary School Principles, Curricula, and Methods (7 units)
 - Educ 339 or 739 Student Teaching in the Elementary School (8 units)
 - Educ 401 Sociological, Historical, and Philosophical Foundations of Education (4 units)

Note: Admission to the college does not include admission to the elementary teacher education program. Procedures for *admission to teacher education* are outlined on page 150. It is the responsibility of each student to file an application for *admission to teacher education* in his junior year and to complete the requirements for *admission to teacher education* before enrolling in Education 329 and Education 331.

Admission to teacher education does not include *admission to student teaching*. Each student is responsible for meeting the requirements and following the procedures for *admission to student teaching* given on page 160.

Composite Lower Division, Upper Division, and Fifth Year Work

A student seeking recommendation for the standard teaching credential with specialization in elementary school teaching after five years of preservice teacher education should complete—

In the lower and upper division:

- a. Coursework listed in 3, 4, and 5 above.
- b. A minimum of three courses from item 6 above. These courses are to be selected in consultation with and with the approval of his professional adviser.
- c. Courses in professional education
 - Junior year, Education 311 (4)
 - Senior year, second semester, Education 329 (1) and Education 331 (7)
- d. Additional courses selected in consultation with his professional adviser.

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In the fifth year:

- a. Courses in professional education
First semester, Education 739 (8)
Second semester, Education 401 (4)
- b. Additional courses from item 6 above as needed and other courses selected in consultation with his professional adviser.

(The applicant for the standard teaching credential with specialization in elementary school teaching must complete 30 units of upper division and/or graduate work after he has completed all requirements for the bachelor's degree.)

A student seeking the standard teaching credential with specialization in elementary school teaching on partial fulfillment of requirements should complete—

In the lower and upper division:

- a. Coursework listed in 3, 4, and 5 above.
- b. A minimum of three courses from item 6 above. These courses are to be selected in consultation with and with the approval of his professional adviser.
- c. Courses in professional education
Junior year, Education 311 (4)
Senior year, first semester, Education 329 (1) and Education 331 (7)
Senior year, second semester, Education 339 (8)
- d. Additional courses selected in consultation with his professional adviser

In the fifth year (to be completed during the first seven years of teaching):

- a. Courses in professional education
Education 401 (4)
- b. Additional courses from item 6 above as needed and other courses selected in consultation with his professional adviser.

(The applicant for the standard teaching credential with specialization in elementary school teaching must complete 30 units of upper division and/or graduate work after he has completed all requirements for the bachelor's degree.)

Curriculum in Junior College Teacher Education

The program requirements leading to the college-recommended standard teaching credential with a specialization in junior college teaching are:

1. A master's or higher degree from CSCF or from an accredited institution.
2. Preparation in subject matter areas commonly taught in public junior colleges in either of the following:
 - a. An academic major in a single subject commonly taught in public junior college. (The subject in which a master's degree has been granted constitutes a major in that subject for these purposes.)
 - b. If the major is nonacademic (the candidate holds a master's degree in a subject such as business administration or physical education), the candidate must have an academic minor of a minimum of 20 semester hours in a single subject commonly taught in the public junior college. Twelve of the units in the minor must be of upper division or graduate level.
3. Professional education requirements in CSCF recommended program:

	Units
Educ 744 Principles of Junior College Teaching.....	3
Educ 799 Junior College Student Teaching and Seminar.....	4

Admission to Junior College Teacher Education Program

Admission to the college does not constitute admission to junior college teacher education.

The candidate must:

Have a master's or higher degree from a fully accredited institution in a field in which the college offers a major

or

have classified graduate status (master's degree candidacy) at CSCF and possess a baccalaureate degree.

Admission to junior college teacher education follows in general the procedure described on page 150. For exact procedures see Credentials Office.

The student is responsible for filing his application for admission as early as possible and is also responsible for admission to teacher education.

Application for junior college student teaching and seminar is not included in admission to the program. The student is responsible for following the procedures listed on page 160 under "Application for Student Teaching."

The courses in professional education listed above will be taken in sequence. The student must have postgraduate standing before he enrolls in these courses. Student teaching may be taken in either the last semester in which the master's degree will be completed or after the degree has been granted.

N.B.: The above is a description of the program leading to the recommendation of the college for the credential. This program includes student teaching and work in professional education not required by the state. The college program is designed to meet the job placement needs of candidates for positions in junior colleges.

Curriculum in Preparation of Teachers of the Mentally Retarded

Students preparing for the regular Mental Retardation Credentials (this qualifies the teacher to work with either educable or trainable mentally retarded children) must complete the curriculum in either elementary or secondary school teacher education as described on pages 152 and 158. When the major is in an academic area commonly taught in the elementary or secondary schools (as appropriate), the 22 units of specialized preparation described below (not including student teaching) may be substituted for the minor. On successful completion of the program the student will be recommended for the standard teaching credential with specialization in elementary or secondary teaching with specialized preparation to serve as a teacher of exceptional children, area of the mentally retarded. Upon receipt of this credential, the student will be authorized to teach in special classes for the mentally retarded as well as in regular classes at the appropriate level.

Students desiring to prepare as teachers of the mentally retarded should proceed as follows:

1. Apply for admission to teacher education as described on page 150.
2. File the "Application to Enter the Program for Specialization in the Teaching of Mentally Retarded Pupils" at the same time as application is made to be admitted to teacher education. (Application forms are available from the School of Education.)
3. Arrange for a personal interview with a faculty member involved in the program. This faculty member will advise the student about the appropriate sequence of courses.
4. Upon completion of the necessary prerequisite courses, apply for admission to student teaching as described on page 160. Students in this specialized

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program will have their student teaching assignment divided between regular classes and special classes.

Students seeking recommendations for this special credential to teach the mentally retarded should complete the courses listed below in lieu of the minor required for the Standard Teaching Credential.

	<i>Units</i>
Educ 471 Exceptional Children	3
Educ 473 Mental Retardation and Brain Injury	3
Educ 474 Curriculum and Methods for Teaching the Mentally Retarded	3
Educ 475 Observation and Individual Instruction with the Mentally Retarded	3
Educ 779 Student Teaching with Mentally Retarded Pupils	4
Educ 452 Principles of Guidance	3
Speech 403 Speech Development or Educ 470 Language and Communication Problems of Exceptional Children	3

Electives from courses related to teaching the mentally retarded (4 units);
electives must be approved by the adviser

Total number of units in special education not
including student teaching..... 22

Requirements for a Restricted Credential to Teach the Educable Mentally Retarded

Upon completion of the requirements for this credential, an individual is qualified for service at all grade levels with service restricted to teaching the mentally retarded. Students seeking this credential must:

1. Obtain the Baccalaureate Degree.
2. Complete a fifth year of college work.
3. Complete 27 hours of course work in special education and related fields.
4. Complete student teaching with educable mentally retarded children.
5. Proceed as indicated for teachers of the mentally retarded (see page 155).

Specialized course work for this credential is as follows:

	<i>Units</i>
Educ 312 Human Growth and Development	3
Educ 471 Exceptional Children	3
Educ 473 Mental Retardation Educational Development	3
Educ 474 Curriculum and Methods for Teaching the Mentally Retarded	3

Recommended Sequence of Courses in Professional Education for Students Preparing as Teachers of the Mentally Retarded

	Elementary	Secondary
Junior year, first semester.....	Educ 311 (4)	Educ 311 (4)
Junior year, second semester.....	Educ 471 (3)	Educ 471 (3) Educ 340 (3)
Senior year, first semester.....	Educ 331 (8) Educ 473 (3)	Educ 442 (3) Educ 473 (3)
Senior year, second semester.....	Educ 474 (3)	Educ 474 (3) Educ 401 (4)

	Elementary	Secondary
Fifth year, first semester	Educ 475 (3) Speech 403 (3) Electives in special education (4) Educ 401 (4)	Educ 475 (3) Speech 403 (3) Electives in special education (4)
Fifth year, second semester	Educ 779 (4) Educ 739 (4) Educ 452 (3)	Educ 779 (4) Educ 749 (2) Educ 452 (3)

**Requirements for a Restricted Credential to Teach the
Trainable Mentally Retarded**

Successful completion of this program qualifies the student for a credential restricted to the teaching of the trainable mentally retarded. A fifth year of study is not required; courses may be completed either as an undergraduate or a graduate student. The student does not need to complete requirements for the Standard Elementary or Standard Secondary Teaching Credential.

In addition to the completion of the requirements for the baccalaureate degree at California State College, Fullerton or other accredited institutions, the student must follow Plan I or Plan II listed below.

**Recommended Sequence of Courses in Professional Education for Students
Preparing as Teachers of the Trainable Mentally Retarded**

Plan I: Recommended for students selecting program in the junior year
(credential will be issued with bachelor's degree upon completion of program).
Major: Recommend Psychology, Sociology, or Speech, but others are acceptable.

Junior year, first semester	Educ 311 (4)
Junior year, second semester	Educ 471 (3)
Senior year, first semester	Educ 473 (3) Educ 479 (6)
Senior year, second semester	Speech 403 (3) Educ 779 (4)

Plan II: For Graduate Students

	Units
Educ 311 Psychological Foundations of Education	4
Educ 471 Exceptional Children (optional)	3
Educ 473 Mental Retardation and Brain Injury	3
Speech 403 Speech Development (optional)	3
Educ 479 Seminar and Practicum in Education of the TMR	6
Educ 779 Student Teaching with the Mentally Retarded	4

Curriculum in Preparation of Reading and Remedial Reading Specialists

Teachers who wish to enter the program for the preparation of specialists in reading and remedial reading, including both primary and secondary school levels, may enroll in the following 18-unit specialty:

Sequence of Courses in Reading

	Units
Educ 506 Curriculum and Research: Reading	3
Educ 516 Etiology of Reading Difficulties	3
Educ 581 Analysis of Reading Difficulties	3

Educ 584	Linguistics and Reading	Units 3
or		
Educ 585	Word Perception Skills in Reading	3
Educ 583A	Remedial Reading: Casework	3
Educ 583B	Remedial Reading: Casework	3

Completion of the reading sequence will entitle the student to a statement of completion of the reading specialty.

Curriculum in Secondary School Teacher Education *

Credential requirements and the program leading to the recommendation for the standard teaching credential with specialization in secondary school teaching includes the following:

1. A bachelor's degree from an approved institution.
2. A fifth year of college or university postgraduate education taken at the upper division or graduate level. (The postgraduate year is defined by California State College, Fullerton as 30 semester units of upper division or graduate level coursework completed after the bachelor's degree.)
3. Forty-five semester hours of coursework, including the English and the competency described below, and including *four* of the following six areas: (1) humanities (excluding foreign languages), (2) social sciences, (3) natural sciences, (4) mathematics requiring as a prerequisite an understanding and knowledge of high school algebra and geometry, (5) fine arts, and (6) foreign languages. The humanities requirement must include a year of English, and in addition, the applicant for the credential shall demonstrate competence in composition either by passing a course in advanced composition or by passing an examination in lieu thereof.

(NOTE: This 45 semester hours of coursework for the credential can be met through the college general education requirement for the bachelor's degree with proper selection of courses. Not more than six hours of coursework taken to satisfy these requirements shall apply toward the major or minor for the credential.)

4. Preparation in subject matter areas commonly taught in the public secondary schools for the purpose of *credential* requirements for majors and minors.

a. One of the following:

Option 1. A major in an academic subject matter area commonly taught in the public secondary schools.

Option 2. A major and a minor, each of which is in a subject matter area commonly taught in the public high schools, and one of which is in an academic subject matter area.

- b. Major requirements for the credential must include at least 24 upper division and graduate level units. At least six units in the major must be taken at the graduate level. Six postgraduate units in the minor may be taken in lieu of this requirement for the major. See the *general course numbering code* on page 183 for the description of graduate level courses for the credential. Also see the appropriate sections of this catalog for descriptions of requirements in specific majors. The college will recognize single subject areas as satisfying Option 1 provided the student supplies additional upper division or graduate units in supporting areas structured by the department in which the baccalaureate degree is taken and in consultation with the other departments involved. This option should be considered carefully,

* This is the curriculum for the standard teaching credential with specialization in secondary school teaching. Credential requirements are subject to regulatory changes. Any such changes will be described in later college publications.

since it may not be practical in terms of job placement. Some departments of the college will require that the student must present a minor. Students must consult with academic and professional advisers concerning Option 1.

- c. Minor requirements vary, but must include 20 units in a single subject in this credential program at CSCF. (Note: A minor is not required for graduation from the college but is required for the recommendation of the college for Option 2.)

Each student will complete a major planned with and approved by his major adviser. Majors presently available are: art, biology, business administration, chemistry, communications with journalism emphasis, drama, economics, English, French, geography, German, history, mathematics, music, physical education, physics, political science, Spanish, and speech.

Each student will complete a minor planned with and approved by his professional adviser. Minors presently available are: art, biology chemistry, communications with journalism emphasis, drama, economics, English, French, geography, German, history, mathematics, music, physical education, physics, political science, Spanish and speech. Students may also present specialized preparation to serve as a teacher of exceptional children in the area of the mentally retarded or speech and hearing handicapped in lieu of the minor.

Students majoring in business administration and physical education must have an academic minor with a minimum of 20 units in subjects commonly taught in the public secondary schools. Students with these majors must complete 12 units of upper division or graduate level work in the minor area.

5. Credential requirements in courses for preservice professional education are met in the following program in professional education:

Courses in Professional Education

	Units
Educ 340 Principles and Curricula of Secondary Education.....	3
Educ 311 Psychological Foundations of Education.....	4
Educ 401 Sociological, Historical, and Philosophical Foundations of Education.....	4
Educ 442 Teaching (art, English, etc.) in the Secondary Schools (also listed in respective departments).....	3
Educ 449 Field Work in Methods of Teaching in Secondary Schools.....	1
Educ 749 Student Teaching (art, English, etc.) in the Secondary School and Seminar (also listed in respective departments).....	6

Students normally will begin their work in professional education in the junior year, and it is expected that, except for Education 401, the courses above will be taken in the indicated sequence. Students who begin their work in professional education as seniors or as graduate students will follow a somewhat different sequence, and should consult professional advisers when planning their programs. Graduate students without professional education backgrounds may be required to extend their program beyond a single academic year to complete the college secondary school teacher education program. In all cases students are required to take Education 340 the first semester they are enrolled in professional education.

Note: Admission to the college does not include admission to the secondary school teacher education program. See the description on page 150 for the procedures for *admission to teacher education* which does include admission to this credential program. It is the responsibility of each student to file his application for *admission to teacher education* by the end of the semester in which he com-

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pletes Education 340. It is also the responsibility of each student to arrange to complete his requirements for *admission to teacher education* early in his work in professional education. Students must be admitted to teacher education prior to taking Education 442 and Education 449.

Admission to teacher education does not include *admission to student teaching*. See the description of the procedures for *admission to student teaching* on this page. The student must observe the deadline and must meet other requirements for *admission to student teaching*.

Curriculum in Preparation of Teachers of Speech and Hearing Handicapped

Details of this teacher education program are found on page 131. The program is administered by the Speech Department in consultation with the School of Education.

Program Leading to the California Credential—Speech and Hearing Specialist

Students wishing to pursue the major in Speech and Hearing and to complete a fifth year for the "Restricted Teaching Credential for Services as a Speech and Hearing Specialist" (1967) should follow the major for Speech for the B.A. degree with emphasis in Speech Pathology and Audiology to be followed by a fifth year of adviser-approved specialized preparation.

Required in the undergraduate and graduate years will be the completion of 65 semester units constituting a well-integrated program that includes 18 semester units in courses that provide fundamental information applicable to the normal development and use of speech, hearing, and language, and their relationship to the educative process, and 42 semester units in courses that provide information about and training in the management of speech, hearing, and language disorders and that provide information supplementary to these fields.

STUDENT TEACHING

Each candidate for the standard teaching credential with specialization in elementary school teaching will do his student teaching in the last semester of his senior year or in his postgraduate year at the college. Each candidate for the standard teaching credential with specialization in secondary school teaching, or for the standard teaching credential with specialization in junior college teaching will do his student teaching during a postgraduate year. Details about student teaching in special education classes are available in the Office of Special Education. Student teaching assignments are made in the elementary and secondary schools of districts geographically accessible to the college. Junior college student teaching assignments are made in nearby junior colleges. Students will be assigned to work under the supervision of carefully selected supervising teachers; a college supervisor makes frequent visits to the student teacher and the supervising teacher. Student teachers meet in a weekly seminar under the leadership of the college supervisor to discuss performance and problems.

Application for Student Teaching

Admission to teacher education as described above is the first step in a cumulative and continuing evaluation of a candidate's fitness to teach. The applicant for admission to student teaching must have a grade-point average of 2.5 in the major, 2.5 in the minor, and 2.5 in professional education. Marks of C, or better, are required in all professional education courses. Applicants for admission to elementary school student teaching must be classified as postgraduate students or be within 15 units of the baccalaureate degree. Applicants for admission to secondary school student teaching or to junior college student teaching must be classified as postgraduate students. All applicants must have completed at least 12 units at California State College, Fullerton. The applicant must present a favorable report on health

status and history. He must present evidence of readiness for student teaching responsibility as testified by the major adviser, the professional adviser, and other college faculty. This evidence relates to scholarship, breadth of understanding, command of the subjects to be taught, fundamental skills of communication, personality and character, interest and potential for teaching, and health.

Competence is required in all subjects and skills for which the candidate is seeking a credential. For the elementary school teacher education student, this includes all subjects and skills commonly taught in the first eight grades of the public schools. Secondary school and junior college teacher education students must meet the requirements for major and minor(s) as specified by the academic divisions.

All instructors of the college are asked to participate in the continuing evaluation of students in relation to those aptitude, personality and character traits which are considered essential to admission to the teaching profession. Dependability in fulfilling assignments, class attendance, ability to get along with people, industry, and emotional stability are representative criteria. In addition to the evaluations by instructors, the applicants may be interviewed by a faculty committee, and attention will be directed to general appearance, dress, vitality, poise, temperament, integrity, and social attitudes.

The application for admission to student teaching is submitted to the coordinator of elementary education or the coordinator of secondary education. The application must be submitted by October 15 or March 1 of the semester preceding the semester in which the student teaching assignment is expected. A faculty committee will gather the information described above and report to the student in time to do planning for the following semester.

Except for graduate students who are in their first semester of study at CSCF, applications will be accepted only from those who have completed all requirements for admission to teacher education.

Full details on standards and procedures are described in "Instructions and Standards for Admission to Student Teaching," available in the Office of Elementary and Secondary Education.

Study Limits of Student Teachers

Students who enroll in Educ 339 or 739, Student Teaching in the Elementary School, will be limited to one additional course for that semester. Students who enroll in Educ 749, Student Teaching in the Secondary School, will be limited to two additional courses for that semester. It is expected that students will not carry out-of-college work responsibilities during the semester of the student teaching assignment.

If a student is under hardship because of these limitations, he may submit a petition to the coordinator of elementary education or to the coordinator of secondary education, as appropriate, requesting permission to carry not more than 13 units, including student teaching. The petition must set forth, in full, the circumstances necessitating the petition.

Permission to Substitute Teaching Experience for Student Teaching

A candidate for a teaching credential who has had two years of successful, regular teaching experience must petition the School of Education, through his professional adviser, for permission to substitute such experience for the student teaching requirement. Substitution of teaching experience for student teaching will be considered only if the applicant:

1. Has been admitted to teacher education at the college.
2. Has submitted an official verification from his former supervisor, principal, or superintendent to the School of Education certifying at least two years of successful, regular teaching experience at the appropriate level. A form for this verification is available in the Office of the School of Education.

OTHER CREDENTIAL PROGRAMS

Administration and Supervision

Students are required to take Educ 503, Foundations of Administrative Leadership, during their first registration in *school administration*, or be accepted in the *internship in school administration*. To continue in the program beyond this course the student must be granted a "letter of admission to the program" and possess an official CSCF program evaluation. Both the internship and the regular credential program are an integrated whole. Students who desire only isolated courses from the program are normally denied admission to such courses. Experienced school administrators, holding a California Administrative credential and exempt from degree requirements may register for any course in the School Administration concentration. Teachers wishing to take courses in school administration directed at helping them to understand administration problems are welcome to take selected courses.

A selected number of teachers, who have completed a minimum of five years teaching experience, will be offered an opportunity to study and to practice school administration as school interns in administration. A candidate must obtain admission to the program and agreement must be reached with a sponsoring school or college district to employ the candidate as a full-time administrator during the school year. All candidates will be given a temporary credential for supervision and administration according to the regulations of the California Administrative Code, Title V, Section 6555. Such candidates should register in two courses:

Educ 561 Organization of School Systems

Educ 563 Principles of School Personnel Administration

Both courses must be completed in the summer session if the student is to do his internship beginning in the fall semester. Applications for admission to the administrator internship program should be sent to Dr. Ernest G. Lake, Chairman, Internship Program in School Administration, by June 1. Careful planning of electives will enable candidates to receive the master of science degree in education with a concentration in school administration upon further study after completing the requirements of the internship.

Pupil Personnel Services

Students must take Education 452, Principles of Guidance, during their first registration in this field. At or near the end of this course, students are normally admitted to the program by a screening process. Students who transfer this course in from other institutions must see an adviser for approval of the next course before continuing in the program. Details of this program are contained in a brochure available from the School of Education.

School Psychometry

Students interested in *school psychometry* and *school psychology* follow the program for school counseling outlined above and then add certain adviser approved courses for the Standard Designated Services credential in School Psychometry and/or School Psychology.

GRADUATE PROGRAMS

MASTER OF SCIENCE IN EDUCATION

General Characteristics

This degree is reserved for professionally qualified graduate students who desire to prepare for or advance their careers in *school counseling*, *school administration*, *special education*, *reading*, or *elementary curriculum and instruction*. Most students

in school counseling and administration can meet credential requirements in either Pupil Personnel Services or Administration (including supervision) while completing the degree.

Prerequisites

Only students who have a teaching credential, successful teaching experience, an approved academic major, acceptable scores on the Graduate Record Examination (area tests or aptitude test), 30 units of adviser-approved study past the baccalaureate degree, a 2.5 GPA on previous academic and related work, and who have been screened into the program on these and professional leadership criteria, may proceed to the last 30 units of study on the program. Credit will be given for previous postbaccalaureate studies when possible. While otherwise well-qualified students may be admitted with limited subject or grade deficiencies, these may often be removed in the first 30 units of postbaccalaureate study.

Programs of Study

Elementary Curriculum and Instruction

Units

The final adviser-approved 30 units (minimum) will include the following:

Core Studies 6

Educ 510 Research Design and Analysis (3)

One of the following:

Educ 402 Comparative Education (3)

Educ 403 History of Education (3)

Educ 406 Educational Sociology (3)

Educ 501 Philosophy of Education (3)

Supporting courses from other disciplines 6

Courses for the concentration in *elementary curriculum and instruction* 18

Two or More of the following:

Educ 530 Curriculum and Research in Elementary Education: Foreign Languages (3)

Educ 531 Curriculum and Research in Elementary Education: Language Arts (3)

Educ 532 Curriculum and Research in Elementary Education: Mathematics (3)

Educ 533 Curriculum and Research in Elementary Education: Science (3)

Educ 534 Curriculum and Research in Elementary Education: Social Studies (3)

Educ 537 Seminar for Elementary Education (3)

One of the following: (3 units)

Educ 597 Graduate Project (1-3)

Educ 598 Thesis (1-3)

Electives selected with approval of the adviser (0-6)

Reading

Units

The final adviser-approved 30 units (minimum) will include the following:

Core Studies 6

Educ 510 Research Design and Analysis (3) *or*

Educ 511 Survey of Educational Research (3)

One of the following:

Educ 402 Comparative Education (3)

Educ 403 History of Education (3)

Educ 406 Educational Sociology (3)

Educ 501 Philosophy of Education (3)

Other Credential Programs

	Units
Supporting courses from other disciplines.....	6
Courses for the concentration in <i>reading</i>	20
Educ 506 Curriculum and Research: Reading (3)	
Educ 516 Etiology of Reading Difficulties (3)	
Educ 581 Analysis of Reading Difficulties (3)	
Educ 582 Analysis of Reading Practices (3)	
Educ 583A Remedial Reading: Casework (3)	
Educ 583B Remedial Reading: Casework (3)	
Educ 597 Graduate Project (1-3) <i>or</i>	
Educ 598 Graduate Thesis (1-3)	

School Administration

Students concentrating in *school administration* will take Educ 503, Foundations for Administrative Leadership, as soon as they identify their interest in this M.S. degree. The final adviser-approved 30 units (minimum) will include the following:

	Units
Core Studies	6
Educ 511 Survey of Educational Research (3) <i>or</i>	
Educ 510 Research Design and Analysis (3)	
<i>(By specific permission of the adviser)</i>	

One of the following:

- Educ 402 Comparative Education (3)
- Educ 403 History of Education (3)
- Educ 406 Educational Sociology (3)
- Educ 501 Philosophy of Education (3)

Supporting courses from other disciplines.....	6
Courses for the concentration in <i>school administration</i>	16

- Educ 505 The Supervision of Curriculum (4)
- Educ 561 Organization of School Systems (3)
- Educ 563 Principles of School Personnel Administration (2)
- Educ 567AB Field Work and Seminar in School Administration (2-2)
- (Project or Thesis)*

One of the following	3
Educ 566 The Elementary School Principal and Supervisor (3)	
Educ 586 The Secondary School Principal and Supervisor (3)	

School Counseling

Students concentrating in *school counseling* will take Educ 452, Principles of Guidance as soon as they identify their interest in this concentration in the M. S. Education degree. At or near the end of this course students are normally admitted to this program by a screening process. Students who transfer this course in from other institutions must see an adviser for approval of the next course before continuing in the program. This second course then becomes the screening course for transfer students.

The final adviser-approved 30 units (minimum) will include the following:

	Units
Core Studies	6
Educ 510 Research Design and Analysis (3) <i>or</i>	
Educ 511 Survey of Educational Research (3)	
One of the following:	
Educ 402 Comparative Education (3)	
Educ 403 History of Education (3)	

Other Credential Programs

Educ 406 Educational Sociology (3)	Units
Educ 501 Philosophy of Education (3)	
Supporting courses from other disciplines.....	6
Courses for the concentration in <i>school counseling</i>	20
Educ 550 Counseling Theories and Processes (3)	
Educ 551 Educational and Career Orientation (3)	
Educ 552 Group Processes in Guidance (3)	
Educ 553 Administration and Organization of Pupil Personnel Services (3)	
Educ 559AB Field Work in Pupil Personnel Services (3-3)	
Educ 597 Project or Educ 598 Thesis (1-1)	

Students interested in *school psychometry and school psychology* follow the program for school counseling outlined above and then add certain adviser approved courses for the Standard Designated Services credential in School Psychometry and/or School Psychology.

Special Education

Students electing to concentrate in *special education* shall, in addition to the prerequisites for admission to the masters program, either (1) possess a California credential authorizing service as a teacher of exceptional children or (2) have completed requirements comparable to those required for the minor for a California credential to teach exceptional children.

Before a candidate can be awarded the Master of Science degree in Education with a concentration in special education, he must complete Educ 510 or Educ 511 and one of Educ 402, Educ 403, Educ 406, or Educ 501. In addition, six semester hours of upper division or 500-level courses must be taken in disciplines other than education; such courses must be approved by the student's adviser and should support the special education concentration. The remaining 18 hours of the student's coursework will be selected from the following list with the approval of the student's adviser and shall include Educ 514; additional courses may be added as needed.

	Units
Educ 503 Foundations for Educational Leadership.....	3
Educ 514 Graduate Seminar: Behavioral Research on Children with Learning Disorders.....	3
Educ 521 Group Processes in the Classroom.....	3
Educ 522 Behavior Disorders in the Classroom.....	3
Educ 523 Learning Disorders in the Classroom.....	3
Educ 552 Group Processes in Guidance.....	3
Educ 555 Individual Diagnosis.....	3
Educ 570 Graduate Clinic in Exceptional Children: Advanced Developmental Psychology.....	2
Educ 571 Graduate Clinic in Exceptional Children:..... Advanced Psychology of Learning.....	2
Educ 572 Psycho-Educational Clinic..... (May be repeated for credit to maximum of 4 units)	2
Educ 581 Analysis of Reading Difficulties.....	3
Educ 597 Graduate Project or	
Educ 598 Thesis.....	1-3

For further information, consult the appropriate Program Office in the School of Education.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

DEPARTMENT OF HEALTH EDUCATION, PHYSICAL EDUCATION, AND RECREATION

Professors: Johnson (Chairman), Omalev, Pastor

Associate Professors: Barrett, Caine, Little, Stovall, Yessis

Assistant Professors: Albrecht, Fardy, Fulton, Hanauer, Scheel, Witchey

Instructors: Matson, Wolfe

Lecturer: Morrison

BACHELOR OF SCIENCE IN PHYSICAL EDUCATION

The department offers a bachelor of science in physical education for students preparing to teach, for those preparing to pursue graduate work in physical education and for those preparing for careers in business, industry and government service.

The major consists of 40 units in health education, physical education and recreation, and six units of electives in upper division in supporting and related fields. Electives are to be approved by the students' departmental adviser. Requirements for the major, including proficiency requirements, prerequisite and lower division courses, are indicated below.

Proficiency Requirements for Major Students

All physical education majors must demonstrate proficiency in the areas of aquatics, rhythms, gymnastics, combatives (men), modern dance (women) and in individual and team sports. Intensive skill courses in these areas should be taken in the lower division. All major students must attain satisfactory proficiency in all categories listed below in any one of the following ways:

1. Complete courses PE 205 Professional Activities

Sports/Dance series (4 courses at two units each)

or

2. Pass proficiency screening test as administered by the course instructor.

Proficiency Series

Aquatics: PE 111, PE 112, PE 113 (select one)

Combatives: PE 132M Combatives (M)

Rhythms: PE 141 or PE 142, PE 143 (W), PE 144 (W)

Gymnastics: PE 131 or PE 151

Individual sports: PE 130, PE 136, PE 137, PE 139, PE 138 or PE 135, PE 150, PE 157

Team sports **: PE 121M and 122M, PE 121W and 122W

MAJOR IN PHYSICAL EDUCATION

Prerequisites

	Units
Chemistry 100* Introductory Chemistry	4
or	
Physics 211A* Elementary Physics	4
or	
Physical Sci 201* Modern Physical Science	4
Biology 101 Elements of Biology	5
Biology 361 Mammalian Anatomy and Physiology	4
Total	13

* Chemistry or Physics or Physical Science as taught at California State College, Fullerton.

** Two semesters of team sport competition on an intercollegiate team may be taken in lieu of team sports requirement (applies to both men and women).

Health Education, Physical Education, and Recreation

Electives: Interdisciplinary

Units

Six units of electives in upper division in supporting or related fields. Electives will be approved by the student's departmental adviser. 6

Total 6

Courses in Health, Physical Education and Recreation

Lower Division (all required)

HE 101	Personal and Community Health	2
HE 102	Prevention and First Aid	2
PE 201	Introduction to Physical Education and Recreation	3
Rec 203	Recreation Programs and Activities	2

Total 9

Upper Division (all required)

PE 324	Theory and Principles of Human Motor Learning	3
PE 325	Case Studies in Human Motor Learning	3
PE 416	Kinesiology (pre/Bio 361)	3
PE 417	Physiology of Exercise (pre/Bio 361)	3
PE 418	Adapted and Corrective Activities (pre/PE 416)	3
HE 419	Environmental Health (pre/HE 101)	3
PE 420	Tests and Measurements in Physical Education	3

Total 21

Upper Division (Any five courses) †

PE 311	Analysis of Aquatics	2
PE 312	Analysis of Combatives	2
PE 313	Analysis of Folk, Square, and Social Dance	2
PE 314	Analysis of Individual and Dual Sports	2
PE 315	Analysis of Modern Dance (W)	2
PE 317A,B	Analysis of Team Sports (W)	4
PE 318	Analysis of Team Sports (M)	2
PE 319	Analysis of Gymnastics and Tumbling	2

Total 10

Total in health, physical education and recreation 40

MINOR IN PHYSICAL EDUCATION

A minor consists of 22 units of work as listed below:

Lower Division: HE 102, PE 201, Rec. 203.

Upper Division: PE 324, PE 416 or PE 417, PE 419 or PE 420 and select any three courses (6 units) from the analysis series: †
PE 311, 312, 313, 314, 315, 317A, 317B, 318, 319.

For information about teaching credentials, consult the Credentials Office or the chairman of the department.

MASTER OF SCIENCE IN PHYSICAL EDUCATION

General Characteristics

The program of studies leading to this degree is designed to prepare carefully selected individuals as master teachers of physical education by providing the

† Students must have completed the proficiency skills test essential to the course as a prerequisite to enrollment in any of the courses listed in the series PE 311-319.

Health Education, Physical Education, and Recreation

technical knowledge and scholarship necessary to interpret to others through modern methods of education: (1) the basic subject matter of physical education; (2) the conduct and application of experimental research pertinent to physical education; (3) the ability to evaluate critically the basic issues affecting physical education; and (4) the application of concepts from related fields having significance for physical education.

The program is also designed to prepare teachers of physical education at the college level as well as to provide the background for continued study in a doctoral program in physical education.

Prerequisites

Prerequisites to the program include:

- (1) completion of 24 approved upper division units in physical education;
- (2) a GPA of 3.0 or better, for all upper division work taken in physical education and a 2.5 GPA for all previous college work. (Contingency provisions: grade point deficiencies in individual courses in physical education may be met by taking 6-12 hours of approved courses at California State College, Fullerton, and earning a 3.0 grade point average in these courses. Such courses, while counted toward the prerequisites for the Master of Science program, may not be used to fulfill the program requirements.)
- (3) completion of the Aptitude Test of the Graduate Record Examination.

Program of Study

The degree program consists of 30 units of graduate study with a GPA of 3.0 or better. Coursework shall include 21 units of 500 level courses of which 10 units shall be in the core studies. Further work includes 12-17 units in physical education electives with eight of these units concentrated in one special area. Six units of work must be in disciplines other than physical education. A thesis and an oral examination at the conclusion of the program are required; a written examination may also be required.

I. Core Studies (minimum 10 units)	Units
PE 510 Research Design in HEPER.....	3
PE 598 Thesis	4

At least one of the following:

PE 515 Seminar in Physical Education.....	3
PE 516 Philosophical Bases of Physical Education.....	3
PE 520 International Physical Education.....	3

II. Electives (12-17 units) in Physical Education, including a minimum of eight units in one of the following concentrations:

(PE 599 Independent Research, 1-3 units, may be applied to any of the concentrations which follow.)

A. Administrative:

PE 532 Curriculum Design in Physical Education.....	3
PE 530 Administration and Supervision of HEPER.....	3
PE 533 Facilities Development and Planning.....	2

B. Scientific:

PE 552 Bio-Kinetics	3
PE 555 Scientific Bases of Training	3
PE 551 Seminar in Exercise Physiology.....	3
PE 545 Seminar in Evaluation of Physical Education.....	3
PE 540 Seminar on Problems in Adapted Physical Education.....	3

Health Education, Physical Education, and Recreation

C. Scientific Sports:

Must include two courses from the Scientific area above:

Units

PE 560 Advanced Study in Performance:

(a) Tennis-Badminton 2

(b) Gymnastics 2

(c) Track and Field 2

III. Supporting courses from other disciplines 6

For further details, consult the Chairman of the Health Education, Physical Education and Recreation Department.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

ENGINEERING

SCHOOL OF ENGINEERING

Dean: Robert G. Valpey

Professors: Cohn, El-Saden (Chairman, Mechanical and Aerospace Engineering), Hunt (Chairman, Electrical Engineering), Valpey

Associate Professor: Kemmerly

Assistant Professors: Chiang (Chairman, Structural Engineering and Engineering Mechanics), Duckworth, Ho, Krishnamurthy, Rizzo

COURSES IN ENGINEERING

The School of Engineering offers programs at the undergraduate and graduate level. The individual courses are described in the section of this catalog on announcement of courses. At the undergraduate level, the school prescribes certain patterns of courses, combined with those of other academic departments and schools of the college, as a program of study leading to the degree of bachelor of science in engineering. At the graduate level, the school prescribes certain courses as a program of 30 semester units leading to the master of science in engineering. In both the undergraduate and graduate programs specific options in

ENGINEERING

BACHELOR OF SCIENCE DEGREE IN ENGINEERING

The heart of the engineering program is a core curriculum somewhat broader than that of the traditional engineering program. This core includes courses in mathematics, physics, chemistry, basic engineering sciences, and the humanities. And provides a firm basis for more specialized knowledge at an advanced level. Beyond the basic core, the student may choose topics in one of the major subject areas listed below. A minimum of 84 hours of study will constitute a major program. During his first 2½ years, all students in engineering will take the same program emphasizing the interrelationship of all engineering subjects to form the broad background required of all modern engineers.

The program of 136 semester units assumes that the entering student brings a high school preparation which includes geometry, trigonometry, two years of algebra, either physics or chemistry, and mechanical drawing. Students deficient in any of these areas will be expected to make them up during the summer before college registration. Placement examinations are required in mathematics and chemistry. The major options in undergraduate engineering are:

Electrical engineering

Mechanical and aerospace engineering

Structural engineering and engineering mechanics

Engineering science

A smooth transition from a junior college into upper-division engineering is assured when the following program, as a minimum, has been completed. Students deficient in any of these areas may look to our summer catalog for offerings that may make up any deficiencies:

	Minimum Number of Semester Units
Analytic Geometry and Calculus	14
Chemistry (for engineering and science majors)	8
Physics (for engineering and science majors)	8
Engineering Graphics	2

SCHOOL OF ENGINEERING

Dean: Robert G. Valpey

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Hunt (Chairman, Electrical Engineering), Valpey

Associate Professor: Kemmerly

Assistant Professors: Chiang (Chairman, Structural Engineering and Engineering
Mechanics), Duckworth, Ho, Krishnamurthy, Rizza

COURSES IN ENGINEERING

The School of Engineering offers programs at the undergraduate and graduate level. The individual courses are described in the section of this catalog on announcement of courses. At the undergraduate level, the school prescribes certain patterns of courses, combined with those of other academic departments and schools of the college, as a program of 136 semester units leading to the bachelor of science in engineering. At the graduate level, the school offers a sequence of courses as a program of 30 semester units leading to the master of science in engineering. In both the undergraduate and graduate programs specific options in major fields are offered.

BACHELOR OF SCIENCE DEGREE IN ENGINEERING

The heart of the engineering program is a core curriculum somewhat broader than that of the traditional engineering program. This core includes courses in mathematics, physics, chemistry, basic engineering sciences, and the humanities, and provides a firm basis for more specialized knowledge at an advanced level. Beyond the basic core, the student may choose topics in one of the major subject options listed below. A minimum of 32 hours of study will constitute a major option. During his first 2½ years, all students in engineering will take the same program emphasizing the interrelationship of all engineering subjects to form the broad background required of all modern engineers.

The program of 136 semester units presumes that the entering student brings a high school preparation which includes geometry, trigonometry, two years of algebra, either physics or chemistry, and mechanical drawing. Students deficient in any of these areas will be expected to make them up during the summer before first registration. Placement examinations are required in mathematics and chemistry. The major options in undergraduate engineering are:

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	<i>Minimum Number of Semester Units</i>
Analytic Geometry and Calculus.....	14
Chemistry (for engineering and science majors).....	8
Physics (for engineering and science majors).....	8
Engineering Graphics	2

Properties of Engineering Materials	2
Computer Programming	2
Electric Circuits	3
Analytical Mechanics	3

MINIMUM REQUIREMENTS FOR THE UNDERGRADUATE DEGREE

Lower Division Science and Mathematics (all required for B.S.)

Math 150A	Analytic Geometry and Calculus	4
Math 150B	Analytic Geometry and Calculus	4
Math 250A	Intermediate Calculus	3
Math 250B	Intermediate Calculus	3
Chem 101A	General Chemistry	5
Chem 105	General Chemistry for Engineers	3
Phys 221A	Fundamental Physics	5
Phys 221B	Fundamental Physics	5
		32

Nonengineering General Education

See current departmental listing of authorized electives	34
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Lower Division, Engineering (all required for B.S.):

Engr 101	Introduction to Engineering	1
Engr 102	Graphical Analysis	2
Engr 201	Mechanics	3
Engr 202	Properties of Engineering Materials	3
Engr 203	Electric Circuits	3
Engr 203L	Electric Circuits Laboratory	1
Engr 205	Digital Computation	2
		15

Upper Division, Engineering (all required for B.S.):

Engr 302	Dynamics	3
Engr 303	Electronics	3
Engr 303L	Electronics Lab	1
Engr 304	Thermodynamics	3
Engr 305	Transport Processes	3
Engr 306A	Unified Laboratory	1
Engr 306B	Unified Laboratory	1
Engr 308	Engineering Analysis	3
Engr 312	Linear Systems Analysis	3
Engr 417	Engineering Economy	2
		23

Upper Division Courses for Option (32 units required for B.S.):

Four options are offered within the bachelor of science in engineering program: electrical engineering, mechanical and aerospace engineering, structural engineering and engineering mechanics, and engineering science. For each option, 32 units are required for the B.S. The following list may not be all-inclusive or restrictive. The selected courses for the option must receive written approval of the appropriate adviser.

Electrical Engineering Option (32 units required for B.S.):		<i>Units</i>
†Engr 309	Networks and Transmission Lines	2
†Engr 310	Electronic Circuits: Discrete and Integrated	3
Engr 311	Field Theory	3
†Engr 315	Electronics and Circuits Laboratory	1
†Engr 360	Electrical Engineering Design Projects Lab	2
†Engr 370	Seminar in Electrical Engineering	1
†Engr 375A,B	Electrical Engineering Lab	2, 2
Engr 402	Elements of Digital Computers	3
Engr 402L	Digital Techniques Laboratory	1
Engr 403	Numerical Analysis	3
Engr 404	Analog Computation	2
Engr 404L	Analog Computation Laboratory	1
Engr 413	Electromechanical Energy Conversion	3
Engr 413L	Electromechanical Energy Conversion Laboratory	1
Engr 416	Feedback Control Systems	3
Engr 419	Electromagnetic Field Theory	3
Engr 423	Engineering Probability and Statistics	3
Engr 434	Direct Energy Conversion	3
Engr 443	Electronic Communication Systems	3
Engr 443L	Electronic Communication Systems Lab	3
Engr 445	Pulse and Digital Circuits	3
Engr 446	Radar Systems	3
Engr 455	Solid State Electronics	3
Engr 499	Independent Study	1-3

Mechanical and Aerospace Engineering Option (32 units required for B.S.):

Engr 301	Strength of Materials	3
Engr 316	Applied Thermodynamics	2
Engr 317	Refrigeration and Air Conditioning	4
Engr 320	Physical Metallurgy	3
Engr 333	Applied Aerodynamics	3
Engr 335	Mechanical Analysis	3
†Engr 361	Mechanical Engineering Design Projects Lab	2
†Engr 371	Seminar in Mechanical/Aerospace Engineering	1
†Engr 376A,B	Mechanical Engineering Lab	2, 2
Engr 403	Numerical Analysis	3
Engr 406	Dynamic Response	3
Engr 406L	Dynamic Response Laboratory	1
Engr 407	Transfer and Rate Processes	3
Engr 410	Space Dynamics	3
Engr 412	Theory of Elasticity	3
Engr 415	Gas Dynamics	3
Engr 416	Feedback Control Systems	3
Engr 421	Mechanical Design	3
Engr 423	Engineering Probability and Statistics	3
Engr 425	Turbomachinery	3
Engr 432	Aerospace Vehicle Structures	3
Engr 433	Aerodynamics	3
Engr 434	Direct Energy Conversion	3
Engr 437	Propulsion	3
Engr 441	Stability and Control of Flight Vehicles	3
Engr 473	Intro to Nuclear Engineering	3
Engr 499	Independent Study	1-3

† Indicates required courses within the option.

Engineering

Structural Engineering and Engineering Mechanics Option (32 units required for B.S.):

	Units
Engr 301 Strength of Materials	3
Engr 323 Structural Analysis	3
Engr 324 Soil Mechanics and Foundations	3
Engr 324L Soil Mechanics and Foundations Lab	1
Engr 326 Structural Design	3
Engr 403 Numerical Analysis	3
Engr 408 Reinforced Concrete Design	3
Engr 409 Intermediate Structural Design	3
Engr 411 Dynamics of Structures	3
Engr 412 Theory of Elasticity	3
Engr 414 Matrix Analysis of Structures	3
Engr 418 Foundation Design	3
Engr 420 Limit Analysis of Structures	3
Engr 427 Indeterminate Structures	3
Engr 430 Design of Steel Structures	3
Engr 432 Aerospace Vehicle Structures	3
Engr 499 Independent Study	1-3

Engineering Science Option (32 units required for B.S.):

The program in engineering science is to be selected by the student and his adviser and submitted for approval to a committee of the School of Engineering (supplemented, if appropriate, by members of the science and mathematics faculty). The courses are to be selected from upper division electives in engineering, physics, chemistry, mathematics, and biology (additional prerequisites for science courses may be required), to meet a special and specific engineering science objective of the student, such as engineering physics, computer science, etc.

DETAIL OUTLINE OF TYPICAL * EIGHT-SEMESTER PROGRAM FOR B.S. IN ENGINEERING (136 Units)

Semester 1 Freshman	Units
PE (any activity)	1
General Education Elective	3
Math 150A Calculus	4
Chem 101A General Chemistry	5
Engr 101 Introduction to Engineering	1
Engr 102 Graphical Analysis	2
	16
Semester 2 Freshman	
Math 150B Calculus	4
Physics 221A Fundamentals of Physics	5
Chem 105 Chemistry (for engineers)	3
Engr 205 Digital Computation	2
General Education Elective	3
	17

* NOTE: This program is merely a guide. The student may lighten his academic load each semester to meet his needs. For example, a 15-unit load would take nine semesters. (Indeed, the national average time to complete a "four-year" engineering curriculum is 4.7 years.)

Semester 3 Sophomore

General Education Electives	6
Math 250A Calculus	3
Physics 221B Fundamental Physics	5
Engr 201 Mechanics	3

17

Semester 4 Sophomore

PE (any activity)	1
General Education Electives	6
Math 250B Calculus	3
Engr 202 Properties of Engineering Materials	3
Engr 203 Electric Circuits	3
Engr 203L Electric Circuits Lab	1

17

Semester 5 Junior

Engr 303 Electronics	3
Engr 303L Electronics Lab	1
Engr 304 Thermodynamics	3
Engr 305 Transport Processes	3
Engr 306A Unified Laboratory	1
Engr 302 Dynamics	3
Engr 308 Engineering Analysis	3

17

Semester 6 Junior

General Education Electives	5
Engr 312 Linear Systems Analysis	3
Engr 306B Unified Laboratory	1
Engineering Option Courses	9

18

Semester 7 Senior

General Education Electives	3
Engr 417 Engineering Economy	2
Engineering Option Courses	12

17

Semester 8 Senior

General Education Electives	6
Engineering Option Courses	11

17

136

NOTE: A student may be required to take the engineering mathematics review course offered in extension. This course is open to all who may feel the need for such a refresher course. No credit.

MASTER OF SCIENCE IN ENGINEERING

Applicants, as well as continuing students, should read carefully the college requirements for master's degree programs, page 69.

The procedural steps for admission to and the completion of the degree "master of science in engineering" are as follows:

Engineering

Admission Procedure

1. Apply for admission to the college in unclassified graduate status and declare the objective to be a master of science in engineering. Proof of a degree from an accredited college or university must be supplied. This must be taken care of at the Office of Admissions before the dates established in the college calendar.
2. Apply for admission to the School of Engineering master of science program. This must be taken care of at the office of the School of Engineering after admission to the college but before registration.

Prerequisites

Admission to the engineering program requires a 2.5 undergraduate grade point average; however, students may be admitted with grade deficiencies. Such deficiencies must be made up by completing 6 to 12 units of adviser-approved courses in addition to those required for the degree, with at least a 3.0 average. A committee of the engineering faculty will evaluate each student's record for specific course deficiencies in the engineering field. Making suitable allowance for actual engineering experience, the committee will require each student, prior to admission to the program, to make up such deficiencies as the committee determines.

NOTE: A student may be required to take the engineering mathematics review course offered in extension. This course is open to all who may feel the need for such a refresher course. No credit.

Advancement to Classified Graduate Status

Achievement of this status requires the following:

1. Meeting the prerequisites of the previous paragraph.
2. Before completing 9 units at CSCF toward a M.S. degree, a student shall fill out an application card for classified status and make an appointment with the adviser at the office of the School of Engineering.
3. Preparing, in consultation with his adviser, an approved graduate study plan.

Advancement to Candidacy

Achievement of this status requires the following:

1. Having been granted classified status in the master of science in engineering program.
2. Having completed 12 units of coursework on his master's degree study plan, including six units of 500-level courses with a GPA of not less than 3.0.
3. Filing an advancement to candidacy card in the Graduate Office.

Graduation

Final achievement of the master of science in engineering requires:

1. Having been admitted to candidacy status.
2. Filing a request for check on completion of requirements in the Graduate Office prior to the appropriate deadline.
3. Having completed 30 units of approved work with an overall GPA of not less than 3.0.
4. Completing satisfactorily a final oral examination.
5. Receiving approval of the faculty of the School of Engineering and the Dean of Graduate Studies.

The Program for the Master of Science in Engineering

Qualifications for the master of science in engineering requires the following:

1. Completion of a minimum of 30 units of approved upper division or graduate-level work including:
 - (a) a minimum of 6 units of approved upper division or graduate mathematics (certain engineering courses may fulfill this requirement).
 - (b) a minimum of 15 units of approved 500 level courses.

2. An overall GPA of 3.0.

A candidate for the master of science in engineering may pursue one of five options currently offered by the School of Engineering:

- Electrical engineering
- Mechanical and aerospace engineering
- Structural engineering and engineering mechanics
- Systems engineering
- Engineering science

A student is normally required to select a minimum of 15 units within these options. These 15 units may be 400-level and 500-level courses. The 400-level courses are listed in the undergraduate program (preceding) and the 500-level courses are listed below:

		<i>Units</i>
Electrical Engineering		
Engr 501A, B	Microwaves	3, 3
Engr 503	Information Theory and Coding	3
Engr 504	Linear Network Synthesis	3
Engr 505	Nonlinear Control Systems	3
Engr 506	Digital Computer Systems	3
Engr 507	Statistical Communication Theory	3
Engr 513	Optimal Control Systems	3
Engr 515A, B	Quantum Electronics	3, 3
Engr 521A, B	Antenna Theory	3, 3
Engr 523	Solid State Devices	3
Engr 553A, B	Plasma Dynamics	3, 3
Engr 555	Electromagnetic Field Theory	3
Engr 557	Sampled-Data Systems	3
Engr 559	Active Network Synthesis	3
Engr 570	Seminar in Electrical Engineering	1-3
Mechanical and Aerospace Engineering		
Engr 508	Intermediate Fluid Mechanics	3
Engr 511	Advanced Dynamics	3
Engr 512	Gyrodynamics	3
Engr 516	Advanced Principles of Heat Transfer	3
Engr 518	Advanced Fluid Mechanics	3
Engr 520	Incompressible Boundary Layer Theory	3
Engr 522	Theory of Hydrodynamic Lubrication	3
Engr 524	Advanced Thermodynamics	3
Engr 525	Compressible Boundary Layer Theory	3
Engr 530	Advanced Strength of Materials	3
Engr 569	Orbital Mechanics	3
Engr 573	Aerospace Guidance Systems	3
Engr 575	Kinetic Theory and Statistical Thermodynamics	3
Structural Engineering and Engineering Mechanics		
Engr 509	Theory of Plates and Shells	3
Engr 510	Numerical and Approx Meth. in Structural Mech.	3
Engr 511	Advanced Dynamics	3
Engr 517	Theory of Inelasticity	3
Engr 518	Advanced Fluid Mechanics	3
Engr 519	Advanced Structural Mechanics	3
Engr 545	Advanced Structural Design	3

Engineering

		Units
Engr 547	Advanced Dynamics of Structures	3
Engr 549	Theory of Elastic Stability	3
Engr 577	Reliability Analysis of Structures	3

Systems Engineering

Engr 403	Computer Methods in Numerical Analysis	3
Engr 404	Analog Computation	2
Engr 404L	Analog Computation Laboratory	1
Engr 416	Feedback Control Systems	3
Engr 423	Engineering Probability and Statistics	3
Engr 581	Linear Systems Engineering	3
Engr 582	Estimation Theory in Systems Engineering	3
Engr 585	Optimization Techniques in Systems Engineering	3
Engr 587	Operational Analysis Techniques in Systems Engineering	3
Engr 591	Analytical Methods in Engineering	1-6
Engr 592	Advanced Engineering Analysis	3

(Up to 9 units in systems engineering may be selected from approved subjects offered in the School of Business Administration and Economics.)

Engineering Science

The program in engineering science is to be selected by the student and his adviser and submitted for approval to a committee of the School of Engineering (supplemented, if appropriate, by members of the science and mathematics faculty). The courses selected are to meet a special and specific engineering science objective of the student, such as engineering physics.

In addition to those courses offered in the specific options, the following three courses apply to any option, though they are not necessarily required.

Engr 597	Project	1-6
Engr 598	Thesis	1-6
Engr 599	Independent Graduate Research	1-3

For further information, consult the School of Engineering.

See also "The Program of Master's Degrees," page 69, and the *Graduate Bulletin*.

GENERAL COURSE NUMBERING CODE

- 100-299 Lower division courses of freshman and sophomore level, but open also to upper division students.
- 300-399 Upper division courses of junior and senior level, which do not give graduate credit unless included on an approved graduate study plan (such as a credential or graduate degree program) for a specific graduate student.
- 400-499 Upper division courses of senior level, which do give graduate credit when included on an approved graduate study plan for a specific graduate student.
- 500-599 Graduate courses organized primarily for graduate students.
- 700-799 Graduate professional courses which are not applicable to graduate degrees.

ANNOUNCEMENT OF COURSES

PREREQUISITES

Students are expected to meet stated prerequisites for all courses. However, in exceptional cases, and at the discretion of the Division in which the course is taught,

INDEPENDENT STUDY

Under the independent study program, the upper division student can pursue topics or problems of special interest beyond the scope of a regular course under the supervision of a faculty adviser. The work is of a research or creative nature, and normally culminates in a paper, project, comprehensive examination, or performance. Before registering, the student must get his topic approved by the professor who will be supervising independent study. The catalog numbers for independent study in departments are 499 and 599. Independent study courses may be repeated. A student wishing to enroll in more than six units of independent study in any one semester must have the approval of his major adviser and of the chairman of the department(s) in which the independent study is to be conducted.

*Note exceptions on page 61.

GENERAL COURSE NUMBERING CODE

- 100-299 Lower division courses of freshman and sophomore level, but open also to upper division students.
- 300-399 Upper division courses of junior and senior level, which do *not* give graduate credit unless included on an approved graduate study plan (such as a credential or graduate degree program) for a specific graduate student.
- 400-499 Upper division courses of junior and senior level which give graduate credit when taken by a graduate student. (Note limitations in specific graduate programs.)
- 500-599 Graduate courses organized primarily for graduate students.*
- 700-799 Graduate professional courses in the postgraduate program, not applicable to graduate degrees.

PREREQUISITES

Students are expected to meet stated prerequisites for all courses. However, in exceptional cases, and at the discretion of the division in which the course is taught, students may be allowed to meet prerequisites by examination.

INDEPENDENT STUDY

Under the independent study program, the upper division student can pursue topics or problems of special interest beyond the scope of a regular course under the supervision of a faculty adviser. The work is of a research or creative nature, and normally culminates in a paper, project, comprehensive examination, or performance. Before registering, the student must get his topic approved by the professor who will be supervising independent study. The catalog numbers for independent study in departments are 499 and 599. Independent study courses may be repeated. A student wishing to enroll in more than six units of independent study in any one semester must have the approval of his major adviser and of the chairman of the department(s) in which the independent study is to be conducted.

* Note exceptions on page 61.

SCHOOL OF LETTERS, ARTS AND SCIENCE

ANTHROPOLOGY

201 Introduction to Physical Anthropology (3)

Man in biological and evolutionary perspective. Methods, findings, concepts, and issues in the study of primates, fossil men, and races.

202 Introduction to Cultural Anthropology (3)

The nature of culture and its significance for man. Uniformities and variations in human cultures. Cultural analyses of major institutional forms such as the family, economy, government, religion and art with an emphasis on preliterate peoples. A consideration of central problems of cultural comparison and interpretation.

203 Introduction to Archaeology (3)

Relationship of archaeology, prehistory, and culture history; field methods and analysis of archaeological data. A survey of world culture history, from Pleistocene beginnings to the threshold of civilization; and introduction to the world's early centers of civilization.

301 World Ethnography (3)

Prerequisite: Anthropology 202 or consent of instructor. A general survey of the peoples of the world and a study of representative cultures with special reference to their situation in the history and geography of the world.

313 Human Genetics (3)

(Same as Biological Science 313.)

321 The American Indian (3)

Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of North American Indians north of Mexico; origins, languages, culture areas, cultural history; the impact of European contacts.

322 Peoples of Mesoamerica (3)

Prerequisite: Anthropology 202 or consent of instructor. General survey of the culture history and ethnology of the Mesoamerican culture-area, with treatment of each of the principal subareas in depth. Analysis of both the native civilizations of Mesoamerica and the present-day ethnological societies, emphasizing sociopolitical organization, economic systems and religious systems.

325 Peoples of South America (3)

Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of Central and South America. Description of selected cultures representative of different cultural areas before and after contacts with Western countries.

328 Peoples of Africa (3)

Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of Africa. Description of selected cultures representative of different cultural areas before and after contacts with Western and Asian countries.

340 Peoples of Asia (3)

Prerequisite: Anthropology 202 or consent of instructor. Survey of culture-areas and societal types of central, southern, and east Asia, with special emphasis

on India and China. Analysis of Asian civilizations and nonliterate societies, emphasizing sociopolitical organization, economic systems, and religious systems.

345 Peoples of the Middle East (3)

Prerequisite: Anthropology 202 or consent of instructor. A cultural survey of the Middle East with descriptions of selected cultures (Arab urban, nomadic, Jewish, Turk, Berber, Kurd).

347 Peoples of the Pacific (3)

Prerequisite: Anthropology 202 or consent of instructor. A survey of the native peoples and cultures of the Pacific Islands, including Australia; the social and cultural patterns of representative cultures of various areas; special ethnological and theoretical problems.

350 Peoples of Europe (3)

Prerequisite: Anthropology 202 or consent of instructor. Representative groups considered in modern and historical perspective, stressing especially rural-urban relationships and the dynamics of change.

360 Contemporary American Culture (3)

Prerequisite: Anthropology 202 or consent of instructor. Application of anthropological methods, categories of analysis, and types of interpretation to American culture. Survey and critique of selected community studies and other kinds of relevant research.

361 Afro-American Culture (3)

Prerequisite: Anthropology 202 or consent of instructor. An introduction to African culture. A survey of African cultural characteristics in the New World, as they relate to contemporary events, including art, ideas, dance and literature.

401 Ethnographic Field Methods (3)

Prerequisites: Anthropology 202 and 6 additional units of anthropology or consent of instructor. Anthropological field research by students on various problems using participant observation techniques.

403 Archaeological Fieldwork (3)

Prerequisites: Anthropology 202 or 203 and consent of instructor. Participation in the excavation of a local archaeological site. Archaeological mapping, photography and recording. Laboratory methods of cataloging, preservation, description and interpretation of archaeological materials. Saturday field sessions. (6 hours field work per week).

406 Descriptive Linguistics (3)

(Same as Linguistics 406.)

410 Language and Culture (3)

Prerequisite: Anthropology 202 or consent of instructor. The study of language as a factor in culture. Introduction to anthropological linguistics. Trends in the study of language and culture. (Same as Linguistics 410)

411 Folklore (3)

Prerequisite: Anthropology 202 or consent of instructor. An introduction to the study of folktales, myths, legends, proverbs, riddles and other forms of the verbal traditions of peoples. Major concepts and theories and research methods in the study of folklore.

Anthropology

413 Ethnological Music (3)

Music, musicmaking, and musicians in various nonliterate societies.

415 Culture and Personality: Psychological Anthropology (3)

Prerequisites: Anthropology 202 and Psychology 331 or 351 or Sociology 341 or consent of instructor. Comparative study of the relationship between the individual and his culture. Child training in nonwestern cultures. Survey of important concepts, studies, and research techniques. Changing viewpoints and new directions in culture-personality studies.

416 The Quest for Self: East and West (3)

(Same as Interdisciplinary Center 403)

420 Primitive Value Systems (3)

Prerequisite: Anthropology 202 or consent of instructor. Study of what properly is considered "common sense" in the everyday life of people living within differing sociocultural environments.

421 Anthropology of Religion (3)

Prerequisite: Anthropology 202 or consent of instructor. Examination of beliefs and practices in the full human variation of religious phenomena, but with an emphasis on primitive religions. The forms, functions, structures, symbolism, and history and evolution of man's religious systems. Analysis of major categories, concepts, and theoretical models used by anthropologists in the study of religion.

422 Jewish and Comparative Mysticism (3)

(Same as Interdisciplinary Center 422.)

423 Comparative Aesthetics and Symbolism (3)

An analysis of the metaphysical and mystical systems underlying the "grammars" of the art, poetry, languages, myths, music, and rituals of various nonliterate and literate peoples and their development into creative experiences.

425 Anthropology of Law and Government (3)

Prerequisite: Anthropology 202 or consent of instructor. Sources of law-government in primitive societies; the cultural background of law; the functions and development of law and government in primitive polities; transitions to and comparisons with classical and modern legal and political systems.

428 Social Anthropology (3)

Prerequisite: Anthropology 202 or consent of instructor. A study of the social organization of preindustrial societies; religious, political and economic institutions; status and value systems; conditions and theories of change.

429 Kinship and Social Organization (3)

Prerequisites: Anthropology 202 and 428 or consent of instructor. Kinship systems in primitive society and their significance in the organization of social life. Theories of kinship, marriage regulations, and kinship role patterns. Analysis of the formal properties of diversely structured kinship systems and techniques of kinship and structural analysis.

430 Economic Anthropology (3)

Prerequisite: Anthropology 202 or consent of instructor. Analysis of anthropological concepts of economy, ecology, and technology; relationship between habitat, economy, and culture. A survey of the different types of economic

systems found throughout the world; outline of the economic development of mankind.

440 Human Evolution (3)

Prerequisite: Anthropology 201. Advanced human evolution; human physiological and related cultural evolution as displayed in the fossil record, adaptations, problems in human evolution.

450 Culture and Education (3)

Prerequisite: Anthropology 202 or Education 301 or consent of instructor. The transmission of values, implicit cultural assumptions, and the patterning of education in cross-cultural perspective, with special attention to American culture and development problems.

453 Culture and Habitat (3)

(Same as Geography 453.)

460 Culture Change (3)

Prerequisite: Anthropology 202 and 301 or consent of instructor. Interrelations between cultural, social and psychological processes in the dynamics of culture growth and change. Impact of western technology on tribal and peasant societies. Anthropological contributions to the planning of directed sociocultural change in selected areas.

470 Philosophical and Behavioral Foundations of Anthropology (3)

Prerequisite: Anthropology 202 and open to lower division students with the consent of the instructor. Consideration of basic assumptions and contexts of anthropological work. The synthesis of ideas and methods into professional skills and careers.

480 History of Anthropology (3)

Prerequisite: At least 12 units of anthropology or consent of instructor. Historical antecedents of modern anthropology. A systematic survey of the development of anthropology as a scientific field; an examination of the principal contributions of leading anthropologists, past and present. Reinterpretations and emerging trends.

499 Independent Study (1-3)

Prerequisite: At least 15 units of anthropology and consent of the adviser. Student selection of an individual research project involving either library or fieldwork. There are conferences with the adviser as necessary, and the work results in one or more papers. May be repeated for credit.

501 Seminar: Methodology of Anthropological Research (3)

Prerequisites: Anthropology 202, 401, and consent of instructor. Examination, analysis and evaluation of the contemporary methodological spectrum in anthropology and of new trends in research planning and implementation. Consideration and critique of specific cases involving differing research designs.

502 Contemporary Theory in Cultural Anthropology (3)

Prerequisite: Anthropology 480 or consent of instructor. Critique of the basic assumptions and theoretical positions of leading contemporary anthropologists.

504 Seminar: Selected Topics in Anthropology (3)

Prerequisites: Completion of undergraduate major in anthropology and/or graduate standing or consent of instructor. The topic chosen and a general outline of

Art

286 Design for the Theatre (3)

(Same as Drama 286.)

301 Western Art: Ancient to Classic (3)

A study of the developments in art from prehistoric time to the classic period in Greek art.

302 Western Art: Classic to Renaissance (3)

Provides broad familiarity with the major styles of classic, medieval, and Russian art. Lectures, discussions and field trips.

305A,B Crafts (3,3)

Prerequisites: Art 103 and 104, or 205A, or 100 and 432 or the equivalent. A study and evaluation of basic craft concepts, processes, and materials as they relate to the development of utilitarian forms. (6 hours activity)

306A,B Advanced Ceramics (3,3)

Prerequisite: Art 106A or 106B. Further experiences in the study and evaluation of form as related to the creative use of ceramic concepts and materials including design, forming, glazing, and firing. (6 hours activity)

307A,B Advanced Drawing and Painting (3,3)

Prerequisites: one semester of drawing and one semester of painting. The study, evaluation and creative use of the concepts and materials of drawing and painting with emphasis on individual exploration, growth, planning and craftsmanship. (9 hours laboratory)

309 Art Techniques (3)

Prerequisite: Art 100 or the equivalent. Creative use of a variety of drawing and painting materials. (6 hours activity)

313A,B Interior Design (3,3)

Prerequisites: Art 103, 104, 107A,B. The elements and principles of design as they relate to the organization of our domestic environment. (6 hours activity)

316A,B Sculpture (3,3)

Prerequisites: Art 103, 104 and 117B. (6 hours activity)

317A,B Advanced Life Drawing (3,3)

Prerequisite: three units lower division life drawing. Drawing and painting from the live model (9 hours laboratory)

323A,B Advertising Design (3,3)

Prerequisites: Art 103, 104, 107A,B. Development and projection of ideas in relation to the technical, aesthetic, and psychological aspects of advertising art. (6 hours activity)

333A,B Industrial Design (3,3)

Prerequisites: Art 103, 104 or 205A, 107A,B. Planning and designing of projects in relation to the technological, psychological, and social aspects of contemporary society. (6 hours activity)

338A,B Creative Photography (3,3)

Prerequisites: Art 103 and Communication 218A, or its equivalent, or consent of the instructor. Photography as an art medium with emphasis on the creative

use of photographic concepts, materials, processes and techniques. Field trips to be arranged. (6 hours activity)

347A,B Printmaking (3,3)

Prerequisites: Art 107A,B and Art 117A,B,C. An introduction to concepts and materials involved in printmaking including lithography, etching, woodcut, aquatint, monoprint and serigraphy. (9 hours laboratory)

350A,B Painting for Non-Art Majors (3,3)

Opportunities for students with little or no background in art to work creatively with various painting media both indoors and outdoors. (9 hours laboratory)

353A,B Textile Design and Construction (3,3)

Prerequisite: Art 100 or Art 103. Concepts and processes of design as they relate to fabric surfaces. (6 hours activity)

363A,B Illustration (3,3)

Prerequisite: Art 103, 107A,B, Art 117A,B,C. Development and projection of ideas relative to the needs of story, book, and magazine, and film illustration. (6 hours activity)

380 Art and Child Development (3)

Prerequisites: Art 100 and Education 311. The study and evaluation of art concepts, materials, and processes as they relate to and promote child development. (6 hours activity)

406A,B Ceramic Analysis (3,3)

Prerequisite: Art 106A,B Art 306A. An introduction to the physical and chemical aspects of ceramic materials. Study and evaluation of ceramic materials as they are related to the development of the ceramic art form. (6 hours activity)

411 Foundations of Modern Art (3)

Basic problems of painting and sculpture of the Realism, Impressionism, Post Impressionism periods.

412 Art of the 20th Century—1900 to Present (3)

Fundamentals of modern painting, graphics, and architecture.

421 Oriental Art: China (3)

A study of the historical development of the arts of China and their relation to Chinese philosophy and culture.

422 Oriental Art: Japan (3)

A study of the historical development of the arts of Japan and their relation to Japanese philosophy and culture.

426 Glass Forming (3)

Prerequisites: Art 106A,B, Art 306A, and approval of instructor. A course in the chemistry, handling and manipulation of glass and its related tools and equipment for the ceramic artist. (6 hours activity)

431 Renaissance Art (3)

Basic problems of painting, sculpture and architecture of the Renaissance period. Lectures, discussion and field trips.

432 Baroque and Rococo Art (3)

Basic problems of painting, sculpture and architecture of the Baroque and Rococo period. Lectures, discussion and field trips.

Art

451 Oceanic Art (3)

An introductory survey of the styles of the aboriginal people of the following regions: Australia, Melanesia, Micronesia, Polynesia and Indonesia.

452 Art of Non-European Africa (3)

An introduction by region and tribal group to the art forms of West Coastal Africa and the Sudan, Niger River kingdoms, Yourba kingdoms, Cameroon chiefdoms. Congo tribes, Central Africa and East Coastal Africa.

453A,B Display and Exhibition Design (2,2)

A course in the appropriate and creative use of materials, processes, and design concepts as they relate to the special problems involved in the planning and preparing of displays, exhibits, bulletin boards, wall cases, and art portfolios. (More than 6 hours laboratory)

461 Art of North American Indian (3)

An introduction to the art forms and style groupings of the following American Indian groups: Eskimo, Pacific Northwest, California, Eastern Woodlands, Mound Builders, Southwestern and Northern Mexico.

462 Art of Mesoamerica (3)

An introduction to the art and architectural forms of Mesoamerica from the early, formative stages to the Spanish Conquest.

471 Art of Central and South America (3)

An introduction to the art styles and cultural regions of Central America and South America.

481 Special Studies in Art History and Appreciation (1-3)

Prerequisite: permission of the instructor. Opportunities for intensive study and evaluation in one area of art history and appreciation.

483 Special Studies in Design (1-3)

Prerequisite: permission of the instructor. Opportunity for intensive study in the design areas listed below. Each area listed may be repeated to a maximum of 8 units, but no more than 3 units of credit may be obtained in any one area in a single semester.

483a Advertising Design (2 hours activity for each unit)

483b Interior Design (2 hours activity for each unit)

483c Design and Composition (2 hours activity for each unit)

483d Display Design (More than 3 hours laboratory for each unit)

483e Textile Design (2 hours activity for each unit)

485 Special Studies in Crafts (1-3)

Prerequisite: permission of the instructor. Opportunity for intensive study in the craft areas listed below. Each area listed may be repeated to a maximum of eight units, but no more than three units of credit may be obtained in any one area in a single semester. (2 hours activity for each unit)

485a Jewelry

485b General Crafts

485c Ceramics

485d Weaving

486 Special Studies in Sculpture (1-3)

Prerequisites: Art 316A,B and permission of the instructor. Opportunity for intensive study in the following sculptural processes: modeling, carving, fabrication and casting. May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

487 Special Studies in Drawing and Painting (1-3)

Prerequisite: permission of the instructor. Opportunity for intensive study in the drawing and painting areas listed below. Each area listed may be repeated to a maximum of eight units, but no more than three units of credit may be obtained in any one area in a single semester. (3 hours laboratory for each unit)

487a Painting**487b Life Drawing****487c Drawing****487d Printmaking****488A,B Advanced Scene Design (3,3)**

(Same as Drama 488 A, B.)

489 Special Studies in Creative Photography (3)

Prerequisites: Art 338A,B. Advanced projects in photography as a means of personal expression. (6 hours activity)

500 Graduate Seminar in Art (3)

Selected advanced problems in art and art education. Each student will present research results in oral or written form.

501 Graduate Seminar in Art History and Appreciation (3)

Prerequisite: Art 500. Directed research with emphasis on the relationship between historical backgrounds and developments in art and the student's area of concentration. May be repeated to a maximum of eight units.

502 Seminar in Contemporary Art (3)

Selected advanced problems and directed research in relation to the contemporary art form.

503 Graduate Problems in Design (1-3)

Prerequisite: permission of instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in the design areas listed below. May be repeated to a maximum of eight units in each area, but no more than three units of credit may be obtained in any one area in a single semester.

503a Advertising Design (2 hours activity for each unit)**503b Interior Design (2 hours activity for each unit)****503c Design and Composition (2 hours activity for each unit)****503d Display Design (More than 3 hours laboratory for each unit)****503e Textile Design (2 hours activity for each unit)****505 Graduate Problems in Crafts (1-3)**

Prerequisite: permission of instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in the crafts areas listed below.

Art Education

May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

505a Jewelry

505b General Crafts

505c Ceramics

506 Graduate Problems in Sculpture (1-3)

Prerequisite: permission of the instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in sculpture. May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (2 hours activity for each unit)

507 Graduate Problems in Drawing and Painting (1-3)

Prerequisite: permission of instructor. Intensive study with emphasis on planning, development, and evaluation of individual projects in the drawing and painting areas listed below. May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (3 hours laboratory for each unit)

507a Painting

507b Life Drawing

507c Drawing

507d Printmaking

507 Project (3-6)

Prerequisites: Art 500, Art 501, and recommendation of the student's graduate committee. Art 501 may be taken concurrently with Art 597 on approval of instructor. Development and presentation of a creative project in the area of concentration beyond regularly offered coursework. No more than three units may be taken in any one semester.

598 Thesis (3-6)

Prerequisites: Art 500, Art 501, and recommendation of the student's graduate committee. Art 501 may be taken concurrently with Art 598 on approval of instructor. Development and presentation of a thesis in the area of concentration beyond regularly offered coursework. No more than three units may be taken in any one semester.

599 Independent Graduate Research (1-3)

Open to graduate students in art with the consent of the department chairman. May be repeated for credit.

ART EDUCATION

332 Industrial Arts for Elementary Teachers (2)

Prerequisite: Ed 311 or consent of the instructor. Creative selection, organization and use of materials and tools in construction activities. Includes correlation experiences with the social studies, science, and other units of work. (4 hours activity)

360 Elementary School Crafts (2)

Studio activities and techniques of crafts appropriate to the elementary school. Strongly recommended for elementary teaching credential candidates. (4 hours activity)

370A,B Art Activity (2,2)

Opportunities to observe, analyze, and evaluate child growth in and through creative art experiences. (4 hours activity)

429A,B Arts and Crafts for Teaching Exceptional Children (2,2)

Methods of using a variety of art materials and processes with emphasis on those experiences which meet the needs of retarded or handicapped children. (4 hours activity)

441 Studio Problems in Secondary Art Education (3)

Prerequisite: Senior standing in Art, or permission of instructor. Advanced individual studio problems with projects related to specific learning experiences in Art Education at the secondary school level. (6 hours activity)

442 Teaching Art in the Secondary School (2)

Prerequisites: Education 311, Education 340, Art 380, Art Education 441, admission to teacher education, senior standing or consent of the instructor. See pages 158-160 under Secondary Education for description of standard teaching credential program. Objectives, methods, and materials including audiovisual instruction for teaching are in secondary schools. Required, before student teaching of students presenting majors in art for the standard teaching credential. The student who has not had teaching experience must register concurrently in Education 449.

749 Student Teaching in Art in the Secondary School and Seminar (3)

See page 312 for description and prerequisites.

ASTRONOMY

(Offered by the Department of Science and Mathematics Education)

200 General Astronomy (4)

Prerequisite or co-requisite: Mathematics 150A. High school physics recommended. Methods of astronomy, celestial motion, solar system, stellar types, galactic structure, theories of origin of the universe and solar system. (Same as Earth Science 200 and Physics 200) (3 hours lecture, 1 hour quiz)

BIOLOGICAL SCIENCE**101 Elements of Biology (5)**

An introduction to basic concepts in the study of living organisms and to the characteristics of the natural environment. (3 hours lecture, 6 hours laboratory)

141 Principles of Botany (4)

Prerequisite: Bio Sci 101. Emphasis will be placed on the dynamic aspects of botany although the traditional areas of morphology and classification will not be neglected. Required of all biology majors. (2 hours lecture, 6 hours laboratory)

161 Principles of Zoology (4)

Prerequisite: Bio Sci 101. An introduction to the principles of animal biology with special reference to the structure, classification, physiology, behavior and ecology of animals. Required of all biology majors. (2 hours lecture, 6 hours laboratory)

201 Field Biology (3)

Prerequisites: one year of biological science or permission of instructor. A course for nonmajors designed to acquaint the interested student with the plant and animal life of this region. Several weekend field trips will be arranged to study different biotic communities. (1 hour lecture, 6 hours laboratory)

Biological Science

311 General Microbiology (4)

Prerequisites: one semester courses in biology and chemistry. An introduction to the study of the morphology, growth and physiology of the bacteria and other microorganisms. A consideration of the role of microorganisms as agents of change in the natural processes important in health, industry and agriculture. (2 hours lecture, 6 hours laboratory)

312 Genetics Lecture (3)

Prerequisite: one year of college biology or permission of the instructor. The general principles and modern developments in the study of heredity.

312L Genetics Laboratory (1)

Prerequisite: Bio Sci 312. The use of a variety of organisms and methods for exploring basic principles of genetics. (3 hours laboratory)

313 Human Genetics (3)

Prerequisite: Bio Sci 101 or equivalent. Principles of heredity with emphasis on methods of analysis, on interaction of genes and environment, and on gene populations in humans. (Same as Anthropology 313)

314 Readings in Biological Sciences (1)

Prerequisite: Bio Sci 101 or equivalent. Directed readings of classical and contemporary biological literature with periodic group discussions concerning the methods and principles studied. This course is designed for the nonmajor and is open to seniors only. (3 hours laboratory)

315 Molecular Biology (4)

Prerequisite: a year of general chemistry and two semesters of college biology. An introduction to the physical and chemical aspects of biological science, using subcellular activities as the primary focus of the course. Topics include studies of modern data-gathering methods, subcellular structure and function, bioenergetics, biosynthesis and an introduction to heredity at the molecular level. (2 hours lecture, 6 hours laboratory)

325 Marine Biology (4) (Formerly 425)

Prerequisites: Bio Sci 101 or equivalent, or permission of the instructor. Physical and chemical aspects of the ocean as a background for the study of marine organisms and habitats, including food cycles, communities, identification, ecology, methods of collecting, and preserving local marine algae, invertebrates, and fish. (3 hours lecture, 3 hours laboratory or field work)

342 Plant Anatomy (4)

Prerequisite: Bio Sci 141 or one year of college biology or equivalent. The origin, development, and maturation of leaves, stems, roots, and flowers of vascular plants. (2 hours lecture, 6 hours laboratory)

344 Plant Morphology (4)

Prerequisite: Bio Sci 141 or one year of college biology or equivalent. A study of the morphology and classification of the lower plant groups and a general survey of the major groups of plants exclusive of angiosperms and gymnosperms. (2 hours lecture, 6 hours laboratory)

361 Mammalian Anatomy and Physiology (4)

Prerequisite: one year of college biology or permission of instructor. Study of the structure and function of the human organism. (2 hours lecture, 6 hours laboratory)

362 Histological Technique (3)

Prerequisite: one year of college biology or permission of instructor. Theory and practice of the preparation of cells and tissues for microscopic study. 1 hour lecture, 6 hours laboratory)

401 Biogeography (3)

Prerequisites: Bio Sci 141, 161, and 424 or 465 or permission of instructor. A study of the present day distribution of plants and animals based upon classification, fossil records, morphology and geography.

403 Biosystematics (4)

Prerequisite: Bio Sci 312 and 424. An introduction to the principles and techniques of biosystematics, including evolutionary mechanisms, the species concept, taxonomic procedures and nomenclature. (2 hours lecture, 6 hours laboratory)

412 General Cell Physiology (4)

Prerequisites: one year of college biology and one semester of organic chemistry or permission of the instructor. Characteristics of life at the cellular level; processes by which the cell obtains energy and material and forms new cell substances; control of these processes by the cell; organization of structures and enzyme systems within the cell. (2 hours lecture, 6 hours laboratory)

413 Pathogenic Microbiology (4)

Prerequisite: one semester of microbiology or bacteriology. Study of the biology of infectious disease: mechanisms of microbial pathogenicity; host defenses; mode of action of antibiotics and other antimicrobial agents; characteristics of specific pathogenic bacteria, fungi and viruses. (2 hours lecture, 6 hours laboratory)

414 Immunology (4)

Prerequisite: Bio Sci 311 and 315, Chem 301A, or permission of the instructor. Study of the nature of antibodies and antigens, their role in immunity, and the specificity of their reactions. Laboratory experiments will show the kinetics of antibody formation and the mechanisms of antibody-antigen reactions. Techniques in serodiagnosis will be performed. (2 hours lecture, 6 hours laboratory)

416 Limnology (4)

Prerequisite: Bio Sci 141 and Chem 101B. Comparative physical, chemical and biological characteristics of inland waters and estuaries. (2 hours lecture, 6 hours laboratory)

420 General Oceanography (3)

Prerequisite: Bio Sci 141 and 161, and Chem 101AB (may be concurrent), Physics 211. Introduction to oceanography including the study of the extent of the oceans; the chemical nature of the sea; marine geology; causes and effects of currents and tides; and interrelationships of plants and animal life.

421 Biological Oceanography (4)

Prerequisite: Bio Sci 420. Biological factors of the marine environment; physiological and ecological relationships; methods of sampling, identification and analysis. (3 hours lecture, 3 hours laboratory)

424 Evolution (3)

Prerequisite: one year of college biology or permission of the instructor. A study of evolution, including the history of evolutionary thought; origin of universe, earth and life; geological and paleontological history of the earth; evidences for evolution derived from comparative anatomy, embryology, genetics, zoogeography; mechanisms of evolution.

Biological Science

424L Evolution Laboratory (1)

Prerequisite: Bio Sci 424 (may be taken concurrently). (3 hours laboratory)

426 Marine Ecology (4)

Prerequisite: upper division or graduate standing in Biological Sciences, and successful completion of Bio Sci 425 or 461 or 446. A course in the fundamentals of ecology embracing the aspects of the interrelations of organisms and their environment with emphasis on productivity, population dynamics, behavior and biological associations. (2 hours lecture, 6 hours laboratory)

436 Microbial Growth and Physiology (4)

Prerequisites: one semester courses in microbiology and organic chemistry. An advanced treatment of the growth, physiology and structures of the microorganisms, with emphasis on study of the free-living bacteria, yeasts and molds. (2 hours lecture, 6 hours laboratory)

439 Microbial Ecology (4)

Prerequisite: one semester of microbiology or bacteriology. The interaction of microbes and their environment; the influence of physical and chemical factors on the distribution and activities of microbial populations; the effects of microbes on the living and nonliving environment. Basic principles of microbial enrichment, selection and succession. On completion of the basic experiments each student will select and perform a field and laboratory study in microbial ecology. (2 hours lecture, 6 hours laboratory)

441 Plant Taxonomy (4)

Prerequisite: Bio Sci 141 or one year of college biology or equivalent. An introduction to the study of classification of conifers and the flowering plants through field collecting and laboratory study and identification of representative kinds. (2 hours lecture, 6 hours laboratory)

443 Plant Ecology (4)

Prerequisite: Plant Taxonomy 441. Relation of plants to their environment with emphasis on climatic and soil factors influencing their structure, behavior, and distribution. (2 hours lecture, 6 hours laboratory)

444 Plant Physiology (4)

Prerequisite: Bio Sci 141 or equivalent and one semester of organic chemistry or permission of the instructor. A study of plant growth, nutrition, food synthesis, and metabolism. (2 hours lecture, 6 hours laboratory)

445 Mycology (4)

Prerequisite: Bio Sci 141. A study of the comparative morphology and taxonomy of the fungi with an emphasis on morphological, physiological and reproductive characteristics demonstrating evolutionary relationships. (2 hours lecture, 6 hours laboratory)

446 Algae (4)

Prerequisite: Bio Sci 141 or equivalent. A study of the comparative morphology and taxonomy of the algae including a consideration of the physiological and chemical characteristics demonstrating evolutionary relationships. (2 hours lecture, 6 hours laboratory or field work)

452 Economic Botany (3)

Prerequisites: Bio Sci 141 or permission of the instructor. An examination of man's dependence upon and economic interest in plants throughout the world.

461 Invertebrate Zoology (4)

Prerequisite: Bio Sci 161, or a year of college biology or permission of instructor. Evolution, classification, physiological adaptations, and biology of invertebrate animals. Includes dissection, identification and observation of living animals. (2 hours lecture, 6 hours laboratory, or field work)

463 Comparative Vertebrate Anatomy (4)

Prerequisite: a year course in general zoology or biology, or permission of the instructor. A comparative study of the chordates, with emphasis on morphology and evolution of various organ systems from fish through mammals. Includes thorough dissection of dogfish, necturus, and cat. (2 hours lecture, 6 hours laboratory)

464 Embryology (4)

Prerequisite: a year course in general zoology or biology or permission of the instructor. Study of development from fertilization through organogenesis with laboratory work on the frog, chick, and pig. (2 hours lecture, 6 hours laboratory)

465 Animal Ecology (4)

Prerequisite: three semesters of college biology or permission of the instructor. A survey of the physical, chemical, and biological factors of the environment as they affect the distribution and mode of life of animals. (2 hours lecture, 6 hours laboratory; one or more weekend trips per semester required)

466 Studies in Animal Behavior (3)

Prerequisite: one year of college biology or permission of the instructor. An introduction to the current problems in animal behavior including sensory capacities, orientation, innate and learned patterns, and social behavior of invertebrates and vertebrates.

467 Entomology (4)

Prerequisite: Bio Sci 161, or a year of college biology or permission of instructor. Anatomy, physiology, evolution, and biology of insects and other terrestrial arthropods. Laboratory includes detailed dissection, collection, identification, and observation of living arthropods. (2 hours lecture, and 6 hours laboratory or field work)

468 Comparative Animal Physiology (4)

Prerequisites: principles of zoology, Chem 101A, 101B, and organic chemistry. A comparative survey of organ systems and physiological processes among invertebrate and vertebrate animals. (2 hours lecture, 6 hours laboratory)

469 Ichthyology (4)

Prerequisites: a year of college biology, comparative vertebrate anatomy, and natural history of the vertebrates, or permission of the instructor. The biology, structure, physiology, ecology, evolution and economic importance of fishes. Laboratory and field work in identification, collection, and natural history of fishes. (2 hours lecture, 6 hours laboratory or field work per week; one or more weekend trips per semester required)

471 Natural History of the Vertebrates (4)

Prerequisites: one year of college biology; comparative vertebrate anatomy, evolution, or permission of the instructor. Natural history, behavior, distribution, and ecology of the vertebrates. Laboratory and field emphasis on identification, behavior, maintenance of living and preserved animals. (2 hours lecture, 6 hours laboratory or fieldwork; one or more weekend trips per semester required)

Biological Science

472 Parasitology (4)

Prerequisite: one year of general biology or permission of instructor. A consideration of the symbiotic relationships existing at all levels of animal organization. Emphasis will be placed on the natural history, biology, physiology, ecology and laboratory recognition of symbiotic organisms. (2 hours lecture, 6 hours laboratory)

476 Herpetology (4)

Prerequisites: a year of college biology, comparative vertebrate anatomy, and natural history of the vertebrates; or permission of the instructor. The biology, structure, physiology, ecology, distribution, evolution, and behavior of amphibians and reptiles. Laboratory and field work in identification, collection, study of amphibians and reptiles including studies on reptile and amphibian behavior and physiology. (2 hours lecture, 6 hours laboratory or field work per week; one or more weekend trips per semester required)

491 Senior Seminar (1)

Prerequisites: senior standing in one of the sciences with a GPA of 2.8, or permission of the instructor. Topics in the biological sciences and related fields, selected by the faculty and students participating in the course.

499 Independent Study (1-3)

Open to qualified students who wish to pursue independent study in biology under general supervision. May be repeated for credit.

502 Seminar in Biology (3)

Open to graduate students only by permission of the instructor. May be repeated for credit.

504 Molecular Genetics (4)

Prerequisite: Bio Sci 312, 315 and Chem 301AB. The organization, replication and function of the genetic material and informational macromolecules in organisms from the viruses to the higher plants and animals. Topics include: chromosomal structure and function, recombination, mutagenesis, genetic coding, protein synthesis and genetic aspects of development. (3 hours lecture, 3 hours laboratory)

510 Seminar in Physiology (3)

Selected topics within the area of physiology. Open to graduate students and other qualified students by permission of instructor. May be repeated.

511 Seminar in Microbiology (3)

Selected topics in the area of microbiology. Open to graduate students and other qualified students by permission of instructor. May be repeated.

512 Seminar in Genetics (3)

Selected advanced topics within the general area of genetics. Open to graduate students and to other qualified students only by permission of instructor. May be repeated.

514 Seminar in Immunology (3)

Selected topics in immunochemistry, immunobiology and medical immunology. Open to graduate students and other qualified students by permission of instructor. May be repeated.

515 Seminar in Molecular Biology (3)

Selected advanced topics in molecular biology, such as macromolecular structure, thermodynamics in biological systems and molecular regulation of cellular activity.

ties. Open to graduate students and other qualified students by permission of instructor. May be repeated.

516 Viruses and Virus Infections (4)

Prerequisite: a course in microbiology or bacteriology. A study of viruses as molecules, as living organisms and as infectious agents. Further consideration of virus infections of man, other animals, bacteria and plants; comparison of viruses with rickettsiae and other obligate parasites. (2 hours lecture, 6 hours laboratory)

517 Seminar in Ecology (3)

Selected advanced topics within the general area of ecology. Open to graduate students and to other qualified students only by permission of instructor. May be repeated.

520 Seminar in Marine Science (3)

Selected advanced topics within the general area of marine science. Open to graduate students and to other qualified students only by permission of instructor. May be repeated.

540 Seminar in Botany (3)

Selected advanced topics within the general area of botany. Open to graduate students and to other qualified students by permission of the instructor. May be repeated.

560 Seminar in Zoology (3)

Selected advanced topics within the general area of zoology. Open to graduate students and to other qualified students by permission of the instructor. May be repeated.

598 Thesis (1-3)

May be repeated for a maximum of 6 units of credit.

599 Independent Graduate Research (1-3)

Open to graduate students only by permission of a staff member. May be repeated for credit.

CHEMISTRY

100 Introductory Chemistry (4)

Prerequisite: one year of high school algebra. Fundamental principles of chemistry with emphasis placed on the chemistry of inorganic compounds. Does not apply as credit for majors in the physical or biological sciences or for minors in the physical sciences. (3 hours lecture, 3 hours laboratory)

101A,B General Chemistry (5,5)

Prerequisites: high school algebra and either high school chemistry or high school physics or Chemistry 100. High school physics and trigonometry strongly recommended. Intended for majors and minors in the physical and biological sciences. Chemistry placement test required.

101A—The fundamental principles of chemistry including stoichiometry, gas laws, solid and liquid states, changes of state, modern atom concepts, chemical bonding and chemical equilibrium with emphasis on quantitative acid-base chemistry. Laboratory: experiments applying elementary physical chemistry and volumetric quantitative analysis. (3 hours lecture discussion, 6 hours laboratory)

Chemistry

101B—Oxidation-reduction chemistry, introduction to chemical thermodynamics and chemical kinetics, discussions of the chemistry of representative and transition elements, and introductions to biochemistry, organic and nuclear chemistry. Laboratory: Experiments concerning gravimetric and volumetric quantitative analysis, selected topics in qualitative analysis and inorganic preparations. (3 hours lecture discussion, 6 hours laboratory)

105 General Chemistry for Engineers (3)

Prerequisite: Chemistry 101A. Description the same as Chemistry 101B. Open only to engineering majors. Not open to students with credit in Chemistry 101B.

201 Modern Physical Science (4) (See course description under Physical Science)

205 Glassblowing (1)

Elementary training in the manipulation of glass leading to the construction of scientific glass apparatus. Enrollment limited with preference given to junior and senior physical science majors. (4 hours laboratory)

211 Quantitative Analysis (4)

Prerequisites: two semesters of college chemistry. Stoichiometry and the fundamentals of volumetric and gravimetric quantitative analysis. Students completing Chemistry 101B with a grade of C or better will not receive credit. (2 hours lecture discussion, 6 hours laboratory)

301A,B Organic Chemistry (3,3)

Prerequisite: Chemistry 101B or equivalent. Chemistry 301B must involve concurrent enrollment in Chemistry 302B. A course in organic chemistry designed for the non-chemistry major. Emphasis is placed on modern theories of structure and reaction mechanism. Recommended for biology majors and students planning to enter a paramedical profession.

302A,B Organic Chemistry Laboratory (1,1)

Chemistry 302A may be taken concurrently with Chemistry 301B and 302B. Chemistry 302B must be taken concurrently with Chemistry 301B. A course designed to give training in the basic techniques of the organic chemistry laboratory, including synthesis of typical aliphatic and aromatic compounds. (3 hours laboratory)

305A,B Organic Chemistry (5,5)

Prerequisite: Chemistry 101B or equivalent. A comprehensive course in organic chemistry designed for the chemistry major. Emphasis in lecture and laboratory is placed upon modern theories of structure and reaction mechanism with applications of modern instrumental and spectroscopic methods. (3 hours lecture discussion, 6 hours laboratory)

312 Quantitative Chemistry (4)

Prerequisites: Chemistry 101A,B, (grade C or better) or Chemistry 211. Physics 211A,B, or Physics 221A,B strongly recommended. Modern analytical chemistry including contemporary separation methods, nonaqueous quantitative chemistry, and introductions to instrumental methods of analysis in electrochemistry, absorption spectroscopy, and radiochemistry. (2 hours lecture discussion, 6 hours laboratory)

351 Introduction to Biochemistry (4)

Prerequisites: Chemistry 251 or Chemistry 301B and five units of biology. A survey of the chemistry and metabolism of proteins, carbohydrates, lipids, hor-

mones, in plants, animals, and microorganisms. (3 hours lecture discussion, 3 hours laboratory)

371A,B Physical Chemistry (3,3)

Prerequisites: Mathematics 250A,B, Physics 221A,B, and Chemistry 101B. Chemistry 312 recommended. Equivalent courses may be substituted. A study of the fundamental laws and theories of chemistry. Thermodynamics, solutions, chemical and phase equilibria, electrochemistry, transport phenomena, introduction to atomic and molecular structure, rotation and vibration spectroscopy, statistical mechanics, kinetics are the major topics discussed. Discussions with emphasis on the use of fundamental principles to solve problems.

403 Analysis of Organic Compounds (4)

Prerequisite: Chemistry 305A,B and Chemistry 312 or equivalents. Isolation and identification of organic compounds using chemical and instrumental techniques. (2 hours lecture discussion, 6 hours laboratory)

411 Instrumental Analysis (4)

Prerequisites: Chemistry 312, 301A,B, Chemistry 371A,B and Physics 221A,B. Advanced topics in absorption and emission spectroscopy, nuclear magnetic resonance, electron spin resonance, mass spectrometry, gas chromatography, X-ray methods, electrochemistry and radiochemistry. (2 hours lecture discussion, 6 hours laboratory)

421A,B General Biochemistry (3,3)

Prerequisite: Chemistry 301B or equivalent. Survey of major areas of biochemistry, including chemistry and functions of compounds of biochemical interest.

422A,B General Biochemistry Laboratory (2,2)

Prerequisites: Concurrent or prior enrollment in General Biochemistry 421A,B. Laboratory designed to illustrate the chemistry and metabolism of carbohydrates, lipids, and proteins, and to introduce the student to research methods. (6 hours of laboratory)

425 Advanced Inorganic Chemistry (3)

Prerequisites: Chemistry 101A,B or equivalent and Chemistry 301A,B and Chemistry 371A,B. A comprehensive inorganic chemistry course with an introduction to modern theories of chemical bonding and structure. Theoretical treatments include molecular orbital and ligand field theory with their extensions, coordination and transition metal chemistry, various aspects of nonmetal chemistry and a discussion of hydride properties.

427 Preparative Techniques (4)

Prerequisites: Chemistry 312, 301A,B and Chemistry 425 (concurrent enrollment acceptable) or equivalents. Laboratory exercises using advanced techniques and modern methods for the preparation and identification of chemical compounds. Readings in the current literature required.

431 Advanced Organic Chemistry (3)

Prerequisites: Chemistry 301A,B, Chemistry 371A and Chemistry 371B. Theoretical aspects of organic chemistry with emphasis on the modern concepts of structure and chemical reactivity.

441 Physical Chemistry Laboratory (4)

Prerequisite: Chemistry 371A,B. Laboratory exercises illustrating the physical principles of chemistry. (2 hour lecture discussion, 6 hours laboratory)

Chemistry

451 Quantum Chemistry (3)

Prerequisite: Chemistry 371A,B. An introduction to the application of quantum mechanics. Postulates and theories approximation methods, the electronic structure of atoms and periodic system, molecules and the chemical bond, and introduction to group theory.

495 Senior Research (1-3)

Prerequisite: Three one-year courses in chemistry and senior standing. Must have consent of supervising instructor before enrollment. Open only to students with a 3.0 grade point average in chemistry. An introduction to the methods of chemical research through a research project carried out under the supervision of one of the Chemistry Department faculty. May be repeated for credit.

499 Independent Study (1-3)

Prerequisite: Consent of supervising instructor before enrollment. Study of some special topic in chemistry, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

500 Research in Chemistry (1-6)

Prerequisites: Admission to graduate standing and consent of supervising instructor before enrollment. Research in one of the fields of chemistry on an individual basis under the supervision of an appropriate faculty member.

505 Seminar (1-2)

Prerequisite: Graduate standing and consent of department. Student presentations of recent contributions to the Chemical Literature. May be repeated for credit.

511 Theory of Separations (2)

Prerequisites: Chemistry 312, 301A,B, 371A,B. The theory, application, and limitations of physical and chemical separation techniques.

551 Quantum Mechanics (3)

Prerequisite: Chemistry 451. Elementary applications. Perturbation theory, collision problems, relativistic theory of the electron, theories of valence, complex compounds and complex crystals.

555 Chemical Kinetics (3)

Prerequisite: Chemistry 550 or permission of the instructor. Analysis of reacting systems; theories of chemical kinetics; discussion of gas phase, liquid phase and surface reactions including recent developments.

561 Statistical Thermodynamics (3) (Formerly 461)

Prerequisite: Chemistry 550 or equivalent. A study of statistical mechanics and its application to chemical problems.

572 X-Ray Crystallography (3) (Formerly 472)

Prerequisites: Physics 221A,B, Mathematics 250, and Chemistry 301A,B, or equivalent courses. Morphological crystallography, crystal symmetry and crystallographic groups, X-rays and X-ray diffraction, the recording and interpretation of diffraction phenomena, and the analysis of crystal structures, including computer applications.

575 Theory of Spectroscopy (3) (Formerly 475)

Prerequisite: Chemistry 451 or equivalent. Group theory, symmetry mode, intensities and selection rules, selected topics from electronic spectra of atoms and molecules, UV, IR, NMR, ESR and Raman spectroscopy.

598 Thesis (1-2)

Prerequisites: An officially appointed thesis committee and advancement to candidacy. Guidance in the preparation of a project or thesis for the Master's degree.

COMMUNICATIONS

101 Reporting and Writing (3)

Introduction to news reporting and writing, with emphasis on news gathering, evaluation, and the principles of clarity and conciseness. Typing ability required.

102 Reporting and Writing (3)

Prerequisite: Communication 101 or permission of instructor. Concentration on writing of more advanced news stories and news features. Typing ability required.

218A Introduction to Photography (2)

An introductory lecture and laboratory course in photographic theory and the application of photographic principles. (1 hour lecture, 3 hours lab)

218B Communications Photography (2)

A lecture and laboratory course applying photographic principles to the requirements of mass communications. (1 hour lecture, 3 hours lab)

290 History and Aesthetics of Motion Pictures (3)

(Same as Drama 290)

306 Photographic Production (2)

Class assignments will include production of photographs for college publications and television programs. Application of photocommunication principles to media problems under deadline conditions. (3 hours lab per unit)

319 Documentary Film Production (3)

Fundamentals of documentary film script writing, production planning, and execution. (2 hours lecture, 3 hours lab)

331 News Communication (3)

An introduction to the news communication media, with experience in news writing. (Not open to students with credit in Communications 101-102.)

332 Copy Editing and Makeup (3)

Prerequisite: Communications 101 and 102, or permission of instructor. Practice and theory of editing information materials for publication in newspapers and magazines. (6 hours activity)

333 Mass Communication in Modern Society (3)

The basic structure and the interrelationships of newspapers, magazines, films, radio, television, in terms of their significance as social instruments and economic entities in modern society.

334 Feature Article Writing (3)

Nonfiction writing for newspapers and magazines, including study of sources, methods, and markets. Open to nonmajors.

335 Reporting of Public Affairs (3)

Prerequisites: Communications 101 and 102, or permission of instructor. Coverage in depth of significant events pertinent to operations of governmental units and related organizations.

Communications

338 Newspaper Production (3)

Prerequisite: permission of the instructor. A lecture and activity course in which members of the class constitute the editorial staff of the college newspaper. The group meets four hours per week for critiques in news reporting, writing, editing and makeup, followed by production. With consent of instructor, the course may be repeated up to a maximum of 9 units credit. (More than 9 hours lab)

353 Advertising Copy and Layout (3)

Writing of copy and layout of advertisements, based on study of sales appeals, attention factors, and illustrations. (6 hours activity)

354 Retail Advertising (3)

Principles and procedures of retail advertising; utilization of mass media; supervised field assignments in the analysis of specific advertising needs.

356 Advertising Production (1)

Preparation of advertisements for the college newspaper, magazine and yearbook. Advertising accounts assigned to each student. Weekly critique sessions. Individual consultation with instructor. (5 hours lab)

358A,B Publications Production (2,2)

A workshop for students engaged in the production of the college magazine and yearbook and other types of student publications, as scheduled by appropriate college authorities. Activities will include writing, editing, photography, art work, and layout. Open to nonmajors. (More than 6 hours lab)

361 Theory and Practice of Public Relations (3)

Examination of basic principles of public relations and their application in non-commercial as well as commercial fields, including industry, education, government and welfare.

371 Radio-television News and Public Affairs (3)

Theory and practice of covering news events and public affairs for radio and television. Student material will be prepared for broadcast locally. (6 hours activity)

375 The Documentary Film (3)

Purpose and development of the documentary; current trends; critical analysis; production requirements; future of the medium in business, government and education, and television. Students will analyze selected documentary films.

380 Introduction to Radio and Television (3)

(Same as Drama 380)

401 Report Writing (3)

Planning, organizing and writing of various kinds of reports for business, education and government. Consideration will be given to use of graphic aids and preparation of copy for reports that are to be printed. Recommended for non-majors.

403 Technical Writing (3)

The study of uses of technical writing in industry, science and engineering, and the completion of written assignments designed to test understanding of, and provide experience with various forms.

404 Advanced Technical Writing and Editing (3)

Writing and editing of technical material for reports, proposals, special publications and journals.

407 Communication and the Law (3)

Development of Anglo-American concept of freedom of speech and press; statutes and administrative regulations affecting freedom of information and of publishing, advertising and telecommunications. Problems of libel and slander, rights in news and advertising, contempt, copyright, and invasion of privacy. Open to nonmajors.

425 History and Philosophy of American Mass Communication (3)

The development of American mass communication beginning with newspapers and periodicals and continuing through radio and television. Includes ideological, political, social and economic aspects.

426 World Communication Systems (3)

The examination of major mass communication systems, both democratic and totalitarian, and the means by which news and propaganda are conveyed internationally.

427 Seminar on Current Issues in Mass Communication (3)

Prerequisite: consent of instructor. Consideration of problems such as the extent to which the mass media should be regulated by the government, "objective" versus "interpretive" news reporting, and ethical and legal questions of particular cases.

439 Mass Media Internship (2)

According to his vocational preference, the student serves a supervised internship with a newspaper, magazine, radio or television station, press association, advertising agency, or public relations firm.

451 National Advertising Campaigns (3)

Advanced study of advertising campaigns; utilization of news media—television, newspapers, magazines, etc.—in national advertising programs. Design of complete campaign from idea to production.

463 Public Relations Methods (3)

Prerequisite: Communications 361 or equivalent, or consent of the instructor. Means by which public relations concepts are carried out through the mass media.

465 International Public Relations (3)

Application of public relations principle to the requirements of international operation in business, education, religion and philanthropy.

467 Public Relations for Educational Institutions (3)

Prerequisite: Communications 361 or permission of the instructor. Examines the theory and practice of public relations as it applies to public and private schools at all levels, including the methods, policies, programs and problems inherent in educational public relations.

473 Telecommunication Regulation (3)

Prerequisites: Communications 380, comparable course, consent of instructor, Drama 380. Self-regulation, governmental regulation, and international regulation of broadcast programming.

475 Telecommunication Programming (3)

Prerequisite: Communications 380 or Drama 380. Theory and practice of programming for television and radio.

Comparative Literature

477 Telecommunication Station Management (3)

Prerequisite: Communications 380. Functions and policies of broadcasting station and network management. Effects of government, public opinion, employee groups, and ownership. Technical, legal, financial and other obligations.

499 Independent Study (1-3)

Prerequisite: consent of the department chairman. Individually supervised mass media projects and research on and off campus. Research and projects may involve newspapers, magazines, radio, television, and public relations agencies. May be repeated for credit.

500 Mass Communication Theory (3)

Prerequisite: B.A. degree, background in mass communications, or consent of instructor. Theory of mass communication in terms of communicator, media, and audience. Consideration of extensive research regarding probable effects of mass communications.

501 Literature of Mass Communications (3)

Types, sources, and uses of mass communication literature; application to individual graduate studies.

510A Seminar in Mass Communications Research (3)

Prerequisite: Graduate standing and 24 units of undergraduate communications study or consent of the instructor. A survey of the research areas, methods, and techniques of communications research. Research in selected problems in communications.

510B Seminar in Mass Communications Research (3)

Prerequisite: Communications 510A. Application of research techniques to problems in the following areas: advertising, broadcasting, news-editorial, public relations, journalism education and history of the mass media.

512 Graduate Seminar: Journalism Education (3)

Prerequisite: Graduate standing. Study of selected problems in journalism education with emphasis on individual research.

597 Project (3 or 6)

Completion of a creative project in the area of concentration beyond regularly offered course work.

598 Thesis (3 or 6)

Completion of a thesis in the area of concentration beyond regularly offered course work.

599 Independent Graduate Research (1-3)

Prerequisite: consent of the department chairman. Individually supervised mass media projects or research for graduate students. May be repeated for credit.

COMPARATIVE LITERATURE

(Offered by the Department of English)

305 The Hebrew Prophets: Poets, Philosophers, Humanists (3)

(Same as Interdisciplinary Center 305.)

312 The Bible as Literature (3)

A comprehensive survey of Biblical literature emphasizing intrinsic literary qualities as well as the influence of major themes of both Old and New Testament writings upon western literary traditions.

315 Classical Mythology in World Literature (3)

The origins, elements, forms and functions of classical mythology in works from the earliest times to the present.

316 Celtic and Germanic Mythology (3)

A basic study of the principal Celtic and Germanic myths with some discussion of literary and archeological relationships.

324A Advanced World Literature (3)

Selected readings in Indian, Chinese, Japanese, Middle Eastern and European literature from the beginning to 1650.

324B Advanced World Literature (3)

Selected readings from Oriental and Western literature from 1650 to the present.

332 Medieval Literature of Western Europe (3)

Selected readings in modern English translation from the medieval literature of England and the continent from St. Augustine to Sir Thomas Malory.

333 Literature of the Renaissance (3)

Major phases of the Renaissance as a literary movement, from Erasmus to Montaigne and Cervantes.

373 Masters of Russian Literature (3)

Reading, discussion, and interpretation of selected works by Pushkin, Dostoyevsky, Tolstoy, Chekhov, Pasternak, and others, and their relationship to Western literature.

374 Modern Russian Literature (3)

A study of literary trends and representative works of Russian writers from Maxim Gorky to the present times. Special consideration of the Soviet literary theory and its impact upon their literature. Lectures and readings in English.

375 Hispanic Literature (3)

A study of selected translations from Hispanic literature and their relations to world literature. Readings in the picaresque novel, Cervantes, Golden Age drama, Galdos, Unamuno, Lorca.

376 Main Trends in Spanish-American Literature (3)

An introduction to the main currents of Spanish-American literature, emphasizing contemporary writers such as Alegria, Asturias, Borges, Fuentes, Neruda. Close attention will be given to the relation between the artistic expression and the ideological values of the same period.

402 Art, Literature, and the Development of Consciousness (3)

(Same as Interdisciplinary Center 402.)

403 The Quest for Self: East and West (3)

(Same as Interdisciplinary Center 403.)

404 The Nature of Love: Plato to Joyce (3)

(Same as Interdisciplinary Center 404.)

405 Psychoanalysis and Drama (3)

(Same as Drama 405 and Interdisciplinary Center 405.)

Drama

425A Oriental Literature (3)

A study of selected translations of Indian and Chinese literature.

425B Oriental Literature (3)

A study of selected translations of Japanese literature.

450 The Naturalists (3)

A study of naturalism in the works of Turgenev, Balzac, the brothers Goncourt, Maupassant, Zola, Huysmans, Ibsen, Verga; and also the works of Gissing, Moore, Hardy, Garland, Crane, Norris, Dreiser, London, and O'Neill.

453 The Novel in France and Germany (3)

Reading, discussion, and interpretation of outstanding novels in translation with a view toward determining some principles of the narrative arts. Emphasis on Goethe, Stendhal, Flaubert, Mann, Kafka, Proust, and others.

454 Contemporary Movements in European Literature (3)

A study of modern literary movements, including naturalism, realism, symbolism, expressionism and surrealism, with reading and discussion of selected examples.

473A,B World Drama (3,3)

Reading, discussion and interpretation of great plays of the world in translation, emphasizing them as literature for performance. First semester from ancient Greece through the mid-19th century; second semester, from Ibsen to the present. (Same as Drama 473A,B.)

482 Senior Seminar: Major Writers (3)

Directed research and writing, group discussion, and lectures involving intensive study of major writers. The student should consult his adviser and the schedule of classes for the sections available. This course number may be repeated with different content for additional credit.

491 Senior Seminar: Greek Tragedy (3)

Fifth century Greek tragedy through the extant works of Aeschylus and Sophocles, and ten plays of Euripides. (Same as Drama 491.)

582 Graduate Seminar: Dante (3)

DRAMA

211 Introduction to Oral Interpretation (3)

Prerequisite: Speech 101, a high school speech course, or consent of instructor. A fundamentals course devoted to theory, methods, and practice in the performance of oral communication of different types of literature. (Same as Speech 211.)

241 Voice Production for the Actor (2)

Prerequisite: Consent of instructor. Fundamental techniques, methods, and training to give the actor maximum use of his voice in theatre. Correction of speech faults and regional accents. Introduction to problems of stage dialects. Study of basic interpretative material. (1 hour lecture, 2 hours activity)

245A,B Mime and Pantomime (2,2)

Theory and practice of mime and pantomime for drama, dance and education (expression and gesture). Provide historical and contemporary knowledge and techniques with emphasis on individual development of creative skill in mime and pantomime. (4 hours—activity)

263A,B Beginning Acting (3,3) (Formerly 273AB)

Laboratory practice and discussions of the form and content of the art of acting: (A) action, motivation and circumstances of behavior on stage; (B) problems in characterization. (6 hours activity)

271 Introduction to Theatre Arts (3)

A study of the evolution of theatre, motion pictures, radio and television as composite arts. Emphasis is placed on the visual and production aspects as influenced by different cultures, traditions, and technologies. Field trips to certain significant productions.

272 Understanding Theatre (3)

A nontechnical survey course for the general student leading to an appreciation and understanding of the theatre as a medium of communication and entertainment and as an art form. Field trips to certain significant productions.

276A,B Beginning Stagecraft (2,2)

Participation in the preparation and execution of the departmental and student productions: (A) production organization; the theatre plant; tools; construction; two and three dimensional scenery; introduction to scenic design; fundamentals of scene painting and basic stage lighting; (B) the stage setting; mechanical drawing; stage management; lighting and sound for the theatre. (More than 6 hours production)

285A,B Theatrical Makeup (1,1)

Theory and practice in makeup for stage and television. Emphasis on development of individual skill in techniques of character analysis, application in pigment, plastic, hair makeup, and selection and use of makeup equipment. (3 hours—activity)

286 Design for the Theatre (3)

Prerequisite: Art 103, 104 or Drama 276A or 276B, or consent of instructor. Study and practice in the principles of designing for the stage. Practical work in the designing and planning of sets for drama productions. (Same as Art 286.)

290 History and Aesthetics of Motion Pictures (3)

History and development of motion pictures as an art form combining lectures, readings, discussion, and screening of films. (Same as Communications 290)

311 Oral Interpretation (3)

Prerequisite: Drama 211 or Speech 211 or consent of instructor. The principles and practice of reading aloud from the printed page. Analysis of selections from prose and poetry are emphasized. The development of voice control and projection of idea and motion. (Same as Speech 311.)

314A,B Reading Theatre (3,3)

Prerequisite: Drama 211 or Speech 211. Oral reading in which the emphasis is placed on group and individual reading of dramatic literature. The first semester will emphasize modern and contemporary dramatic literature and the second semester will include selections from the Elizabethan, Renaissance and Romantic periods.

341 Phonetics (3)

(Same as Speech 341, Linguistics 341)

363A,B Intermediate Acting and Characterization (3,3)

Prerequisite: Drama 263. Continuation of Drama 263A,B, Acting. Emphasis on extended and integrated speech and movement problems in characterization. En-

Drama

couraging the student to begin development of style and ensemble acting. Laboratory scenes, extensive analysis and exploration. (6 hours activity)

364 Seminar in Writing (3)

Prerequisite: Evidence of student's previous interest in creative writing and consent of the instructor. Study of superior models, development of style, and group criticism and evaluation of each student's independent work, as it relates to playwriting. May be repeated for credit. (Same as English 364)

370A,B Fundamentals of Directing (3,3)

Prerequisite: A, prerequisite to B. Consent to instructor. The study of prehearsal problems and procedures, of the structural analysis of plays, and of composition, picturization, pantomimic dramatization, movement, and rhythm onstage. Practice in directing scenes. (6 hours activity)

374A,B Dance Theatre and Production (2,2)

Prerequisite: Physical Education 143 or the equivalent or consent of instructor. Cannot be taken concurrently with Drama 478AB. Theory and practice of creative and expressive movement in relation to the theatre and dance production. (More than 6 hours—production)

376A,B Advanced Stagecraft (2,2)

Participation in the supervising of major areas of technical production; stage management, lighting design, production management. Cannot be taken concurrently with Drama 478AB. (More than 6 hours—production)

377A,B Stage Costuming (2,2)

Prerequisites: Stagecraft 376A or permission of the instructor A, prerequisite to B. Principles and theory of costumes for stage and television including both historical and contemporary techniques and application. (More than 6 hours—production)

380 Introduction to Radio and Television (3)

The history and development of the broadcasting industry and its impact and influence on our society. A study of the basic broadcasting practices, audiences, production and programming. (Same as Communications 380)

382 Television Techniques (3)

Survey of the development and current trends in television techniques, programming, and production.

383 Radio and Television Writing (3)

Study of the principles and practices and experience in the writing of scripts and other forms of continuity for both radio and television.

386 Stage Lighting (2)

Prerequisites: Drama 276AB or equivalent. Studies in the theory and practice of lighting for stage and television. Special emphasis in design. Students must enroll concurrently for one unit of credit in Drama 478A or B in order to participate in practical application of stage lighting coordinated with the directing class program.

402 Dramatic Activities for Children (3)

Theory and practice in the use of creative dramatics, storytelling, puppetry, assembly programs, role-playing, and other aspects of dramatics as tools for the teacher, group worker, recreation major, and others who work with children.

403 Children's Theatre (3)

Prerequisites: Drama 263A or B; Drama 276A and Drama 370AB or equivalent; or consent of the instructor. Theories and principles of production in the formal theatre arts for children. Analysis and evaluation of appropriate theatrical forms.

405 Psychoanalysis and Drama (3)

(Same as Interdisciplinary Center 405.)

450 Theatre Management (2)

Prerequisites: Consent of instructor. Discussion and practice of the basic elements of Public Relations as applied to theatre with a detailed analysis of various advertising mediums and experimentation in their use. A study of the various financial aspects of academic, community, and professional theatre operations including practical experience in front-of-the-house management and box office operation through the department's public presentations. Students must enroll concurrently for one (1) unit of Drama 478A or 478B.

463A,B Advanced Acting (3,3) (Formerly 373A,B)

Prerequisite: Drama 363A,B. A study of historical theories and techniques of styles of acting as an art form. The first semester will include Greek through Renaissance periods and the second semester will include the Neoclassic periods to contemporary styles. (6 hours activity)

468A,B Experimental Theatre (3,3) (Formerly 378A,B)

Prerequisites: consent of instructor. Cannot be taken concurrently with Drama 478AB. An activity course in which dramatic principles are applied through production of full length and one-act plays using various styles of acting and staging. (More than 3 hours production per unit)

470A,B Directing (3,3)

Theory and practice in directing scenes from plays for their oral and visual values as theatre. Second semester students will each direct public performances of two one-act plays. (6 hours activity)

Drama 471 Kabuki Theatre (3)

Prerequisite: Upper division standing or consent of instructor. A study of the history and development of the Kabuki Theatre, emphasizing the three types of Kabuki plays (Jidaimano, Sewamono, Shosagoto) and theories of production of Kabuki drama.

472 American Theatre (3)

Prerequisites: Drama 271, Drama 272, or the equivalent and junior standing. The development of the art of theatre in the United States from colonial times to the present day; its place and potentialities as a force in a democratic society.

473A,B World Drama (3,3)

Reading, discussion and interpretation of great plays of the world in translation, emphasizing them as literature for performance. First semester from ancient Greece through mid-19th century; second semester, from Ibsen to the present. (Same as Comparative Literature 473AB)

474 Special Studies in Dance Theatre and Production (1-3)

Prerequisites: Drama 374A,B or the equivalent and consent of instructor. Opportunity for intensive study in theory and practice in dance theater and production.

Drama

May be repeated to a maximum of eight units but no more than three units of credit may be obtained in a single semester. (More than 3 hours production per unit)

475A,B History of the Theatre (3,3)

Examinations of the evolution of all major aspects of world theatre. (A) From ancient Greece to the end of the 18th century; (B) 19th and 20th centuries.

477 Senior Seminar in Contemporary Critical Techniques (3)

Prerequisite: Consent of instructor. Introduction to major contemporary modes of criticism and their application to selected plays and area productions.

478A,B Rehearsal and Performance (1-3)

Acting in stage productions, major technical assignments in stage productions, or participation in television or children's theatre productions. Any upper division or graduate student who is interested should enroll. This class cannot be taken concurrently with either 374AB, 376AB or 468AB. (More than 3 hours production per unit.)

488A,B Advanced Scene Design (3,3)

Prerequisites: Drama 286, or equivalent beginning work in design. Lecture in scene design with emphasis on style, ornamentation and illusion leading to practical problems in designing for the stage and television. (Same as Art 488AB.)

491 Senior Seminar: Greek Tragedy (3)

(Same as Comparative Literature 491.)

499 Independent Study (1-3)

Open to advanced students in drama with the consent of the department chairman. May be repeated for credit.

500 Introduction to Graduate Study in Drama (3)

Introduction to methodological problems in graduate research. Location of source materials, including library and original data; research and project design and execution; interpretation of researches.

501 Graduate Seminar: Advanced Theatre Theory and Appreciation (3)

Prerequisites: Drama 500. Directed research with emphasis on the relationship between historical backgrounds and developments in the theatre and the student's area of concentration.

511 Graduate Seminar in Interpretation (3)

Prerequisites: Consent of instructor. The historical and philosophical backgrounds in the development of interpretation and its relationship to contemporary theory and practice. (Same as Speech 511.)

571 Graduate Seminar: Major Writers (3)

Directed research and writing, group discussion, and lectures covering Shakespeare. The student should consult his adviser and the schedule of classes for the section appropriate to his program. (Same as English 571.)

572 Production Planning in Theatre Arts (3)

History and philosophy of production problems in theatre arts. Organization of the college theatre as it relates to the total college program. Planning of the production within the limitations of budgets and physical facilities.

573 Graduate Seminar, Literary Genres (3,3)

Prerequisites: Permission of instructor. As appropriate to the specialized research and publications of the instructor, this course will offer directed research and writing, group discussion and lectures covering such major literary types as: tragedy, comedy and historical drama. With consent of the adviser, this course may be repeated with different content for additional credit. (Same as English 572.)

597 Project (3)

Development and presentation of a creative project in the area of concentration beyond regularly offered coursework. May be repeated to a maximum of six units.

598 Thesis (3)

Development and presentation of a thesis in the area of concentration beyond regularly offered coursework.

599 Independent Graduate Research (1-3)

Open to graduate students in drama with the consent of the department chairman. May be repeated for credit.

DRAMA EDUCATION**442 Teaching Drama in the Secondary School (2)**

Prerequisites: Education 340, Education 311, admission to teacher education, senior standing or consent of the instructor. The student who has not had teaching experience must register concurrently in Education 449. See page 158 under Secondary Education for description of Standard Teaching Credential program. Objectives, methods, and materials including audiovisual instruction for teaching drama in secondary schools.

484 Educational Television Production (3)

Theory and practice in the activities, methods of lesson preparation, and presentation of educational television productions.

749 Student Teaching in Drama in the Secondary School and Seminar (6)

See page 312 for description and prerequisites.

EARTH SCIENCE

(Offered by the Department of Science and Mathematics Education)

101 Physical Geology (4)

(Same as Geology 101)

102 Historical Geology (4)

(Same as Geology 102)

200 General Astronomy (4)

(Same as Astronomy 200)

301, 302, 401, 402 Studies in Geoscience (2-6 units each)

Open to majors in earth science and related fields. Students may elect from two to six units per semester with approval of instructor. Guided independent study of problems in earth science. Supervision is geared to the experience and maturity of each student. Problems are designed to explore significant aspects of earth science and may be taken in any sequence. (1 hour of discussion or conference and 3 hours of laboratory, supervised study, and field work for each 2 units.)

English

301 Studies in the area of geochemistry. Prerequisites: Physical geology and general chemistry. Problems in the identification and classification of rocks, minerals, soils, water types; geochemistry of crystalline solids, magmatic, marine, and meteoric liquids, and atmospheric and volcanic gases; properties, growth, symmetry, and morphology of crystals; genesis of earth materials and the interdependence of their development. Optical, chemical, X-ray, and physical experimental techniques. Field methods of collecting and evaluating data.

302 Studies in the area of geobiology. Prerequisites: Historical geology and a semester of biology. Problems in the reconstruction of geologic history by evolutionary trends in fossils, by radioactive isotope determinations, by stratigraphic sequence, by relationships of sedimentary facies, by analysis of rock structures in field and laboratory. Inter-relationships of flora and fauna and the genesis of rocks, oceans, and atmosphere. Techniques for identification and classification of fossils. Preparation and interpretation of maps, diagrams, and aerial photographs.

401 Studies in the area of geo-fluids. Prerequisite: Fundamental physics. Problems in the energy systems of oceans, atmosphere and surface and underground water and their interfaces; morphology and genesis of shorelines and seafloor; dynamics of oceans and atmosphere; physics of clouds and water vapor; classification and analysis of weather systems; composition and structure of oceans and atmosphere; evolutionary development of oceans and atmosphere. Methods and instruments.

402 Studies in the area of geophysics. Prerequisites: Fundamental physics. Astronomy recommended. Problems in the techniques and applications of seismology to earthquakes, exploration, and the earth's interior; measurement and interpretation of gravitation, terrestrial magnetism, and terrestrial heat; extra-terrestrial radiation, plasmas, and upper-atmospheric phenomena; lunar and planetary structures, surfaces and atmospheres; hypotheses of the origins of planets, atmospheres, oceans, continents, and mountains. Geophysical instruments and methods of investigation.

499 Independent Study (1-3)

Study of some special topic in earth science, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

ENGLISH

For world literature in English translation see courses under Comparative Literature. English 101 and 102 are normal prerequisites for all courses numbered 200 or above.

101 Composition and World Literature (3)

Analytical and critical writing based on the study of representative works from Classical and Biblical literature to the Renaissance.

102 World Literature and Composition (3)

Prerequisite: English 101 or the equivalent. The study of representative works from the Renaissance to the modern age, as a basis for continuing practice in analytical and critical writing.

201 Analysis of Literary Forms (3)

The main literary forms—prose fiction, poetry, and drama—are studied and analyzed. Various critical methods are applied to representative works mainly from English and American literature. Especially recommended for prospective teachers of literature.

202 The Short Story (3)

Critical analysis of selected American and European short stories, aimed at an understanding of the structure and technique of the short story.

206 Introduction to Poetry (3)

The course is designed to increase students' understanding and appreciation of the art of poetry. The primary activity will be close reading of poems written in English.

211 Masters of British Literature (3)

Prerequisite: Limited to students who are of sophomore standing or who have obtained the consent of the instructor. An introduction to major periods and movements, major authors, and major forms through 1760.

212 Masters of British Literature (3)

Prerequisite: Limited to students who are of sophomore standing or who have obtained the consent of the instructor. An introduction to major periods and movements, major authors, and major forms from 1760 through modern times.

301 Advanced Composition (3)

Exercises in creativity, analysis, and rhetoric as applied in expository writing. Required of English majors seeking the secondary credential.

303 The Structure of Modern English (3)

Prerequisite: junior standing. The grammar of contemporary English applied to problems in writing. Modern English usage. Required of English majors seeking the secondary credential.

321 American Literature to Whitman (3)

Emphasis on major writers: Hawthorne, Poe, Melville, Emerson, Thoreau, Whitman, and others.

322 American Literature from Twain to the Moderns (3)

Emphasis on Twain, James, Crane, Hemingway, Faulkner, O'Neill, Frost, Eliot.

333 Chaucer (3)

A study of *The Canterbury Tales* and of Chaucer's language, with particular emphasis upon the understanding of the vocabulary, pronunciation, grammar, and syntax of the East Midland dialect of Middle English, as indispensable to literary appreciation.

334 Shakespeare (3)

An introduction to Shakespeare's art through a detailed study of the more famous plays.

335 Elizabethan and Jacobean Drama (3)

Studies of representative English dramatists of the late 16th and early 17th centuries. Emphasis on the development of the dramatic tradition in the plays of Marlowe, Jonson, Webster, Beaumont and Fletcher, and others.

336 Elizabethan Poetry and Prose (3)

A study of the nondramatic literature of the English Renaissance from More to Campion. Emphasis on Renaissance thought and the works of Spenser.

337 Seventeenth Century Poetry and Prose (3)

A survey of the major writers of the period from 1603 to 1660 exclusive of Milton.

English

341 Milton (3)

An intensive study of the poetry and prose in the light of Milton's intellectual development.

342 The Age of Reason in English Literature (3)

Swift, Pope, Johnson, Boswell, Addison, and Steele. The Restoration, the Age of Reason, and foreshadowings of Romanticism.

343 The Romantic Movement in English Literature (3)

Burns, Blake; Wordsworth, Coleridge; Byron, Shelley, and Keats. The reaction against rationalism, the rise of revolutionary and liberal thought, humanitarianism, and emphasis on individual creativity.

344 The Literature of the 19th Century after 1830 (3)

A study of literature in its relationship to the problems which emerge from the social, cultural, scientific, and industrial revolutions of the Victorian period.

345 The Development of the English Novel through Jane Austen (3)

A study of the English novel from its beginnings to the 19th century considering such novelists as Defoe, Richardson, Fielding, Sterne, and Austen.

346 The Development of the 19th-Century English Novel (3)

A study of such novelists as the Bröntes, Thackeray, Dickens, Eliot, and Hardy.

351 Science Fiction (3)

Prerequisite: English 101. The study of science fiction as a genre, including future-scene fiction, the utopian novel, the superman novel, and short fantasy stories.

364 Seminar in Writing (3)

Prerequisite: Evidence of student's previous interest in creative writing and consent of the instructor. Study of superior models, development of style, and group criticism and evaluation of each student's independent work. Depending on the specialized writing field of the instructor, the various sections will concentrate on fiction, plays, or poetry. May be repeated for credit.

433 Children's Literature (3)

A study of masterpieces of the world's literature for children. Illustrates literary qualities appealing to children and demonstrates the ways in which children's literature reflects the particular cultural differences of the various Oriental, classical and modern cultures.

435 Studies in Shakespeare (3)

Prerequisite: English 334 or consent of the instructor. An intensive study of selected plays with primary emphasis upon problems of dramatic structure and artistic meanings.

451 Philosophical Backgrounds of Modern Literature (3)

(Same as Interdisciplinary Center 451.)

462 Modern British and American Novels (3)

Prerequisites: survey of English, American, or world literature; an upper division literature course; or consent of the instructor. The development of modern British and American novels from 1900 to 1950.

463 Contemporary British and American Novels (3)

The novel in English since World War II.

464 Modern British and American Drama (3)

Prerequisites: survey of English, American, or world literature; an upper division literature course; or consent of the instructor. The development of British and American drama from 1900 to the present.

466 Modern British and American Poetry (3)

Prerequisite: survey of English, American or world literature; an upper division literature course; or consent of the instructor. The development of British and American poetry from 1900 to the present.

490 History of the English Language (3)

Prerequisite: senior or graduate standing. The historical development of English vocabulary, phonology, morphology, and syntax from Indo-European to modern American English.

491 Senior Seminar (3)

Prerequisite: an undergraduate course in the area to be studied, a B average or better in English courses, or consent of the instructor.

Directed research and writing, group discussion, and lectures covering selected topics from language studies, intensive studies of major writers, criticism, and literary types, periods, and ideological trends.

499 Independent Study (3)

Open to advanced students in English with the consent of the department chairman. May be repeated for credit.

570 Graduate Seminar: Language Studies (3)

Directed research and writing, group discussion, and lectures covering philology, historical development, and structure of English. Individual offerings under this course number may deal with only one aspect of language studies. The student should consult his advisor and the schedule of classes for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

571 Graduate Seminar: Major Writers (3)

As appropriate to the specialized research and publication of the instructor, this course will offer directed research and writing, group discussion, and lectures covering major figures such as: Shakespeare, Milton, Chaucer, Melville, Twain, Hawthorne, Joyce, and Coleridge. The student should consult his adviser and the schedule of classes for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

572 Graduate Seminar: Literary Genres (3)

As appropriate to the specialized research and publication of the instructor, this course will offer directed research and writing, group discussion and lectures, covering such major literary types as: the epic, the novel, the short story, lyric poetry, tragedy, comedy, and historical drama. The student should consult his adviser and the schedule of classes for sections appropriate to his graduate program. This course number may be repeated with different content for additional credit. (Same as Drama 573.)

573 Graduate Seminar: Cultural Periods (3)

As appropriate to the specialized research and publication of the instructor, this course will offer directed research and writing, group discussion, and lectures covering the literature of a particular cultural period from the Anglo-Saxon to modern times. The student should consult his adviser and his schedule of classes

English Education

for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

574 Graduate Seminar: Special Problems in Literature (3)

As appropriate to the specialized research and publication of the instructor, this course will offer directed research and writing, group discussion, and lectures covering special problems such as: the detailed critical study of varying influences on literature, including philosophical, religious, scientific, geographic, and other ecological viewpoints. The student should consult his adviser and his schedule of classes for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

579 Graduate Seminar: Problems in Criticism (3)

Directed research and writing, group discussion, and lectures covering historical development and schools of criticism. Individual offerings within this course number may deal with only one aspect of critical problems. The student should consult his adviser and the schedule of classes for the sections appropriate to his graduate program. This course number may be repeated with different content for additional credit.

599 Independent Graduate Research (3)

Research projects in areas of specialization beyond regularly offered course work. Oral and written reports. This course number may be repeated with different content for additional credit.

ENGLISH EDUCATION

442 Teaching English in the Secondary School (2)

Prerequisites: Education 311, Admission to Teacher Education. Principles, methods, and materials of teaching English in the secondary school. The student who has not had teaching experience must register concurrently in Educ 449.

749 Student Teaching in English in the Secondary School and Seminar (6)

See page 312 for description and prerequisites.

FOREIGN LANGUAGES EDUCATION

(Offered by the Department of Foreign Languages and Literatures)

432 Teaching Foreign Languages in the Elementary School (2)

Methods of teaching FLES: foreign languages in elementary schools. Critical review of materials, audiolingual-visual aids, and current research. Conducted in English, with practice by students in the language they plan to teach.

433 Electro-Mechanical Aids in the Foreign Language Classroom (1)

Principles and techniques of advanced electro-mechanical, auditory, visual, and programmed learning devices in foreign language instruction. Special emphasis on instructional television and the language laboratory.

442 Teaching Foreign Languages in the Secondary School (2)

Prerequisites: Education 311 and 340; French, German, or Spanish 466; and admission to Teacher Education. Also open to experienced teachers. The student who has not had teaching experience must register concurrently in Education 449. See page 158 under Secondary Education for description of Standard Teaching Credential program.

The theory and practice of language learning and language teaching with special emphasis on the audio-lingual method in combination with electro-mechanical aids. Conducted in English, with practice by students in the language they plan to teach. Required, before student teaching, of students presenting majors in foreign languages for the standard teaching credential with a specialization in secondary education.

749 Student Teaching in Foreign Languages in the Secondary School and Seminar (6)

See page 312 for description and prerequisites.

FRENCH

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental French (5)

Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of French. Audio-lingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in French.

102 Fundamental French (5)

Prerequisite: French 101 or equivalent. Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of French. Audio-lingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in French.

203 Intermediate French (3)

Prerequisite: French 102 or equivalent. Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in French.

204 Intermediate French (3)

Prerequisite: French 203 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in French.

213 Intermediate Composition (2)

Practice in written expression based on cultural and literary materials. May be taken concurrently with French 203. Required of all majors and minors at the intermediate level; optional to others. Conducted in French.

214 Intermediate Composition (2)

Practice in written expression based on cultural and literary materials. May be taken concurrently with French 204. Required of all majors and minors at the intermediate level; optional to others. Conducted in French.

303 Readings in Scientific French (3)

Prerequisite: French 102 or equivalent. Readings reflecting a broad spectrum of writing in the physical and natural sciences and mathematics. Special attention given to the development of rapid reading for comprehension. Open only to Science and Mathematics majors.

315 Introduction to French Civilization (3)

Prerequisite: French 204 or equivalent. Reading and discussions to develop a view of the French tradition (its social, intellectual and literary evolution) while

French

at the same time strengthening facility with the language. Open to lower division students with the consent of the instructor. Conducted in French.

317 Advanced Conversation and Composition (3)

Prerequisite: French 204 or equivalent. Open to lower division students with the consent of the instructor. Designed to give the student special competence in the control of French as an instrument for free oral and written expression. Conducted in French.

325 Contemporary French Civilization (3)

Prerequisite: French 204 or equivalent. Reading and discussion to develop understanding of the social and intellectual problems, trends, and contributions of present-day France, while at the same time strengthening facility with the language. Open to lower division students with the consent of the instructor. Conducted in French.

375 Introduction to Literary Forms (3)

Prerequisite: French 317 or consent of instructor. An introduction to the principal literary forms, prose fiction, poetry, drama and the essay and to the major concepts of the literary techniques and criticism. Close analysis and interpretation of various texts to increase the student's abilities in reading, language, and literary criticism. Conducted in French.

400 French for Advanced Students and Teachers (3)

Prerequisite: French 317 or consent of instructor. Intensive review of spoken French, while developing the student's powers of self-expression in the spoken and written language. Modern writings in various fields, as well as developments in methodology and texts, serve as the basis for intensive practice. Conducted in French.

431 French Literature in the Middle Ages and Renaissance (3)

Prerequisite: French 315 or consent of instructor. The development of French literature from the 12th through the 16th centuries, through analysis of representative works. Conducted in French.

441 French Literature in the Century of Revolution (3)

Prerequisite: French 315 or consent of instructor. The principal authors and movements (romanticism, realism, naturalism, symbolism) of the 19th century. Conducted in French.

451 French: Literature in the Baroque and Classic Age (3)

Prerequisite: French 315 or consent of instructor. The essence and evolution of 17th-century classicism, studied principally in the major authors (Corneille, Molière, Racine, La Fayette) and in the dominant genre (the theater). Conducted in French.

461 French Literature in the Age of Enlightenment (3)

Prerequisite: French 315 or consent of instructor. Two complementary aspects of the 18th century: reason and feeling, the *philosophes* and the current of sensibility. Emphasis on major authors (Marivaux, Voltaire, Diderot, Rousseau, Laclos). Conducted in French.

466 Introduction to French Linguistics (3)

The analytical procedures of general linguistics as applied to French, with special attention to structural contrasts between French and English. Emphasis on the application of linguistic analysis to the teaching of modern foreign languages.

471 Senior Seminar: Contemporary French Literature (3)

Prerequisite: French 315 or consent of instructor. The major figures of the 20th century, including the generations of Proust, Apollinaire, Malraux, Sartre and Robbe-Grillet. Conducted in French.

485 Senior Seminar in French Literature (3)

Prerequisite: French 431, 441, 451, 461, or senior status. Exploration of a literary current, period, author, genre or problem. The subject will change each time the course is given. Conducted in French.

499 Independent Study (1-3)

Supervised projects in French language or literature to be taken with the consent of the instructor and department chairman. May be repeated for credit.

500 Graduate Seminar: Advanced Structure and Style (3)

Prerequisite: Consent of instructor. Conducted in French.

510 Graduate Seminar: Phonology (3)

Prerequisite: French 466 or consent of instructor. Conducted in French.

520 Old French (3)

Prerequisite: Consent of instructor. An introduction to the medieval dialects of northern France. A survey of phonology and grammar with the study of a variety of texts illustrating dialectal and chronological features. Conducted in French.

530 Graduate Seminar: Historical Linguistics (3)

Prerequisite: French 466 or consent of the instructor. Conducted in French.

557 Graduate Seminar: French Poetry (3)

Prerequisite: Consent of instructor. Conducted in French.

571 Graduate Seminar: French Prose (3)

Prerequisite: Consent of instructor. Conducted in French.

575 Graduate Seminar: French Drama (3)

Prerequisite: Consent of instructor. Conducted in French.

576 Graduate Seminar: Major Writers (3)

Prerequisite: Consent of instructor. May be repeated for credit. Conducted in French.

598 Thesis (3-6)

Prerequisite: Recommendation of the student's graduate committee.

599 Independent Graduate Research (1-3)

Prerequisite: Fluency in French and consent of instructor. Supervised research projects in French language or literature. May be repeated for credit.

GEOGRAPHY

100 Man and the Land (3)

An introductory geography of the world, with emphasis on the world's major physical regions and their occupational development by man.

Geography

206 Physical Geography (4)

A study of the basic elements of the physical environment (e.g., weather, climate, landforms, oceans, vegetation and soils) and an analysis of their world distribution and interrelationships. (3 hours lecture, 2 hours activity)

210 Cultural Geography (3)

A topical examination of the evolutionary role of culture in the human occupancy of the earth, focusing on changing technological and organizational patterns in livelihood and settlement.

233 Economic Geography (3) (Formerly 333)

A systematic inquiry into the world distribution of economic activities: agriculture, extractive and manufacturing industries, transportation and tertiary services.

312 Geomorphology (3)

Prerequisite: Geography 206 or Geology 100A. A study of the development of landforms and the processes which alter them. (2 hours lecture, 2 hours activity)

323 Climatology (3)

Prerequisite: Geography 206 or consent of instructor. A study of atmospheric elements and controls, climatic classification systems, and world climatic distributions. (2 hours lecture, 2 hours activity)

343 Maps and Map Interpretation (3)

Interpretation, evaluation, uses, and sources of various types of maps and graphic aids for teaching and research. (2 hours lecture, 2 hours activity)

431 Geography of California (3)

Description and analysis of the geographic regions of California—their environmental diversity, population distribution, economic development and current problems.

432 Geography of Anglo-America (3)

Prerequisite: Geography 100 or consent of instructor. A regional study of the United States and Canada emphasizing the interrelated physical and cultural features, that give geographic personality, both to the individual regions as well as the individual countries.

433 Geography of Europe (3)

Prerequisite: Geography 100 or consent of instructor. Description and analysis of physical environments and human occupancy patterns in Europe west of the Soviet Union.

434 Geography of Latin America (3)

Prerequisite: Geography 100 or consent of instructor. A systematic and regional survey of Middle and South America with particular emphasis on the interrelationships of the physical and social factors of the area.

435 Geography of Asia (3)

Prerequisite: Geography 100 or consent of instructor. A regional study of Asiatic nations, exclusive of the Soviet Union and Southwest Asia, showing the interrelationships of physical and cultural characteristics with special emphasis on the growing significance, in economic, social, and political terms, of such countries as China, India and Japan.

436 Geography of Sub-Saharan Africa (3)

Prerequisite: Geography 100 or consent of instructor. The physical, human, and regional geography of Africa south of the Sahara.

438 Geography of the Soviet Union (3)

Prerequisite: Geography 100 or consent of instructor. Character of and bases for the regional diversity of man and land in the Soviet Union.

439 Geography of the Middle East (3)

Prerequisite: Geography 100 or consent of instructor. The physical foundations and cultural landscapes of civilization in the Middle East, with emphasis on contemporary political, socioeconomic, and cultural changes.

445 Australia and the Pacific Islands (3)

Prerequisite: Geography 100 or consent of the instructor. The physical, cultural, and regional geography of Australia, New Zealand, Melanesia, Micronesia, and Polynesia.

450 Conservation of the American Environment (3)

A survey of resource-use problems and the principles of conservation, with discussions of philosophy, ethics, public policy, and conservation education. Type studies and term papers focus on the American West.

453 Senior Seminar: Culture and Habitat (3)

Prerequisite: Geography 210 or Anthropology 202, or consent of instructor. An ecological approach to man in nature, emphasizing a special habitat problem each year (e.g., diet and hunger, land tenure, environmental perception). (Same as Anthropology 453)

463 Problems of California Geography (3)

Prerequisite: Geography 431 or consent of instructor. A seminar analyzing selected geographic problems of California, such as urbanization, transportation, water supply and pollution.

464 Man and Geographic Relationships in Latin America (3)

Prerequisite: Geography 434 or consent of instructor. A seminar for advanced students in Latin American Studies or Geography. Studies of contemporary interest dealing with man and his development in the area of Latin America. Specific content of the course will vary from year to year, but major stress will be placed upon the larger countries of the region.

471 Urban Geography (3)

The city as a geographic unit; urban settlements as regional centers; city-region relationships; the structure of villages, towns and cities, and their historical development; case studies.

472 Urban Growth and Planning (3)

Prerequisite: Geography 471 or consent of instructor. A senior seminar on urban development with an emphasis on the decentralizing forces operating in contemporary urban space; identification of trends in the planning process.

475 Land Use Analysis and Classification (3)

Prerequisite: senior or graduate standing and completion of the Geography core. Consent of the instructor is required. Analysis and interpretation of urban and rural land use and settlement with specific references to geographic field problems. The course involves application of geographic techniques and tools to local field studies. Saturday field sessions.

Geography

478 Cartography (3)

Prerequisite: Geography core or consent of instructor. Compilation and construction of maps and graphs as geographic tools, with emphasis on the principles of effective cartographic representation. (2 hours lecture, 3 hours laboratory)

479 Airphoto and Image Interpretation (3)

Use of aerial photography, space photography, and other remote sensors as tools and research sources. Emphasis on interpretation of physical and cultural elements of the landscape. (2 hours lecture, 2 hours activity)

481 Political Geography (3)

Prerequisite: Geography 210 or consent of instructor. The political map of the world with special reference to the geopolitical structure of states, dependencies, and other politically organized areas.

483 Seminar in Historical Geography (3)

Prerequisite: Geography core or consent of instructor. The seminar will study a number of geographic sites and situations as products of change through time. The change will be examined under themes including theory and viewpoints, physical and cultural evolution. A research project on a local area will be required.

490 Geographic Research and Presentation (3)

Prerequisite: Geography core and consent of instructor. A senior seminar in research methods, with discussions of major research themes, data-gathering, writing, editing, printing, bibliographic citation, manuscript format, and presentation. Students prepare several short papers and one major research study.

499 Independent Study (1-3)

Open to advanced students. Student must have permission of instructor under whom study will be undertaken before enrolling. May be repeated once for credit.

500 Seminar in the Evolution of Geographic Thought (3)

Prerequisite: Graduate standing, or consent of instructor. An inquiry into the nature, scope, and development of the geographic discipline.

513 Seminar in Regional Geography (3)

Prerequisite: Graduate standing or consent of instructor. A seminar on selected regions or selected topics within a regional setting. May be repeated once for credit.

523 Seminar in Human Geography (3)

Prerequisite: Graduate standing or consent of instructor. A seminar on selected topics pertaining to cultural, economic, political or social geography. May be repeated once for credit.

597 Project (1-3)

May be repeated for a maximum of 6 units of credit.

598 Thesis (1-3)

Prerequisite: Recommendation of the student's graduate committee. May be repeated for a maximum of 6 units of credit.

599 Independent Graduate Research (1-3)

Open to graduate students by consent of instructor. May be repeated for credit.

GEOLOGY

(Offered by the Department of Science and Mathematics Education)

101 Physical Geology (4) (Formerly 100A)

An introduction to the physical nature of the planet earth, its properties and composition; the genesis and relationships of rocks and minerals; erosion processes and their effects; the evolution of the earth's crust. (Same as Earth Science 101) (3 hours lecture, 3 hours laboratory. One field trip)

102 Historical Geology (4) (Formerly 100B)

Prerequisite: Geology 101 or consent of instructor. The history of the earth as interpreted from rocks, structures, and fossils. Consideration of the geologic time scale, ancient environments, and the development of life, with emphasis on their interdependence. (Same as Earth Science 102) (3 hours lecture, 3 hours laboratory. One or two field trips)

GERMAN

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental German (5)

Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structures of German. Audio-lingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in German.

102 Fundamental German (5)

Prerequisite: German 101 or equivalent. Intensive practice in listening comprehension, speaking, reading, and writing to develop control of the sounds and the basic forms and structure of German. Audio-lingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in German.

203 Intermediate German (3)

Prerequisite: German 102 or equivalent. Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in German.

204 Intermediate German (3)

Prerequisite: German 203 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in German.

213 Intermediate Composition (2)

Practice in written expression based on cultural and literary materials. May be taken concurrently with German 203. Required of all majors and minors at the intermediate level; optional to others. Conducted in German.

214 Intermediate Composition (2)

Practice in written expression based on cultural and literary materials. May be taken concurrently with German 204. Required of all majors and minors at the intermediate level; optional to others. Conducted in German.

303 Readings in Scientific German (3)

Prerequisite: German 102 or equivalent. Readings reflecting a broad spectrum of writing in the physical and natural sciences and mathematics. Special attention given to the development of rapid reading for comprehension. Open only to Science and Mathematics majors.

German

315 Introduction to German Civilization (3)

Prerequisite: German 204 or equivalent. Readings and discussions in German literature, arts and institutions to develop insights into German culture, while strengthening facility with the language. Open to lower division students with the consent of the instructor. Conducted in German.

317 Advanced Conversation and Composition (3)

Prerequisite: German 204 or equivalent. Open to lower division students with the consent of the instructor. Designed to give the student special competence in the control of German as an instrument of free oral and written expression. Conducted in German.

325 Modern German Thought in Science and Culture (3)

Prerequisite: German 204 or equivalent. Readings and discussion of modern German thought in science, literature, philosophy and art, designed to acquaint the student with a broad range of German contributions to present-day civilization while strengthening facility with German language. Open to lower division students with consent of instructor. Conducted in German.

375 Introduction to Literary Forms (3)

Prerequisite: German 317 or consent of instructor. An introduction to the principal literary forms, prose fiction, poetry, drama and the essay and to the major concepts of literary techniques and criticism. Close analysis and interpretation of various texts to increase the student's abilities in reading, language, and literary criticism. Conducted in German.

399 German Phonetics (1)

Prerequisite: Junior standing and consent of instructor. Detailed analysis of individual problems in pronunciation followed by intensive work in class and the language laboratory. May be repeated for credit. Conducted in German.

400 German for Advanced Students and Teachers (3)

Prerequisite: German 317 or consent of instructor. Intensive review of spoken German, while developing the student's powers of self-expression in the spoken and written language. Modern writings in various fields, as well as developments in methodology and texts, serve as the basis for intensive practice. Conducted in German.

431 The Works of Lessing and Schiller (3)

The major works of Lessing and Schiller illustrating their thought and art. Conducted in German.

441 The Works of Goethe (3)

Selected works of Goethe illustrating his thought and art. Conducted in German.

451 German Literature to the Baroque (3)

Important works from the *Hildebrandslied* to *Simplicissimus* in the setting of their intellectual and historical climate. Conducted in German.

461 German Literature Since Goethe (3)

Important works illustrating the development from romanticism to expressionism in the setting of their intellectual and historical climate. Conducted in German.

466 Introduction to German Linguistics (3)

The analytical procedures of general linguistics as applied to German, with special attention to structural contrasts between German and English. Emphasis

on the application of linguistic analysis to the teaching of modern foreign languages.

485 Senior Seminar in German Literature (3)

Subject will vary and will be announced in the class schedule. Prerequisite: senior standing in German and consent of instructor. Research and discussion in depth of a literary movement, a genre or an author. Topics offered in past years have included the Baroque, the *Novelle*, Brecht, Modern Drama, Romantic Period. May be repeated for credit with a different topic. Conducted in German.

499 Independent Study (1-3)

Supervised research projects in German language or literature to be taken with the consent of the instructor and the department chairman. May be repeated for credit.

500 Graduate Seminar: Advanced Structure and Style (3)

Prerequisite: consent of instructor. Conducted in German.

510 Graduate Seminar: Phonology (3)

Prerequisite: German 466 or consent of instructor. Conducted in German.

530 Graduate Seminar: Historical Linguistics (3)

Prerequisite: German 466 or consent of instructor. Conducted in German.

557 Graduate Seminar: German Poetry (3)

Prerequisite: consent of instructor. May be repeated for credit with a different topic. Conducted in German.

571 Graduate Seminar: German Prose (3)

Prerequisite: consent of instructor. May be repeated for credit with a different topic. Conducted in German.

575 Graduate Seminar: German Drama (3)

Prerequisite: consent of instructor. May be repeated for credit with a different topic. Conducted in German.

576 Graduate Seminar: Major Writers (3)

Prerequisite: consent of instructor. May be repeated for credit with a different topic. Conducted in German.

598 Thesis (3-6)

Prerequisite: recommendation of the student's graduate committee.

599 Independent Graduate Research (1-3)

Prerequisite: Fluency in German and consent of instructor. Supervised research projects in German language or literature. May be repeated for credit.

HISTORY

110A World Civilizations to the 17th Century (3)

The story of man from the beginning of civilizations and historical records until the middle of the 17th century.

110B World Civilizations from 1648 (3)

The story of man from the end of the religious wars to the present. Deals with the rise of science, the Enlightenment, the Industrial Revolution, and the rise of the ideologies of the 20th century.

History

170A United States to 1877 (3)

A survey of the political, social, economic, and cultural development of the United States from the discovery to 1877. Attention is given to the Old World background, the rise of the new nation, sectional problems, and the Civil War and Reconstruction.

170B United States Since 1877 (3)

A survey of United States history from the late 19th century to the present. Attention is given to economic transformation, political reform movements, social, cultural, and intellectual changes, and the role of the United States in world wars and the Cold War.

340A History of England and Great Britain (3)

A study of the political, economic, and social history of England and her affiliated nations and territories from the earliest times to the later Stuarts. Particular stress is placed upon the growth of the parliamentary system of government and upon English overseas activities.

340B History of England and Great Britain (3)

A study of the political, economic, and social history of Great Britain from the later Stuarts to the present. Particular stress is placed upon the modification of the parliamentary system and the growth of economic and social democracy within Britain and upon the development of responsible political systems in the dependent territories.

350A Colonial Latin America (3)

A survey of the pre-Columbian cultures; the conquests by Spain and Portugal and the European background of these countries; the development of the socio-economic, cultural, and governmental institutions in colonial life; the background of revolutions and the wars for independence.

350B Republican Latin America (3)

A survey of the Latin American republic since 1826, emphasizing the struggle for responsible government, socioeconomic, and cultural changes, and the role of United States foreign policy.

383 History of California (3)

A survey of the political, economic, and social history of California from the aboriginal inhabitants to the present, tracing the development of contemporary institutions and the historical background of current issues.

399 Historiography (3)

Introduction to nature and discipline of history. A study of methods of historical research and writing, of bibliography, and of major problems of historical interpretation. Required of history majors.

401 European Intellectual History from 1500 to the Present (3)

Prerequisite: consent of instructor. The history of the competing ideas in European history from 1500 to the present which have entered into the formation of modern European institutions.

412A Ancient Near East—Mesopotamia (3)

Prerequisite: History 110A. A study of the political, socioeconomic, religious, and literary history of Mesopotamian culture from the rise of the Sumerian city-states to Alexander the Great, a period of over three millennia. This will include discussion of the Sumerians, Assyrians, Babylonians, Hurrians, and Persians.

412B Ancient Near East—East Mediterranean (3)

Prerequisite: History 110A. A study of ancient Egypt from early dynastic times in the third millennium B.C. to the conquest of Alexander the Great. The history of the Syro-Palestinian region will be studied in light of its migrations and international culture. A careful study of the Hebrews and their contributions to modern civilization will be included.

415A Classical Greece (3)

Prerequisite: History 110A or consent of instructor. A study of the civilization of ancient Greece. This course traces the rise and flourishing of the classical city-states; considerable attention is devoted to the literary and philosophic contributions to our modern civilization.

415B Hellenistic Civilization (3)

Prerequisite: History 110A or consent of instructor. A study of the Hellenistic synthesis and the new patterns in government, the arts and sciences, philosophy and literature that appeared between the Macedonian conquest and the intervention of Rome.

417A Roman Republic (3)

Prerequisite: History 110A or consent of instructor. A study of the development of Roman social and political institutions under the republic.

417B Roman Empire (3)

Prerequisite: History 110A or consent of instructor. A study of Roman imperial institutions and culture. Attention is also given to the rise of Christianity.

419 History of Byzantine (3)

The rise and fall of Byzantium from the 4th century A.D. until the 15th century A.D. This will include a study of Byzantine society and its contribution to the world.

423A Medieval Europe, 300–1050 (3)

Prerequisite: History 110A. The genesis of European society and culture from the decline of Rome to the mid-11th century: the medieval church, the Barbarian migrations, the Byzantine and Islamic cultures and the establishment of feudalism in western Europe.

423B Medieval Europe, 1050–1400 (3)

Prerequisite: History 110A. A continuation of History 423A. The struggle between church and state, the rise of feudal monarchies and the intellectual, scientific and artistic expressions of European civilization in the later Middle Ages.

425A The Renaissance (3)

Prerequisite: consent of instructor. The history of Europe from 1400 to 1525 with emphasis upon the beginnings of capitalism, the beginnings of the modern state, humanism, the pre-Reformation and the church on the eve of the Reformation.

425B The Reformation (3)

Prerequisite: consent of instructor. The history of Europe from 1525 to 1648; deals with the Protestant and Catholic Reformations; the religious wars; the price rise; royal absolutism; the rise of science.

History

426 Rise of Modern Europe, 1648–1763 (3)

Prerequisite: History 110B. European diplomatic history and the balance of power from 1648 to 1763. Attention is given to the social and philosophical developments of the period.

427 Europe in the Era of the French Revolution and Napoleon (3)

A survey of European history from 1763 to 1815. Emphasis is placed on the politics, society, and culture of the Old Regime, the influence of the Enlightenment, the impact of the French Revolution on Europe, and the establishment of French hegemony by Napoleon.

428 19th Century Europe (3)

Europe from 1815 to 1914. An examination of the political, economic, social, and cultural trends in European history from the Congress of Vienna to the outbreak of World War I. Special attention is given to the emerging forces of nationalism, liberalism, socialism, and secularism.

429 Europe Since 1914 (3)

Prerequisite: History 110B. Survey of events from the beginning of World War I to the present. Special emphasis given to the economic, political, social, diplomatic, and intellectual trends of 20th century Europe.

432 Germany Since 1648 (3)

Prerequisite: History 110A–B. The evolution of Germany from the Peace of Westphalia to the present. Emphasis is placed on political, social, economic, diplomatic and cultural trends in the 19th and 20th centuries.

434A Russia to 1890 (3)

Prerequisite: History 110B. An analysis of the historical developments from the establishment of the Russian state at Kiev through the great reforms, the revolutionary movement and reaction of the 19th century. Emphasis is placed upon the shaping of contemporary Russia.

434B The Russian Revolutions and the Soviet Regime (3)

An evaluation of the 1905 and 1917 revolutions and the subsequent consolidation of power under the Communist regime. Chief emphasis is placed upon the continuity and change in Russian social, political, cultural institutions and foreign policy effected by the impact of Marxist-Leninist-Stalinist ideology.

437 East Europe Since 1500 (3)

The political, social, economic, and cultural history of the peoples of East Central Europe from 1500 to the present.

439 History of Spain (3)

Development of Hispanic civilization from the earliest times to the present.

450 Change in Contemporary Latin America (3)

An analysis of political, social and economic change in present-day Latin America.

453 History of Mexico (3)

Mexico's political, social, economic, and intellectual development with emphasis upon the changes in the 20th century.

454 Argentina, Brazil, Chile (3)

A history of Argentina, Brazil, and Chile, with special attention to Chile.

456A Sub-Saharan Africa to 1900 (3)

The history of Africa from earliest times to partition by the European colonial powers.

456B Sub-Saharan Africa Since 1900 (3)

A comparative analysis of colonial policy and the problems of political, economic and social change.

457 Sub-Saharan Africa Since 1945 (3)

A survey of Sub-Saharan Africa since 1945 with emphasis on the process of decolonization and the socioeconomic and political problems subsequently encountered in these newly-independent nations.

460 Problems of the Contemporary Far East (3)

A topics course dealing with events in the major Far Eastern nations since World War II, with emphasis upon problems of nationalism, communism and economic development in China, Japan, Korea and Southeast Asia.

461A The Far East (3)

A study of the political, social and economic conditions in China, Japan and Korea prior to World War I, as well as the rise of American power in the Far East.

461B The Far East (3)

A study of the developments in China and Japan that led to the Sino-Japanese conflict, Japan's decision to fight the United States, and the rise of Communist China.

462A History of China (3)

A survey of Chinese history from antiquity until Western impact in the 19th century. The development of Chinese society, thought and political institutions.

462B History of China (3)

A survey of Chinese history from the 1840s to the present, emphasizing the problems posed by the Western presence in China and the various processes of modernization which China has undergone.

463A History of Japan (3)

A study of the social, political, and economic history of Japan until 1868, with emphasis upon the Tokugawa era.

464A Southeast Asia in the Modern World (3) (Formerly 464)

A study of the social, political, and economic development in Southeast Asia from 1500 to the establishment of the colonial empires of the West in the 19th century.

464B Southeast Asia in the Modern World (3) (Formerly 464)

A study of Southeast Asia under the impact of imperialism and the effects of decolonization.

465 History of India (3)

A survey of the Indian subcontinent's history from the earliest civilizations to the present.

History

466A Middle East to the Crusades (3)

Prerequisite: History 110A. The study of the events transpiring in the Middle East from the Roman world to the period of the Crusades. This will include the impact of the Islamic civilization upon the Middle East society.

466B Middle East Since the Crusades (3)

Prerequisite: History 110B. The development of the countries of the Middle East following the Crusades to the present. This will include the Ottoman Empire, European colonialism in the Middle East, and the modern Middle East.

468 Contemporary Middle East (3)

A study of the social, political and economic changes taking place in the Middle East primarily since World War I. Where possible the Middle East will be treated as a whole and viewed through a topic-oriented approach.

471 American Colonial Civilization (3)

Prerequisite: History 170A or consent of instructor. This course surveys the settlement of North America and the growth of Anglo-American civilization to the mid-18th century stressing the creation of political, economic, and social institutions and a distinctive American culture.

472 United States from Colony to Nation (3)

Prerequisite: History 170A or consent of instructor. This course surveys the political, economic, and intellectual developments of 18th-century America with special emphasis upon Anglo-American imperial problems leading to the Revolution, the origins of American nationalism, the creation of a constitutional republic, and the rise of a party system.

473 Sectionalism and Civil War (3)

Slavery, sectionalism, and Civil War, and the impact of these forces upon national life and thought from 1815 to 1865.

474 America in the Age of the Industrial Revolution (1876-1914) (3)

A study of the maturation of the American industrial economy and its transforming impact upon class structure, politics, intellectual and cultural life, and diplomacy. Special consideration is given to the attempts made in the Progressive years to cope with the changes wrought by the Industrial Revolution.

475 America Comes of Age, 1914-1945 (3)

A multi-topic analysis of major trends in U. S. domestic policy, foreign policy, economy and society from World War I through World War II. Course will concentrate on conflicting values and ideals of domestic policy and U.S. role in world affairs.

476 Age of Power, Affluence and Anxiety Since 1945 (3)

Multi-topic analysis of U. S. history from 1945 to the present stressing the interrelationship of foreign policy, economic prosperity, domestic tensions and protest movements.

481 Westward Movement in the United States (3) (Formerly 381)

Prerequisite: History 170A-B or equivalent. A survey of the expansion of the United States population and sovereignty from the eastern seaboard to the Pacific, colonial times to 1900, and a history of regional development during the frontier period.

482A Socioeconomic History of the United States (3)

Prerequisite: History 170A or consent of the instructor. The course explores the interaction of social and economic factors upon each other in the development of American society. Special attention is given to the role of business and labor in economic change. The first semester covers the development of a colonial economy and the early national economy.

482B Socioeconomic History of the United States (3)

Prerequisite: History 170B or consent of the instructor. The course continues to explore the interaction of social and economic factors upon each other in the development of American society. Special attention is given to the role of business and labor in economic change. The second semester begins with the "takeoff stage of economic development" and ends with contemporary America.

484A American Constitutional History to 1865 (3)

Prerequisite: History 170A. English and colonial origins, the growth of democracy, the slavery controversy, and the sectional conflict as they reflect constitutional development.

484B American Constitutional History from 1865 (3)

Prerequisite: History 170B. Constitutional problems involved in the post-Civil War era, the expansion of business, World War I, the New Deal, World War II, and civil rights in the postwar era.

485A United States Foreign Relations to 1900 (3)

A comprehensive survey of the foreign relations of the United States from the beginning of the nation until 1900. Particular attention is given to bases of policy, critical evaluation of major policies and relationships between domestic affairs and foreign policy.

485B United States Foreign Relations from 1900 (3)

Relations from 1900 to the present. An analysis of the rise of the United States as a world power in the 20th century with special emphasis on the search for world order and the diplomacy of the atomic age.

486A Social and Intellectual History of the United States (3)

A study of the social and intellectual development of the United States from the Puritans to the Civil War.

486B Social and Intellectual History of the United States (3)

A study of the social and intellectual development of the United States from the Civil War to the present.

487A History of Politics in American Society (3)

Prerequisite: History 170A-B or consent of instructor. The first semester of this course traces political developments from the Colonial Period to the end of the Civil War. Its primary focus is upon political patterns of behavior, institutional development and the response of the American political system to changing societal demands and needs.

487B History of Politics in American Society (3)

Prerequisite: History 170A-B or consent of instructor. The second semester of the course traces political developments from Reconstruction to Lyndon Baines Johnson. Its primary focus is upon political patterns of behavior, institutional development and the response of the political system to changing societal demands and needs.

Interdisciplinary Center

488A American Negro From Slavery to Jim Crow (3)

History of Black Americans from African backgrounds through slavery to late 19th century. Will include comparative study of slavery in several societies.

488B American Negro Since 1890 (3)

History of Black Americans from 1890 to present, stressing both their culture and role in American life and the issues involved in their relations with other segments of the population in various regions.

491 Proseminar in Special Historical Topics (3)

Intensive study of phases or periods of history involving occasional lecture, discussions, directed reading, and written reports.

499 Independent Study (3)

Open to advanced students in history with the consent of the department chairman. May be repeated for credit.

501 Seminar in the Content and Method of History (3)

Prerequisite: consent of the instructor.

505 Seminar in Analysis of Recent Interpretations in History (3)

Prerequisite: consent of the instructor.

520 Seminar in European History (3)

Prerequisite: consent of the instructor.

560 Seminar in Afro-Asian History (3)

Prerequisite: consent of the instructor.

570 Seminar in American History (3)

Prerequisite: consent of the instructor.

585 Seminar in the History of United States Foreign Relations (3)

Prerequisite: consent of the instructor.

590 History and Historians (3)

Prerequisite: consent of instructor. A study of the writings, personalities, and philosophies of representative historians from Herodotus to the present.

598 Thesis (3 or 6)

Prerequisite: consent of instructor. May be repeated for credit.

599 Independent Graduate Research (3)

Open to graduate students in history with the consent of the department chairman. May be repeated for credit.

INTERDISCIPLINARY CENTER

(Offered by the Center)

201A, B Honors Colloquium: Contemporary Civilization (3)

An interdisciplinary program to provide general education requirements for Honors students. The course is organized around six main themes: the "Death of God", the loss of a world picture, what is history? the triumph of the material, the triumph of the therapeutic, and understanding media. Relevant readings in Nietzsche, Camus, Einstein, Russell, Whitehead, Toynbee, Popper, Marx, Pavlov, Freud, McLuhan, et al. Admission by consent of the instructor or the Honors Committee.

301 Psychological Approaches to Literature (3)

A development of the work of I. A. Richards begun in his *Practical Criticism*. The course's primary focus is on the psychological experimentation relevant to understanding errors of interpretation, particularly interpretation of literary texts. Several experimental approaches to understanding errors in interpretation will be described and illustrated, including those of Piaget (errors of the child), Asch (structural factors of personality), and Adorno. Current therapeutic techniques for the development of attitude change will be discussed.

303 Yoga (3)

A study of Yoga: its theories, literature, and practices; some methods of meditation taught; its relevance for today's world.

304 Religion and the Cultural Crisis (3)

A study of the present religious situation, culminating in the "Death of God." Religion is shown as dynamically interacting with significant aspects of our cultural life—the family, the community, politics, law, and science. Tillich, Whitehead, and Karl Heim will be among the authors read.

305 The Hebrew Prophets: Poets, Philosophers, Humanists (3)

The eloquence and message of the prophets in their historical milieu. (Same as Comparative Literature 305.)

400 The Social Sciences in the Modern World: Basic Skills and Human Dimensions (3)

Analytical comparison of historical, humanistic, and scientific methodologies in the history of the social sciences. The human and professional aspects of careers in the contemporary social sciences.

401 The Social Sciences in the Modern World: Major Findings, Concepts, Theories (3)

Summary and synthesis of major findings and theoretical contributions from anthropology, economics, geography, history, linguistics, political science, psychology and sociology.

402 Art, Literature, and the Development of Consciousness (3)

An application of theories of consciousness, particularly Jungian, to art and literature. *The Divine Comedy* and certain tragedies especially will be used to illustrate the development of the hero through different levels of consciousness. (Same as Comparative Literature 402.)

403 The Quest for Self: East and West (3)

A comparative study of quest narratives which exemplify the Eastern and Western man's search for self-identity and fulfillment. Religious, psychological, and literary texts will be used to help illuminate the comparison. (Same as Comparative Literature 403 and Anthropology 416.)

404 The Nature of Love: Plato to Joyce (3)

An examination of the various dimensions of love as found in notable philosophical, psychological, and literary works. (Same as Comparative Literature 404.)

405 Psychoanalysis and Drama (3)

A detailed study of Freud's topographic and structural theories and their recent elaborations; the application of theory to selected readings in dramatic literature mainly, but also to some fiction, poetry, and films. (Same as Drama 405 and Comparative Literature 405.)

Interdisciplinary Center

406 Anxiety, Guilt and Freedom (3)

An interpretative exploration of relationship of religion to psychology.

420 The Worlds of Martin Buber, "The Philosophy and Theology of Martin Buber" (3)

A detailed and critical study of Buber's views concerning relationship of man to God and man to man.

422 Jewish and Comparative Mysticism (3)

A description and analysis of Jewish mysticism, and its comparison with other systems of mysticism from different cultures. (Same as Anthropology 422.)

451 Philosophical Backgrounds of Modern Literature (3)

The connection between representative writers and such thinkers and philosophers as Freud, Spengler, Schopenhauer, Nietzsche, and Kierkegaard. (Same as English 451 and Philosophy 451.)

452 Student Protest (3)

The dynamics of student protest with major attention given to contemporary activities in the U. S.

461 Development of Science and Technology (3)

Survey of contemporary history of scientific discovery, innovation, and technical change. (Same as Science and Mathematics Education 461.)

464 Technology and Ideology (3)

Examination of the development and meaning of contemporary technological society: technocracy, technostucture, cybernetics and cyberculture, and associated changes in ideology.

470 Seminar: Interdisciplinary Issues (3)

Concentrated study each year of a different key issue approached from an interdisciplinary view. In 1969-70: "The University in Ferment."

(Sponsored by the Interdisciplinary Center)

Anthropology

360 Contemporary American Culture (3)

406 Descriptive Linguistics (3)

410 Language and Culture (3)

411 Folklore (3)

413 Ethnological Music (3)

415 Culture and Personality (3)

420 Comparative Belief Systems (3)

423 Comparative Aesthetics and Symbolism (3)

425 Primitive Law and Government (3)

430 Economic Anthropology (3)

450 Culture and Education (3)

Art

380 Art and Child Development (3)

Biological Science

313 Human Genetics (3)

(This course may feature a special section which focuses on the relation of genetic knowledge to concepts in philosophy, psychology, and anthropology.)

Economics

370 Economics of Research and Development and Technological Change (3)

History

491 Proseminar in Special Historical Topics (3)

Topic: The American Response to Technological Development

Examination of the historical consequences of technological change and development for American society including the reception of technological images, symbols, and myths into the culture; the adaptation of institutions to imperative needs for technological innovation; and the changing status of technologists in American society with primary focus on the late 19th and 20th centuries.

Linguistics

375 Philosophy of Language (3)

(Same as Philosophy 375.)

490 Linguistics in Relation to Other Disciplines (1-4)

Philosophy

250 Philosophy of Ideas (3)

407 Seminar in Basic Concepts of Philosophy and Psychology (3)

The Center calls attention to such Interdisciplinary Programs as Comparative Literature and Linguistics.

INTERNATIONAL STUDY COURSES

California State College, Fullerton students under the California State Colleges International Study Programs register concurrently at California State College, Fullerton and at the host institution abroad, with credits assigned to the student which are equivalent to courses offered at California State College, Fullerton. Undergraduate students who discover appropriate study opportunities at the host institution but no equivalent course at California State College, Fullerton may use Independent Study (499) and International Study 292 or 492. Graduate students may use Independent Graduate Research (599) and International Study 592.

292 Projects in Study Abroad (Subject): (1-6 lower division units)

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

492 Projects in Study Abroad (Subject): (1-3 upper division units; maximum 12)

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

592 Projects in Study Abroad (Subject): (1-3 graduate units; maximum 12)

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

ITALIAN

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental Italian (4)

Intensive practice in listening comprehension, speaking and writing to develop control of the sounds and the basic structure of Italian. Audiolingual assignments

Journalism Education

are an integral part of the course and are to be prepared in the language laboratory. Conducted in Italian.

102 Fundamental Italian (4)

Prerequisite: Italian 101 or equivalent. Intensive practice in listening comprehension, speaking, reading and writing to develop control of sounds and the basic forms and structure of Italian. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in Italian.

JOURNALISM EDUCATION

(Offered by the Department of Communications)

442 Teaching Journalism in the Secondary School (2)

Prerequisite: Education 311, Education 340, admission to teacher education, or consent of the instructor. The student who has not had teaching experience must register concurrently in Education 449. See page 158 under Secondary Education for description of Standard Teaching Credential program. Theory and technique of advising school newspaper and yearbook staffs and teaching journalism. Relation of classroom instruction to staff assignments.

499 Independent Study (1-3)

Prerequisite: consent of department chairman. Individually supervised projects relating to journalism education.

749 Student Teaching in Journalism in the Secondary School and Seminar (6)

See page 312 for description and prerequisites.

LATIN

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental Latin (3)

Intensive practice to develop a comprehensive reading knowledge and a fundamental writing ability in Latin. Modern techniques of language instruction will be applied.

102 Fundamental Latin (3)

Prerequisite: Latin 101 or equivalent. Intensive practice to develop a comprehensive reading knowledge and a fundamental writing ability in Latin. Modern techniques of language instruction will be applied.

203 Intermediate Latin (3)

Prerequisite: Latin 102 or equivalent (2 years of high school Latin). Intensive reading and writing. Selected prose and poetry from the Golden Age. Audiolingual techniques of language learning are used when applicable.

204 Intermediate Latin (3)

Prerequisite: Latin 203 or equivalent (3 years of high school Latin). Intensive reading and writing. Selected prose from the Silver and Middle Ages. Audiolingual techniques of language learning are used when applicable.

499 Independent Study (1-3)

Supervised projects in Latin language and Roman literature. To be taken with consent of the Department Chairman as a means of meeting special curricular problems. Subject matter will vary. May be repeated for credit.

LINGUISTICS

341 Phonetics (3)

(Same as Speech 341, Drama 341.)

375 Philosophy of Language (3)

(Same as Philosophy 375.)

402 Phonetic Analysis of Speech (3)

(Same as Speech 402.)

404 General Semantics (3)

(Same as Speech 404.)

406 Descriptive Linguistics (3)

Introduction to the nature of human linguistic behavior. Phonological, morphological, and syntactic structures of languages are examined through the use of techniques developed for the description of such structures.

410 Language and Culture (3)

(Same as Anthropology 410.)

490 Linguistics in Relation to Other Disciplines (1-4)

The mutually contributing relationships between linguistics and the social and natural sciences, literature, music, psychology, philosophy, mathematics, and language pedagogy. To be taken for one unit of credit for four semesters by majors in linguistics. Open to all upper division students.

499 Independent Study (1-3)

Supervised projects in linguistics to be taken with the consent of the Department Chairman as a means of meeting special curricular problems. Selection of topic to be studied varies with needs of the students enrolled. May be repeated for credit.

505 Seminar: Phonetics and Phonemics (3)

Prerequisites: Anthropology or Linguistics 406 or consent of instructor. Study of various kinds of phonological systems that occur in languages. Emphasis on practical problems in the phonetic and phonemic analysis of selected language data. (Same as Anthropology 505.)

507 Seminar: Morpho-syntax (3)

Prerequisites: Anthropology or Linguistics 406 or consent of instructor. The study of word formation and sentence construction in a variety of languages. Application of immediate constituent, tagmemic, and transformational analysis to selected linguistic data. (Same as Anthropology 507.)

530 Historical Linguistics (3)

(Same as French, German, Spanish 530.)

MATHEMATICS *

110 Methods and Concepts of Mathematics (3)

Prerequisites: 2½ years of high school mathematics, including one year of algebra and one year of geometry. Selected topics in algebra, number theory, geometry, set theory, probability and analysis with special emphasis on the ideas and methods involved. Not open for credit to mathematics majors.

* Prerequisites may be waived in any mathematics course by the consent of the instructor.

Mathematics

120 Elementary Probability (3)

Prerequisites: three years of high school mathematics or its equivalent. Topics include set algebra, finite probability models, sampling, binomial trials, conditional probability and expectation. It is particularly suited to students of economics, the biological and social sciences.

150A,B Analytic Geometry and Calculus (4,4)

Prerequisites: four years of high school mathematics inclusive of trigonometry and a passing score in the placement test. An introduction to analysis including vector algebra, analytic geometry, functions, limits, differentiation, the definite integral, techniques of integration, first order differential equations, applications.

250 Intermediate Calculus (4)

Prerequisites: Math 150A, B or equivalent. A continuation of Math 150. Topics include functions of several variables, partial differentiation, curvilinear integrals, multiple integration, infinite series, Taylor's theorem, linear differential equations.

250A,B Intermediate Calculus (3,3)

Prerequisites: Math 150A,B or equivalent. May be taken by non-mathematics majors in lieu of Math 250. Topics include functions of several variables, partial differentiation, multiple integration, infinite series, Taylor's theorem, linear differential equations, vector calculus, line and surface integrals, Green's, Stokes' and Gauss' theorems.

291 Linear Algebra (3)

Prerequisite: Math 150B. The study of matrices, determinants, vector spaces, linear transformations.

302 Modern Algebra (3)

Prerequisite: Math 291. The integers, rational numbers, real and complex numbers, polynomial domains, introduction to groups, rings, integral domains and fields.

304 Mathematical Logic (3)

Prerequisite: Math 150B. An introductory course in the elements of mathematical logic.

305 Elements of Set Theory (3)

Prerequisite: Math 250 or Math 250B or Math 291. Operations on sets; functions; cardinals and ordinals; ordering, well ordering; axiom of choice; transfinite numbers.

306 Vector and Tensor Analysis (3)

Prerequisites: Math 291 and either Math 250 or Math 250A. Analysis of vector fields; Green's, Gauss' and Stokes theorems. Introduction to tensor analysis. Applications to geometry, mechanics and electromagnetism.

307 Elementary Differential Geometry (3)

Prerequisites: Math 291 and either Math 250 or Math 250A. The differential geometry of curves and surfaces in Euclidean 3-space. Differential forms in 3-space. Cartan's equations of structure. Gauss-Weingarten-Codazzi equations.

310 Ordinary Differential Equations (3)

Prerequisite: Math 291, and either Math 250 or Math 250B. An introduction to existence theorems and the theory of ordinary differential equations.

315 Euclidean Geometry (3)

Prerequisite: Math 250 or Math 250B. Selected topics in advanced Euclidean geometry such as convexity, transformation theory and n -dimensional Euclidean space.

320 Projective Geometry (3)

Prerequisite: Math 291. Homogeneous coordinates, projective group, cross-ratio, duality, point and line conics.

330 Number Theory (3)

Prerequisite: Math 250 or Math 250B or Math 291. Divisibility, congruences, prime number theory, Diophantine problems.

335 Mathematical Probability (3) (Formerly 335A)

Prerequisite: Math 250 or Math 250B. An introductory course in probability theory and its applications, based on use of the calculus.

336 Mathematical Statistics (3) (Formerly 335B)

Prerequisite: Math 250 or Math 250B. An introductory course in statistical theory and its applications, based on use of the calculus.

340 Numerical Analysis (3)

Prerequisites: Math 291, and either Math 250 or Math 250B. Corequisite: QM 264. Interpolation and approximation. Numerical differentiation and integration. Solution of nonlinear equations. Difference equations. Error analysis. Opportunity is given to use the computer center facilities.

350A,B Advanced Calculus (3,3)

Prerequisite: Math 291, and Math 250 or Math 250B. Designed to introduce the student to rigorous proofs in analysis. Topics include the real number system, continuity, differentiation and integration of functions of several variables, infinite integrals and series.

407 Abstract Algebra (3)

Prerequisite: Math 302. Sets, mappings, groups, rings, modules, fields, homomorphisms, advanced topics in vector spaces and theory of linear transformations, matrices, algebras, ideals, field theory, Galois theory.

412 Complex Analysis (3)

Prerequisite: Math 350A. Complex differentiation and integration, Cauchy's theorem and integral formulas, maximum modulus theorem, harmonic functions, Laurent series, analytic continuation, entire and meromorphic functions, conformal transformations and special functions.

414 Topology (3) (Formerly 314)

Prerequisite: Math 350A. An introductory course in point set and algebraic topology.

430 Partial Differential Equations (3)

Prerequisite: Math 350B or consent of instructor. Cauchy-Kowalewsky and other existence theorems, theory of first order equations, classification of equations of higher order, detailed study of elliptic, hyperbolic and parabolic equations, applications of functional analysis to partial differential equations.

Mathematics

431 Methods of Applied Mathematics (3)

Prerequisite: Math 350A or consent of instructor. Calculus of variation, partial differential equations of physics, Fourier series and orthogonal functions, integral transforms.

440 Advanced Numerical Analysis (3)

Prerequisites: Math 340 and Math 350A or consent of instructor. Numerical solution of linear equations, matrix inversion, computation of eigenvalues and eigenvectors, numerical solution of ordinary and partial differential equations, error analysis.

450 Real Analysis (3)

Prerequisite: Math 350A. An introduction to Lebesgue measure and integration on the real line. Topics include the dominated convergence theorem, absolute continuity, convergence in measure and differentiation.

499 Independent Study (1)

Prerequisite: consent of the instructor. Study of some special topic in mathematics, selected in consultation with the instructor and carried out under his supervisions.

506 Seminar in Number Theory (3)

Prerequisites: Math 302, Math 330, Math 350B or consent of the instructor. Selected topics in analytic and algebraic number theory.

507 Topics in Abstract Algebra (3)

Prerequisites: Math 407. Modules, algebras, ideal theory, field theory, Galois theory, categories, functors, homology.

508 Seminar in Algebra (3)

Prerequisites: Math 407 or consent of the instructor. Structure theory of rings, algebras, Field and Galois Theory. Homological algebra. Research topics in algebra. May be repeated for credit.

512 Complex Analysis (3)

Prerequisite: Math 412. Special topics in complex analysis including analytic functions of several variables, special functions, conformal mapping and Riemann surfaces.

514 Topology (3)

Prerequisite: Math 414. Advanced point set and algebraic topology.

515 Seminar in Advanced Topology (3)

Prerequisite: consent of the instructor. Advanced areas in topology in preparation for research work.

525 Differential Geometry (3)

Prerequisite: Math 414. Differentiable manifolds, connections, curvature, torsions, covariant differentiation, topics in Riemannian Geometry.

526 Seminar in Geometry (3)

Prerequisites: Graduate standing. Permission of the instructor.

530 Topics in Applied Mathematics (3)

Prerequisite: Consent of the instructor. Topics will be selected from mechanics of continua, integral equations, partial differential equations, probability, statistics,

ordinary differential equations, Riemann surfaces and approximation theory. May be repeated for credit.

531 Seminar in Applied Mathematics (3)

Prerequisite: consent of the instructor. Advanced topics in applied mathematics.

550 Topics in Real Analysis (3)

Prerequisite: Math 450. General theory of measure and integration, set functions, theorems of Radon-Nikodym and Fubini.

551 Seminar in Analysis (3)

Prerequisite: consent of the instructor. A semester graduate course in analysis. Advanced topics in real and complex analysis.

560 Functional Analysis (3)

Prerequisites: Math 291, Math 450, corequisite Math 414. Topics in modern functional analysis including Hilbert and Banach spaces, linear transformations and spectral theory.

599 Independent Graduate Research (1-3)

Prerequisite: Graduate Standing. One unit of independent study required of each student for each regular graduate course. Also offered without being attached to any course. May be repeated for credit.

MATHEMATICS EDUCATION

(Offered by the Department of Science and Mathematics Education)

303A,B Fundamental Concepts of Mathematics—Arithmetic (3,3)

Prerequisites: one year of algebra and one year of geometry. The structure of the real number system and its subsystems. Numeration systems. Elementary number theory. Equations and inequalities. Elementary set theory and logic. Does not give credit toward mathematics major.

311 Fundamental Concepts of Mathematics—Algebra (3)

Prerequisite: Math 150B. Selected topics in modern algebra. Axiomatic construction of algebraic structure. Linear systems of equalities and inequalities. Combinatorial analysis. Truth-functional logic.

312 Fundamental Concepts of Mathematics—Geometry (3)

Prerequisite: Math 150B. Selected topics in elementary geometry. The study of various axiom systems for Euclidean geometry; non-Euclidean geometry; projective, metric, and affine geometry.

442 Teaching Mathematics in the Secondary School (2)

Prerequisites: Education 311, Education 340, Admission to Teacher Education, senior standing, or consent of the instructor. Objectives, methods, and materials for teaching mathematics in secondary schools. Required, before student teaching, of students presenting majors in mathematics for the general secondary credential. The student who has not had teaching experience must register concurrently in Educ 449. The requirements for the major must include Math Educ 303A, B, 311, and 312. (1 hour lecture, 2 hours activity)

480 History of Mathematics (3)

Prerequisites: A bachelor's degree with a major or minor in mathematics or mathematics education. An introduction to the history of elementary mathematics through the calculus, by a problem solving approach.

Music

499 Independent Study (1-3)

Prerequisite: consent of the instructor. Study of some special topic in mathematics education, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

749 Student Teaching in Mathematics in the Secondary School and Seminar (6)

See page 312 for description and prerequisites.

750 Seminar in Mathematics Education (2)

Prerequisites: Graduate standing and consent of the instructor. Study of selected problems in elementary or secondary education. May be repeated for credit.

MUSIC

100 Introduction to Music (3)

A basic approach to listening to music with understanding and pleasure through a general survey of musical literature representative of various styles and performance media. Music will be related to other arts through lectures, recordings, and concerts. Closed to music majors.

101 Music Theory for Nonmusic Majors (3)

Basic theory and practical applications to further understanding of basic music principles and to improve music performance and listening skills. Includes sight-singing and relationship to keyboard and simple melodic instruments. Closed to music majors.

111A,B Music Theory (3,3)

A year course covering diatonic harmony and musicianship. Includes scales and intervals, triads and their inversions, harmonizations, nonharmonic tones, modulation and dominant seventh chords. Practical applications, to include sight singing, dictation and keyboard harmonizations. (2 hours lecture, 2 hours activity)

161a, 361a Symphony Orchestra (1)

Open by audition to college students and qualified adults in the community. Performance of standard representative symphonic works. (More than 3 hours major production)

161b, 361b College Choir (1)

Open to all college students with permission of instructor. Study and performance of standard representative choral literature works. (More than 3 hours major production)

161c, 361c Symphonic Band (1)

Open by audition to college students and qualified adults in the community. Performance of standard representative symphonic band literature. (More than 3 hours major production)

161d, 361d Opera Theatre (1)

Study of roles and representative excerpts from standard and contemporary operas and the basic musical, dramatic and language techniques of the musical theatre. Performance of operatic excerpts and complete operas. (More than 3 hours major production)

161e, 361e College Singers (1)

Membership restricted to advanced voice students or those passing voice test. Performs finest representative choral literature. (More than 3 hours major production)

162b, 362b Wind Ensemble (1)

Open to qualified wind students by audition or consent of the instructor. Performs representative wind ensemble literature. (2 hours activity)

162c, 362c Vocal Ensemble (1)

Study and performance of choral literature of the Renaissance and Baroque periods. Open only to students by audition. Public performance required. (2 hours activity)

162d, 362d Percussion Ensemble (1)

Study and performance of music written for the Percussion Ensemble. Open to any qualified student with consent of instructor. 2 hours activity.

163, 363 Chamber Music Ensembles (1)

Open to all qualified wind, string, or keyboard students. Various ensembles will be formed to study, read, and to perform representative chamber literature of all periods. (2 hours activity)

170, 270, 370, 470 Individual Instruction (Technique) (1-2)

Note: Students must register for a minimum of one unit per semester, selected upon advisement from Mu 170-470/Mu 171-471. Individual study with approved instructor with emphasis on performance techniques. Jury examination required. Special fee.

171, 271, 371, 471 Individual Instruction (Repertory) (1)

Prerequisite: Jury recommendation plus two consecutive semesters of individual instruction (Technique) (170-470). Note: Students must register for a minimum of one unit per semester, selected upon advisement from Mu 170-470/Mu 171-471. Individual study with approved instructor with emphasis on repertory. Jury examination required.

184A,B Piano Class for Teachers (1,1)

Prerequisite: Mu 101. Elementary and intermediate instruction in basic piano techniques, with special emphasis on application in the elementary school. Required of candidates for general elementary credential who specialize in music and those preparing to teach in kindergarten and first grades. (2 hours activity)

211A,B Music Theory (3,3)

Prerequisite: Mu 111B, or equivalent. A year course covering secondary dominants, diminished 7th, 9th, 11th, and 13th chords, sequence and chromatic chords. Practical applications to include sight singing, melodic and harmonic dictation, and keyboard harmonizations. (2 hours lecture, 2 hours activity)

251 Survey of Musical Literature (3) (Formerly 151A,B)

An introductory course required of majors in the study of the literature of music in Western civilization. Open to minors and qualified students by consent of instructor. Students should be able to read music as a part of the analysis of form, design and style. (3 hours lecture, 1 hour laboratory)

Music

281 Orchestral Instruments (2)

Required of all music degree candidates and for music teaching credentials. May be repeated for a maximum of 8 units. (4 hours activity)

281a String Instruments (2)

Specialization on violin, with related work on standard instruments of the string family. (4 hours activity)

281b Woodwind Instruments (2)

Specialization on clarinet, with related work on standard instruments of the woodwind family. (4 hours activity)

281c Brass Instruments (2)

Specialization on trumpet, with related work on standard instruments of the brass family. (4 hours activity)

281d Percussion Instruments (2)

Specialization on the snare drum and mallet-played instruments with related work on other standard percussion instruments. Special consideration given to typical problems encountered with percussion in the public schools. (4 hours activity)

281e Survey of Orchestral Instruments (2)

A general survey of orchestral instrument practices for elementary credential candidates. (4 hours activity)

282A,B Piano Class for Music Majors (1,1)

Prerequisite: declaration of the music major and placement by the instructor. Designed to meet music major piano requirements for degree and teaching credentials. Fundamentals of keyboard technique for students whose major performance field is not piano. Not required for piano majors. (2 hours activity)

283A,B Voice Class (1,1)

Prerequisite: permission of instructor. Priority is given to music majors. Designed to meet voice requirement for instrumental and piano majors and to prepare candidates for proficiency requirement for teaching credential. Not required for voice majors. (2 hours activity)

312 Modal Counterpoint (2) (Formerly 312A)

Prerequisite: Mu 111AB and 211AB. Required of all music majors. 16th century polyphonic techniques in two and three voices, covering cantus firmus, double and triple counterpoint and fugal (i.e. imitative and cononic) techniques. The style is generally liturgical but does include some stylistic consideration of the secular styles of dance, song and madrigal.

313 Tonal Counterpoint (2) (Formerly 312B)

Prerequisite: Mu 312. Late 17th and 18th century polyphonic techniques characteristic of the music from Purcell to Mozart. Includes basso ostinato, imitative counterpoint fantasia, invention, fugue and canon in two and three voices.

321A,B Form and Analysis (2,2)

Prerequisite: consent of instructor. Analysis of structural elements of music such as motive, phrase, and period; binary, ternary, rondo, sonata-allegro and larger musical forms in representative musical works.

322A,B Composition (2,2)

A—Prerequisite: elementary counterpoint, Mu 211B or consent of instructor. Ear training, analysis of smaller forms, simple composition of two three-part song form styles. B—Analysis and writing of more complex musical forms.

323A,B Orchestration (2,2)

Prerequisite: Mu 211B and consent of instructor. Writing and analysis of orchestral music.

333 Music and Child Development (3)

Prerequisite: Mu 101 or equivalent or successful completion of proficiency test. Study of the relationship of music to child growth and development, with emphasis on the child from 5 to 12.

350 Music in Our Society (3)

Prerequisite: Mu 100 or consent of instructor. Designed to increase interest and an understanding of music in its relation to our general culture. Emphasis on structure, analysis and aesthetic principles through the study of masterpieces of musical literature of various historical periods.

351A,B History and Literature of Music (3,3)

Prerequisites: Mu 151A,B. A—A study of the history and literature of music from early Greek beginnings through the Renaissance. B—A study of the history and literature of music covering the Baroque, Classic, Romantic period and the 20th century. (Required of all music majors.)

382A,B Piano Class for Music Majors (1,1)

Prerequisite: Mu 282B or placement by instructor. Continuation of piano requirement for qualified upper division students. Mu 382B provides specific preparation for piano functional examination. (2 hours activity)

385A,B Voice Class for Elementary Teachers (1,1)

Basic techniques of singing, adaptation of the adult voice for singing with children. Emphasis on the development of singing skills and the selection of singing materials from children's music books used in the elementary school. Primarily intended for candidates for elementary credential. (2 hours activity)

386 Piano Accompanying (1)

The study and application of playing accompaniments for instrumentalists, vocalists, and ensembles. Participation in rehearsals, recitals, and concerts required. (2 hours activity)

390 Diction for Singers (1)

This course is designed to teach proper singing diction in English, Italian, French and German, but may not be considered a substitute for formal language study. Examples from standard vocal literature explained through use of International Phonetic Alphabet.

391A,B Choral Conducting (2,2)

Principles, techniques, and methods of conducting choral groups. Laboratory work with class and vocal ensembles, using standard choral repertoire. Required of all music education majors. (4 hours activity)

392A,B Instrumental Conducting (2,2)

Prerequisite: Mu 391A. Principles, techniques, and methods of conducting orchestral and band groups. Laboratory experience in conducting instrumental groups, using standard instrumental literature. (4 hours activity)

Music

393 Piano Performance and Repertory (3)

Prerequisite: Mu 351A,B or consent of instructor. Study and performance of representative styles and schools of piano literature, particularly with reference to solo and ensemble works. (2 hours lecture, 2 hours activity)

454 The String Quartets of Beethoven (2)

Prerequisites: Previous music history and theory courses. A comprehensive study of the early, middle and late quartets of Beethoven approached through listening to recordings and live performances. Research on the period and the circumstances under which each quartet was composed will be presented in the form of seminar projects.

456 Opera History and Literature (2)

Prerequisite: Mu 351A,B or consent of instructor. The course will cover opera history, including its predecessors to the present day, with representative examples of literature from all periods.

457 Song Literature (2)

Prerequisite: Mu 351A,B or consent of instructor. Course will provide a basic knowledge of art song literature in terms of period style and nationality.

458 Collegium Musicum Practicum (2)

Prerequisite: Mu 351A,B or consent of instructor. The study and performance of rare and old music, both instrumental and vocal. Techniques of musical research will be applied. Students should be competent performers.

467 Piano Pedagogy (2)

Prerequisite: Mu 393 or consent of instructor. Fundamentals of piano pedagogy, with reference to studio and public school teaching. Organization, materials and methods of teaching piano in beginning, intermediate, and advanced classes.

498 Senior Recital (1)

Advanced individual instruction in the principal performance field leading to the successful presentation of a public senior recital.

499 Independent Study (1-3)

Study of a special topic in Music selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

500 Introduction to Graduate Study in Music (2)

Required of all graduate music majors. Study of basic bibliography, literature, and research techniques and materials useful in graduate music study.

522 Contemporary Techniques of Composition (2)

Advanced techniques of composition, as applied to the student's area of graduate specialization.

523 Advanced Orchestration (2)

Prerequisite: Mu 323B. Analysis and practice of traditional and contemporary orchestration techniques. Scoring of music for large ensembles such as orchestra, band, chorus and orchestra, or band and orchestra.

550 Seminar in Music History (2)

Prerequisites: At least two from the following: Mu 451, 452, and/or 453, and consent of instructor. Detailed investigation and analysis of specific developments in musicology including exercises in transcriptions from old notations and historical investigations prepared by members of the seminar.

551 Music of the Medieval Period (2) (Formerly 450)

Prerequisite: Consent of instructor. A detailed study of the music forms, structures and styles from 500 to 1450. Detailed analysis of important representative works as well as the contributions of individual composers and theoretical writers.

552 Music of the Renaissance (2) (Formerly 450)

Prerequisite: Consent of instructor. A comprehensive study of the forms, styles, and developmental characteristics of music between 1450 and 1600. Detailed analysis of selected works by representative composers and theoretical writers.

553 Music of the Baroque Period (2) (Formerly 452)

Prerequisite: Mu 351A,B or consent of instructor. Musical forms, styles, and performance practices of the Baroque period. Detailed analysis of significant representative works. (2 hours lecture and discussion, 1 hour weekly listening)

554 Music of the Classic Period (2) (Formerly 452)

Prerequisite: Mu 351A,B or consent of instructor. A study of the history and literature of music from approximately 1750 to 1900. Detailed analysis of important representative works. (2 hours weekly lecture and discussions, 1 hour per week listening.)

555 Music of the Romantic Period (2) (Formerly 452)

Prerequisite: Consent of instructor. An intensive study of the structure and development of music in the nineteenth century. Detailed analysis of important representative works. (2 hours weekly lecture and discussion, 1 hour listening)

556 20th Century Music (2) (Formerly 453)

Prerequisite: Mu 351A,B or consent of instructor. Developments in the music of western Europe and the western hemisphere since 1890. Intensive study of contemporary music and its structure.

558 Collegium Musicum (2)

Prerequisite: Permission of instructor. Advanced studies in the performance of rare and old music. (see Mu 458 for general description). May be repeated for credit.

570 Individual Instruction (1-2)

Prerequisite: Jury recommendation. Individual instruction with approved instructor with emphasis on performance techniques and repertory. Minimum of 1 unit must be taken per semester. Required of all graduate students whose terminal project is the graduate recital. Special fee.

591 Advanced Choral Conducting and Interpretation (2)

Prerequisite: Mu 391B, conducting experience, or consent of instructor. Advanced problems in choral conducting techniques, with emphasis on laboratory work with student groups and in concert conducting. (4 hours activity)

592 Advanced Instrumental Conducting and Interpretation (2)

Prerequisite: Mu 392B, keyboard facility for score reading and consent of instructor. Advanced study of conducting techniques through assignments with the college symphony. Interpretive problems of each period covered in lectures. (4 hours activity)

597 Project (3)

Systematic study and report of a significant undertaking in the area of musical composition, musical performance, or other related creative activity. A written critical evaluation of the work or activity will be required.

Music Education

598 Thesis (3)

Individual investigations of specific problems in the area of concentration by candidates for the M.A. degree.

599 Independent Graduate Research (1-3)

Prerequisite: graduate standing in music and permission of instructor. Research and study projects in areas of specialization beyond regularly offered course work. Oral and written reports required.

MUSIC EDUCATION

435 Children's Literature in Music (2)

Prerequisite: Mu 333 or consent of instructor. A survey of books and listening materials for preschool and elementary age children, with techniques of presentation. Designed for the classroom teacher or general student.

Music Education Techniques Block: *

*** 441 Teaching Music Theory and Appreciation in the Public Schools (2)**

Prerequisite: 20 units in music, Educ 311, or consent of instructor. Required of all music majors working for the standard teaching credential, secondary specialization. The history and organization of the teaching of music theory and appreciation in the public schools. Interrelation of general and specialized classes and their place in the total school program. Music literature, materials, and techniques for producing effective musical growth. (2 hours lecture)

*** 442 Teaching Vocal Music in the Public Schools (2)**

Prerequisites: 20 units in music to include Mu 391A (for those doing student aide), Educ Sec 340, Educ Found 311, Admission to Teacher Education, senior standing or consent of the instructor. See page 158 under Secondary Education for description of standard teaching credential program. Objectives, methods, and materials including audiovisual instruction for teaching music in the secondary schools. The history and organization of the teaching of vocal and choral music in public education. Planning sequential vocal training and performance organizations for the total school program. Study of choral literature and techniques of instruction. (2 hours lecture)

*** 443 Teaching Instrumental Music in the Public Schools (2)**

Prerequisite: 20 units in music, Educ Found 311, senior standing or consent of instructor. Required of all music majors working for the standard teaching credential, secondary specialization. The history and organization of the teaching of instrumental music in public education. Study of music literature and appropriate curricula for the development of concert bands, symphony orchestras, and chamber music ensembles for the total school program. (2 hours lecture)

532 Seminar in Music Education (2)

Studies in the trends and application of educational theory in relation to the teaching of music in the public schools.

544 Curriculum Planning and Construction in Music (2)

Principles and practices of curriculum planning in music education, with special reference to the public elementary, junior and senior high school. Required of majors who intend to complete supervision credential.

* Mu 441, 442 and 443 are scheduled as an integrated course in music education techniques. Students must take in the semester immediately preceding student teaching (ordinarily the first semester of the postgraduate year) and must allow two hours daily in their schedules to take the class and to complete fieldwork assignments. Students without teaching experience must take Educ 449 Teacher Aide Assignment (1) concurrently and must allow sufficient time in their schedules at the same hour each day so that they can serve as teacher aides in public schools.

545 Supervision and Administration of Music in the Public Schools (2)

Open to music education majors with teaching experience. Philosophy, principles and practices of supervision of music in the public elementary and secondary schools. Emphasis on modern principles of leadership, types of services, organization, management and evaluation of programs of instruction. Required of candidates for supervisory credential.

749 Student Teaching in Music in the Secondary School and Seminar (6)

Prerequisite: Mu 441, 442, 443 and Educ 449.

See page 312 for description.

NATURE INTERPRETATION

(Offered by the Department of Science and Mathematics Education)

460 Applied Conservation (4)

Prerequisites: upon division standing with basic courses in Biology; Geography 450 required of non-science majors. A survey of the history of conservation for application in teaching and nature interpretive professions.

570 Elements of Nature Interpretation (3)

Prerequisites: B.A. degree and consent of instructor. An interdisciplinary integration of biological, earth science and social science principles relevant to a naturalist training program for teachers and graduate students.

PHILOSOPHY

100 Introduction to Philosophy (3)

An introduction to the nature, methods and some of the main problems of philosophy.

110 Comparative Study of the World's Great Religions (3)

A study of man's religious impulse as viewed from the philosophical standpoint. An attempt will be made to analyze and to compare religious experience as expressed in Christianity, Islam, Buddhism, Hinduism, etc.

210 Logic (3)

Analysis of the various forms given to propositions and the basic requirements necessary for valid inference.

250 Philosophy of Ideas (3)

Analysis of basic ideas which have shaped modern thought.

290 History of Philosophy: Greek Philosophy (3)

The origins of Philosophy in Greece, and its development to the time of Socrates, Plato, and Aristotle.

291 History of Philosophy: Medieval Philosophy (3)

Scholastic philosophy and its precursors in ancient thought.

300 History of Philosophy: Rationalism and Empiricism (3) (Formerly 331)

The rationalism of Descartes, Spinoza, and Leibniz, and the empiricism of Locke, Berkeley, and Hume.

301 History of Philosophy: Kant and the 19th Century (3) (Formerly 332)

The empiricistic and rationalistic influences on Kant, followed by a study of the major trends in 19th-century philosophy.

Philosophy

305 Contemporary Philosophy (3) (Formerly 382)

A survey and analysis of the main trends of 20th century philosophy. Emphasis will be placed on such trends as pragmatism, linguistic analysis, and existentialism.

310 Ethics (3)

An analysis of the problems of human conduct: motivation, valuing, norms, social demands, and personal commitments.

311 Aesthetics (3)

An investigation into the conditions and the aims of art and aesthetic experience.

323 Contemporary Existentialism (3)

An analysis of the meaning of existentialism in modern philosophy.

345 Political Philosophy (3)

Selected problems in political philosophy.

347 Selected Problems in Philosophy (3)

An investigation into the significant contributions made to human culture through philosophic analysis.

360 Philosophy of History (3) (Formerly 460)

A study of the metaphysical and the logical problems of history.

368 Symbolic Logic (3)

The recognition and construction of correct deductions in the sentential logic and the first-order predicate calculus with identity.

370 Philosophy of Religion (3)

An examination of the role of philosophy in shaping theological doctrine, in critically evaluating religious experience, in proving the existence of God, and in considering the issues of atheism and the existence of evil.

375 Introduction to Philosophy of Language (3)

An introduction to the major issues in semantical theory: truth, meaning, analytic-synthetic, semiotics. (Same as Linguistics 375.)

380 Seminar in Analytic Philosophy (3) (Formerly 470A)

Prerequisite: six units in philosophy or instructor's permission. A detailed investigation of the works of some of the many figures of the 20th century movement in analytic philosophy. The works of Russell, Moore, Wittgenstein, Strawson, Ryle will be read.

420 Metaphysics (3) (Formerly 412)

Prerequisite: six units in philosophy or instructor's permission. An examination of the philosophical problems of freedom and determinism, mind and body, time and becoming, causation, deity, substratum, personal identity.

425 Introduction to Phenomenology (3) (Formerly 380)

Prerequisite: six units in philosophy or instructor's permission. An investigation into the historical background and basic viewpoints which have provided a framework for philosophical research and study in the writings of Husserl, Heidegger, Sartre, and Merleau-Ponty.

430 Epistemology (3) (Formerly 340)

Prerequisite: six units in philosophy or instructor's permission. An investigation of the concepts of knowledge, belief and certainty, and a study of representative theories concerning man's knowledge of the external world, the past, and other minds.

435 Philosophy of Science (3) (Formerly 450)

Prerequisite: six units in philosophy or instructor's permission. An investigation into the methodologies of the deductive and inductive sciences.

440 Philosophy of Mind (3) (Formerly 502)

Prerequisite: six units in philosophy or instructor's permission. Basic problems relating to the analysis of the concept of mind and such related issues as behavior, consciousness, and voluntary action.

445 Seminar in Value Theory (3) (Formerly 507)

Prerequisite: Philosophy 310 or instructor's permission. An investigation into the conditions, modes, levels, and criteria relevant to any systematic view of valuing.

450 Seminar in Philosophy of Language (3) (Formerly 490)

Prerequisite: six units in philosophy or instructor's permission. A detailed examination of the problems in the theory of meaning and formal semantics.

457 Seminar in Ancient Philosophy (3) (Formerly 417A, 417B, 447A, and 447B)

Prerequisite: Philosophy 290 or instructor's permission. A detailed examination of the works of some major Ancient Philosopher, such as Plato or Aristotle, or of some School of Ancient Philosophy, such as Stoicism. This course number may be repeated with different content for additional credit.

467 Seminar in Continental Rationalism (3) (Formerly 427A and 427B)

Prerequisite: Philosophy 300 or instructor's permission. A detailed examination of the works of some major Rationalist, such as Descartes, Spinoza or Leibniz, or some school or phase of Continental Rationalism. This course number may be repeated with different content for additional credit.

477 Seminar in British Empiricism (3) (Formerly 457A and 457B)

Prerequisite: Philosophy 300 or instructor's permission. A detailed examination of the works of some major British Empiricist, such as Locke, Berkeley, or Hume, or of some school or phase of British Empiricism. This course number may be repeated with different content for additional credit.

487 Seminar in Modern Philosophy (3) (Formerly 467A and 467B)

Prerequisite: Philosophy 301 or instructor's permission. A detailed examination of the works of some major Modern Philosopher, such as Kant, Hegel, Nietzsche or J. S. Mill, or of some school or phase of Modern Philosophy to around the end of the 19th century. This course may be repeated with different content for additional credit.

497 Seminar in Contemporary Philosophy (3) (Formerly 470B)

Prerequisite: Philosophy 305 or instructor's permission. Emphasis will be placed on the Analytic Movement in Philosophy as it developed during the 20th century. The works in such philosophers as C. I. Lewis, Quine, Goodman, Russell and Wittgenstein will be read. The course may be repeated with different content for additional credit.

Physical Science

499 Independent Study (1-3)

Prerequisites: minimum of 12 units in philosophy and approval of the department. Such study is designed to develop greater competency in research. May be repeated for credit.

PHYSICAL SCIENCE

(Offered by the Departments of Chemistry and Physics)

201 Modern Physical Science (4)

Prerequisite: one year of high school algebra or equivalent, or permission of the instructor. Taught jointly by the departments of chemistry and physics, this course presents the essential unifying features of the basic physical sciences, chemistry, chemistry and physics; the modern concepts of the physical and chemical theory of atomic and molecular structure form the unifying course material. Selected physical and chemical theory (from the fields of mechanics, electricity and magnetism, light, kinetic theory, thermodynamics, quantum theory, and inorganic and organic chemistry) are included to provide the necessary background material. Credit will not be given to students who have had a college course in chemistry or physics.

PHYSICS *

101 Freshman Seminar (1)

Prerequisite: open only to freshman physics majors and, by written permission of the department chairman only, to others in closely related fields.

Introduction to physics: a series of seminars, in lecture and discussion form, concerning careers in physics and the applied sciences, professional activities of today's scientists, and special topics of current interest in physics research and development. Field trips to academic and industrial establishments are included. (1 hour seminar or one field trip per week)

201 Modern Physical Science (4) (See course description under Physical Science 201)

211A,B Elementary Physics (3,3)

Prerequisites: high school algebra, $1\frac{1}{2}$ years; trigonometry, $\frac{1}{2}$ year. Elementary physics taught without the use of calculus. Covers principally the fields of mechanics, thermodynamics and electricity and magnetism in the first semester, and principally the fields of waves, relativity, quantum mechanics and the search for the ultimate constituents of matter in the second semester.

Concurrent enrollment in 212A,B laboratory required.

212A,B Elementary Physics (1,1)

Laboratory for 211A,B. Concurrent enrollment in 211A,B lecture required. (3 hours laboratory per week)

221A Fundamental Physics (4)

Prerequisite: Math 150A; corequisite: Math 150B. Fundamental classical physics including mechanics, heat and thermodynamics, acoustics, and wave motion.

Concurrent enrollment in 222A laboratory required.

222A Fundamental Physics (1)

Laboratory for 221A. Concurrent enrollment in 221A lecture required. (3 hours laboratory per week)

* For all courses, prerequisites not requiring consent of the department chairman may be waived by the instructor of the course if he is satisfied that the student is qualified to undertake the course. A grade of C or better is required for all prerequisite courses.

221B Fundamental Physics (4)

Prerequisite: Physics 221A. Fundamental classical and modern physics, including physical optics, electricity and magnetism, and an introduction to modern physics. Concurrent enrollment in 222B laboratory required.

222B Fundamental Physics (1)

Laboratory for 221B. Concurrent enrollment in 221B lecture required. (3 hours laboratory per week)

221C Fundamental Physics (3)

Prerequisite: Physics 221B. Fundamental physical concepts are presented in a unifying framework. The course is intended to prepare the physics student for upper division physics by placing emphasis on the mathematical physics used in the five major theories of physics—classical mechanics, relativity, electricity and magnetism, quantum physics, and statistical mechanics.

411 Theory of Wave Motion (3)

Prerequisites: Physics 221B, Mathematics 150B. The properties of wave motion—production, propagation, refraction, diffraction, interference, and transmission of waves—as applied to mechanics, electromagnetism and quantum mechanics.

416 Thermodynamics (3)

Prerequisites: Physics 221B, Mathematics 250B. A postulational study of thermodynamics with emphasis on thermodynamic states rather than on thermodynamic processes. An introductory course in the basic concepts and postulates, conditions of equilibrium, formal relationships, processes and thermodynamic engines, stability of thermodynamic systems, first- and second-order phase transitions, the Nernst postulate, and representative applications.

431 Electricity and Magnetism (3)

Prerequisites: Physics 221B, Mathematics 250B. Theories of electrostatics, electrodynamics, and electromagnetic waves.

441 Analytical Mechanics (3)

Prerequisites: Physics 221B, Mathematics 250B. Principles of Newtonian mechanics applied to the statics and dynamics of particles and rigid bodies. Introduction to Lagrangian and Hamiltonian equations.

451 Modern Physics (3)

Prerequisites: Physics 221B, Mathematics 250B. Discussion of experiments and introduction to theory for selected topics in atomic, nuclear, and solid state physics.

452 Introductory Radiology (3)

Prerequisite: one year college physics. X-rays, radioactivity, interaction of radiation with matter, detection of radiation, applications to health physics. Especially suitable for biology, chemistry, and premedical students who expect to work in radiation biology, radiation chemistry, or medical radiology.

453 Nuclear Physics (3)

Prerequisites: Physics 221B, Mathematics 250B. Properties of nuclei, radioactivity, elementary particles, nuclear reactions. Introductory discussion of theories of nuclear structure and nuclear processes.

454 Introduction to the Solid State of Matter (3)

Prerequisite: one course in atomic or nuclear physics, differential equations. An introduction to the physical properties of matter in the solid state, as explained by

Physics

atomic theory. Crystal structure, thermal, electric, and magnetic properties of metals, semiconductors, band theory, and solid state devices.

455 Introduction to Quantum Physics (3)

Prerequisites: Physics 431, Physics 441, differential equations. An introduction to the concepts and theory of quantum physics. Early quantum theories, the Schrodinger equation, eigenvalue equations, operators, commutation properties, applications to simple quantum systems, matrix formulation, perturbation theory.

471 Electronic Circuit Theory (3)

Prerequisites: Physics 221B, Mathematics 250B. Operating characteristics of vacuum tubes, transistors, and semiconductor diodes. Linear circuit theory for alternating currents and for transient currents. Introduction to switching and pulse circuits.

481A Experimental Physics (3)

Prerequisite: Physics 221B; corequisite: Physics 431. Selected experiments in electrical measurements and electronics, with emphasis on precision of measurement and standardization of instruments. (1 hour lecture, 6 hours laboratory per week.)

481B Experimental Physics (3)

Prerequisite: Physics 481A; corequisite: Physics 441. Selected experiments in mechanics, acoustics, physical optics, and microwaves. (1 hour lecture, 6 hours laboratory per week.)

481C Experimental Physics (3)

Prerequisite or corequisite: one course in nuclear or modern physics. Selected experiments in atomic and nuclear physics. (1 hour lecture, 6 hours laboratory per week.)

481D Experimental Physics (3)

Prerequisites: Physics 481A,B,C or consent of department chairman. Selected experiments in classical and modern physics. (1 hour lecture, 6 hours laboratory per week)

491 Senior Report (1)

Prerequisite: Consent of department chairman. Selection and design for individual project, oral and written reports.

492 Senior Report (2)

Prerequisite: Physics 491 and consent of department chairman. Laboratory work on individual project, oral and written progress reports, oral and written final report. (1 hour lecture-recitation and 6 hours laboratory per week)

499 Independent Study (1-3)

Prerequisite: approval of study plan by department chairman and by instructor. Study of some selected topic in physics, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit to a maximum of 6 units.

521A,B Methods of Theoretical Physics (3,3)

Prerequisite: Mathematics 250A,B. A study of selected applications of mathematics to physical theory and to engineering. Applications are selected from ordinary and partial differential equations, integral equations, integral transforms, series expansions of functions, calculus of variations, matrix theory, tensor analysis, group theory, complex variable theory, and numerical analysis.

531A,B Classical Electrodynamics (3,3) (Formerly 531)

Prerequisite: mathematics through partial differential equations. **A:** Boundary value problems in electrostatics and magnetostatics; multipole expansions; dielectrics and macroscopic media; Maxwell's equations and conservation laws; wave guides and resonators. **B:** Simple radiating systems; electromagnetic potentials; multipole radiations; classical relativistic electrodynamics; radiation from moving charges.

540A,B Quantum Physics (3,3) (Formerly 555)

Prerequisite: mathematics through partial differential equations. **A:** Transformation theory, quantum dynamics, angular momentum, symmetry principles, representation theory, Klein-Gordon equation, approximation techniques; applications to topics such as scattering theory, interaction with radiation, motion in a magnetic field, atomic and nuclear structure. **B:** Lorentz groups, Dirac equation, field quantization, group theory approximation techniques; applications to topics such as systems of identical particles, molecular structure, the many-body problem, and magnetic phenomena.

541 Analytical Mechanics (3)

Prerequisite: mathematics through partial differential equations. A thorough theoretical treatment of classical mechanics including the important motions of a point, general principles of work and energy, the principle of least action, Lagrange and Hamiltonian equations, the dynamics of rigid bodies, and related topics.

599 Independent Graduate Research (1-3)

Prerequisite: written approval of study plan by department committee and by instructor. Open only to graduate students and only by permission of a faculty member. May be repeated for credit.

POLITICAL SCIENCE *

Political Science 100 or its equivalent is the prerequisite for all upper division political science courses. Political Science majors are expected to have completed Political Science 231 and Political Science 306 before taking upper division courses.

100 American Government (3)

Explores people, their politics, and power focusing on contemporary issues, changing political styles and processes, as well as institutions and underlying values contributing to the stability of the American political system. Satisfies the state requirements in U.S. Constitution and California state and local government.

231 Political Analysis (3)

An inquiry into the findings, emphases, and approaches in the study of politics, utilizing cross-national experiences.

306 Research Proseminar in Political Science (3)

Basic research concepts, techniques, and design formats; their relationship to data collection and analysis; an introduction to descriptive and inferential statistics, and to computer techniques and applications in political science. This course is required of all political science majors and should be taken before any upper division work is completed.

311 Contemporary Issues in California Government and Politics (3)

Analysis of contemporary issues in California government and politics, including regional, county, and community subdivisions. Emphasis is on decision-making and

* Prerequisites may be waived only with the consent of the instructor.

Political Science

the costs of democracy; the crisis in the cities, the flight to the suburbs, and race relations. Comparisons will be made with other states and their subdivisions. This course satisfies the state requirement in California state and local government.

312 Political Parties (3)

The American two-party system; party organization and conflicts, problems of party responsibility and party leadership, nominating procedures, campaign methods and finances; the role of parties in legislative and executive policy-formulation.

313 Pressure Groups and Public Opinion (3)

The power and growth of farm, labor, business, and noneconomic pressure groups; interest group activity in Congress; administration and courts; public opinion and propaganda; voting behavior.

320 Public Administration and Policy (3)

An introduction to modern public administration and to the role it plays in the formulation and execution of public policy: administrative decision-making, authority and legitimacy, administrative leadership, professionalism, the role of parties and interest groups in the administrative process.

340 Democracy and Communism (3)

Not open to majors. The democratic tradition, especially in the United States and Great Britain; the theory and practice of communism in Soviet Russia, Yugoslavia, and Red China; authoritarian political thought in Italy, Germany, and Spain.

341 Fundamental Principles of Political Theory (3)

Problems of evidence and validation in political studies. The distinctions between empirical statements, value judgments and tautologies. The relationship of fact and value. The need for operational definitions. Systematic approaches to political philosophy, including those of Plato, Aristotle, St. Thomas, Hobbes, Locke, Rousseau, Bentham and Marx. The dilemma posed by positivism and relativism for the study of political values.

342 Specific Problems of Political Philosophy (3)

Problems of making value judgments in politics: liberty v. security, the extent of obligations to the state, variations in forms of government, the role of government in the economy.

351 International Relations (3) (Formerly 251)

A study of the diplomatic, political, economic, and cultural relations of states; basic factors of power, sovereignty, nationalism, imperialism, colonialism, the rise to influence of the developing nations, the settlement of disputes.

371 The Judicial Process (3)

The nature and functions of law in the Anglo-American legal system, the federal and state courts, legal procedures and their relationship to the American political process. Approaches to the study of the judicial process.

405 Simulation in Government and Politics (3)

Prerequisite: Consent of the instructor. The theory and application of simulation models, including decision-making, game theory, and others with respect to politics and administration at local, national, and international levels. Individual and group research techniques are stressed.

406 Scope and Theory of Political Science (3)

A senior proseminar in political science. The nature of the discipline: approaches, tools, concepts and theories. Highly recommended for all political science majors planning to do graduate work.

412 The Art of Politics (3)

Prerequisite: consent of the instructor. An examination of politics as it is practiced and understood by practitioners of the art. A seminar which features guest lecturers.

414 The Legislative Process (3)

The nature of the legislative process in the United States including the organization and procedures of legislative bodies, direct legislation and the relationships of the legislative branch to other branches of government. Legislative systems will be analyzed comparatively.

415 Political Behavior (3)

Prerequisite: Political Science 306. The application of behavioral methodology to the understanding of individual political behavior within various U.S. governmental and social situations. The formation of attitudes and opinions, their measurement and relationship to political behavior.

416 The American Presidency (3)

A study of the growth of the office and power of the President, of his relationship to his advisers and the executive departments. Congress and the courts, state governments and the public. The role of the President as chief policymaker and administrator, party and public opinion leader, with particular attention to developments during international and domestic crises.

420 Local Government and Administration (3)

Legal and historical framework of local government with emphasis on municipal government and the functional fields of management in the United States.

421 Public Finance Administration (3)

Prerequisite: Political Science 320. The role of finance administration and budgeting in the determination of public policy, and in the administrative planning and management of governmental operations in the United States. Examines the relationship of assessment administration to governmental revenues and expenditures, the principles and practices of cost accounting, treasury management, and capital budgeting.

422 Public Personnel Administration (3)

Prerequisite: Political Science 320. The growth and development of the civil service and the merit system; an evaluation of recruitment procedures and examinations; an analysis of such topics as position classification, salary structures, retirement plans, in-service training, employees organizations, and personnel supervision.

423 Regional Planning and Development (3)

Prerequisite: Political Science 320. A study of governmental policies, procedures, and agencies involved in the planning and development of regions. The concept of regions, survey of regional problems, and objectives, developmental prospects of regions, emerging views of regional planning, and intra- and inter-regional investment allocation during the development process.

Political Science

424 Urban Planning and Development (3)

Prerequisite: Political Science 320. The origins and development of city planning; the legal bases and fundamental concepts of planning are defined; and the organization and administration of the planning activity are examined. The major elements of the general plan, zoning laws and administration, urban renewal, and capital programming are considered.

425 Comparative Public Administration (3)

Prerequisite: Political Science 231 and 320. Strongly recommended for students planning to concentrate in comparative politics. Cross cultural comparison of public administration systems; application of different models of analysis to administrative institutions; bureaucracy; the ecology of public administration in modernized and developing societies; and the role of public administration in nation-building.

426 Government Organization and Management (3)

Prerequisite: Political Science 320. Analytical study of administrative systems and procedure; planning, flow, and control of work; data processing; operations research; and forms design.

429 Government Internship (3)

Prerequisites: Public Administration concentration and consent of the instructor. Students work 15-20 hours per week as supervised interns in a public agency. Supervision is provided by the faculty and cooperating agency. In addition to the job experience, interns meet in a weekly three-hour seminar.

431 Government and Politics of Western Europe (3)

A comparative analysis of the structures and functions of the political systems of Western Europe.

433 Government and Politics of Eastern Europe (3)

A comparative analysis of the structures and functions of the political systems of Eastern Europe.

435 Government and Politics of Africa (3)

A comparative analysis of the structures and functions of the political systems of developing societies in Africa.

436 Government and Politics of South and Southeast Asia (3)

A comparative analysis of the structures and functions of the political systems of developing societies in South and Southeast Asia.

437 Government and Politics of Latin America (3)

A comparative analysis of the structures and functions of the political systems of developing societies in Latin America.

438 Latin American Interest Groups (3)

Consideration of the role of church, military, business, peasant and bureaucratic groups in Latin American society with particular interest in their impact on the quest for governmental stability and economic development.

439 Government and Politics of the Far East (3)

A comparative analysis of the structures and functions of the political systems in the Far East.

440 Political Ideologies and Attitudes (3)

Prerequisite: Political Science 341. The content and appeals of contemporary ideologies. The social, economic and psychological bases of political attitudes and preferences.

442 Problems of Democratic Political Thought (3)

Prerequisite: Political Science 341. Problems relevant to philosophies and theories of democratic political systems, with emphasis on American political thought.

443 The Theory and Philosophy of Marxism (3)

Prerequisites: Political Science 341 and 342. An analytical study of Marxist theory and philosophy from its pre-Hegelian roots to the present.

450 Conduct of American Foreign Relations (3)

Formulation and execution of foreign policy. The roles and powers of the President, Senate, and House of Representatives. The functions of the Department of State and Foreign Service, United States Information Agency, Agency for International Development (AID); the role of the Pentagon; public opinion and pressure groups. Separation of powers, checks and balances; and cooperation in the conduct of American foreign policy.

451 Problems in International Relations (3)

Prerequisite: Political Science 251. Examination of selected problems in various countries and geographic areas with a definite impact on International Relations, such as nationalism, colonialism, anticolonialism, neutralism, racism, ethnic and linguistic minorities, border disputes, governmental instability, economic poverty, disease, illiteracy and overpopulation.

452 Current Issues in American Foreign Policy (3)

An examination of the impact of treaties, alliances, economics, military strategy, and internal politics on U.S. foreign policy-formulation.

453 Contemporary Approaches to International Relations (3)

Prerequisite: Political Science 251. Consideration of theories applicable to the study of the actions and interactions of states; systems analysis, models, decision-making, communications, the concept of power; examination of such research tools as gaming, simulation, content analysis.

454 The Soviet Union in World Affairs (3)

Prerequisite: Political Science 251 and 433. Elements of national power, the use of various instruments of international relations, and policy-making processes in the development of Soviet foreign policy since 1917.

461 The United Nations and Other Public International Organizations (3)

Prerequisite: Political Science 251. The nature, scope, and role of public international organizations; evaluation of the League of Nations; analysis of the United Nations; its functions, purposes and problems; role of the World Court; International Labor Organization. Functions of UNESCO, UNICEF, and similar organizations.

463 The International Relations and Problems of Latin America (3)

Prerequisite: Political Science 251. A study of the foreign policies of the individual Latin American states, problems presented by the cold war and U.S. policies, the O.A.S., current efforts for economic cooperation, and Latin America's role in the U.N.

Political Science

473 Seminar in Constitutional Law and Governmental Power (3)

Prerequisite: Political Science 371. Case studies involving the balance of power among courts, Congress, and the President; between national and state governments; and the extent of judicial review of laws involving social and economic problems.

474 Seminar in Constitutional Law and Civil Liberties (3)

Prerequisite: Political Science 371. Case studies involving first amendment freedoms; equal protection of the laws; and procedural rights stemming from due process.

475 Administrative Law (3)

Prerequisite: Political Science 371, 473. The study of law as it affects public officials and agencies in their relations with private citizens and the business community. Attention is given to appropriate case materials and regulatory practices.

476 International Law (3)

Prerequisite: Political Science 251. The sources and nature of international law; its role in a world of sovereign states; the law of war and peace; the rights and duties of nations in their international relationships. The World Court; purpose, problems, and prospects.

499 Independent Study (1-3)

Open to advanced students in political science by permission of the department chairman.

(The prerequisite for each graduate course is consent of the instructor.)

501 Readings in Political Science (3)

Survey of the major works in the discipline of political science; strongly recommended for all students seeking an M.A. in Political Science or an M.P.A.

506 Seminar in the Scope and Theory of Political Science (3)

The nature of the discipline, approaches, tools, concepts and theories.

511 Advanced Studies in American Politics (3)

A comprehensive examination of the political process in the United States.

515 Seminar in Political Behavior (3)

An intensive analysis of selected topics in political behavior.

521 Seminar in Administrative Theory (3)

Comprehensive analysis of the historical development and theoretical foundations of public administration.

524 Seminar in Environmental Planning (3)

Specialized study of problems and issues in the physical and human environment of the urban community.

526 Seminar in Administrative Behavior (3)

Concepts, functions and techniques of administrative leadership; group dynamics; decision-making; the organization and the individual.

528 Seminar in Public Administration Problems (3)

Comprehensive analysis of selected problems in the theory and practice of public administration.

531 Seminar in Comparative Politics (3)

A comparative study of political systems.

541 Advanced Studies in Political Theory (3)

A comprehensive examination of ideologies, concepts, methods and trends in political theory.

550 Seminar on Foreign Policy Formulation (3)

A study of various models of the foreign policy-making process. Emphasis will be on the interaction between domestic and international sources for policy formulation.

551 Advanced International Relations (3)

Study of selected problems in international relations with emphasis on individual research and contributions within the framework of a seminar. May be repeated for credit.

571 Advanced Studies in Public Law (3)

Selected studies of the relationship of the judicial process to legislative decision making; executive power; local government; the initiation process; and public opinion.

597 Project (3)

Prerequisite: Consent of the instructor.

598 Thesis (3-6)

Prerequisite: Consent of the instructor.

599 Independent Graduate Research (1-3)

Open only by permission of the chairman of the department. May be repeated for credit.

PORTUGUESE

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental Portuguese (4)

Listening comprehension, speaking, reading comprehension, and writing to develop control of the sounds and the basic forms and structures of Portuguese. Enrollment restricted to students with previous study of a Romance language. Conducted in Portuguese.

102 Fundamental Portuguese (4)

Prerequisite: Portuguese 101 or equivalent. Listening comprehension, speaking, reading comprehension, and writing to develop control of the sounds and the basic forms and structures of Portuguese. Enrollment restricted to students with previous study of a Romance language. Conducted in Portuguese.

315 Introduction to Brazilian Culture and Civilization (3)

Prerequisite: Portuguese 102 or equivalent, reading knowledge of Portuguese or consent of instructor. Readings and discussions to develop insights into the literature of Brazil and intellectual expression of the leading ideas in Brazilian civilization, while at the same time strengthening facility with the language. Conducted in Portuguese.

Psychology

325 Contemporary Brazilian Civilization (3)

Prerequisite: Portuguese 315 or consent of instructor. Readings and discussion toward developing an understanding of the social and intellectual problems, trends, and contributions of present-day Brazil, while at the same time strengthening facility with spoken and written Portuguese. Conducted in Portuguese.

431 Portuguese Literature of the Golden Age (3)

Prerequisite: Portuguese 315 or consent of instructor. The literature of Portugal's golden age (1500-1700). The major works of the Cancioneiros, Gil Vicente, Luis de Camões and other writers will be examined from the point of view of their artistic structure as well as within the context of Portuguese culture and civilization. Conducted in Portuguese.

441 Brazilian Literature (3)

Prerequisite: Portuguese 315 or consent of instructor. The literature of Brazil from the Colonial period to the present. Conducted in Portuguese.

499 Independent Study (1-3)

Supervised projects in Portuguese language or literature to be taken with the consent of the instructor and the department chairman. May be repeated for credit.

PSYCHOLOGY

101 Introductory Psychology (3)

General introduction to basic concepts and problems in psychology as a behavioral discipline. Emphasis upon the human organism as an adapting system, with attention to genetic origins; normal development and capacities; problem-solving and adjustment to stress.

161 Elementary Statistics (3)

Prerequisites: Psych 101 and Math 120. An introductory course in descriptive statistics with an introduction to inferential methods.

202 Principles of Psychology (3)

Prerequisite: Psych 101. A course for psychology majors covering selected basic areas of psychology in depth. Special emphasis on the methods of studying physiological factors, adaptive behavior, perception, cognition and motivation. (2 hours lecture and 3 hours laboratory)

231 Psychology of Personal Adjustment (3)

Prerequisite: Psych 101. Dynamics of personal adjustment and interpersonal relations. Nature of conflict and frustration; demands of changing social roles; and attitudes, opinions and prejudices as they affect the individual and his relationships to others.

302 Experimental Psychology: Learning and Motivation (3)

Prerequisites: Psych 101, 202, 161 or permission of instructor. Selected experimental investigations in human and animal learning, memory, thinking, problem solving, and motivation with appropriate lecture and discussion. (2 hours lecture and 3 hours laboratory)

303 Experimental Psychology: Sensation and Perception (3)

Prerequisites: Psych 101; 202; 161 or permission of instructor. Selected experimental investigation with appropriate lecture and discussion. (2 hours lecture and 3 hours laboratory)

304 Experimental Psychology: Comparative (3)

Prerequisites: Psych 101; 202; 161 or permission of instructor.

Behavioral similarities and differences between species as related to their position on the phylogenetic scale; the relation of changes in activity, motivation, emotionality, complexity, plasticity and adaptiveness of behavior to changes in sensory, motor, endocrine and neural structures as well as genetic and environmental factors. (2 hours lecture and 3 hours laboratory)

311 Educational Psychology (3)

Prerequisites: 6 units in Psychology. Application of psychological research and theory to the educative process. Major attention given to the problems of learning, individual differences, child capacities, and behavior.

321 Physiological Psychology (3)

Prerequisites: Psych 202 and Bio. Sci. 101 or equivalent. Survey of relations between behavior and biological processes. Anatomy and physiology of the nervous system, role of neural and humoral agents in perception and complex behavior (emotion, etc.), behavioral effects of brain lesions, the effects of drugs on behavior, psychosomatic disorders and motivation. (2 hours lecture and 3 hours laboratory)

331 Psychology of Personality

Prerequisite: Psych 202. Concepts of personality development, structure, and dynamics, with emphasis upon problems, methods, and findings in the study of personality.

341 Abnormal Psychology (3)

Prerequisites: Psych 231 or Psych 331. Dynamics, symptoms, causes, treatment, and prevention of neuroses, psychoses, alcohol and drug addiction, psychosomatic illnesses, and character disorders.

342 Mental Health (3)

Prerequisite: Psych 101. An analysis of the concepts of mental health with emphasis upon positive factors in the individual, group, and community which are conducive to improving mental health. (Credit not given as part of psychology major.)

351 Social Psychology (3)

Prerequisites: 6 lower division units in psychology. Study of phenomena of social interaction and the nature of group processes and influences. Attention paid to the intrapsychic effects of group influences on the individual's behavior.

361 Developmental Psychology (3)

Prerequisite: Psych 161. Concepts and processes involved in the understanding of the psychological development of the person from infancy through adulthood. Attention is given to stages in the development of cognition, emotion, perception, motivation, and to the interaction of these processes.

391 Industrial Psychology (3)

Prerequisites: Psych 161 or Psych 202. Study of psychological principles and techniques in industrial and business settings. Includes selection, placement, training, human factors, environmental influences, problems of people at work, and consumer behavior

Psychology

408 History of Psychology (3)

Prerequisites: 12 upper division units in psychology or permission of instructor. Survey of the development of psychology from early times to the present.

411 Human Learning and Memory (3)

Prerequisite: Psych 302. Theoretical and experimental analysis of the acquisition, retention, and transfer of verbal and motor responses. Consideration of single vs. multiple memory storage systems and of the role of reward, information, and motivation in human learning.

412 Psychology of Learning (3)

Prerequisite: Psych 302 or permission of instructor. Principles of learning according to the major theoretical systems. Critical evaluation of the theories and systems.

413 Perception (3)

Prerequisite: Psych 303 or permission of instructor. Psychological problems in perception.

415 Cognitive Processes (3)

Prerequisite: Psych 302, Psych 303 or Psych 304. Consideration of theory and research with respect to problem solving, thinking, concept learning, language, decision making and judgment, cognitive structure, cognitive development.

431 Theories of Personality (3)

Prerequisite: Psych 331 or permission of instructor. Personality structure, development, and dynamics according to major theories. Research methods as they apply to personality theory.

451 Experimental Social Psychology (3)

Prerequisites: Psych 161 or equivalent; Psych 202; and Psych 351. Study in depth of selected phenomena of social interaction and the nature of group processes and influences. Laboratory experience in experimental investigation of attitude formation and change; group processes such as communication, and problem-solving and formation of norms; interpersonal processes of influence and perception. (2 hours lecture and 3 hours laboratory)

461 Group Psychological Testing (3)

Prerequisite: Psych 161 or equivalent. Intelligence, aptitude, interest, and personality testing. Theory, construction, evaluation, interpretation, and uses of psychological tests.

465 Advanced Psychological Statistics (3)

Prerequisite: Psych 161 or permission of instructor. Quantitative methods in psychology with particular emphasis on correlation, small sample theory, nonparametrics and some complex analysis of variance procedures.

471 Behavior Modification (3)

Prerequisite: Psych 302. An exposition and evaluation of theories and techniques for modifying behavior including operant conditioning methods. (2 hours lecture and 3 hours laboratory)

481 Survey of Clinical Psychology (3)

Prerequisites: Psych 331, 341, and 461. Development and contemporary aspects of the field. Methods, diagnosis, therapeutic techniques, research, and problems.

499 Independent Study (1-3)

Prerequisites: Senior standing and permission of instructor. Individual library study or experimental investigation under direction of a staff member. May be repeated for credit.

500 Advanced General Psychology (3)

An integration of key concepts in learning, motivation, perception, personality and social psychology.

510 Experimental Design (3)

Prerequisites: Psych 161 and 465. Principles and methods of planning and carrying out systematic investigations on the behavior of complex organisms, interdependence of experimental design and statistical evaluation of results, and the opportunity for practice in formulation of testable hypotheses.

511 Seminar in Psychological Measurement (3)

Logic and methodology of measurement in the areas of intelligence, personality, judgment, and attitudes: problems of test construction and validation. May be repeated for credit.

520 Seminar: Experimental Psychology (3)

Prerequisites: graduate standing; Psych 465 and Psych 500. Study in depth of the data, methods, problems and current developments in sensation-perception; animal learning; human motor and verbal learning; thinking and problem solving; and motivation. May be repeated for credit.

521 Seminar: Personality (3)

Prerequisites: graduate standing; Psych 500. An intensive study of central problems in personality. Intensive study current problems and theories in these areas. May be repeated for credit.

523 Seminar: Comparative Psychology (3)

Prerequisites: graduate standing and permission of instructor. A study in depth of some aspect of animal behavior. Comparisons between species and biological determinants of behavior will be emphasized. May be repeated for credit.

531 Individual Mental Testing (3)

Prerequisite: Psych 461. Study of the major tests of intelligence. Emphasis upon practical experience in administration, scoring, and interpretation of these instruments.

551 Seminar: Social Psychology (3)

Prerequisites: graduate standing and Psych 500, and either Psych 351 or permission of instructor. An intensive study of central problems and major theories in the field of social psychology. May be repeated for credit.

598 Thesis (3-6)

Prerequisites: formal admission to candidacy; permission of instructor. The writing of a thesis based on a major study or experiment in psychology.

599 Independent Graduate Research (1-3)

Prerequisites: graduate standing and permission of instructor. Individual library study or experimental investigation under direction of a staff member. May be repeated for credit.

RUSSIAN

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental Russian (5)

Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of Russian. Audio-lingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in Russian.

102 Fundamental Russian (5)

Prerequisite: Russian 101 or equivalent. Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structures of Russian. Audio-lingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in Russian.

203 Intermediate Russian (3)

Prerequisite: Russian 102 or equivalent. Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Russian.

204 Intermediate Russian (3)

Prerequisite: Russian 203 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Russian.

213 Intermediate Composition (2)

Practice in written expression based on cultural and literary materials. May be taken concurrently with Russian 203. Required of all majors and minors at the intermediate level; optional to others. Conducted in Russian.

214 Intermediate Composition (2)

Practice in written expression based on cultural and literary materials. May be taken concurrently with Russian 204. Required of all majors and minors at the intermediate level; optional to others. Conducted in Russian.

303 Readings in Scientific Russian (3)

Prerequisite: Russian 102 or equivalent. Readings reflecting a broad spectrum of writing in the physical and natural sciences and mathematics. Special attention given to the development of rapid reading for comprehension. Open only to Science and Mathematics majors.

315 Introduction to Russian Civilization (3)

Prerequisite: Russian 204 or equivalent. Reading and discussion to develop a view of the Russian tradition (its social, intellectual and literary evolution) while at the same time strengthening facility with the language. Open to lower division students with consent of instructor. Conducted in Russian.

317 Advanced Conversation and Composition (3)

Prerequisite: Russian 204 or equivalent. Open to lower division students with the consent of the instructor. Designed to give the student special competence in the control of Russian as an instrument for free oral and written expression. Conducted in Russian.

375 Introduction to Literary Forms (3)

Prerequisite: Russian 317 or consent of instructor. An introduction to the principal literary forms, prose fiction, poetry, drama and the essay and to the major concepts of literary techniques and criticism. Close analysis and interpretation of various texts to increase the student's abilities in reading, language, and literary criticism. Conducted in Russian.

400 Russian for Advanced Students and Teachers (3)

Prerequisite: Russian 317 or consent of instructor. Intensive review of spoken Russian, while developing the student's powers of self-expression in the spoken and written language. Modern writings in various fields, as well as developments in methodology and texts, serve as the basis for intensive practice. Conducted in Russian.

431 Early Russian Literature (3)

Prerequisite: Russian 315 or consent of instructor. Evolution of Russian literature from the medieval ecclesiastic traditions and transition to Baroque and Classicism. French and German influence on the 18th century. Transition to Romanticism and the beginnings of Realism. Conducted in Russian.

441 The Works of Tolstoy and Dostoevsky (3)

Prerequisite: Russian 315 or equivalent, or consent of instructor. Major works of Tolstoy and Dostoevsky in their intellectual and historical setting and their impact on Russian and world literature. Conducted in Russian.

451 The Golden Age of Russian Literature (3)

Prerequisite: Consent of instructor. A study of major literary works of the first half of the 19th century which exemplify cultural and intellectual movements in Russia. Conducted in Russian.

461 Russian Literature from 1917 (3)

Prerequisite: Russian 315 or equivalent, or consent of instructor. Representative works of outstanding modern Russian writers with an emphasis on The Nobel Prize winners (M. Sholokhov and B. Pasternak). Analysis and discussion of their prose and poetry in the light of the social problems of present-day Russia. Conducted in Russian.

499 Independent Study (1-3)

Supervised projects in Russian language or literature to be taken with the consent of the instructor and department chairman. May be repeated for credit.

SCIENCE EDUCATION

(Offered by the Department of Science and Mathematics Education)

310 Elementary Experimental Science (3)

Prerequisite: Completion of general education natural science requirements or consent of instructor. A laboratory centered course in the physical sciences appropriate for prospective elementary schoolteachers and other youth workers. The course covers, by both lectures and laboratory investigations, selected content areas from the fields of chemistry, physics, geology, oceanography, astronomy, and meteorology that are commonly found in elementary school science programs. Heavy emphasis is placed on laboratory and field investigations of a kind adaptable for children. This course may not be used to fulfill General Education requirements nor is it appropriate for science majors. (2 hours lecture, 2 hours activity)

Science Education

402 Biological Preparations (2)

Prerequisite: Upper division standing with a major or minor in biology. An introduction to the problems and practices of preparing materials for teaching and research in biology. May include collection and preparation of whole organism specimens, histological specimens and media for characterization of microorganisms. (Same as Bio. Sci. 402) (6 hours laboratory per week)

434 Elementary School Science—New Curricula (3)

Prerequisites: Sci Educ 310 (or equivalent) or consent of instructor. The content, philosophy and techniques of the new curricula for elementary science courses are studied. At present the course is designed to prepare teachers for the AAAS process approach to elementary science. (2 hours lecture, 2 hours activity)

442 Teaching Science in the Secondary School (2)

Prerequisites: Education 340, Education 311, admission to teacher education, senior standing or consent of the instructor. The student who has not had teaching experience must register concurrently in Education 449. See page 148 under Secondary Education for description of Standard Teaching Credential program. Objectives, methods, and materials including audiovisual instruction for teaching science will be studied. Developing and using lesson plans, discussions, laboratory activities, etc., will be experienced during the course. (1 hour lecture, 2 hours activity)

443 Secondary Science Education—Biology (3)

Prerequisites: Sci Educ 442 (or equivalent) or consent of the instructor. Educational practices particular to the teaching of biology are studied. Special emphasis is placed on recent curricular developments in this area. Presently the course is designed to instruct teachers in the theory, content and methodology developed by the Biological Sciences Curriculum Study (BSCS). (2 hours lecture, 2 hours activity)

444 Secondary Science Education—Chemistry (3)

Prerequisites: Sci Educ 442 (or equivalent) or consent of the instructor. Similar to Sci Educ 443 with the emphasis on chemistry. Presently the course is oriented around the programs developed by the Chemical Educational Materials Study (CHEMS) and the Chemical Bond Approach (CBA) to teaching chemistry. Needs of participating teachers will determine which program will be emphasized. (2 hours lecture, 2 hours activity)

446 Secondary Science Education—Earth Science (3)

Prerequisites: Sci Educ 442 (or equivalent) or consent of the instructor. The content, philosophy, and techniques of teaching earth science on the secondary level are studied. This course is designed to prepare teachers in the theory, content and methodology in the earth science course developed by the Earth Science Curriculum Project (ESCP). (2 hours lecture, 2 hours activity)

461 Development of Science and Technology (3)

(Same as Interdisciplinary Center 461)

470 Evolution of Scientific Ideas (3)

Prerequisites: Upper division or graduate standing with a major or minor in one of the sciences or consent of the instructor. A study of how some of our currently held scientific concepts have evolved. Emphasis on the essential inter-relatedness of the various scientific disciplines and their relation to contemporary cultural and intellectual influences.

499 Independent Study (1-3)

Study of some special topic in science education, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

710 Seminar in Science Education (2)

Prerequisites: an A.B. degree, teaching credential, or consent of instructor. Designed for postgraduate science students who wish to investigate recent developments in teaching the sciences. New courses and materials for the various subject matter fields will be researched and demonstrated. Areas of concentration will depend on interests and training of the seminar participants. May be repeated for credit.

749 Student Teaching in Science in the Secondary School and Seminar (6)

See page 312 for description and prerequisites.

760A,B Earth Science for Secondary School Teachers (3,3)

Prerequisites: Valid secondary school credential or consent of instructor. The course covers the theory, content and methodology of new Earth Science Curriculum Project (ESCP) course for secondary school earth science. The course is designed for practicing teachers of earth science. (2 hours lecture, 2 hours activity)

799 Independent Study (1-3)

Prerequisite: Valid teaching credential or consent of instructor. Study of some special topic in science education, selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

SOCIOLOGY

201 Introduction to Sociology (3)

A general introduction to the basic concepts of sociology, and the scientific study of human society. Among topics included are social interaction, culture, personality, social processes, population, social class, the community, social institutions, and sociocultural change.

202 Social Problems (3)

Prerequisite: Sociology 201. Study of the extent, causes and consequences of a number of social problems, with emphasis on 20th-century America. Problems are viewed in the context of the changing society.

331A Social Research Methods (3)

Prerequisite: Sociology 201 or consent of the department. Research design and methods of gathering data, especially by interview and questionnaire, are emphasized. Among other topics are the role of theory in research, and sampling methods and problems.

331B Social Research Methods (3)

Prerequisites: Sociology 201, 331A, or consent of the department. Elementary statistical analysis of social data is emphasized, with some consideration of problems of measurement and of the writing of research reports. (2 hours lecture, 2 hours activity)

341 Social Interaction (3)

Prerequisites: Sociology 201 and 3 units of psychology. Inquiry into the social and sociopsychological dimensions of group behavior and the socialization of the

Sociology

individual. Social interaction and its impact on the individual and personality formation.

348 Collective Behavior (3)

Prerequisite: Sociology 201. Characteristics of crowds, mobs, publics. Analysis of social movements and revolutions, their relation to social unrest and their role in developing and changing social organization.

361 Population Problems (3)

Prerequisite: Sociology 201. Population composition, growth and movement. Social factors affecting birth rates, death rates, and migration. Attention is given to the population of the United States and to selected areas of the world.

371 Urban Sociology (3)

Prerequisite: Sociology 201. The population and ecology, patterns of growth, institutions, characteristic social interaction, values, and problems of the urban community.

411 Criminology (3)

Prerequisite: Sociology 201. The extent, causes and control of criminal behavior. Includes study of the criminal law, causal factors and theories, correctional institutions, probation and parole, and preventive efforts.

413 Juvenile Delinquency (3)

Prerequisite: Sociology 201. Juvenile delinquency as a social problem. Sociological study of the causes of delinquent behavior, and programs of control, treatment and prevention.

425 Comparative Social Change (3)

Prerequisite: Sociology 201. Comparative analysis of changing community, institutional, technological, and social class patterns in selected societies, with emphasis on differences between "developed" and developing areas.

431 Minority Group Relations (3)

Prerequisite: Sociology 201. Study of racial, national and religious minorities, especially in the United States. Includes study of discrimination, prejudice, different patterns of intergroup adjustment, and attempts to change group status.

436 Social Stratification (3)

Prerequisite: Sociology 201. Social class structures and their functions. Different styles of life; determinants of class status; vertical social mobility; change in class systems.

451 Sociology of the Family (3)

Prerequisite: Sociology 201. The family as a social institution. Historical and cross-cultural perspectives; social change affecting marriage and the family; analysis of American courtship and marriage patterns; the psychodynamics of family life.

454 Sociology of Aging (3)

Prerequisite: Sociology 201. Analysis of aging as a social process, with emphasis on sociological theories of aging, problems of adjustment, demographic changes and policy issues.

458 Sociology of Religion (3)

Prerequisite: Sociology 201. Theoretical analysis of religion as a social institution in complex societies. The structure and functioning of religious organizations; roles and role relationships; types of religious organizations and leadership; the relationships of religion to other social institutions; religion and social change.

460 Comparative Institutions: Latin America (3)

Prerequisites: Sociology 201. Comparative study of Latin American institutions (familial, economic, religious, political, military). Analytic emphasis on institutional structures and processes; relationship of institutions to each other and the larger society.

463 Political Sociology (3)

Prerequisite: Sociology 201. Theoretical perspectives; nature of power and authority; social structure and political institutions; elites and decision-making; social influences on political behavior; political movements.

465 Law and Society (3)

Prerequisite: Sociology 201. The law and lawyers in the context of human society. Law as formal social control, variations in legal systems, social change and selected areas of law, the legal profession.

470 Sociology of Occupations (3)

Prerequisite: Sociology 201. Sociological analysis of work roles in technologically advanced societies. Career patterns, occupational recruitment, job mobility, organizational demands. The nature and development of the professions, their ideologies and images.

473 Complex Organizations (3)

Prerequisite: Sociology 201. Sociological analysis of formal organizations (industrial, governmental, welfare, military, medical, educational, correctional, etc.) as systems of social interaction. Includes such topics as blueprinted vs. informal structure, authority, decision-making, role conflicts, communication and morale.

477 Social Organization (3)

Prerequisites: Sociology 201; six upper division sociology units, or consent. Theories of social organization and the structure of various social groups are analyzed, with a comparative analysis of social structures and systems. The various levels of groups are discussed and interrelated.

479 Concepts and Fields of Sociology (3)

Prerequisites: Sociology 201 and nine upper division units in sociology. Analysis of theoretical and methodological problems of major sociological concepts. The use of these concepts in selected fields, and research findings, will be emphasized.

480 Analysis of Social Philosophy (3)

Prerequisite: Sociology 201. The analysis of pre-20th century explanations of man's behavior and interpretations of the human condition. Considerable attention is given to the articulation of changing historical conditions and alternative philosophies.

481 Sociological Theory (3)

Prerequisite: Sociology 201 and consent of the department. A comprehensive survey of the main schools of sociological thought, both European and American, with emphasis on *systems* of theory, methodology of theorists, cultural change, and social institutions.

Sociology

482 Sociology of Knowledge (3)

The analysis and study of frames of reference and beliefs systems in everyday life, and their relationship to social structure, decision processes, and social change.

499 Independent Study (1-3)

Prerequisites: At least 12 hours of sociology and consent of the adviser. Student selects an individual research project, either library or field. There are conferences with the adviser as necessary, and the work culminates in one or more papers. May be repeated for credit.

501 Seminar: Selected Topics in Societal Structure and Process (3)

Prerequisite: Consent of instructor. Analysis of a specialization within the study of society such as: socialization and personality; deviance; social change; institutional structure and process. It is possible for this course to be repeated if the topic is different.

511 Seminar in Crime and Delinquency (3)

Prerequisites: either Sociology 411 or 413, or consent of the department. Analysis of selected problems in the field of crime and delinquency with major emphasis upon independent investigation into the theoretical and research contributions on the causes, prevention and treatment of criminal and delinquent behavior.

531 Methods and Measurements in Sociology (3)

Prerequisites: Sociology 331A, 331B, or their equivalents, or consent of the department. A critical analysis of basic problems of social research. Casual inferences, value bias, and measurement, especially the construction of scales.

533 Seminar in Intergroup Relations (3)

Prerequisite: Sociology 431 or consent of the department. Analysis of relations among ethnic, racial and religious groups throughout the world. Analysis of processes leading to, sustaining, and associated with changes in relations among such groups.

536 Seminar in Social Stratification (3)

Prerequisite: Sociology 436 or consent of the department. Analysis of stratification in industrial societies. Emphasis on theory and methods, and on international comparisons. Analysis of factors leading to social class, the persistence of class divisions, class conflict and social change, and the effects of class on behavior.

541 Seminar in Social Interaction (3)

Prerequisites: Sociology 341 or consent of the department. Advanced social-psychological study of social interaction, including sociological factors in personality development and analysis of primary group behavior.

573 Seminar in Large Organizations (3)

Prerequisite: Sociology 473 or consent of the department. The analysis of large organizations, their structural and operating characteristics and the relationships between the organization and its members.

577 Seminar in Social Organization (3)

Prerequisites: Sociology 477 or its equivalent and consent of the department. A critical treatment of various theoretical approaches to the analysis of social organization. Specific areas of social organization.

581 Analysis of Sociological Theory (3)

Prerequisites: Sociology 481 or equivalent and consent of the department. Examination of the basic elements and key problems in constructing a systematic sociological theory. A detailed, comprehensive and critical analysis of selected theoretical works.

598 Thesis (3)

Prerequisites: acceptance as a candidate for the M.A. in sociology, and approval of the topic. Individual research under supervision, reported in a thesis, and defended in an oral examination conducted by a faculty committee. Must be taken 2 semesters for a total of six units.

599 Independent Graduate Research (1-3)

Prerequisite: consent of the graduate adviser, and the department. Individual research on either a library or empirical project, with conferences with the adviser as necessary, culminating in one or more papers. May be repeated for credit.

SPANISH

(Offered by the Department of Foreign Languages and Literatures)

101 Fundamental Spanish (5)

Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of Spanish. Audio-lingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in Spanish.

102 Fundamental Spanish (5)

Prerequisite: Spanish 101 or equivalent. Intensive practice in listening comprehension, speaking, reading and writing to develop control of the sounds and the basic forms and structure of Spanish. Audiolingual assignments are an integral part of the course and are to be prepared in the language laboratory. Conducted in Spanish.

203 Intermediate Spanish (3)

Prerequisite: Spanish 102 or equivalent. Intensive practice in speaking, understanding, reading and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Spanish.

204 Intermediate Spanish (3)

Prerequisite: Spanish 203 or equivalent. Intensive practice in speaking, understanding, reading, and writing based on cultural and literary materials. Linguistic analysis from sound to sentence. Conducted in Spanish.

213 Intermediate Composition (2)

Practice in written expression based on cultural and literary materials. May be taken concurrently with Spanish 203. Required of all majors and minors at the intermediate level; optional to others. Conducted in Spanish.

214 Intermediate Composition (2)

Practice in written expression based on cultural and literary materials. May be taken concurrently with Spanish 204. Required of all majors and minors at the intermediate level; optional to others. Conducted in Spanish.

315 Introduction to Spanish Civilization (3)

Prerequisite: Spanish 204 or equivalent. Readings and discussions in Spanish literature, arts and institutions to develop insights into Spanish culture, while strength-

Spanish

ening facility with the language. Open to lower division students with the consent of the instructor. Conducted in Spanish.

316 Introduction to Spanish-American Civilization (3)

Prerequisite: Spanish 204 or equivalent. Reading and discussion in Spanish-American literature, arts and institutions to develop insights into Spanish-American literature and culture while strengthening facility with the language. Open to lower division students with the consent of the instructor. Conducted in Spanish.

317 Advanced Conversation and Composition (3)

Prerequisite: Spanish 204 or equivalent. Open to lower division students with the consent of the instructor. Designed to give the student special competence in the control of Spanish as an instrument for free oral and written expression. Conducted in Spanish.

375 Introduction to Literary Forms (3)

Prerequisite: Spanish 317 or consent of instructor. An introduction to the principal literary forms, prose fiction, poetry, drama and the essay and to the major concepts of the literary techniques and criticism. Close analysis and interpretation of various texts to increase the student's abilities in reading, language, and literary criticism. Conducted in Spanish.

399 Spanish Phonetics (1)

Prerequisite: Junior standing and consent of instructor. Detailed analysis of students' specific problems in pronunciation followed by intensive work in class and the language laboratory until articulatory proficiency is achieved. May be repeated for credit. Conducted in Spanish.

400 Spanish for Advanced Students and Teachers (3)

Prerequisite: Spanish 317 or consent of instructor. Intensive study of spoken Spanish, while developing the student's powers of self-expression in the spoken and written language. Conducted in Spanish.

431 The Golden Age (3)

Prerequisite: Spanish 315 or consent of instructor. Major works including Mysticism, the Picaresque and Pastoral Novels, the theater of Lope de Vega and his contemporaries. Conducted in Spanish.

440 Spanish-American Literature (3)

Prerequisite: Spanish 316 or consent of instructor. Spanish-American Literature from The Conquest to 1888. Conducted in Spanish.

441 Spanish-American Literature (3)

Prerequisite: Spanish 316 or consent of instructor. Spanish-American Literature from *modernismo* to the present. Conducted in Spanish.

451 Spanish Literature to the Golden Age (3)

Prerequisite: Spanish 315 or consent of instructor. *Cantar de Mio Cid* and other epic poetry, the early ballads and lyric literature, the prose of Juan Manuel, the Renaissance lyrics of Garcilaso de la Vega, *El libro de buen amor* and *La Celestina*. Conducted in Spanish.

461 Spanish Literature Since Neoclassicism (3)

Representative works of the 19th and 20th centuries. Analysis of romanticism, eclecticism, naturalism and realism. Conducted in Spanish.

466 Introduction to Spanish Linguistics (3)

The analytical procedures of general linguistics as applied to Spanish, with special attention to structural contrasts between Spanish and English. Emphasis on the application of linguistic analysis to the teaching of modern foreign languages.

472 Senior Seminar: Cervantes and the Age of Humanism (3)

Prerequisite: Spanish 431 or consent of instructor. Cervantes' artistic creation and its relation to the culture of the 16th century. Special emphasis on *Don Quixote* and the *Novelas ejemplares*. Conducted in Spanish.

475 Senior Seminar: Contemporary Literature of Spain (3)

The Generation of '98 and 20th-century theater, poetry and novel. Conducted in Spanish.

499 Independent Study (1-3)

Supervised research projects in Spanish language or literature to be taken with the consent of the instructor and department chairman. May be repeated for credit.

500 Graduate Seminar: Advanced Structure and Style (3)

Prerequisite: consent of instructor. Conducted in Spanish.

510 Graduate Seminar: Phonology (3)

Prerequisite: Spanish 466 or consent of instructor. Conducted in Spanish.

530 Graduate Seminar: Historical Linguistics (3)

Prerequisite: Spanish 466 or consent of instructor. Conducted in Spanish.

556 Graduate Seminar: Spanish Poetry (3)

Prerequisite: consent of instructor. Conducted in Spanish.

557 Graduate Seminar: Spanish-American Poetry (3)

Prerequisite: consent of instructor. Conducted in Spanish.

567 Graduate Seminar: Spanish-American Novel (3)

Prerequisite: consent of instructor. Conducted in Spanish.

571 Graduate Seminar: Spanish Prose (3)

Prerequisite: consent of instructor. Conducted in Spanish.

575 Graduate Seminar: Spanish Drama (3)

Prerequisite: consent of instructor. Conducted in Spanish.

576 Graduate Seminar: Major Writers (3)

Prerequisite: consent of instructor. May be repeated for credit. Conducted in Spanish.

598 Thesis (3-6)

Prerequisite: recommendation of student's graduate committee.

599 Independent Graduate Research (1-3)

Prerequisite: Fluency in Spanish and consent of instructor. Supervised research projects in Spanish language or literature. May be repeated for credit.

SPEECH

101 Introduction to Oral Communication (3)

Provides the student with a basic understanding of the principles of rhetoric and oral communication, including listening, as well as with experiences in such activities as discussion, oral reading, and public speaking.

138 Forensics (2)

Prerequisite: Speech 101. Investigation and practice in the background, format, procedures, and evaluation criteria of the various forensic events. Students must participate in at least two intercollegiate tournaments. May be repeated for credit. (More than 6 hours for each unit of credit.)

202 Voice and Diction (3)

Prerequisite: Speech 101. Lecture: Introductory study of voice and speech sound articulation processes and characteristics from the point of view of the speech sciences. Laboratory: Student works toward development of flexibility in his own voice and articulation patterns.

204 Language in Human Behavior (3)

Prerequisite: Speech 101 or equivalent. A basic study of General Semantics with emphasis upon how the use of language affects intra- and inter-personal communication.

211 Introduction to Oral Interpretation (3)

(Same as Drama 211.)

231 Advanced Oral Communication (3)

Prerequisites: Speech 101, a high school course in speech, or consent of instructor. The composition and delivery of talks to inform and to persuade. Logical organization and substantive development are stressed.

235 Essentials of Argumentation and Debate (3)

Prerequisite: Speech 101 or 231. Investigation of the forms and skills of debate in our society. Use of evidence and case construction are emphasized. Parliamentary, symposium, and academic debate are considered.

301 Speech for Teachers (3)

Prerequisite: Speech 101 or graduate standing. This course is designed to help teachers to use speech and dramatized activities effectively in the classroom. The normal speech development of children is examined, and consideration is given to the identification and handling of speech, hearing, and listening problems.

303 Effective Listening (3)

Prerequisite: Speech 101 or equivalent. An examination of listening as a principal form in oral communication. Theory, self-development, and procedures by which principles can be learned. Attention will be paid to the practices of teaching of listening in the public schools. Especial emphasis will be placed on the need of listening in leadership positions.

311 Oral Interpretation (3)

(Same as Drama 311.)

324 Dynamics of Small Group Discussion (3)

Prerequisite: Speech 101. Study and practice of the principles of group dynamics, interpersonal communication, and the process by which individuals work effec-

tively in the solution of problems, share ideas, and become sensitive to the environment in which they work with others.

333 Oral Communications in Business and Industry (3)

Prerequisite: Speech 101. The nature and scope of internal oral communications in business and industry, with a view toward management's responsibility in overcoming the barriers to effective communication. Particular emphasis is given to the interview, conference, and briefing sessions.

334 Persuasive Speaking (3)

Prerequisite: 231 or equivalent. Investigation of the problems and techniques of a series of speeches directed toward a predetermined goal: emphasis on progressive use of persuasive materials.

335 Advanced Argumentation (3)

Prerequisite: 235. Argument as applied to advocacy; special attention is given to logic and evidence as related to analysis of significant issues.

338 Intercollegiate Forensics (2)

Directed activity in debate and other forensic events. Participation in intercollegiate competition is required for credit. May be repeated for credit. (More than 6 hours for each unit of credit.)

340 Speech Science (3)

Prerequisite: Speech 101. Anatomy and physiology of the speech mechanism with emphasis on respiration, phonation, resonance, articulation, and hearing; the physical and acoustical aspects of the speech process.

341 Introduction to Phonetics (3)

Prerequisite: Speech 101 or graduate standing. The study of the history and theory of speech sounds including the morphological aspect of linguistics; the use of the International Phonetic Alphabet; the various factors influencing articulation and pronunciation. (Same as Drama 341, Linguistics 341.)

342 Survey of Problems in Communication (3)

To acquaint the undergraduate student with the subject matter and vocational opportunities, and principles of speech pathology and audiology. Covered will be the role of school personnel, classes of speech and hearing disorders, incidence, speech development and barriers to the normal acquisition of speech. Observation, lecture, films and demonstrations will be extensively utilized.

402 Phonetic Analysis of Speech (3)

Prerequisite: 341. Intermediate level course in phonetics which introduces student to narrow transcriptions, the electromechanical analysis of speech, and laboratory techniques in physiological phonetics. Special selected problems in the anatomy and physiology of speech as related to problems of physiological and acoustic analysis. (Same as Linguistics 402.)

403 Speech and Language Development (3)

Prerequisite: Speech 101 or graduate standing. Study of linguistic development and the psychological aspects of oral communication. Meets the language and speech development and disorders requirement for specialized preparation to serve as teachers of exceptional children.

404 General Semantics (3)

Prerequisite: Speech 101 or graduate standing. An examination of the basic principles underlying the influence of language on human action and interaction.

Speech

424 Discussion and Group Leadership (3)

Prerequisite: Speech 324 is recommended. The principles and practices of leadership of groups in discussion. Survey of classical and modern backgrounds and uses of discussion. The logic and ethics of problem-solving discussion. The use of discussion as a means of public presentation.

433 British Public Address (3)

Prerequisite: six units of upper division speech. A rhetorical study of the times, issues, proofs, structure, and style of selected speeches on British political, social, and religious topics.

434 American Public Address (3)

Prerequisite: six units of upper division speech. A rhetorical history of the United States from the colonial period to the present. The influence of selected speeches and speakers on the development of American culture.

436 Survey of Rhetoric (3)

Prerequisite: six units of upper division speech. A survey of ancient, medieval and modern rhetoric.

438 Principles of Rhetorical Criticism (3)

Prerequisite: Speech 436. Principles for describing, interpreting and evaluating speech, developed through analysis of contemporary forensic, deliberative and ceremonial speeches. Consideration of various critical systems. Intensive practice in writing rhetorical criticisms.

441 Speech Pathology: Nonorganic Disorders (3)

Prerequisites: Speech 101 or graduate standing; Speech 341 and Speech 342. Speech pathology with special emphasis on the identification of the most commonly experienced speech problems of a nonorganic nature, such as, articulation, stuttering, voice-delayed development, areas of mental retardation, and emotional problems of children; basic principles of therapy in the clinic and in the classroom; parent conferences and referrals.

443 Speech Pathology: Organic Disorders (3)

Prerequisites: Speech 340, 341, 342. Etiologies, evaluation, and treatment of speech defects of an organic nature (cleft palate, cerebral palsy, aphasia, voice, hearing, dental abnormalities and laryngectomy).

444 Theory of Persuasion (3)

Prerequisite: six units of upper division speech. The study and application of psychological principles used by writers and speakers to effect social control: audience analysis and the use of persuasive techniques to influence the thought and behavior; the function of ethos.

451 Diagnostic Methods in Speech and Hearing (3)

Prerequisite: Speech 342 or concurrent registration in Speech 342 or consent of instructor. Provides the student with information about various diagnostic procedures that can be used by him and in consultation with members of related disciplines: psychologist, pediatrician, otologist, orthodontist, neurologist.

452 Therapeutic Procedures in Speech and Hearing (3)

Prerequisite: Speech 342 or concurrent registration in Speech 342 or consent of instructor. Observation and supervised experience in recommended procedures and use of instructional aids with speech-handicapped children, including the preparation and utilization of speech correction and speech improvement materials. (2 hours lecture, 2 hours activity)

458 Clinical Practice (3)

Prerequisites: 441 or 443, or concurrent registration in one of the courses and approved application for clinical practice. Practice in the correction of speech in children and adults under supervision.

463 Audiology (3)

Prerequisite: Consent of instructor. The nature of auditory functioning, physical and psychological. A detailed consideration of the anatomy of the auditory mechanism, pathological changes and medical treatment. A survey of the rehabilitation facilities for the aurally handicapped; e.g. agencies, hearing aids, auditory training, speech reading, language development, etc.

464 Audiometry (3)

Prerequisite: Speech 342. Equipment, principles, methods and procedures used in conducting school and industrial hearing conservation programs. Attention is given to techniques of audiometric testing and the use of audiograms. Care and use of audiometers, both air-conduction and bone-conduction. Partially fulfills the state requirements for public school audiometrist.

465 Speech Reading and Auditory Training (3)

Prerequisite: Speech 341 or consent of instructor. Historical backgrounds of lip-reading, methods used in visual reading of speech, and the techniques commonly used in the teaching of speech reading to the aurally handicapped.

499 Independent Study (1-3)

Open to advanced students in speech with the consent of the department chairman. May be repeated for credit.

500 Seminar in Speech Research (3)

Introduction to methodological problems in graduate study. Location of source materials, including library and original data; research and project design.

503 Seminar in Communication Theory (3)

Critical analysis of the background, theory, research, and applications of the process of communication.

511 Graduate Seminar in Interpretation (3)

(Same as Drama 511.)

524 Seminar in Discussion (3)

Prerequisite: Speech 324 or 424, or equivalent, or consent of instructor. Analysis of significant literature, major trends, and theories of argumentation, discussion, and debate, and an intensive study of the relationship of these areas to each other.

535 Seminar in Argumentation (3)

Prerequisites: Speech 335; Speech 436 and Speech 444 recommended. Issues in development of argumentation theory: an examination of periodical literature and prominent texts.

536 Seminar in Rhetorical Theory (3)

Prerequisite: Speech 436 or consent of instructor. Analysis of major rhetorical treatises, 400 B.C. to A.D. 1800.

543 Seminar: Major Problems in Speech Pathology and Audiology (3)

Selected problems in speech pathology and audiology approached through an investigation of the literature and clinical research.

Speech Education

557 A-I Seminar in Speech Pathology (3)

Prerequisite: Speech 441 and 443. May be repeated for a total of 16 units, but no individual seminar may be repeated for credit: A, cleft palate; B, stuttering; C, aphasia; D, cerebral palsy; E, aphasoid child; F, voice disorders; G, articulation problems; H, mentally retarded; I, Advanced Diagnostics.

558A,B,C Advanced Clinical Practice (2,2,2)

Prerequisite: Speech 458 or equivalent. Advanced clinical practice with children and adults, having communication problems encountered in professional setting such as the college clinic, public schools, hospitals, crippled children clinics, etc. Students will work with clients with disorders of voice, deafness, aphasia, dysarthria, stuttering. May be repeated for credit.

563 Seminar in Audiology (3)

Prerequisite: Speech 463, 464, or consent of instructor. Investigation into a particular area or areas of audiology with selected problems. Emphasis is upon research and contributions within the framework of the seminar.

597A,B,C Project (2,2,2)

The conduct and reporting of an approved project.

598A,B,C Thesis (2,2,2)

Prerequisite: Speech 500. The selection, investigation, and written presentation of a selected problem in the field of speech.

599 Independent Graduate Research (1-3)

Prerequisites: graduate standing and consent of chairman. Open to graduate students with permission of chairman of department. May be repeated for credit.

SPEECH EDUCATION

442 Teaching Speech in the Secondary School (2)

Prerequisites: Education 311, Education 340, Admission to Teacher Education, senior standing or consent of the instructor. The student who has not had teaching experience must register concurrently in Education 449. See page 158 under Secondary Education for description of standard teaching credential program. Objectives, methods, and materials for teaching speech in secondary schools. Required, before student teaching, of students presenting majors in speech for the standard teaching credential.

459 Clinical Practice and Student Teaching in Speech Correction and Lip Reading (4)

Prerequisites: Education 311 and 24 units in the area of speech and hearing handicapped children in the public schools. Experiences include working in small groups and in individual therapy sessions with speech and hearing handicapped children enrolled in regular school classes, participation in parent counseling conferences and conferences with school personnel including administrators, classroom teachers, and nurses. Planning of curriculum materials to integrate speech and hearing therapy with regular classroom instruction will be stressed. This meets the directed teaching requirements for the credential to teach speech and hearing handicapped in remedial classes.

749 Student Teaching in Speech in the Secondary School and Seminar (6)

See page 312 for description and prerequisites.

SCHOOL OF BUSINESS ADMINISTRATION AND ECONOMICS

ACCOUNTING

201A,B Elementary Accounting (3,3)

Prerequisite: Accounting 201A must be taken before taking Accounting 201B. Accounting concepts and techniques essential to the administration of a business enterprise; analyzing and recording financial transactions; preparation of financial statements; analysis and interpretation of financial statements; introduction to manufacturing accounts and reports.

300 Accounting Fundamentals (3) (Open only to graduate students)

The basic fundamentals of accounting as they apply to the accumulation, organization, and interpretation of financial and quantitative data relevant to the activities of the corporate business enterprise.

301A,B Intermediate Accounting (3,3)

Prerequisite: Accounting 201B. The quantification, recording, and presentation of balance sheet and income statement items with particular emphasis on the corporate type of organization; statement of application of funds; cash flow statement; basic concepts of accounting theory; interpretation of financial statements.

302 Cost Accounting (3)

Prerequisite: Accounting 201B. The development of accounting information for management of manufacturing enterprises; cost records; cost behavior and allocation; standard costs; and an introduction to cost control.

303 Governmental Accounting (3)

Prerequisite: one course in accounting. A consideration of the accounts and reports of nonprofit institutions, municipalities, state and federal governments; organization, procedures, budgets.

304 Managerial Accounting (3)

Prerequisite: Accounting 201B. This course is intended for students whose area of concentration is not accounting. Analysis, interpretation, and application of accounting information for managerial decision making; budgets and budgetary control; special-purpose reports; differential cost analyses.

307 Distribution Costs (3)

Prerequisites: Accounting 201B and Marketing 351. The development of quantitative measures for marketing activity; costs of distributing through different channels of distribution, advertising vs. personal selling, and movement activities; development of sales budgets, standard costs, and the analysis of actual performance in the light of budgets and standards. (Same as Marketing 307.)

308 Federal Income Tax (3)

Prerequisite: Accounting 201B. Basic consideration of the history, theory, and accounting aspects of federal income taxation.

Accounting

401 Advanced Accounting (3)

Prerequisite: Accounting 301B. A study of partnerships, statements for special purposes, receiverships, consolidated financial statements, branch accounting and foreign exchange.

402 Auditing (3)

Prerequisites: Accounting 301B and 302. Nature of an audit, auditing standards and procedures, audit reports; professional ethics and responsibilities of the independent public accountant; introduction to internal auditing.

406 Cost Control (3)

Prerequisite: Accounting 302. A study of current and persistent problems in cost accounting; theories of cost allocation and absorption; flexible budgeting; responsibility accounting; and distribution cost control.

407 Integrated Data Processing Systems (3)

Prerequisites: Accounting 201B or 300 and Quant Meth 264 or 265. Integrated systems for the collection, processing, and transmission of information; aspects of the information service function; feasibility studies; case studies of operating systems.

408 Problems in Taxation (3)

Prerequisite: Accounting 308. Research in problems of taxation with emphasis on income taxes as they relate to corporations, partnerships and fiduciaries.

409 C.P.A. Problems and Theory (3)

Prerequisite: Accounting 401, or consent of the instructor. Selected problems and questions as found in the uniform C.P.A. examination; preparation, analysis and revision of financial statements; assets, liabilities and ownership equities; income determination; cost accounting; governmental and institutional accounting; accounting theory.

499 Independent Study (3)

Prerequisites: senior standing and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

500 Industrial Accounting (3)

Prerequisites: Accounting 201B, or 300, graduate standing and consent of the instructor. Accounting information for industrial management; elements of manufacturing cost; cost systems; standard costs; cost reports; distribution cost analysis.

501 Seminar in Administrative Accounting (3)

Prerequisites: Accounting 302, or 304, or 500, graduate standing and consent of the instructor. Accounting, financial, and other quantitative data for managerial decision-making; long-term and short-term profit planning; budgetary control; cost analysis and special reports; financial analysis and planning; the financial and taxation aspects of business decisions.

502 Seminar in Accounting Theory (3)

Prerequisites: Accounting 301B, graduate standing and consent of the instructor. The concepts and theory of accounting; the effects of professional, governmental, business, and social forces on the evolution of accounting theory.

503 Seminar in Contemporary Financial Accounting Problems (3)

Prerequisite: Accounting 502. A critical examination of the current problems and areas of controversy in financial accounting.

504 Seminar in Contemporary Managerial Accounting Problems (3)

Prerequisites: Accounting 500 or Accounting 302, graduate standing and consent of the instructor. A critical examination of the current problems and areas of controversy in managerial accounting.

505 Seminar in Auditing (3)

Prerequisites: Accounting 402 and graduate standing. Auditing theory and practices; professional ethics; auditing standards; SEC and stock exchange regulations; auditor's legal liability; statement trends and techniques.

597 Project (3)

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6)

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (3)

Prerequisites: graduate standing, the consent of the instructor, and approval by the department chairman. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

BUSINESS ADMINISTRATION**497 Business and Economic Research (3)**

Prerequisite: Bus. Ad. core, senior standing, and consent of instructor. For advanced students who wish to investigate business and economic problems in specialized areas. Application of research methods: selection and identification of a problem, determining a method of approach, collection and analysis of relevant data, eliciting conclusions and solutions.

595 Modern Capitalism (3)

Prerequisite: Graduate standing and consent of instructor. The changing role of capitalism and its control in the United States, European countries and Japan. The trends as to Government policy and action, relative to private ownership and co-ordinated economic planning.

ECONOMICS**100A Principles of Economics (3) (Formerly 200B)**

The first half of a two-semester sequence. An introduction to the principles and analysis of economic policy. Emphasizes economic stability and growth and the role of public policy.

100B Principles of Economics (3) (Formerly 200A)

The second half of a two-semester sequence. Continuation of an introduction to the principles of economic analysis and policy including the central problem of scarcity. Emphasizes resource allocation and income distribution, international economics, comparative economic systems, and the role of public policy.

200 Principles of Economics (5)

Prerequisite: open only to junior transfers. (Duplicates 100A-B. An introduction to the principles of economic analysis and policy including the central problem of scarcity, basic economic institutions of the United States, resource allocation and income distribution, economic stability and growth, and the role of public policy.

201 The American Economy (3)

A survey of the basic economic concepts and processes of a private enterprise economy. Included is a consideration of such topics as resource allocation, income distribution, problems of economic stability and growth and the appropriate role of government in a private enterprise society. Not open to students majoring in business administration and economics.

300 Basic Economics (3) (Open only to graduate students)

A concentrated study of the principles of economic analysis and policy and the basic economic institutions of the United States.

310 Intermediate Microeconomic Theory (3) (Formerly 302)

Prerequisite: Economics 100A,B, or 200 or equivalent. A theoretical formulation of the principles of the determination of prices and output of goods and productive services in a market system.

320 Intermediate Macroeconomic Theory (3) (Formerly 303)

Prerequisite: Economics 100A,B, or 200 or equivalent. A theoretical formulation of the principles of the determination of the level and fluctuations in real and money income, and the forces underlying economic growth.

323 American Economic History (3)

Prerequisite: Economics 100A,B, or 200 or equivalent. The development of American economic institutions with special emphasis on economic problems, economic growth, and economic welfare.

330 Comparative Economic Systems (3) (Formerly 403)

Prerequisite: Economics 100A,B, or 200 or equivalent. An analytical comparison of unplanned and planned systems of economic organization as to their theoretical foundations, existing economic institutions, and achievements and failures; capitalism, socialism, communism, and fascism will be examined as exemplified by the United States, England, Russia and prewar Germany.

331 The Soviet Economy (3) (Formerly 404)

Prerequisite: Economics 100A,B, or 200 or equivalent. An analytical evaluation of Soviet economic development including the structure and performance of the Soviet economy and problems of planning and control.

332 Economic Problems of Asia (3)

Prerequisite: Economics 100A,B, or 200 or equivalent. Analysis of the natural resources, population, agricultural, industrial, transportation, communications, monetary, banking, etc. problems of Asia, i.e. China, Japan, etc. and the Asian subcontinent. The relations of non-economic problems to the economic is considered in detail.

333 Economic Development: Analysis and Case Studies (3) (Formerly 431)

Prerequisite: Economics 100A,B, or 200 or equivalent. An examination of the processes of economic growth with special references to developing areas. Considers capital formation, resource allocation, relation to the world economy, economic planning and institutional factors, with appropriate case studies.

351 European Economic History (3) (Formerly 322)

Prerequisite: Economics 100A,B, or 200 or equivalent. The evolution of European economic institutions and their relation to the development of industry, commerce, transportation, and finance in the principal European countries.

360 Economics of Location (3) (Formerly 452)

Prerequisite: Economics 100A,B, or 200 or equivalent. The theory and principles underlying the location of economic activity.

361 Urban Economics (3)

Prerequisite: Economics 100A,B, or 200 or equivalent. Theory and analysis of the urban economy, urban economic problems and policy.

365 Economics of Taxation (3) (Formerly 451)

Prerequisite: Economics 100A,B, or 200 or equivalent. A study of government finance at the federal, state, and local levels with particular reference to administrative problems of public finance, the ethical aspects of taxation, and the impact of taxation and spending on resource allocation and income distribution.

370 Economics of Research, Development and Technological Change (3) (Formerly 470)

Prerequisite: Economics 100A,B, or 200 or equivalent. Examination of the importance of R & D and technological change in the economy; concepts, issues, and major figures in the study of economics of technology; analytical techniques for the assessment of technological change; and evaluation of the impacts of technological change.

410 Government and Business (3) (Formerly 401)

Prerequisite: Economics 310. An economic study of business organization, conduct and performance followed by an analysis of the rationale and impact of public policy on various segments of business and business activities, including the regulated industries, sick industries, and antitrust policy.

411 International Trade (3) (Formerly 421)

Prerequisite: Economics 310. An examination of the theory or international trade and the means and significance of balance of payments adjustments, with an analysis of past and present developments in international commercial and monetary policy. (Same as Marketing 421)

412 Labor Economics (3) (Formerly 326)

Prerequisite: Economics 310. An analysis of the basic economic and institutional influences operating in labor markets. Considers relevant aspects of resource allocation, income distribution, economic stability, and growth.

420 Money and Banking (3) (Formerly 324)

Prerequisite: Economics 320. A study of the structure and operation of commercial banks and financial institutions including a consideration of the impact of money and capital market developments on economic activity. (Same as Finance 324.)

421 Monetary and Fiscal Policy (3) (Formerly 402)

Prerequisite: Economics 320. A study of the techniques of monetary and fiscal policy and an appraisal of their relative roles in promoting economic stability and growth.

440 Introduction to Econometrics (3) (Formerly 462)

Prerequisite: Economics 310, 320, and QM 362. Development of advanced statistical methods and their application in economic research. Advanced concepts in model building; development of different types of economic models. The use and effect of economic models in public policy.

Economics

441 Introduction to Mathematical Economics (3)

Prerequisite: Economics 310, 320, and QM 362. Selected topics in economic theory, drawn from microeconomics and macroeconomics. Content varying from year to year but with emphasis on constrained optimization problems and rational decision making.

450 History of Economics Thought (3) (Formerly 405)

Prerequisite: Economics 310, 320. A study of the development of economic thought as reflected in the evolution of major schools of thought and of leading individual economists as they influenced economic thought and policy.

499 Independent Study (3)

Prerequisites: Economics major or concentration, senior standing and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

502 Advanced Microeconomic Analysis (3)

Prerequisites: Economics 200 or 100A,B, and 310. An advanced theoretical formulation of the principles of the determination of prices and outputs of goods and productive services in a market system. Topics include: consumer choice, demand, production, cost, the equilibrium of the firm and the market, and distribution.

503 Advanced Macroeconomic Analysis (3)

Prerequisites: Economics 200 or 100A,B, and 320. Advanced theory of the determination of the level and fluctuations of real and money income, and the forces underlying economic growth.

505 Methodology in Economic Research Seminar (3)

Prerequisites: Economics 502 or 503 and concurrent enrollment in Economics 503 or 502. A systematic examination of the philosophy and methodology of economic analysis and research. Topics include theory construction, verification and measurement, and the problems associated with policy formulation.

506 Seminar in Micro- and Macro-Economic Applications (3)

Prerequisites: Economics 502, 503, and 505. Complements the study of methodology in economic research. Students select approved topics and via independent investigation and seminar presentation and critique develop their analytical and research abilities, culminating with an acceptable paper.

510 Competition, Monopoly and Public Policy (3)

Prerequisite: Economics 300 or equivalent. Seminar devoted to an examination of the economic implications of various forms of market structure and business conduct and considers the application of public policy to various segments of business and business activities, including antitrust policy and regulation of business. (Not open to Economics M.A. candidates.)

511 Economic Problems and Public Policy (3)

Prerequisite: Economics 300 or equivalent. Seminar devoted to an examination of the nature and implication of the major economic problems facing the economy and an evaluation of current and alternative policies for their solution. Problems considered will include price level stabilization, balance of payments equilibrium, economic growth, and cyclical and technological unemployment. (Not open to Economics M.A. candidates.)

512 Comparative Economics Seminar (3)

Prerequisite: Economics 300 or equivalent. A comparative study of various analytical and prescriptive approaches to economic problems of scarcity, development, fiscal and monetary policy, planning and poverty. (Not open to Economics M.A. candidates.)

596 Selected Topics in Economic Analysis and Policy (3)

Prerequisites: Economics 200 or 100A,B, 310 and 320. Seminar: Selected topics in economic analysis and policy will be covered in depth, with special emphasis on contemporary research and materials. May be repeated for credit.

597 Projects (3)

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6)

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (3)

Prerequisites: graduate standing, the consent of the instructor, and approval by the department chairman. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

FINANCE

324 Money and Banking (3)

Prerequisite: Economics 200, or 200A,B, or 201. A study of the structure and operation of commercial banks and financial institutions including a consideration of the impact of money and capital market developments on economic activity (same as Econ. 324).

330 Business Finance (3)

Prerequisites: Accounting 201B, or 200, and Economics 200, or 200B. Sources and uses of long-term and short-term capital in business firms, and analysis of business finance.

331 Financial Analysis (3)

Prerequisite: Finance 330. The techniques of financial analysis and their application to business situations. Group problems and case studies.

333 Personal Finance (3)

Prerequisite: None. (This course may not be taken for credit by students electing the finance area of concentration.) Financial problems of the household in allocating resources and planning expenditures. Consideration of housing, insurance, installment buying, medical care, savings and investments.

334 Principles of Insurance (3)

Prerequisites: Economics 200, or 200A,B. Principles of life, casualty and liability insurance, individual and group insurance programs; methods of establishing risks and rates.

335 Investment Principles and Practices (3)

Prerequisite: Finance 330. Principles underlying the selection and management of portfolios, analysis of different types of securities; the role of mutual funds, investment trusts and other investment institutions. Group problems and case studies.

Finance

336 Principles and Practices of Real Estate (3)

Prerequisite: Economics 200, or 200B. Survey of urban real estate principles and practices; structure and growth of cities; basis of real property values; real estate development and financing.

337 Real Estate Finance (3)

Prerequisite: Finance 336. Instruments of real estate finance; factors affecting the supply and cost of real estate credit; primary and secondary mortgage markets; real estate as an investment medium. Group problems and case studies.

338 Real Estate Valuation (3)

Prerequisite: Finance 338. Theory of real property value, historical development; methods used in urban and rural property appraisals; special purpose appraisals. Group problems and field work required.

339 Real Estate Research (2)

Prerequisites: Finance 336 and 337 or 338 and concurrent enrollment for 1 unit of Finance 499. Group problems and individual projects in the use of applicable research techniques in solving problems related to real property.

431 Capital and Money Markets (3)

Prerequisites: Finance 330 and either Finance 324 or Economics 324, or consent of instructor. Role of capital and money markets in the American economy; markets for new corporate and government issues; secondary markets; interrelation of financial institutions; factors influencing yields and security prices.

433 Problems in Business Finance (3)

Prerequisite: Finance 331. Comprehensive case studies including group problems of estimating funds requirements, long-term financial planning, controlling and evaluating cash flows, and financing acquisitions and mergers. (2 hours lecture; 2 hours activity)

439 Social Insurance (3)

Prerequisite: Finance 330. Financial problems and policies in old age pensions, health insurance, unemployment insurance, workman's compensation, and private pension plans.

499 Independent Study (3)

Prerequisites: senior standing and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

532 Seminar in Corporate Financial Management (3)

Prerequisite: Finance 330, and graduate standing. Financial policies and structure of corporations; acquisition and administration of funds; financial control.

533 Seminar in Financial Administration (3)

Prerequisite: Finance 532. Optimal financing and asset administration; advanced techniques of capital budgeting; application of analytical methods to the administration of the finance function of the business firm.

534 Seminar in Financial Markets (3)

Prerequisites: Finance 431 or Finance 324 and consent of the instructor. Structure and operation of major financial institutions; portfolio composition, price-cost problems, and market behavior; analysis of financial intermediation and interrelation of financial institutions and markets.

535 Seminar in Investment Management (3)

Prerequisites: Finance 335 and graduate standing. Problems of investment and portfolio management; concepts of risk evaluation and investment criteria; analysis of interest rate movements; investment timing; valuation of securities; regulation of securities markets.

536 Seminar in Risk Management (3)

Prerequisites: Finance 334 and graduate standing. Techniques of risk management, structure of risk management, insurance planning and control, risk management programs.

537 Seminar in Real Estate Investment (3)

Prerequisites: Finance 330, 336 or equivalent and graduate standing. Problems of real estate investment; concepts of evaluation and investment criteria; analysis of real property values; real estate development and financing.

597 Project (3)

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6)

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

MANAGEMENT**341 Principles of Management (3)**

Prerequisite: Economics 200 or 200 A,B. The fundamentals of management universal to all organizations; covers such studies as planning, organizing, activating, and controlling.

342 Production Operations Management (3)

Prerequisite: Management 341, QM 265. Fundamentals of the production functions in business and industry. Dynamic analysis at the production level of; systems, organizations, analytical models and methods, product and process development, and management information systems. Case studies stress realism in management problem solving approaches.

343 Personnel Management (3)

Prerequisite: Management 341 or consent of the instructor. A study of the personnel function, its activities, and its problems. Emphasis upon management's responsibilities for selection, development, and effective utilization of personnel.

346 Business Law (3)

The philosophy, institutions and role of the law in business and society, with emphasis upon the functions of courts and attorneys, and upon case studies in the areas of contracts and corporation law.

347 Business Law (3)

Prerequisite: Management 346. The philosophy, institutions and role of the law in commercial transactions, with emphasis upon the uniform commercial code and case studies in the areas of sales, security devices, personal property, bailment and negotiable instruments.

Management

348 Business Law (3)

Prerequisite: Management 346. The philosophy, institutions and role of the law in business relationships, with emphasis upon case studies in the areas of agency, partnership, real property, mortgages, trusts, wills, community property, insurance, suretyship and bankruptcy.

349 Real Estate Law (3)

Prerequisite: Management 346 or equivalent area; Finance 336. Law of real property; types of ownership; titles and estates; transfers of interests; encumbrances; easements; fixtures; land sale contracts; recording; zoning; leases; responsibilities of real estate brokers.

441 Labor-Management Relations (3)

Prerequisite: Management 341 or consent of the instructor. The course provides an understanding of the impact of labor-management relations upon labor, management, and the public. Proper grievance procedure, collective bargaining, and the settlement of disputes are among the subjects that are examined.

442 Labor Law (3)

Prerequisites: Management 341, 346 or consent of the instructor. The study of labor law and its effects upon American society. Federal and state legislation, and actions of regulatory bodies are explored by means of case studies.

443 Behavioral Science for Management (3)

Prerequisites: Management 341 or consent of the instructor. A seminar designed to provide the student an opportunity to study cases and current literature in the human problems of work situations. Special emphasis is placed upon concepts in motivation, leadership, individual differences, organizational health, and adapting to change. Group problems offer a practical approach to these areas.

444 Management of Systems (3)

Prerequisite: Management 342, QM 361. The technology for managing programs, enterprises, and organizations as cybernetic systems. The course investigates the design and control of systems appropriate for product, project and program levels of analysis. (2 hours lecture, 2 hours activity)

445 Production and Management Performance Control (3)

Prerequisite: Management 342, QM 361. Quantitative approaches toward assuring performance control in production operations and management activities. The methods of collecting, evaluating, and using control information in real-time. Synthesis of effective control systems through group projects.

446 Managerial Economics (3)

Prerequisites: Quantative Methods 361 and Management 341, or consent of the instructor. A study of the relationship of management tools to applied economics and statistics, in the decision-making process: the use of cases and group problems to study the true economic meaning of cost, demand, supply, price, product, and competition.

447 Management Decision Games (3)

Prerequisites: The business administration core or consent of the instructor. A simulation of an oligopolistic industry to provide the student with an opportunity, through group problems, to use statistics and other analytical tools to make managerial decisions in the functional areas of management. (2 hours lecture; 2 hours activity)

449 Seminar in Business Policies (3)

Prerequisites: Accounting 201A,B, Finance 330, Management 341, Marketing 351, and senior standing. The seminar is limited to seniors and graduate students. Through an analysis of integrative cases and problems the student is encouraged to use his business and liberal arts training. Individual and team efforts resolve decision-making policies and actions.

499 Independent Study (3)

Prerequisites: management concentration, senior standing, and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

541 Seminar in Project Operations Problem Solving (3)

Prerequisites: Graduate standing and the consent of the instructor. A seminar designed to focus attention on application of system analysis; special projects are used to illustrate other dynamic techniques to project operations problems. Current literature reviews, case study analysis, and special projects are used to further student understanding.

542 Seminar in Labor Relations (3)

Prerequisites: graduate standing and consent of the instructor. Theories and philosophies of union-management relations in modern industrial society with attention to trends in nonindustrial organizations. Issues in collective bargaining contract administration, labor law, and government regulation. Discussion and analysis of literature.

543 Seminar in Personnel Administration (3)

Prerequisites: graduate standing and the consent of the instructor. The seminar provides the graduate student with an opportunity to study cases, problems, and significant literature in the field in order to develop a comprehensive understanding of personnel administration and human relations.

544 Seminar in Organizational Behavior and Administration (3)

Prerequisites: graduate standing and consent of the instructor. The analysis of human behavior in organization, studies in organizational theories, and administrative action.

548 Seminar in International Management (3)

Prerequisites: graduate standing and consent of the instructor. Problems in managerial qualifications and training, political structure within and without the operations, foreign receptivity to United States business, organizing and controlling the international firm. Management in selected countries is examined.

549 Seminar in Policy Planning and Administration (3)

Prerequisites: graduate standing and consent of the instructor. Planning, implementing, and controlling policy strategies to achieve objectives are considered. The executive's role in the overall operations of the enterprise and its resources are examined, and supported by cases, literature and training techniques in practice.

597 Project (3)

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6)

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

Marketing

599 Independent Graduate Research (3)

Prerequisites: graduate standing, the consent of the instructor, and approval by the department chairman. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

MARKETING

307 Distribution Costs (3)

Prerequisites: Accounting 201B and Marketing 351. The development of quantitative measures for marketing activity; costs of distributing through different channels of distribution, advertising versus personal selling, and movement activities; development of sales budgets, standard costs, and the analysis of actual performance in the light of budgets and standards. (Same as Accounting 307)

351 Principles of Marketing (3)

Prerequisite: Economics 200. Marketing organization and methods for the individual business with serious consideration of the social and economic aspects of the distribution task. Topics include the consumer, his place and his problems in the marketing area; marketing functions, institutions, and policies; legal and political environment for marketing activity; and an evaluation of the present marketing system.

352 Principles of Retailing (3)

Prerequisite: Marketing 351. Retail problems of location; organization; buying; selling media and methods; pricing; and merchandising. Emphasis will be placed upon operating procedures and control, planning, budgeting, and costs.

353 Marketing Administration (3)

Prerequisite: Marketing 351. Survey of the major problems facing the marketing executive, including product planning, pricing, market and analysis, sales potentials, marketing organization, and administration of the sales force.

354 Principles of Advertising (3)

Prerequisite: Marketing 351. The management of the advertising function, including the role of advertising in marketing strategy, budgetary considerations, allocation among media, measurement of effectiveness, administration and control, and its economic and social implications.

355 Credit and Credit Administration (3)

Prerequisite: Marketing 351. The general nature and functions of credit, credit instruments; the operation of the credit department; sources of credit information; acceptance of credit risk; establishment of credit limits; and the problem of collections.

356 Creative Motivation in Marketing (3)

Prerequisite: Marketing 351. Personal salesmanship and the application of the findings of the behavioral sciences to selling and group dynamics as they relate to the creative and promotional aspects of the business.

357 Industrial Purchasing (3)

Prerequisite: Marketing 351. The principles and practices of purchasing for industrial organizations. Major buying policies, sources of materials, quantity and quality considerations, and the relation to production cost.

358 Physical Distribution (3)

Prerequisite: Marketing 351. Consideration of the logistics problems of physically distributing products and the principles and practices of solving them. An evaluation of the transportation and storage of products based on considerations of cost, time, and service.

452 Marketing Research (3)

Prerequisites: Marketing 351, and Quantitative Methods 361. The application of scientific methodology as an aid in solving problems of product planning, pricing, promotion, and distribution. Practical application is emphasized through class projects and case problems. (Two hours lecture; two hours activity)

453 Marketing to the Government (3)

Prerequisite: Marketing 351. The marketing of defense and nondefense products to the government. The nature and administration of contractual agreements with government agencies.

454 Advertising Problems (3)

Prerequisites: Marketing 354 or consent of the instructor, plus senior standing. Management of the advertising function in the marketing program. A study of the formulation of advertising policies, involving primarily an analysis of cases dealing with the role of advertising in marketing, the definition and choice of advertising objectives, strategy, appropriation policy, media selection, evaluation of advertising results, and the organization and implementation of the advertising program. Cases, simulations, and readings.

458 International Marketing (3)

Prerequisites: Marketing 351 and Marketing Administration 353; or consent of instructor. Presents an analytical framework for studying the development of domestic marketing systems in the context of overall economic growth. Emphasis is given to U. S. firms involved in international marketing operations.

459 Marketing Problems (3)

Prerequisite: Marketing 351, 353 and 452; or consent of instructor. Case studies of problems facing the marketing executive; identification and analysis of the problems; selection and evaluation of alternative solutions; and implementation of recommended solutions.

499 Independent Study (3)

Prerequisites: Marketing concentration, senior standing, and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

551 Seminar in Marketing Problems (3)

Prerequisites: Marketing 351 and graduate standing. A managerial approach to the major marketing problems faced by industry: e.g., definition of and organization for the marketing task; demand analysis; decisions concerning product, price, promotion, and trade channels. A firm's adjustment to its marketing environment with emphasis on competitive strategy. The case approach supplemented with simulations and topical readings.

552 Seminar in Pricing and Price Policy (3)

Prerequisite: Marketing 551. A critical analysis of the pricing problems of a firm with alternative choices and diverse objectives. The pricing function will be examined from the standpoints of economic theory, management science, business

Quantitative Methods

practices, legal constraints, and ethical considerations. Relationship of pricing objectives, policies, strategies, and methods to market behavior and the goals of the firm. Pricing policies among businesses and their economic and social implications.

553 Seminar in Product Planning (3)

Prerequisite: Marketing 551. A course designed to assist marketing management in the formulation and execution of marketing plans for new and existing products. An examination of the management decision areas and procedures required for search, preliminary evaluation, development and testing, and commercialization of products. Particular emphasis on solving problems arising from product programs developed to assure corporate growth.

554 Seminar in Promotion (3)

Prerequisites: Marketing 551 or instructor's approval. A critical analysis of the promotion mix as employed by small, medium and large business organizations in their efforts to maximize profitable operations. Particular emphasis will be given to: determination of promotional goals, planning, budgeting, and controlling promotional programs; and measuring the effectiveness of the promotional effort.

555 Seminar in Marketing Research (3)

Prerequisites: Marketing 452 and Marketing 551 or consent of instructor. The application of scientific method to marketing decisions; research methodology and models; decision-making applications.

556 Seminar in Consumer Behavior (3)

Prerequisite: Marketing 551. A critical analysis of theories underlying consumer behavior. The orientation is on understanding and predicting consumer behavior.

559 Seminar in Marketing Thought and Concepts (3)

Prerequisite: Marketing 551. Application of theoretical concepts in the behavioral sciences, managerial sciences and quantitative methods to the development of theories and models in marketing. The emphasis is on the interdisciplinary exchange of ideas relating to marketing. Evolving concepts and theories in marketing are appraised. May be repeated for credit.

597 Project (3)

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6)

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (3)

Prerequisites: graduate standing, the consent of the instructor, and approval by the department chairman. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

QUANTITATIVE METHODS

264 Computer Programming (1)

Introduction to problem-oriented languages of computers. The solving of problems using computer programming. (2 hours activity)

265 Computer Programming and Applications (3)

Computer programming. Introduction to matrix and set notation. Introduction to discrete probability. Descriptive statistics. Computer programming solutions of probability and statistical problems. (2 hours lecture; 2 hours activity)

361 Business and Economic Statistics (3)

Prerequisite: QM 265 or equivalent. Collection, analysis, and presentation of statistical data. Random sampling, estimation, and hypothesis testing. Introduction to regression and correlation.

362 Introduction to Quantitative Methods in Economics (3)

Prerequisites: Economics 100A, B, QM 361 and Economics 310 (may be taken concurrently). An introduction to basic mathematical tools and their application to economic theory. The nature of econometric models and the concept of identification. Estimation and evaluation of simple single equation linear models and an introduction to such problems as autocorrelation and multicollinearity. Not open to students who have taken QM 462.

364 Computer Logic and Programming (3)

Prerequisites: QM 264 or equivalent. An introductory survey of automata theory, switching theory, the organization of modern computing equipment and noninteractive machine language programming.

446 Computer Programming Theory (3)

Prerequisites: QM 264 and Math 150A or equivalent. Selected topics of concern to the computer programmer from the fields of numerical analysis and simulation theory with FORTRAN applications.

461 Advanced Statistics (3)

Prerequisites: QM 361 and Math 150A or equivalent. An advanced treatment of the theory and application of the topics covered in QM 361, using the methods of the calculus where appropriate.

462 Mathematical Models in Business and Economics (3)

Prerequisite: QM 361. Construction and application of mathematical models to business decision making problems. Bayesian decisions. Introduction to linear programming.

463 Introduction to Management Science (3)

Prerequisites: Mathematics 150A and QM 361. Introduction to the basic concepts of Management Science and its relationship to economics and decision theory. Topics surveyed include optimization in continuous models, linear programming, queueing and inventory models, dynamic programming and decision making in the business environment.

464 Computer Applications in Industry (3)

Prerequisites: QM 364 or consent of instructor. An examination of modern computer hardware, the techniques of programming it, and the languages in which such programs are written. Includes discussion of memory protection, interrupt systems, recursive programming, list-structured-languages and user-oriented languages.

465 Linear and Nonlinear Programming (3)

Prerequisite: QM 361 (may be taken concurrently). The theory and applications of linear programming with an introduction to nonlinear programming

Quantitative Methods

methods. Topics include: Linear programming and the Simplex Algorithm; starting procedures; the dual and economic interpretations; parametric programming and sensitivity analysis; transportation and assignment problems; dynamic programming.

467 Statistical Quality Control (3)

Prerequisites: QM 361. Shewhart Control Charts for variables, percent defective, and defects. Tolerances, process capacity, specialized control charts, and batch processing problems. Bayesian aspects of process control.

499 Independent Study (3)

Prerequisites: quantitative concentration, senior standing, and approval by the department chairman. Open to qualified undergraduate students desiring to pursue directed independent inquiry. May be repeated for credit.

560 Operations Research (3)

Prerequisites: Math 150A and QM 361. An examination of the nature and scope of Operations Research, with emphasis on the techniques of model construction. Topics surveyed include optimization in continuous models, linear programming, queueing and scheduling models, inventory models and dynamic programming, and decision making under uncertainty.

561 Seminar in Operations Research (3)

Prerequisites: QM 560 or consent of instructor. A particular topic in Operations Research, such as simulation, inventory theory, or synthesis of large scale systems will be covered in depth with special emphasis on research methods.

563 Statistical Decision Theory (3)

Prerequisites: QM 361. The analysis and application of advanced statistical techniques to the problems of management decision-making under conditions of uncertainty.

565 Seminar on Computers in Industry (3)

Prerequisites: QM 364, QM 464 or consent of instructor. An examination of developments and innovations concerning computers in industry. Artificial intelligence, information retrieval, and time sharing.

566 Design of Experiments (3)

Prerequisites: QM 361 and graduate standing. A survey of the fundamentals of experimental design, including analysis of variance, factorial experiments, nested designs, confounding, and fractional replication.

597 Project (3)

Open to qualified graduate students. Directed independent inquiry.

598 Thesis (3-6)

Open to qualified graduate students. Directed independent inquiry. Student will select and have approved a thesis topic, show evidence of original research, and must present himself for a defense of the thesis before a faculty committee.

599 Independent Graduate Research (3)

Prerequisites: graduate standing, the consent of the instructor, and approval by the department chairman. Open to qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

SCHOOL OF EDUCATION

PRESERVICE COURSES

296 Special Educational Practicum (1-3)

Conduct an individual educationally oriented experience with a child, youth, or young adult in an educational practicum location under the direction of a faculty member. Available to students who want or need public service experience with children, youth, or adults. Does not give credit toward any teaching credential. May be repeated for a maximum of six units of credit. Open to freshman and sophomore students. (3 hours laboratory per hour of credit)

311 Psychological Foundations of Education (4)

Prerequisite: Psych 101. Prerequisite to other courses in the professional education sequence. Learning theory, thinking processes, and human growth and development. (3 hours lecture; 2 hours activity)

312 Human Growth and Development (3)

Prerequisite: Psych 101. A comprehensive study of human growth and development with emphasis on childhood, adolescence, and middle and old age. Includes mental, social, emotional, and physical development.

329 Fieldwork in Methods of Teaching in Elementary School (1)

Prerequisites: Educ 311, and admission to teacher education. Must be taken concurrently with Educ 331. Observation and participation in elementary school classrooms. Integrated with course work in principles, curricula, and methods. (3 hours laboratory)

331 Elementary School Principles, Curricula, and Methods (7)

Prerequisites: Educ 311, Math Educ 303A, and admission to teacher education must be taken concurrently with Educ 329. Principles, curricula, methods, and materials of elementary school instruction with major emphasis on reading, language arts, arithmetic, social studies, and science. Includes audiovisual instruction, methods, and techniques. Required of all candidates for the standard teaching credential with specialization in elementary school teaching. (6 hours lecture, 2 hours activity)

339 Student Teaching in the Elementary School and Student Teaching Seminar (8 or 4)

Prerequisites: Educ 331, three academic related courses, and admission to student teaching. Participation in a regular elementary school teaching program for the greater part of every school day. Includes a two-hour seminar each week in problems and procedures of elementary school teaching. Concurrent enrollment in other courses is discouraged. (Minimum of 30 hours a week in an elementary school, 2 hours per week seminar.)

340 Principles and Curricula of Secondary Education (3)

Required first course in the professional sequence for the standard teaching credential with specialization in secondary teaching. Principles of secondary education in the United States: organization, curriculum, and teaching practices. Correlated with methods and materials courses in the major. Two hours of observation per week in selected junior and senior high school classes. Application for admission to teacher education is included. (2 hours lecture, 2 hours fieldwork)

Education

380 The Teaching of Reading (3)

Curriculum and methods in the teaching of reading in the elementary and secondary schools. Examination and analysis of the approaches to reading in teachers' manuals and guides. Practical experience in preparing lessons in classroom teaching of reading.

401 Sociological, Historical, Philosophical Foundations of Education (4)

Prerequisites: Educ 311, admission to teacher education or consent of the instructor. Survey of social, historical, and philosophical foundations of education from ancient times to the present, discussed in the light of their effect upon modern educational theory and practice.

402 Comparative Education (3)

Prerequisite: Educ 401, Educ 403, or consent of the instructor. A seminar centered in study of the various countries' and areas' education patterns, problems and trends as part of the cultural setting in which found; designed to deepen insights into our own culture's educational program and offer bases for comparative evaluation with other systems.

403 History of Education (3)

Prerequisites: history of world civilization and Educ 331 or Educ 442 or consent of the instructor. The main streams of educational history in Europe and America, with particular emphasis on the ways these main streams have affected the current scene in the United States.

406 Educational Sociology (3)

Prerequisite: Educ 331 or Educ 442, or consent of the instructor. The school in the social order; analysis of cultural factors affecting school, and the special culture of the school; consideration of research in selected areas of the school-culture relationship.

431 Principles and Curricula of the Elementary School (2)

Prerequisite: Educ 311 or consent of the instructor. An introductory course in elementary education. Stress on major principles and basic curricular considerations. Importance of the elementary school system to society.

432 Teaching—in the Elementary School

Prerequisites: Educ 311 or consent of the instructor. Courses, listed dually in the School of Education and in the other appropriate departments dealing with objectives, methods, and materials of teaching the various subjects and areas in the elementary schools. The courses are professional education courses and applicable toward credential requirements. Detailed descriptions of the courses are to be found in the materials of other departments within this catalog.

For Lang Ed 432 Teaching Foreign Languages in the Elementary School (2)

436 Child Study Techniques for Teachers (3)

Prerequisite: Educ 331 or permission of the instructor. This course deals with the techniques the classroom teacher may use in understanding individual children within his classroom who do not respond to the teacher and his peers in typical ways.

437 Problems in Early Elementary Education (3)

Prerequisites: Educ 339 and consent of instructor. Study of current literature and recent research in the area of education of young children through

individual and group study. Emphasis will be placed on problems centered in cognitive processes, content, structure, and instruction at the early elementary education level.

442 Teaching—in the Secondary School

Prerequisites: 20 units in the major, Education 311, Education 340, admission to teacher education, and senior standing; or consent of the instructor. A series of courses, with the exception of business and social science methods, listed dually in the School of Education and in the other appropriate departments, dealing with objectives, methods, and materials of teaching, including audio-visual instruction, the various subjects and areas in secondary schools. Required, before student teaching, of students presenting majors in these areas or subjects for the standard teaching credential with specialization in secondary school teaching. Students without teaching experience must register concurrently in Education 449 to complete a teacher aide assignment in high schools.

Art Ed 442 Teaching Art in the Secondary School (2)

Drama Ed 442 Teaching Drama in the Secondary School (2)

Engl Ed 442 Teaching English in the Secondary School (2)

For Lang Ed 442 Teaching Foreign Languages in the Secondary School (2)

Journ Ed 442 Teaching Journalism in the Secondary School (2)

Math Ed 442 Teaching Mathematics in the Secondary School (2)

Mu Ed 441 Teaching Music Theory and Appreciation in the Public Schools (2)

Mu Ed 442 Teaching Vocal Music in the Public Schools (2)

Mu Ed 443 Teaching Instrumental Music in the Public Schools (2)

PE 442 Teaching Physical Education in the Secondary School (2)

Sci Ed 442 Teaching Science in the Secondary School (2)

Speech Ed 442 Teaching Speech in the Secondary School (2)

443 Principles of Core Curriculum (2)

Prerequisite: teaching experience or consent of the instructor. Unity and inter-relationships of human learning and behavior and the curricular processes and arrangements by which this may be achieved. Seminar on development, principles, and application of core curricula; guidance functions; evaluation; and roles of the teacher.

445 Junior High School Education (3)

Prerequisite: Educ 442 or Educ 331 or consent of instructor. Seminar on principles and procedures for developing the junior high school program. Purposes, curriculum, and organization of the junior high school are stressed including examination of recent innovations and proposals. Designed for students with elementary or secondary backgrounds who plan to teach in the junior high school.

446 Secondary School Curriculum (3)

Prerequisite: student teaching or teaching experience or consent of instructor. Fundamentals of curriculum development. Seminar on current issues within secondary education. Curricular organization and current practices. Survey and evaluation of newer curricular programs. Paper or project of creative, analytic or review

Education

of literature type is required. Designed for experienced teachers interested in curriculum development and/or instructional supervision.

449 Field Work in Methods of Teaching in Secondary Schools (1)

Prerequisite: Educ 340, Educ 311, admission to teacher education or consent of instructor. Participation in the instruction of a secondary school class as a teacher aide. Integrated with coursework in the teaching of the major. Must be taken concurrently with Educ 442 and students must allow sufficient time in their schedules, at the same hour each day, to serve as a teacher aide.

451 Principles of Educational Measurement (3)

Prerequisite: Educ 311 or Psych 311. Development, validation, and application of the principles of educational measurement. Construction and use of informal and standardized achievement tests. Summary and interpretation of results of measurement.

452 Principles of Guidance (3)

Prerequisite: Psych 311 or Educ 312. Guidance related to educational objectives and needs of youth. Emphasis on special needs created by individual exceptionality, size and complexity of the modern educational system and modern society; general requirements, services, organization, and structure of a successful guidance program. Students seeking the special education credentials will emphasize the counseling and guidance of the exceptional student.

471 Exceptional Children (3)

Co-requisite: Educ 311 (or Educ 312 for students working toward the Restricted EMR Credential). Seminar on the study of children who deviate from the average in the elementary and the secondary schools; physically handicapped, mentally retarded, gifted, socially maladjusted, emotionally disturbed, and delinquent. Special educational services, curriculum, procedures, and materials necessary to promote their maximum development.

472 Gifted Children (2)

Prerequisites: Educ 311 and Educ 331, or Educ 431, or Educ 442. Identification, principles of instruction, grouping, individualized instruction, classroom enrichment. Problem solving and research experiences in science, social studies, and mathematics, reading programs and literature, creative writing, oral language.

473 Mental Retardation and Brain Injury (3)

Prerequisite: Educ 471. Organic and cultural basis of mental retardation and brain injury, including social, psychological, and vocational problems. Child growth, sensory development, learning characteristics of mentally retarded and brain injured children, and techniques of working with parents will be considered.

474 Curriculum and Methods for Teaching the Mentally Retarded (3)

Prerequisite: Educ 473 and Educ 331 or Educ 442. Curriculum development, methods, and materials for teaching the educable and trainable mentally retarded at the elementary and secondary levels.

475 Observation and Individual Instruction with the Mentally Retarded (3)

Prerequisite: Educ 474. Supervised observation and participation with the educable and the trainable mentally retarded at both the elementary and secondary levels of education. (Four hours of observation and participation per week plus one hour of lecture and discussion.)

477 The Educationally Handicapped Child (3)

Prerequisite: Educ 471. Behavioral characteristics of the educationally handicapped child, the child with a neurological handicap or a behavioral disorder as defined by the California Education Code. Educational procedures, perceptual and motor training, evaluation, parent guidance.

479 Seminar and Practicum in Education of the Trainable Mentally Retarded (6)

Prerequisite: Consent of the instructor. Curriculum, methods, and materials for children having severe intellectual, motor, sensory and language impairment. Emphasis will be placed on the educational management of children exhibiting handicapping conditions. (Three hours seminar and nine hours practicum in special school facilities.)

489 Field Work in Exceptional Children (3)

Prerequisite: Educ 471 or consent of instructor. Direct supervised experience with educationally handicapped children.

491 Audiovisual Education (2)

Prerequisites: Educ 311, Educ 442, or consent of the instructor. Media in communication, psychological bases, development, curricular function, evaluation. Survey of equipment and materials available, preparation of instructional materials for classroom use. (1 hour lecture, 2 hours activity)

492 Television in the Classroom (2)

Prerequisites: Educ 311 or consent of the instructor. Television as a vehicle for instruction, information, and enrichment. General theory of media in classroom, psychological bases, curricular capabilities and limitations of equipment. Responsibility of the classroom teacher. Practice in utilization process. (1 hour lecture, 2 hours activity)

493 Production of Audiovisual Materials (2)

Prerequisites: Educ 491 or consent of the instructor. Exploration and development of audiovisual materials. Students will participate in script writing, story board, photography and tape production. Experience will be provided in producing graphics, charts and bulletin boards. (1 hour lecture and 3 hours laboratory)

496 Senior Special Educational Practicum (1-3)

Conduct at an advanced level an educational practicum experience with an individual under the direction of a faculty member. May be repeated for a maximum of six units of credit.

499 Independent Study (1-3)

Prerequisite: senior or graduate standing, approval of instructor and department prior to registration. Conduct of an individual investigation under supervision of a faculty member; investigation might be an experiment, a library study, or a creative project; only students of demonstrated capacity and maturity will be approved; adequate prerequisite study necessary. May be repeated for credit.

GRADUATE COURSES

501 Philosophy of Education (3)

Prerequisites: postgraduate standing and Educ 339 or 739 or Educ 749, or consent of the instructor. Uses of theories of knowledge, value and reality in dealing with educational problems; application of contemporary systems of thought to education.

Education

503 Foundations for Administrative Leadership (3)

Prerequisite: consent of the instructor. Seminar on cultures and values to which schools must contribute: introduction to community sociology, tax systems and public administration; the literature of leadership. Screening for admission to program. Occasional special meetings. Required of all students during first registration in school administration and supervision at this college.

505 The Supervision of Curriculum (4)

Prerequisite: Educ 566 or 586. Seminar on development of a quality program of instruction in both elementary and secondary schools; appraisal of programs of instruction; advanced principles of curricular review and modification.

Evaluation of subject matter competence in area of supervisory specialization. Meets credential requirements in principles of curriculum construction and evaluation; supervision of instruction and curriculum in both elementary and secondary schools.

506 Curriculum and Research in Reading (3)

Prerequisite: Consent of instructor. Study of curriculum and research in reading, including materials, organization, and methods of instruction.

509 Theory and Practice in Educational Measurement (3)

Prerequisite: Educ 311 or Psych 311. Introduction to basic concepts, theory, and procedures for construction of informal and standardized tests. Application of measurement theory and statistical techniques toward problems of analysis, scaling, norming, and interpretation of test results. Practice in item writing for short classroom tests and intensive analysis of selected commercial standardized tests.

510 Research Design and Analysis (3)

Prerequisite: bachelor's degree, intent to complete program leading to M.S. in Education. Educ 509. Hypothesis formation, instrumentation, elements of design, treatment of data, hypothesis testing and inference, and analysis of educational data. Develop a research proposal.

511 Survey of Educational Research (3)

Prerequisites: Educ 509, teaching experience. Review of descriptive statistics and statistical inference as applied to educational problems. Analysis of representative research papers. Principles of research design. Prepare a research proposal.

514 Graduate Seminar: Behavioral Research on Children with Learning Disorders (3)

Prerequisites: Educ 510 or Educ 511, consent of instructor, and teaching experience with exceptional children. Critical analysis of behavioral research on children with learning disorders. Resources, criteria for evaluation of studies with exceptional children, historical view of research in special education. Research relating to learning and handicapping conditions, and efficacy of special methods and materials will be reviewed.

516 Etiology of Reading Difficulties (3)

Prerequisite: teaching experience, Educ 506, and consent of instructor. Studies of the factors underlying learning disabilities in reading in children, adolescents and young adults.

521 Group Processes in the Classroom (3)

Prerequisite: Educ 471 or consent of instructor. Exploration of group interaction, teacher sensitivity, and their relevance to educational planning and management. Emphasis: emotionally disturbed, educationally handicapped.

522 Behavior Problems in the Classroom (3)

Prerequisite: Educ 471 or consent of instructor. Identification and management of social and affective disturbances related to school performance. Emphasis: early detection, behavioral modification techniques, parent counseling, interagency cooperation.

523 Learning Problems in the Classroom (3)

Prerequisite: Educ 471 or consent of instructor. Identification and educational management of learning problems. Emphasis: developmental sequences, related prescriptive teaching and remediation techniques.

530 Curriculum and Research in Elementary Education: Foreign Languages (3)

Prerequisite: Educ 339, 739, or permission of instructor. Study of pertinent investigation and their application in the classroom together with significant curriculum developments and organization in the newest area facing the elementary school educator. Criteria for appraising programs, personnel, and materials also will be discussed.

531 Curriculum and Research in Elementary Education: Language Arts (3)

Prerequisites: Educ 510 or permission of instructor. Advanced study of trends and problems in teaching the fundamental skills of communication in the elementary school. Analysis of research in the language arts and related disciplines as background for curriculum development.

532 Curriculum and Research in Elementary Education: Mathematics (3)

Prerequisites: Math Educ 303A, Educ 339 or 739, or permission of instructor. Study of significant research, curricular developments and materials, criteria for planning and improving mathematics programs and instruction.

533 Curriculum and Research in Elementary Education: Science (3)

Prerequisites: Educ 339 or 739 or permission of instructor. Study of significant research in elementary school science. Criteria for planning and improving science programs and the development of materials.

534 Curriculum and Research in Elementary Education: Social Studies (3)

Prerequisite: Educ 339, 739, or consent of instructor. Study of significant research developments and materials, criteria for planning and improving social studies programs, and current techniques of teaching.

537 Seminar for Elementary Education (3)

Prerequisite: Educ 339 or 739 or consent of the instructor. A study of problems and issues in elementary education, their causes and possible solutions.

547 Seminar for Secondary Education (3)

Prerequisite: Educ 749 or consent of the instructor. Persistent problems in secondary education and survey of related literature; causes of and solutions for these problems. Application of scientific method to educational problems, sources of educational research, and to techniques of cooperative thinking.

Education

550 Counseling Theories and Processes (3)

Prerequisite: Educ 452. Seminar in the dynamics of counselor and client relationships, techniques and processes of various levels, and relation to personality theory. Major project and supervised clinical practice required.

551 Educational and Career Orientation (3)

Prerequisite: Educ 550 or permission of instructor. Seminar in the principles of evaluating, classifying, and disseminating occupational and educational information in the guidance program; sources of occupational literature, occupational research, vocational surveys, and methods of studying the individual as a unique whole to help him develop his greatest career potential. Emphasis on the psychological, sociological, economic, and clinical implications of career and educational choice. A major project in career information is developed under supervision.

552 Group Processes in Guidance (3)

Prerequisite: Educ 550 or permission of instructor. Intensive study of the dynamics of group processes including the function of leadership, effective membership and techniques of group problem solving. Special emphasis on clinical group counseling including a semester project in a school setting.

553 Administration and Organization of Pupil Personnel Programs (3)

Prerequisites: Educ 551 or permission of instructor. Development, organization, supervision, and administration of the pupil-personnel services. Seminar on analysis and evaluation of pupil personnel services by the case study method, curriculum, counselor competencies, staffing; includes laws relating to children and child welfare.

555 Dynamics of Individual Behavior and Case Study (3)

Prerequisites: Educ 451, 550, or consent of instructor. Case conference techniques; clinical study of the techniques of individual diagnosis including the synthesis and interpretation of information. Use of the life or developmental record, self-ratings, behavior ratings and tests as they relate to counseling with the normal and abnormal pupil. Identification and remediation of learning difficulties emphasized.

558A School Psychology: Seminar in Problems in Personality Diagnosis (5)

Prerequisites: A clear California credential in school psychometry or psychology intern credential and admission by the screening committee of the Pupil Personnel Services Program Council. Seminar and internship and/or field work in problems of personality assessment in the school setting, effecting changes in behavior among school pupils and personnel. Emphasizes role and function of the school psychologist in pupil personnel services. Advanced experience in the clinical case study, application of understandings of the dynamics of individual counseling and group counseling to human behavior in the school setting.

558B School Psychology: Seminar in Problems of Learning (5)

Prerequisite: Education 558A. Seminar and internship and/or field work in problems of learning and their remediation. Advanced work in diagnostic testing, clinical interpretation of data, remediation of identified problems. Advanced work in communication including reporting, individual counseling, group counseling and case conference.

559A,B Fieldwork in Pupil Personnel Services (2-6)

Prerequisite: Educ 551, 552, 555, admission to the CSCF pupil personnel credential program and permission of instructor. Guidance and counseling in the school setting under the supervision of local coordinator and college staff. Work assignments vary for school counselors, psychometrists, and child welfare workers. Work in a counseling relationship, parent conferences, and follow-up studies. May be repeated for credit up to a maximum of 12 units. (6 hours weekly fieldwork; 2 hours weekly conference)

561 Organization of School Systems (3)

Prerequisite: Educ 503 or concurrent enrollment. Seminar on structure, functions, trends, fiscal responsibilities and issues in respect to the government of education at federal, state, county, and local school district levels. Basic principles in school organization and administration. Special emphasis on intergovernmental relations and impact at local level.

563 Principles of School Personnel Administration (2)

Prerequisite: Educ 503 or concurrent enrollment. Seminar on principles of organizational behavior, social processes inherent in effective leadership, and techniques of school personnel management.

564 Seminar in School Law (2)

Prerequisite: consent of instructor. School law as a reflection of public policy; the California Education Code and the California Administrative Code, Title 5, and county counsel opinions as they affect administration, instruction, and financial management of public schools. Court attorney general decisions in interpreting school law. Legal basis for public education in California. An elective course in school administration.

565 Seminar in School Finance, Business Administration, and Buildings (3)

Prerequisite: consent of instructor. Emphasis on school finance, business administration, and buildings as they implement an effective educational program. A study of financial principles. School revenues and expenditures, budgetary procedures and processes, cost analysis; business management, and salary policies. An elective course in school administration.

566 The Elementary School Principal and Supervisor (3)

Prerequisites: Educ 561 and 563. May be taken concurrently with Educ 769. Seminar on leadership roles of elementary school principal and supervisor, pupil personnel and instructional program in elementary school; working relations and morale among staff, community and pupils; parent education; relations with central district staff; management and recordkeeping functions; teacher evaluation.

567A,B Fieldwork and Seminar in School Administration (2,2)

Prerequisites: Educ 566 or 586 or concurrent registration, and consent of instructor. Two-semester terminal sequence required for the M.S. in Education with a concentration in school administration. Includes directed field work in selected public schools and district offices. Supervised project or thesis required for degree. (4 hours weekly fieldwork, 2 hours weekly conference)

568 Seminar for Administrative Trainees (3)

The purpose of this seminar is to provide a behavioral analysis approach in the establishment of a sound foundation for Educational Administrators who have just completed a year of practice in administration. The seminar is the culminating offering of the Administrator Internship Program. The objectives of the seminar

Education

include (1) developing further insights into the complex behavior of human beings in social groups, (2) increasing understanding of how certain theory and research contribute to effective administrative practice, (3) evaluating further self-behavior in administration. Experienced school administrators who wish to relate their administrative experiences to the theory of behavioral analysis are welcome to register in the seminar. Behavioral environment will be examined as it shapes process, organization, and function in school administration.

570 Graduate Clinic in Exceptional Children: Advanced Developmental Psychology (2)

Prerequisite: Educ 555 or consent of instructor. Clinical work with children focusing on diagnosis, prescription and remediation of developmental deficiencies: language, motor, perception. Students will spend three hours a week in direct work with children and two hours in seminar.

571 Graduate Clinic in Exceptional Children: Advanced Psychology of Learning (2)

Prerequisite: Educ 570 or consent of instructor. Clinical work with children focusing on diagnosing, prescriptions and remediations of educational and behavioral deficiencies. Students will spend three hours a week in direct work with children and two hours in seminar.

572 Psycho-Educational Clinic (2)

Prerequisite: Prerequisite sequence or equivalent and permission of the instructor. (Prerequisite sequence is Educ 475 or Educ 477, Educ 523, Educ 570, and Educ 571 concurrently with Educ 572.) A clinical practicum for the purpose of developing clinical teaching skills in dealing with the learning problems of exceptional children, practice in working with formal and informal information-gathering devices, special teaching instruments, teaching systems, and teaching strategies. Students may, upon the recommendation of the instructor, repeat the course for credit one time. (6 hours laboratory)

577 Seminar in Program Trends in Special Education (3)

Prerequisite: Recommendation of adviser and permission of instructor. A seminar designed for the study of historical development of educational programs for exceptional children. A critical analysis of issues and trends in special education.

578 Administration and Supervision of Special Education (3)

Prerequisite: Educ 577 or consent of instructor. Problems of organization, administration, and supervision of special education programs: finance and attendance, physical facilities, budgeting, needed equipment, community agencies and curriculum development.

581 Analysis of Reading Difficulties (3)

Prerequisite: bachelor's degree, teaching experience, Standard Teaching Credential, Educ 506 or consent of the instructor. Analysis and diagnosis of reading difficulties. Techniques and methods of prevention and treatment. Individual remediation of student. Primary through secondary.

582 Analysis of Corrective Reading Practices (3)

Prerequisite: Educ 516, 581, and consent of instructor. Critical evaluation of reading and remedial reading practices. Short-term project in a school situation.

583A,B Remedial Reading: Casework (3)

Prerequisite: Educ 582, and consent of instructor. Seminar in diagnosis and remediation in reading through casework technique. Conferences with teachers, parents, consultants, and administrators.

586 The Secondary School Principal and Supervisor (3)

Prerequisites: Educ 561 and 563. May be taken concurrently with Educ 789. Seminar on leadership roles of secondary school principal and supervisor, pupil personnel and instructional program in the secondary school; the development and administration of vocational and adult education; working relations and morale among staff, community and pupils; relations with central district staff, the management and recordkeeping functions; teacher evaluation.

597 Project (1-3)

Prerequisites: Consent of instructor. Individual research on an empirical project, with conferences with the instructor, culminating in a project.

598 Thesis (1-3)

Prerequisites: Consent of instructor. Individual research on an empirical problem, with conferences with the instructor, culminating in a thesis.

599 Independent Graduate Research (1-3)

Prerequisites: Consent of the instructor. Open to qualified graduate students desiring to pursue independent inquiry.

PROFESSIONAL COURSES IN THE POSTGRADUATE PROGRAM

709 Supervision of Student Teaching (3)

Prerequisite: Possession of a teaching credential and one year of teaching experience. Designed for teachers who supervise student teachers. Emphasis on principles and procedures of effective supervision and research.

721 Philosophy and Objectives of Junior College Education (2)

Prerequisite: postgraduate standing or consent of instructor. Origins of the junior college movement in higher education in the United States; economic, technological, and social forces creating needs for new and different post-high school education; objectives of junior college education; relationships to secondary and higher education; functions of the junior college; curriculum development and organization.

739 Student Teaching in the Elementary School and Student Teaching Seminar (8 or 4)

Prerequisites: Educ 331, three academic related courses, admission to student teaching, and postgraduate status. Participation in a regular elementary school teaching program, for the greater part of every school day. Includes a two-hour seminar each week in problems and procedures of elementary school teaching. Concurrent enrollment in other courses is discouraged. (Minimum of 30 hours a week in an elementary school, 2 hours per week seminar.)

744 Principles of Junior College Teaching (3)

Prerequisite: postgraduate standing or consent of instructor. Psychological foundations of junior college teaching, measurement and evaluation of learning. Educational and philosophical bases for instructional procedures in the junior college. Instructional procedures including audiovisual materials, junior college class observations. (2 hours seminar, 3 hours fieldwork)

Education

749 Student Teaching In—in the Secondary School and Seminar (6 or 2)

A series of courses in student teaching and seminars listed dually in the School of Education and in the other appropriate departments.

Prerequisites: Educ 442, Educ 449, and admission to student teaching. Student teaching for the general secondary credential or the standard teaching credential with specialization in secondary school teaching. Participation in a regular secondary school teaching program for half-days for a full semester. Includes a seminar each week in problems and procedures of secondary school teaching, under the direction of the respective college supervisor. (Minimum of 15 hours a week in a secondary school; 2 hours per week in seminar)

Art Ed 749 Student Teaching in Art in the Secondary School and Seminar (6)

Drama Ed 749 Student Teaching in Drama in the Secondary School and Seminar (6)

Engl Ed 749 Student Teaching in English in the Secondary School and Seminar (6)

For Lang Ed 749 Student Teaching in Foreign Languages in the Secondary School and Seminar (6)

Journ Ed 749 Student Teaching in Journalism in the Secondary School and Seminar (6)

Math Ed 749 Student Teaching in Mathematics in the Secondary School and Seminar (6)

Mu Ed 749 Student Teaching in Music in the Secondary School and Seminar (6)

PE 749 Student Teaching in Physical Education in the Secondary School and Seminar (6)

Sci Ed 749 Student Teaching in Science in the Secondary School and Seminar (6)

Speech Ed 749 Student Teaching in Speech in the Secondary School and Seminar (6)

769 Directed Fieldwork in Elementary School Administration and Supervision (2)

Prerequisite: Educ 566 or concurrent registration. Work in selected elementary schools and district offices. Further details in special publications. (8 hours weekly fieldwork, 1 hour weekly conference)

778 Fieldwork in Administration of Special Education (12)

Prerequisite: Educ 577, and registration in Educ 578. Directed fieldwork in the administration of special education programs. An assignment will be made in public or private schools.

779 Student Teaching With Mentally Retarded Pupils (4)

Prerequisites: Educ 475 and concurrent enrollment in Educ 339 or 739 (for four units) or Educ 749 (for two units). Student teaching in a special class program for the educable or trainable mentally retarded at either the elementary or secondary level. (Elementary level: minimum of 30 hours a week in an elementary school; 2 hours per week in seminar. Secondary level: minimum of 15 hours a week in a secondary school; 2 hours per week in seminar.)

Students working for a Restricted EMR or Limited TMR credential need only enroll in Educ 779 (4 units). Enrollment in Educ 339 or 739 is not required.

789 Directed Fieldwork in Secondary School Administration and Supervision (2)

Prerequisite: Educ 586 or concurrent registration. Work in selected secondary

schools and district offices. Further details in special publication. (8 hours weekly fieldwork, 1 hour weekly conference)

799 Junior College Student Teaching and Seminar (4)

Prerequisites: Educ 744. Student teaching in the student's major field in a cooperating junior college for one semester. Weekly seminar on curriculum development and organization in the junior college, instructional procedures and materials, and instructional problems of the junior college student teacher. (Minimum of 9 hours a week in a junior college; 2 hours per week in seminar)

HEALTH EDUCATION

(Offered by the Department of Health Education, Physical Education, and Recreation)

101 Personal and Community Health (2)

Meaning and significance of physical, mental and social health as related to the individual and to society; alcohol and narcotics education; fire prevention; public safety and accident prevention.

102 Prevention and First Aid (2)

Study of the hazards in man's environment and the common accidents related thereto. Emphasis is placed upon both the care and prevention of accidents. Students will be certified in standard and advanced American Red Cross first aid procedures. (1 hour lecture, 2 hours activity)

419 Environmental Health (3)

Prerequisite: HE 101 or equivalent. The theoretical considerations of the complex relationship of the physical environment to preventive medicine and public health.

PHYSICAL EDUCATION

(Offered by the Department of Health Education, Physical Education and Recreation)

GENERAL EDUCATION REQUIREMENT IN PHYSICAL EDUCATION

All students must successfully complete two semesters of physical education activity courses of one unit each to fulfill the general education requirement for the baccalaureate degree. Students on a normal schedule will be expected to complete this requirement during the freshman and sophomore year. Not more than six units of credit in physical education activities, including intercollegiate athletics courses, may be applied toward credit for graduation. Physical education activities courses may not be repeated for credit. Upper division students who have completed the general education requirement in physical education may elect additional activities.

Physical Education

EXEMPTIONS OR POSTPONEMENTS

Students 25 or older are exempted from the physical education requirement.*

The college physician may postpone the enrollment of a student in a physical education activity course.

Students unable to participate in the regular physical education program will be assigned to an adapted physical education class.

● FOR MEN

AQUATIC ACTIVITIES: (PE 110 Series)	GROUP AND TEAM ACTIVITIES: (PE 120 Series)	INDIVIDUAL ACTIVITIES: (PE 130 Series)	DANCE ACTIVITIES: (PE 140 Series)
	121m Team Sports 122m Team Sports 124m Soccer	132m Combatives 133m Physical Conditioning	

● FOR WOMEN

	121w Team Sports 122w Team Sports	133w Physical Conditioning	
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COEDUCATIONAL

111 Swimming	123 Group Games (Open only to prospective elementary school teachers)	130 Badminton	141 Social Dance
112 Intermediate Swimming		131 Gymnastics & Tumbling	142 Folk Dance
113 Lifesaving & Water Safety	129 Track & Field	134 Adaptive Physical Education	143 Modern Dance
		135 Intermediate Tennis	144 Intermediate Modern Dance
		136 Archery	145 Advanced Modern Dance
		137 Golf	149 Creative Movement & Dance
		138 Tennis	
		139 Handball	
		150 Intermediate Badminton	
		151 Intermediate Gymnastics	
		152 Intermediate Handball	
		156 Beginning Fencing	
		157 Intermediate Golf	

* Interpretation: A student under 25 years of age at the time of admission to the college is required to take two semesters of the requirement.

To assure a balanced program for each student, physical education activities are classified into four categories: (1) aquatic activities, (2) group and team activities, (3) dual and individual activities, and (4) dance activities. Students are counseled to complete no more than two courses from any given category.

COURSES IN INTERCOLLEGIATE ATHLETICS

Consent of the coach of the sport is required for enrollment. Each semester of enrollment carries one unit of credit. Credit in intercollegiate athletics courses may not meet more than two semesters of the college general education requirement in physical education. Not more than six units of credit in physical education activities, including intercollegiate athletics courses, may be applied toward credit for graduation. May be repeated for a maximum of six units.

170A Intercollegiate Sports for Women (Basketball) (1)

170B Intercollegiate Sports for Women (Volleyball) (1)

181 Baseball (1)

182 Basketball (1)

183 Cross Country (1)

186 Golf (1)

187 Gymnastics (1)

192 Soccer (1)

193 Swimming (1)

194 Tennis (1)

195 Track and Field (1)

196 Water Polo (1)

197 Wrestling (1)

PROFESSIONAL THEORY COURSES

201 Introduction to Physical Education and Recreation (3)

Introduction to physical education programs in public and private agencies, personal, social and professional requirements of the physical education teacher and recreation leader, includes the origin and development of the professions of health education, physical education and recreation with emphasis upon their significance and function in contemporary American culture.

PE 205 Professional Activities: Sports/Dance (2)

Prerequisite: open to physical education major.

Development of skills and knowledge in selected sports and dance activities;

(1) Combatives, modern dance, gymnastics;

(2) Archery, badminton, dance, golf;

(3) Basketball, track & field, tennis, volleyball;

(4) Football, soccer, baseball, tumbling (m);

(5) Field hockey, soccer, softball, tumbling (w); May be repeated four times. (4 hours activity)

210 Water Safety Instructor (2)

Prerequisite: PE 113 or equivalent and consent of the instructor. This course prepares the student to teach swimming and life saving and to supervise aquatic programs. Successful completion of this course will qualify the student for certification as an ARC Water Safety Instructor. Course cannot be used to satisfy a semester of the general education physical education requirement. (1 hour lecture, 2 hours activity)

214 Skin and Scuba Diving (2)

Prerequisites: PE 113 or equivalent and the consent of the instructor. The techniques of skin and scuba diving. Theory of diving, safety procedures and applications of diving will be covered. (1 hour lecture, 2 hours activity)

301 Prevention and Care of Athletic Injuries (2)

Prerequisite: Upper division standing, successful completion of HE 102 (or equivalent) and instructors permission. Designed to assist trainers, coaches, physical education instructors, health educators, YMCA and playground personnel, and

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athletes in the prevention and care of athletic injuries. Emphasis will be on practical applications as well as theory. (1 hour lecture, 2 hours activity)

311 Analysis of Aquatics (2)

Prerequisites: PE 113 or equivalent and permission of the instructor. Analysis of springboard diving, instructional and competitive swimming, waterpolo, and skin and scuba diving. (1 hour lecture, 2 hours activity)

312 Analysis of Combatives (2)

Prerequisite: PE 132M Combatives or equivalent. Analysis of judo (jijitsu), wrestling and self-defense. (1 hour lecture, 2 hours activity)

313 Analysis of Folk, Square and Social Dance (2)

Prerequisite: PE 141, PE 142 or equivalent. Analysis of basic dance skills, international folk, square, round and social dancing. (1 hour lecture, 2 hours activity)

314 Analysis of Individual and Dual Sports (2)

Prerequisites: proficiency in skills covered and permission of the instructor. Analysis of archery, badminton, golf and tennis. (1 hour lecture, 2 hours activity)

315 Analysis of Modern Dance (2)

Prerequisites: PE 143, PE 144 or equivalent and permission of instructor. Analysis of modern dance including choreography, program planning and dance accompaniment. (1 hour lecture, 2 hours activity)

317A Analysis of Team Sports (W) (2)

Prerequisites: proficiency in the skills covered and permission of the instructor. Analysis of basketball, softball, soccer, speedball, and speed-a-way (1 hour lecture, 2 hours activity).

317B Analysis of Team Sports (W) (2)

Prerequisites: proficiency in the skills of the sports covered and permission of the instructor. Analysis of volleyball, field hockey, track and field (1 hour lecture, 2 hours activity).

318 Analysis of Team Sports (M) (2)

Prerequisites: PE 121M, PE 122M or equivalent and permission of the instructor. Analysis of soccer, softball, speedball, and volleyball. (1 hour lecture, 2 hours activity)

319 Analysis of Gymnastics and Tumbling (2)

Prerequisites: PE 131M, PE 131W or equivalent and permission of the instructor. Analysis of apparatus gymnastics and tumbling. (1 hour lecture, 2 hours activity)

320 Theory of Coaching Basketball (2)

Prerequisites: proficiency in basketball and permission of the instructor. Analysis of skills, instructional procedures and coaching techniques necessary in coaching competitive basketball. (1 hour lecture, 2 hours activity)

321 Theory of Coaching Baseball (2)

Prerequisites: consent of the instructor and upper division standing. This course is designed to help prepare the student as a coach of baseball. Emphasis is on offensive and defensive coaching techniques as well as conditioning, budget preparation, purchase and care of equipment, scheduling, officiating, and design and care of facilities. (1 hour lecture, 2 hours activity)

322 Theory of Coaching Track and Field (2)

This course is designed to prepare students in the fundamental techniques of coaching track and field activities. (1 hour lecture, 2 hours activity).

324 Theory and Principles of Human Motor Learning (3)

Prerequisites: PE 201 and permission of the instructor. An analysis of current theories of motor learning as related to human performance. Philosophical bases are developed from which basic principles are evolved.

325 Case Studies in Human Motor Learning (3)

Prerequisite: PE 324. Case studies involving human physical performance. Sequence of activities, individual needs, institutional patterns of organization and programming.

333 Physical Education and Human Development (3)

Prerequisite: Educ Found 311. Emphasis is placed upon characteristics of the child, particularly as these relate to physical growth and development; basic mechanical principles underlying efficient movement; and programs for physical needs of children in the elementary school.

416 Kinesiology (3)

Prerequisite: Bio 361 or equivalent. The study of human motion.

417 Physiology of Exercise (3)

Prerequisite: Bio 361 or equivalent. The study of physiological processes in physical activities and the effects of training upon performance.

418 Adapted and Corrective Activities (3)

Prerequisite: PE 416. The study and selection of activities and programs for students physically unable to participate in the regular physical education program.

420 Tests and Measurements in Physical Education (3)

A study of the development and use of tests and measurements in physical education in the evaluation of objectives, programs, and student achievement.

442 Teaching Physical Education in the Secondary School (2)

Prerequisite: Education 340, Education 311, admission to teacher education, senior standing or consent of the instructor. The student who has not had teaching experience must register concurrently in Education 449. See page 158 under Secondary Education for description of Standard Teaching Credential Program. Objectives, methods, and materials including audiovisual instruction for teaching physical education in secondary schools.

510 Research in Health Education, Physical Education, and Recreation (3)

Prerequisite: Graduate status or instructor's permission. The role and functions of research in health, physical education, and recreation; included are the different types of research with tools of and equipment for the respective research. Selection and development of research problems and critique of completed studies are stressed.

515 Seminar in Physical Education (3)

Prerequisite: Graduate status with a major or minor in physical education. A study of current problems and issues in physical education through a critical analysis of the literature in the field and research findings.

Physical Education

516 Philosophical Bases of Physical Education (3)

Prerequisite: Graduate status with a major in physical education. Identification of philosophical schools of thought as related to physical education including the role of the philosophical process. Examination and application of the philosophical process in physical education.

520 International Physical Education (3)

Prerequisite: Graduate status with a major in physical education. An in depth study of the theory and practice of physical education and sports in selected foreign countries. Evaluation of foreign physical education programs in relation to programs witnessed in the United States.

530 Administration and Supervision of Health Education, Physical Education and Recreation (3)

Prerequisite: Graduate status with major in physical education. An in depth study and critical analysis of existing programs in health education, physical education, and recreation in terms of established evaluative criteria and norms of practice.

532 Curriculum Design in Physical Education (3)

Prerequisite: Graduate status with a major in physical education. Study in desirable practices, procedures, and factors influencing curricular development in the field of physical education. Especially designed for the practicing teacher, supervisor of physical education, and the school administrator concerned with physical education in the total school program.

533 Facilities Development and Planning (2)

Prerequisite: Graduate status and a major in physical education. Analysis of new trends and research in the development of indoor and outdoor facilities in planning programs in health education, physical education and recreation with special emphasis upon design, safety, features, site selection, building construction and equipment needs.

540 Seminar in Problems in Adapted Physical Education (3)

Prerequisite: PE 418. Identification and solutions of problems in planning, organization, administration, and evaluation of adapted physical education programs at local, state, and national levels.

545 Seminar in Evaluation in Physical Education (3)

Prerequisite: Graduate status with a major in physical education. The study and application of advanced evaluation procedures and scientific instrumentation used in the solution of current problems and projects in physical education.

551 Seminar: Advanced Study in Physiology of Exercise (3)

Prerequisite: PE 417 or equivalent. A study of advanced theories of exercise and physiological function.

552 Human Bio-Kinetics (3)

Prerequisite: PE 416 or equivalent background in kinesiology and physiology. A study of advanced theories and a detailed analysis of human movement.

555 Scientific Bases of Training (3)

Prerequisite: Graduate status, course work in kinesiology, physiology of exercise, bio-kinetics, and permission of the instructor. Detailed study of contemporary training with specific attention to the development of those qualities involved in various sports. Experience in evaluation of the effects of training.

560A Advanced Study in Performance: Badminton and Tennis (2)

Prerequisite: Graduate status, advanced preparation and/or experience in badminton and tennis or permission of the instructor. Theory and analysis of top level performance. Includes in depth study of skills, techniques and strategy involved in badminton and tennis and the factors pertinent to outstanding athletic performance.

560B Advanced Study in Performance: Gymnastics (2)

Prerequisite: Graduate status, advanced preparation and/or work in gymnastics or permission of the instructor. Theory and analysis of top level performance. Includes in depth study of the skills and techniques involved in gymnastics and the factors pertinent to outstanding athletic performance.

560C Advanced Study in Performance: Track and Field (2)

Prerequisite: Graduate status, advanced preparation and/or work in track and field or permission of the instructor. Theory and analysis of top level performance. Includes in depth study of the skills, techniques, and strategy involved in track and field and the factors pertinent to outstanding athletic performance.

598 Thesis (4)

Prerequisite: PE 510 and permission of the instructor. Individual research on an empirical problem. Conferences with thesis chairman and committee, culminating in a thesis.

599 Independent Research (1-3)

Prerequisite: Graduate status and consent of the faculty adviser and department chairman. Research for qualified graduate students desiring to pursue independent inquiry. May be repeated for credit.

749 Student Teaching in Physical Education in the Secondary School and Seminar (6)

See page 312 for description and prerequisites.

RECREATION

(Offered by the Department of Health Education,
Physical Education and Recreation)

203 Recreation Programs and Activities (2)

Prerequisite: consent of the instructor. Theory and activity course, leadership in recreation programs, activities in recreation agencies. Laboratory experiences and practice included. (4 hours activity)

SCHOOL OF ENGINEERING

101 Introduction to Engineering (1)

An introduction designed to familiarize the student with the nature, responsibilities and opportunities of the profession.

102 Graphical Analysis (2)

Mechanical Drawing and descriptive geometry including graphical computation vectors, nomography, representations and analysis of empirical data. (6 hours laboratory)

201 Mechanics (3)

Prerequisites: Math 150B, Physics 221A. An introductory development of the fundamentals of statics with emphasis on application to strength of materials.

202 Properties of Engineering Materials (3)

Prerequisites: Chem 101, Engr 201. Applications of basic principles of physics and chemistry to the selection and use of engineering materials, with specific emphasis on mechanical behavior of metals and upon the electrical properties of semiconducting materials.

203 Electric Circuits (3)

Prerequisites: Physics 221B, Math 250A. Analysis of electric and magnetic circuits, network theorems, polyphase circuits, complex frequency plane, resonance, and magnetically coupled circuits.

203L Electric Circuits Lab (1)

Prerequisite: Engr 203 (may be taken concurrently.) Laboratory applications of Engr 203. (3 hours laboratory)

205 Digital Computation (2)

Prerequisites: Math 150A. Applications of the digital computer to elementary engineering problems and numerical methods.

301 Strength of Materials (3)

Prerequisites: Engr 202, Math 250A. Elastic and plastic behavior, axial, torsional and flexural loading, statically indeterminate members, columns.

302 Dynamics (3)

Prerequisite: Engr 201, Math 250A. Newton's laws, motion of particles and rigid bodies, work and energy, impulse and momentum.

303 Electronics (3)

Prerequisite: Engr 203. Electron tube characteristics, semiconductor theory and devices, analysis of amplifiers, rectifiers and oscillators, electronic instrumentation.

303L Electronics Lab (1)

Corequisite: Engr 303. Laboratory study of electron tubes, transistors, diodes, electronic circuits and instruments. (3 hours laboratory)

304 Thermodynamics (3)

Prerequisites: Engr 201, Math 250A. Heat and work, thermodynamic laws, reversibility, Carnot principle, elementary kinetic theory.

305 Transport Processes (3)

Prerequisite: Engr 201, Math 250A. Fluid statics, laminar and turbulent flows, flow through conduits, principles of heat transfer.

306A Unified Laboratory (1)

Corequisites: Engr 202, 305. Principles of instrumentation and measurements in engineering, measurement of electrical, mechanical and thermal parameters. (3 hours laboratory)

306B Unified Laboratory (1)

Prerequisite: Engr 306A; corequisite: Engr 312. Continuation of Engr 306A, measurement of distributed parameters under transient and steady state conditions, the use of analog computer in the solution of engineering problems. (3 hours laboratory)

308 Engineering Analysis (3)

Prerequisite: Math 250B; corequisite: Engr 205. Mathematical models of physical systems, Fourier series and integrals, Laplace transform theory and applications.

309 Networks and Transmission Lines (2)

Prerequisite: Engr 203, 308. Network descriptions by matrix methods, amplitude and phase response, the wave equation, reflection and standing waves, lossless lines, high frequency transmission lines, the Smith Chart.

310 Electronic Circuits: Discrete and Integrated (3)

Prerequisite: Engr 303 with C or better. Introduction to active network theory, feedback and noise considerations, analog computing circuits, tuned amplifiers, sinusoidal oscillators, amplitude modulation and detection, angle modulation, discriminators.

311 Field Theory (3)

Prerequisite: Physics 221B, Engr 308. Fundamental concepts and experimental background underlying the formulation of electric, magnetic and electromagnetic field theory. Electric and magnetic fields produced by charge and current distributions. Effect of magnetic, dielectric and conducting materials. Forces produced on charges, currents and material media. Electromagnetic and magnetoelectric induction. Reduction of field theory to circuit theory. Capacitance, inductance and resistance.

312 Linear System Analysis (3)

Prerequisite: Engr 203, 302, 308. Analysis of linear physical systems, electrical and mechanical analogies, convolution and superposition integrals and applications, signal flow graphs, the concept of feedback and consideration of stability.

315 Electronics and Circuits Lab (1)

Corequisite: Engr 314. Experimental study of transistor and vacuum tube circuits. (3 hours laboratory)

316 Applied Thermodynamics (3)

Prerequisite: Chem 105, Engr 304. Continuation of Engr 304, thermodynamic relations, nonideal gases, chemical reaction, combustion.

323 Structural Analysis (3)

Prerequisite: Engr 201. Analysis of beams, space trusses, frames, arches. Analysis of statically indeterminate structures. Introduction to finite difference method in structural mechanics.

Engineering

324 Soil Mechanics and Foundations (3)

Prerequisites: Engr 201, 301. Soil properties and soil action as related to problems encountered in engineering structures; compression, shear strength, stability and lateral earth pressures.

324L Soil Mechanics and Foundations Laboratory (1)

Corequisite: Engr 324. Laboratory exercises supporting Engr 324. (3 hours laboratory)

326 Structural Design (3)

Prerequisites: Engr 201, 301. Elements of the design of steel, timber members. Connection details. Design of complete structures for both vertical and lateral loads.

333 Applied Aerodynamics (3)

Prerequisite: Engr 305. Introductory course in the evaluation of the aerodynamic loads on flight vehicles. Performance estimation of flight vehicles.

335 Mechanical Analysis (3)

Prerequisite: Engr 302; corequisite: Engr 202. The analysis of machines and mechanical components in terms of inputs and outputs, the determination of one when the other is specified.

360 Electrical Engineering Design Projects Lab (2)

Prerequisite: Within 20 units of graduation. The application of fundamental engineering principles to typical design problems in the field of electrical engineering. (6 hours laboratory)

361 Mechanical and Aerospace Engineering Design Projects Laboratory (2)

Prerequisite: Within 20 units of graduation. The application of fundamental engineering principles to typical design problems in the mechanical/aerospace engineering field.

370 Seminar in Electrical Engineering (1)

Prerequisite: Senior standing in engineering. Recent developments in electrical engineering. Oral and written reports.

371 Seminar in Mechanical/Aerospace Engineering (1)

Prerequisite: Senior standing in engineering. Recent developments in mechanical/aerospace engineering. Oral and written reports.

375A,B Electrical Engineering Laboratory (2,2)

Prerequisite: Senior standing in engineering. Laboratory investigations of electronic and electromechanical components and systems including experimental studies involving feedback control systems; analog computer studies (6 hours).

402 Elements of Digital Computers (3)

Prerequisite: Engr 303. Introduction to digital computers, Boolean algebra, switching networks, input-output devices, analog-digital conversion, arithmetic and control units.

402L Digital Techniques Laboratory (1)

Corequisite: Engr 402. Experimental study of digital logic and switching circuits. (3 hours laboratory)

403 Computer Methods in Numerical Analysis (3)

Prerequisites: Engr 205, 312. The use of numerical methods and digital computers in the solution of algebraic, transcendental, simultaneous, ordinary and partial differential equations, linear programming.

404 Analog Computation (2)

Prerequisite: Engr 303, 312. Basic analog computer elements, programming, the solution of linear and nonlinear problems, transfer function generation, simulation.

404L Analog Computation Laboratory (1)

Corequisite: Engr 404. Experimental study of linear and nonlinear problems using an analog computer. Simulation studies of physical systems. (3 hours laboratory)

406 Dynamic Response (3)

Prerequisite: Engr 302. Steady and transient oscillations, lumped and distributed parameter systems, vibration isolation.

408 Reinforced Concrete Design (3)

Prerequisites: Engr 301, 323. Theory of reinforced concrete. Design of reinforced concrete slabs, beams, columns, buildings and bridges. Introduction to prestressed concrete, ultimate strength theory.

409 Intermediate Structural Design (3)

Prerequisites: Engr 323, 326, 408. Analysis of structural systems, such as buildings, bridges. Various considerations leading to the final selection of a structural design scheme. Design philosophy, code interpretation. Design projects.

410 Space Dynamics (3)

Prerequisite: Engr 312. Kinematics and dynamics of particles and rigid bodies, generalized theories of mechanics, LaGrange equations of motion, Hamilton's principle; potential fields, orbit theory; gyroscopic theory, introduction to gyroscopic instruments.

411 Dynamics of Structures (3)

Prerequisites: Engr 301, 323, Math 310 or equivalent. Free and forced vibrations of discrete systems, response of structures to impulse loads and earthquakes. Matrix formulation and normal coordinates analysis. Vibration of beams.

412 Theory of Elasticity (3)

Prerequisites: Engr 301, 308. The differential equations which govern the behavior of an elastic solid, and their applications to a variety of problems in two and three dimensions using various coordinate systems.

413 Electromechanical Energy Conversion (3)

Prerequisite: Engr 312. Basic principles of electromechanical energy conversion machinery and transducers. Magnetic circuits and transformers. Performance and control of synchronous, induction and direct-current machines.

413L Electromechanical Energy Conversion Laboratory (1)

Corequisite: Engr 413. Experimental study of electromechanical machinery and transducers.

414 Matrix Analysis of Structures (3)

Prerequisites: Engr 301, 323. Introduction to matrix algebra; use of matrix formulation in the analysis of structures; flexibility and stiffness methods; use of the matrix method on a digital computer.

Engineering

415 Gas Dynamics (3)

Prerequisites: Engr 304, 305. The dynamics and thermodynamics of compressible fluid flow, adiabatic and diabatic flows, shock waves.

416 Feedback Control Systems (3)

Prerequisite: Engr 312. Formulation of transfer functions, block diagrams and signal flow graphs, open-loop and closed-loop frequency response, root locus methods, consideration of stability and steady-state errors.

418 Foundation Design (3)

Prerequisites: Engr 323, 326, 408. Design loads for foundation structures. Design of footings, retaining walls, piled foundations, bulkheads, other waterfront structures.

419 Electromagnetic Field Theory (3)

Prerequisite: Engr 311. Continuation of Engr 318 to provide a greater depth and extension of coverage, energy in fields, Maxwell's equations, boundary value problems, propagation, guided waves, transmission line theory and matching.

420 Limit Analysis of Structures (3)

Prerequisites: Engr 301, 323. General theory of elastic-plastic state of materials; concept of yield hinges and yield lines; analysis of continuous beams, frames, plates.

421 Mechanical Design (3)

Prerequisites: Engr 301, 335. Complete design of a mechanical device, formulation of the problem, synthesis of the components, analysis of the assembly and evaluation of the product.

423 Engineering Probability and Statistics (3)

Prerequisite: Engr 308, or consent of instructor. Engineering problems involving discrete and continuous random variables, probability distribution and density functions, introduction to stochastic processes, correlation functions and power spectral densities.

427 Indeterminate Structures (3)

Prerequisite: Engr 323. The Analysis of indeterminate structures, such as continuous beams, frames, grids, arches, trusses, curved beams, using slope and deflection method, moment distribution method, elastic energy approach. Temperature effect, foundation settlement, secondary stresses. Non-prismatic members.

430 Design of Steel Structures (3)

Prerequisite: Engr 301. Design of steel structures: design of built-up girders, moment connections, light gage metal members. Torsion and unsymmetrical bending of beams, buckling of beams and columns. Design for wind and earthquake forces. The use of the latest AISC design code.

433 Aerodynamics (3)

Prerequisites: Engr 302, 305. Measurements in aerodynamics, elementary flow theory, Reynolds number, Mach number and compressibility, finite wing theory.

434 Direct Energy Conversion (3)

Prerequisite: Engr 203, 304, 305. The direct conversion of heat to electrical energy, thermoelectric, thermionic and magnetohydrodynamic devices, solar and fuel cells.

437 Propulsion (3)

Prerequisite: Engr 305, 316. Application of the principles of thermodynamics and compressible fluids in propulsive processes.

443 Electronic Communication Systems (3)

Prerequisite: Engr 310, 315. Principles of amplitude, angular and pulse modulation, study of representative communication systems, consideration of the effects of noise on system performance.

443L Electronic Communication Systems Laboratory (1)

Corequisite: Engr 443. Experimental study of detection, modulation and signal generation; VHF and UHF component and system studies.

445 Pulse and Digital Circuits (3)

Prerequisite: Engr 310. Analysis and design of active and passive devices and circuits for the generation and processing of pulse, digital, and switching waveforms.

446 Radar Systems (3)

Prerequisite: Engr 443. The theory of radar measurements, detection and measurement in search radar, range—and doppler—tracking systems, M T I techniques.

455 Solid-state Electronics (3)

Prerequisite: Engr 310. Semiconductor properties and the physical principles and theory underlying the operation of semiconductor devices; characteristics and approximate models for circuit analysis.

473 Introduction to Nuclear Engineering (3)

Prerequisite: Senior or graduate standing in engineering. An introductory course on the engineering aspects of nuclear energy, nuclear engineering principles and elementary reactor theory, reactor design considerations and certain applications.

499 Independent Study (1-3)

Prerequisite: Approval of study plan by adviser. Study of specialized topics in engineering selected in consultation with the instructor and carried out under his supervision. May be repeated for credit.

501A,B Microwaves (3,3)

Prerequisites: Engr 403, 419. Review of concepts underlying Maxwell's equations, propagation through passive, active, linear, nonlinear, isotropic, anisotropic, homogeneous and inhomogeneous media with and without wave guiding structures. Orthogonal modes in waveguide and cavity resonators, microwave circuit theory, microwave devices. Generation and transmission microwave energy.

503 Information Theory and Coding (3)

Prerequisite: Engr 423. Information measures, probabilistic studies of the transmission and encoding of information, Shannon's fundamental theorems, coding for noisy channels.

504 Linear Network Synthesis (3)

Prerequisite: Engr 313. Generalized analysis methods of passive networks, modern synthesis procedures for realizing driving-point and transfer-functions, approximation methods in filter design.

Engineering

505 Nonlinear Control Systems (3)

Prerequisite: Engr 416. Analysis of nonlinear control systems using linearization and perturbation techniques; describing function and phase plane techniques; Lyapunov's stability criterion.

506 Digital Computer Systems (3)

Prerequisite: Engr 402. The organization and logical design of digital data processing systems for computation, information processing, and control.

507 Statistical Communication Theory (3)

Prerequisite: Engr 423, 443. Characterization of random signals and processes, transmission of random signals through linear systems, noise considerations, detection theory, optimum receivers.

508 Intermediate Fluid Mechanics (3)

Prerequisite: Engr 305. Basic equations of fluid dynamics, Navier-Stokes equations, similarity parameters, inviscid fluids, potential flow.

509 Theory of Plates and Shells (3)

Prerequisites: Engr 301, 591 or equivalent. Theory of plates bent by transverse loads; applications to circular, rectangular, other shapes. General theory of thin shells; shells of revolution; shells of translation.

510 Numerical and Approximate Methods in Structural Mechanics (3)

Prerequisites: Engr 308, Engr 205 or equivalent, graduate standing in engineering. The use of finite difference approximation in the analysis of beam on elastic supports, arches, plates, shells, vibration and buckling of beams. Numerical solution using relaxation and iteration method, digital computer programs.

511 Advanced Dynamics (3)

Prerequisite: Engr 302. The dynamics of particles and rigid bodies by the use of the formulations of the laws of mechanics due to Newton, Euler, Lagrange and Hamilton; applications.

512 Gyrodynamics (3)

Prerequisite: 302. Frames of reference, Eulerian angles, spinning disks and rotors, gravity effects, gyroscopes, control of forced and free vibrations.

513 Optimal Control Systems (3)

Prerequisite: Engr 416. Optimal control theory using the calculus of variations, controllability and observability, sensitivity considerations, direct computational methods in optimum systems control.

515A,B Quantum Electronics (3,3)

Prerequisites: Engr 403, 419, 455. Electroluminescence, interaction of radiation and matter, gas lasers, solid state laser, injection lasers, holography, electro-optic effects, non-linear optics, laser systems, noise and applications.

516 Advanced Principles of Heat Transfer (3)

Prerequisite: Engr 407. A study of advanced principles in convective and radiation heat transfer. Exact and approximate solutions of thermal boundary layer problems. A study of energy transfer in absorbing and emitting media.

517 Theory of Inelasticity (3)

Prerequisites: Engr 412, 591 or equivalent. General equations of inelastic continua; theory of plasticity; three dimensional yield conditions and flow laws; theory of linear viscoelasticity; applications.

518 Advanced Fluid Mechanics (3)

Prerequisite: Engr 508. Viscous flow, Couette and Poiseuille flow, introduction to turbulence and boundary layer theory.

519 Advanced Structural Mechanics (3)

Prerequisites: Engr 301, 323, 591 or equivalent. Use of potential energy principle in structural analysis; direct and indirect method of calculus of variations; non-linear problems of large deformation; beam on elastic foundations; special topics in structural mechanics.

520 Incompressible Boundary Layer Theory (3)

Prerequisite: Engr 407. A study of the fundamental equation of motion and continuity applied to viscous fluids (Navier-Stokes equations). The development of the boundary layer equations and the study of viscous drag. Investigation of boundary layer control theory to reduce viscous drag.

521A,B Antenna Theory (3,3)

Prerequisite: Engr 403, 419. Polarization; radiation patterns; impedance characteristics; plane, cylindrical and spherical waves, electric and magnetic dipoles; wire antennas, traveling wave antennas; broad band antennas; analysis and synthesis of arrays; parabolas; lenses; radomes; feed systems; scattering; multiple beam antennas; synthetic antennas; phased arrays; diffraction; solution by superposition, orthogonal expansion, integral equation and variational techniques; antenna measurements.

522 Theory of Hydrodynamic Lubrication (3)

Prerequisite: Engr 305. Introduction to the theory and design of fluid film bearings.

523 Solid State Devices (3)

Prerequisite: Engr 455. Theory and application of solid-state and integrated circuit electronic devices; junction and insulated-gate field-effect transistors; metal-oxide-semiconductor devices.

524 Advanced Thermodynamics (3)

Prerequisite: Engr 316. Equilibrium and stability criteria, chemical thermodynamics, multiple reaction systems, ionization, equilibrium composition.

525 Compressible Boundary Layer Theory (3)

Prerequisite: Engr 305. Introduction to the study of compressible viscous flow analysis. The compressible boundary layer solutions.

530 Advanced Strength of Materials (3)

Prerequisite: Engr 301. Castigliano's theorem, principle of virtual work, applications to cylinders, shrink fits, curved beams, elastic and inelastic buckling of columns.

545 Advanced Structural Design (3)

Prerequisites: Engr 408, 591 or equivalent. Analysis and design of thin shell structures; folded plates structures; suspended cable structures.

Engineering

547 Advanced Dynamics of Structures (3)

Prerequisites: Engr 411, 591 or equivalent. Vibration of beams, plates and shells. Dynamic response of continuous systems in general. Introduction to random vibrations. Topics in nonlinear vibrations.

549 Theory of Elastic Stability (3)

Prerequisites: Engr 301, 530, 591 or equivalent. Critical loads of columns, beam columns, plates, shells; lateral stability of beams, torsional buckling of open sections, stability of the frames; dynamic stability of elastic systems.

553A,B Plasma Dynamics (3,3)

Prerequisite: Engr 403, 419. Orbit theory, collision theory, transport properties, equilibrium, oscillations, fluctuations, thermionic energy conversion, plasma containment, instabilities, fusion power, plasma propulsion, hypersonics, plasma sheaths and wakes, scattering from plasmas, wave propagation through plasmas, energy conversion.

555 Electromagnetic Field Theory (3)

Prerequisite: Engr 419. Relativistic electrodynamics, retarded potentials, radiation from arbitrarily moving charges, Cerenkov radiation, cyclotron radiation, propagation in dispersive media, space charge dynamics, advanced boundary value problems.

557 Sampled-data Systems (3)

Prerequisite: Engr 416. Analysis of sampled-data and digital control systems, using Z-transforms and state-variable methods, consideration of stability.

559 Active Network Synthesis (3)

Prerequisite: Engr 504. Analysis and design of linear active circuits based on pole-zero concepts; synthesis of active networks with controlled sources, negative emittance converters, operational amplifiers.

569 Orbital Mechanics (3)

Prerequisite: Engr 410. The two-body problem, geometry of orbits, transfers, perturbation, stability and oscillations, rendezvous.

570 Seminar in Electrical Engineering (1-3)

Prerequisites: Graduate standing and 12 units of graduate course work. Seminar covering special topics and current developments of primary interest in the field of electrical engineering. This course, with different content, may be retaken for additional credit.

573 Aerospace Guidance Systems (3)

Prerequisite: Engr 410. Principles of inertial, stellar-inertial and doppler-inertial guidance and control systems; mechanization equations; theory and error analyses of inertial and optical sensors, gyro-stabilized platforms and complete navigation systems; theory and mechanization of space vehicle navigation, guidance and control systems.

575 Kinetic Theory and Statistical Thermodynamics (3)

Prerequisite: Engr 316. Statistical study of ideal gases, kinetic theory, statistical mechanics, electron gas, thermionic emission, photon and phonon gases.

577 Reliability Analysis of Structures (3)

Prerequisites: Engr 323, 423. Application of statistics and theory of probability to the problems of safety of structures.

581 Linear Systems Engineering (3) (Formerly 581A)

Prerequisites: Engr 312 and graduate standing. Classification of systems, principles of time domain analysis, matrices, linear spaces, analog simulation, state space, matrix representation of state equations, review of the Laplace transform, systems with random signals, stability of systems.

582 Estimation Theory in Systems Engineering (3) (Formerly 581B)

Prerequisites: Engr 423, 581. Linear estimation theory, Gauss-Markoff, least squares, Kalman, maximum likelihood; Kalman estimation for discrete dynamic systems, smoothing, filtering, and prediction; Kalman estimation for continuous dynamic systems; Weiner's optimum filter.

585 Optimization Techniques in Systems Engineering (3)

Prerequisite: Engr 403. Differentiation and optimization of functions of several variables; maxima and minima; Lagrange multipliers; linear programming and the simplex method; dynamic programming and application; introduction to the calculus of variations.

587 Operational Analysis Techniques in Systems Engineering (3)

Prerequisite: Engr 423, 585. Operational research models; applications of probability theory to reliability, quality control, waiting line theory, Markov chains; Monte Carlo methods.

591 Analytical Methods in Engineering (1-6)

Prerequisite: graduate standing and consent of the instructor. Application of advanced analytical methods in the solution of complicated problems in civil, electrical and mechanical engineering.

592 Advanced Engineering Analysis (3)

Prerequisite: Engr 308 or equivalent. Method of solving ordinary differential equations with variable coefficients leading to Bessel function and other special functions. Engineering application of partial differential equations with examples drawn from elasticity, vibrations, heat conduction, fluid mechanics, electromagnetic waves and electrical conduction phenomena. Variational method and optimization of functions with multiple variables.

597 Graduate Projects (1-6)

Prerequisite: permission of adviser.

598 Thesis (1-6)

Prerequisite: permission of adviser.

599 Independent Study (1-3)

Prerequisite: Classified graduate status. Open to graduate students only by permission of Engineering School Graduate Committee. May be repeated for credit only upon approval of this committee.

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Anaheim

N. Allen Riley
Fullerton

A. Leonard Robbins
Santa Ana

Titan Boosters

Tucker Wildlife Society

Wesley Marx, *Honorary Chairman*
Irvine

Harold M. Williams
Fullerton

John W. Williams
Anaheim

Mrs. Virgil O. Wodicka
Fullerton

Wesley T. Brown
Newport Beach

William F. Conner
Placentia

Miss Jane Deane
Fullerton

Earl Fuller, M.D.
Fullerton

Art Alliance

Officers and Board of Directors

Mrs. Clyde Lytle, President
Fullerton

Mrs. Francis Connolly, Vice
Fullerton

Mrs. Burr L. Taylor, Secretary
Fullerton

Mrs. Gerhard L. L. L. L. L.
Fullerton

Mrs. Florence Arnold
Fullerton

Mrs. Martin Chubb
Fullerton

Mrs. H. George Osborne
Fullerton

Mrs. W. W. W. W. W.
Fullerton

Mrs. William F. Cat
Fullerton

Edith M. McLean
Fullerton

Patricia A. McLean
Fullerton

Edith M. McLean
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Edith M. McLean
Fullerton

PUBLIC SCHOOL TEACHERS COOPERATING IN STUDENT TEACHING PROGRAM 1968

Anaheim City School District

Diane Ackland, Gayel Arason, Sally Bane, Jeanne Blackwell, Margaret Clifford, Betty Cowan, James Crum, John Ehrke, Joyce Froysland, Joyce Fyhrie, Linda Gunn, Nell Hydursec, Marsha Keefe, Ruby Lackey, Jean Laube, Jeri Lewis, Wilma McCormack, Jan Miller, Leila Moberg, Cammila Myers, Veronica O'Neill, Patricia Scofield, Myrtle Shaw, William Sidman, Doris Sugihara, Marie Taylor.

Anaheim Union High School District

Robert Corfman, Miguel de Cruz, George DeVinna, Allan Dobkins, Harold Farr, Ernest Fox, Bill French, Miles Graff, Gerald Gregg, Thomas Halleen, Doug Hastings, Keith Huffman, Leroy Kellogg, Dorothy McPhillips, David Messinger, Michael Mikulics, John Owens, Dorothy Paridon, Harvey Reynolds, Keith Richard, Norman Terkelson, Bill Williamson.

Brea-Olinda Unified School District

Marly Bergerud, Ed Gibbs, Madeline Wylie.

Centralia School District

Ardelle Aslakson, Virgie Bacon, Jackie Hill, Dorothy Jorgensen, Katherine Murrey, Sharon Packer, Wanda Porter, Elizabeth Riordan, Mary Ann Ruth, Ruth Stillwell

Fountain Valley School District

Nancy Baker, Carol Beeghley, Valarie Carter, Patricia Clark, Yvonne Cogorno, Joy Fitzgerald, Rhodanne Foy, Richard Hanna, Jean Hart, Carolene Hogan, Linda Lemley, Betty Magruder, Mary Moder, Beverly Mullen, Lynn Murray, Dorothy Partin, Marilyn Pestolesi, Beverly Prince, Carol Roback, Clara Schultz, Suzanne Shaffer, Heather Trinidad, Sharon Twedt, Lynn Van Holt, Linda Veinhold.

Fullerton School District

Marcie Baker, Verna Bixler, Margaret Bortz, Marilee Bramlett, Germaine Cahill, Bobbie Catlin, Florence Cavileer, Cecelia Ceresa, Helen Cogan, Carol Crowl, Elodia Earthman, Lois Felshaw, Crusa Ferrero, Barbara Gearhart, Wilma Gibbs, Philip Hansen, George Kantner, Mary Jane Koffard, Dorothy Kreutzer, Joyce McMahon, Eileen Miller, Andrea Northcote, Nancy O'Connell, Jean Oliver, Jean Piirto, Sybil Potts, Betty Querry, Myrtle Reno, Joan Sneed, Mary Staffon, Kathryn Thady, Ruth Trout, Robert Wilcox, Phyllis Ziemer.

Fullerton Union High School District

Audrey Adams, Carl Ames, Frank Bortz, Warren Bowen, George W. Burt, William Campbell, Margaret Chaconas, Iris Cholona, Marvin Freitag, Gertrude Guyette, Rodger Hindman, Leroy Hollenbeck, Anne Kline, Ed Laswell, John Minneci, William Purkiss, Ben Rogers, David Skelly, Bradlynn Stegmann, Robert Strange, Lisolette Thom, Elizabeth Van Oppen, Norma Wilson.

Garden Grove Unified School District

Merritt Grimm, John Shafer.

Cooperating Teachers

La Habra City School District

Betty Anderson, Mary Blanton, Jean Cochran, Betty Connor, Ben Crespin, Barbara Fischer, Carma Jarrett, Reita Lutz, Virginia Peelle, Jeri Reiser.

Lowell School District

Mary Anderson, Phylis Bannon, Carolynne Bruin, Ray Capp, Harriett Dickman, Yvonne Fenaroli, Judy Flanders, Mary Garner, Lillie Jones, Don Knauf, Donna Loomer, Kay McNeil, Millree Mohler, Diane Mooney, Bernice Nosssoff, Lila Patterson, Patricia Price, Shirley Ranney, Alice Shallenberger, Nancy Stewart, Elaine Tada, Jack Wardell, Welthy Warner.

North Orange County Junior College District

Leland Allen, Martin Brown.

Orange Unified School District

Lucille Alley, Eulyne Anrecht, Marilyn Arbenz, Richard Behn, Mary Bishop, Lilyan Bois, Margie Burch, G. Conkey, Margaret Cornett, Hazel Davis, Bob De Gree, Jo Ann Ditmore, Maeva Frank, Martha Grecian, Freida Gully, Lucille Gunn, Sylvia Hamilton, Virgil Hellick, Marlene Henderson, Norman Johnson, Isabel King, Violet Kjer, Dick Lantz, Gary Long, Bob McKie, Elizabeth Maynard, Ted Mullin, Jim Ritchie, Bill Schertle, Beverly Trotter.

Placentia Unified School District

Grace Blanchard, Larry Clem, Helen Churvarsky, Carol Downey, Miriam Dutcher, Dorothy Haeseker, Barbara Hemmerling, Dale Malone, Duane Mendell, Pat Mullins, Joan Newfarmer, Joan Oldendorf, Lee Pando, Margaret Rayburn, Linda Robb, Kay Schneider, Linda Sherwood, Irma Shrake, Anna Speck, Jane Stanley, Norma Stout, Carol Strook, Cleolene Tome, Felipe Vela, Barbara Vignone, Jean Warner.

Pomona Unified School District

Lorna Arant, Jane Peevey.

Tustin School District

Mary Adair, Sydney Calhoun, Evelyn Hunt, Carol Mayfield, Carol Roberts, Anita Walker, William Watts.

Tustin Union High School District

Alayne Campbell, Jack Robinson.

FACULTY AND ADMINISTRATION 1968-69

(Year in parentheses indicates date of appointment)

- LANGSDORF, WILLIAM B. (1959), President and Professor of History
B.A., M.A., Occidental College; Ph.D., University of California
- * ADAMS, PHILLIP A. (1963), Associate Professor of Biology
B.S., University of California; M.A. Ph.D., Harvard University
- ADAMS, RAYMOND V. (1960), Professor of Physics and Chairman, Physics Department
B.S., Kansas State University; Ph.D., California Institute of Technology
- ALAMSHAH, WILLIAM H. (1959), Professor of Philosophy
M.A., Claremont Graduate School; Ph.D., University of Southern California
- ALBRECHT, EDNA L. (1966), Assistant Professor of Physical Education
B.A., M.Ed., Whittier College
- ALEXANDER, JAMES P. (1960), Associate Professor of Communications
B.A., M.S., University of Southern California; Ed.D., University of California, Los Angeles
- ALLAN, JOHN S. (1968), Lecturer in Science Education
B.S., M.S., University of Utah
- ALLEN, HOLLIS P. (1960), Professor of Education *Emeritus*
B.A., Pomona College; M.A., Ed.D., Stanford University; LL.D., Claremont Graduate School
- AMES, DENNIS B. (1960), Professor of Mathematics and Chairman, Mathematics Department
B.A., M.A., Bishop's University; Ph.D., Yale University
- ANDERSEN, MARTIN P. (1965), Professor of Speech
B.A., M.A., Ph.D., University of Wisconsin
- ANTONELLI, EDWARD A. (1967), Instructor in English
B.A., Seattle University; M.A., University of Washington
- ARANA, OSWALDO (1965), Associate Professor of Spanish
B.A., Texas Christian University; M.A., Ph.D., University of Colorado
- AUSTIN, DON D. (1963), Associate Professor of English
B.A., M.A., University of Redlands; Ph.D., University of Washington
- BABCOCK, RICHARD D. (1966), Assistant Professor of Management
B.S., Indiana University; M.S., Arizona State University
- BACHMAN, ALFRED M. (1968), Assistant Professor of Mathematics Education
B.S., Oregon College of Education; M.Ed., M.S., Ph.D., University of Oregon
- * BAILLIE, ALLAN S. (1965), Assistant Professor of Management
B.Sc., B.S.M.E., Ohio University; M.B.A., University of Washington
- BAKER, GEORGE T., III (1968), Assistant Professor of History
B.A., Duke University; M.A., California State College, Fullerton
- BALDWIN, SIDNEY (1967), Professor of Political Science
B.A., Wesleyan University; M.P.A., Ph.D., Syracuse University
- BANKS, DORIS H. (1967), Librarian IV
B.S., New York State Teachers College; M.S.L.S., Syracuse University; M.P.A., University of Southern California
- BARISH, NATALIE (1966), Associate Professor of Biology
A.B., Goucher College; M.A., Indiana University; Ph.D., Ohio State University
- BARRES, STEPHEN J. (1961), Professor of Management and Labor Relations
B.A., Texas Western College; M.S., Ph.D., Purdue University
- BARRETT, JEAN A. (1963), Associate Professor of Physical Education
B.S., Cortland State Teachers College; Ed.M., Ed.D., University of Buffalo
- BATES, MARILYN M. (1966), Assistant Professor of Education
B.A., M.A., California State College, Long Beach; Ph.D., University of Southern California

* On leave 1968-69.

Faculty and Administration

- BAUR, JAMES A. (1967), Assistant Professor of Chemistry
B.S., Elmhurst College; Ph.D., University of Kansas
- BECK, JAMES A. (1968), Assistant Professor of Mathematics
B.A., Eastern Washington State College; M.A., Ph.D., Washington State University
- BECK, WARREN A. (1961), Professor of History and Chairman, History Department
B.A., M.A., Wayne University; Ph.D., Ohio State University
- * BECKER, ERNEST A. (1959), Dean of Students and Professor of Philosophy
B.S., Amherst College; B.D., Hartford Theological Seminary; M.A., Ed.D., University of Southern California
- BELL, CHARLES G. (1964), Associate Professor of Political Science
B.A., Pomona College; M.A., Ph.D., University of Southern California
- BELL, TONY (1968), Lecturer in Sociology
B.A., M.A., University of California, Santa Barbara
- BELLOLI, ROBERT C. (1968), Assistant Professor of Chemistry
B.S., St. Louis University; Ph.D., University of California
- BELOT, LELAND J. (1964), Assistant Professor of History
B.A., Lamar State College; M.A., Rice Institute; Ph.D., University of Texas
- BENGTSON, KURT L. (1967), Assistant Professor of Physics
B.S., M.A., Wayne State University
- BENNETT, JAMES C. (1968), Associate Professor of Education
A.B., San Jose State College; M.A., Stanford University; Ed.D., University of Southern California
- BENSON, RUSSELL V. (1965), Associate Professor of Mathematics
B.E.E., Cornell University; M.A., Ph.D., University of Southern California
- BIGELOW, RALPH (1966), Associate Dean of Students, Director of Admissions and Records, and Associate Professor
B.Mus., M.Mus., University of Rochester
- BLANCHARD, MILTON C. (1961), Building Coordinator
B.S., M.Ed., Tufts University
- BLANK, LANE B. (1967), Associate Professor of Quantitative Methods
B.S., M.S., Ed.D., University of California, Los Angeles
- # BLEND, HARVEY (1963), Professor of Physics
B.S., University of Texas; M.S., Ph.D., University of California, Los Angeles
- BLOOM, BEATRICE ANN (1967), Lecturer in German
B.S., Oberlin College; M.A., University of Southern California
- BOARINO, GERALD L. (1965), Assistant Professor of Spanish
B.A., M.A., Ph.D., University of California
- BOOTH, HERBERT W. (1967), Assistant Professor of Speech
B.A., M.A., California State College, Los Angeles
- BRADSHAW, L. JACK (1965), Professor of Biology
B.A., Ph.D., Stanford University
- BRAGG, MARY JANE (1966), Librarian II
B.A., Occidental College; M.A., Columbia University; M.L.S., University of California, Los Angeles
- BRATTSTROM, BAYARD H. (1960), Professor of Zoology
B.S., San Diego State College; M.A., Ph.D., University of California, Los Angeles
- † BREESE, LAUREN W., Assistant Professor of History
B.A., Pomona College; M.A., Ph.D., University of California, Los Angeles
- BRIGHT, DONALD B. (1967), Associate Professor of Biology
A.B., M.S., Ph.D., University of Southern California
- BRISTOW, RONALD M. (1959), Acting Dean of Students, and Associate Professor
B.A., M.A., Ed.D., University of Southern California
- BROCKMANN, LOUIS O. (1963), Professor of Education and Director, Pupil Personnel Services Program
B.A., M.A., Ph.D., University of Wisconsin

* On leave 1968-69.

On leave spring 1969.

† On leave fall 1968.

- BROWN, GILES T. (1960), Dean of Graduate Studies, and Professor of History
B.A., San Diego State College; M.A., University of California; Ph.D., Claremont Graduate School
- BROWN, MICHAEL E. (1967), Assistant Professor of Political Science
B.A., California State College, Long Beach
- BRYDEN, JOHN H. (1961), Professor of Chemistry
B.S., College of Idaho; M.S., California Institute of Technology; Ph.D., University of California, Los Angeles
- BUCHMAN, EDWIN O. (1968), Assistant Professor of Mathematics
B.S., California Institute of Technology; Ph.D., University of California, Los Angeles
- BUCHWALD, MARY PELTZ (1967), Librarian III
B.A., M.S.L.S., M.A., University of California, Los Angeles
- BUCK, CHARLES W. (1964), Acting Associate Dean of Counseling and Testing
B.A., Occidental College; M.A., University of Oregon
- BURKE, MAX W. (1960), Director of Placement Services and Associate Professor
B.A., University of Iowa; B.D., Colgate-Rochester Divinity School
- BUSBY, WILLIAM T. (1967), Assistant Professor of Marketing and Quantitative Methods
B.B.A., University of Wisconsin; M.S., University of Southern California
- CABANEL-EVANS, HILDA P. (1967), Instructor in English
Licenciatura, Universidad de los Andes, Bogota
- CAINE, JOHN E. (1968), Associate Professor of Physical Education; and Director of Athletics
B.S., M.S., University of California, Los Angeles; Ed.D., Colorado State College
- CALHOUN, ROLAND L. (1961), Associate Professor of Psychology
B.A., Claremont Men's College; M.A., Ph.D., University of Michigan
- CAMPBELL, JOHN B. (1965), Admissions Officer
B.A., Colgate University; M.A., Chapman College
- CARD, EDWARD T. (1966), Operations Research Analyst
B.A., California State College, Fullerton
- * CARLSON, RAE S. (1961), Associate Professor of Psychology
B.A., University of Nebraska; M.S., University of Washington; Ph.D., University of Michigan
- CARR, EDWIN R. (1960), Professor of Education and Economics
B.A., Jamestown College; M.A., Columbia University; Ph.D., University of Minnesota
- CARTLEDGE, SAMUEL J. (1966), Assistant Professor of French
A.B., King College; Ph.D., Yale University.
- CAVAN, JAMES A. (1968), Lecturer in Drama
American Academy of Dramatic Arts
- CAYTON, J. MICHAEL (1968), Assistant Professor of Economics
B.A., Stanford University
- CHADWICK, CAROLE S. (1967), Instructor in Music
B.A., University of Delaware; M.A., Columbia University Teachers College
- CHAPMAN, GORDON R. (1968), Lecturer in Economics
A.B., Stanford University; M.A., University of Oklahoma
- CHARLTON, F. ANDREW (1965), Assistant Professor of Music
B.M.Ed., Pepperdine College; M.A., California State College, Los Angeles
- CHEN, WILLIAM P. (1960), Librarian IV
B.A., National Wu-Han University, China; M.S. in L.S., M.A., Ph.D., University of Illinois
- CHIANG, GEORGE C. (1967), Assistant Professor of Engineering
B.S., National Taiwan University; M.S., University of Southern California; Ph.D., Stanford University
- CHIANG, VERONICA T. (1968), Librarian II
B.A. Tamkang College of Letters and Science; M.S.L.S., University of Southern California
- CHING, ALVIN K. (1967), Assistant Professor of Art
B.A., California State College, Long Beach; M.F.A., Cranbrook Academy of Art
- CHIOU, FLORA Y. C. (1967), Librarian II
B.A., National Taiwan University; M.S.L.S., University of Southern California
- CHRISTENSEN, LAWRENCE L. (1966), Assistant Professor of Anthropology
B.A., M.A., University of California, Los Angeles

* On leave 1968-69.

Faculty and Administration

- COCHRUM, ELLEN J. (1966), Lecturer in Russian
B.A., California State College at Fullerton
- COCKERHAM, LOUIS W. (1968), Assistant Professor of Speech
B.S., M.S., University of Oregon; Ph.D., University of Illinois
- COHN, GEORGE I. (1968), Professor of Engineering
B.S.E.E., California Institute of Technology; M.S., Ph.D., Illinois Institute of Technology
- COLEMAN, JACK W. (1968), Dean, School of Business Administration and Economics; and
Acting Chairman, Department of Accounting
B.S., Kansas University; M.B.A., University of Michigan; D.B.A., Indiana University
- COLGAN, FRED R. (1965), Associate Professor of Management
B.S., M.S., Ph.D., University of Southern California
- COLMAN, RONALD W. (1964), Lecturer in Quantitative Methods
B.A., University of California, Los Angeles
- COOPERMAN, EDWARD L. (1967), Assistant Professor of Physics
B.S., Lehigh University; Ph.D., Pennsylvania State University
- COPP, CAROL M. (1965), Assistant Professor of Sociology
B.A., M.A., University of Michigan; Ph.D., University of Colorado
- COPPEL, LYNN M. (1968), Librarian II
B.S., University of Arizona; M.A., University of Denver
- COPPOLINO, IDA S. (1960), Professor of Education
B.S., University of Utah; M.A., New York University; Ed.D., University of California, Los Angeles
- CORMAN, EUGENE J. (1966), Assistant Professor of Accounting
B.Sc., M.B.A., University of Santa Clara, C.P.A.
- COX, CHARLES H. (1968), Lecturer in Philosophy
B.A., M.A., University of California, Santa Barbara
- COX, MIRIAM S. (1967), Associate Professor of English
B.S., Utah State University; M.S., University of Idaho
- CRONQUIST, JOHN (1967), Instructor in Philosophy
A.B., Duke University; A.M., Harvard University
- CROWLEY, RONALD J. (1965), Assistant Professor of Physics
B.S., M.A., Ph.D., University of Southern California
- CROY, HAZEL M. (1960), Professor of Education, and Director, Reading Education Program
B.A., M.A., University of Redlands; Ed.D., University of California, Los Angeles
- CUMMINGS, SHERWOOD P. (1963), Professor of English and Vice Chairman, English
Department
B.S., University of Illinois; M.A., Ph.D., University of Wisconsin
- CURIEL, LUIS (1968), Lecturer in Spanish
Licenciado en Filosofia & Letras; Licenciado en Derecho, University, Valladolid, Spain
- CURRAN, DARRYL J. (1967), Instructor in Art
B.A., M.A., University of California, Los Angeles
- * CURTIS, DWIGHT W., JR., (1965), Assistant Professor of Psychology
B.A., College of the Pacific; M.A., Sacramento State College; Ph.D., University of Oregon
- CUSICK, JAMES W. (1961), Associate Professor of Education, and Director, Secondary Education Program
B.S., Montana State College; M.A., Washington State University; Ph.D., University of Minnesota
- DAVIS, BARBARA E. (1960), Librarian IV
B.S., Carnegie Institute of Technology; B.Mus., University of Wisconsin; M.L.S., Carnegie Library School
- * DAVIS, F. JAMES (1962), Professor of Sociology and Chairman, Sociology Department
B.A., Ph.D., State University of Iowa
- de FRANCE, DOROTHEA (1967), Lecturer in English
B.A., M.A., California State College, Los Angeles
- de GRAAF, LAWRENCE B. (1959), Associate Professor of History
B.A., Occidental College; M.A., Ph.D., University of California, Los Angeles

* On leave 1968-69.

- DENNO, RAYMOND E. (1961), Director of Audiovisual Services, and Professor of Education
B.A., University of California, Santa Barbara; M.S., University of Southern California; Ed.D.,
University of California, Los Angeles
- DERENNE, ROLAND J. (1968), Assistant Professor of Sociology
B.A., M.A., Marquette University
- * DIETZ, NAOMI G. (1960), Professor of Art
B.S., Whitworth College; M.A., Teachers College, Columbia University
- DINERSTEIN, NELSON T. (1968), Assistant Professor of Mathematics
B.S., M.A., University of Massachusetts; Ph.D., University of Utah
- DITTMAN, ROGER R. (1964), Associate Professor of Physics
B.A., University of California, Santa Barbara; M.S., University of Delaware; Ph.D., University
of Southern California
- DOANE, KENNETH R. (1960), Director of Institutional Research and Studies, and Professor
of Education
B.S., Wisconsin State College, La Crosse; M.S., Ph.D., University of Wisconsin
- DOERING, ROBERT D. (1969), Associate Professor of Management
B.E.M.E., M.S.C.E., M.S.I.E., Ph.D., University of Southern California
- DOLP, FRANZ (1968), Assistant Professor of Economics
B.S., Yale University; Ph.D., University of California
- DONDIS, ERNEST H. (1966), Associate Professor of Psychology
B.A., M.A., California State College, Long Beach; Ph.D., University of California
- DONOGHUE, MILDRED R. (1962), Associate Professor of Education
B.A., University of Michigan; M.A., University of Detroit; Ed.D., University of California,
Los Angeles
- DORER, FRED H. (1967), Assistant Professor of Chemistry
B.S., California State College, Long Beach; Ph.D., University of Washington
- DUCKWORTH, JOHN E. (1968), Assistant Professor of Engineering
B.S.M.E., M.S.M.E., University of Southern California
- DUERR, EDWIN (1964), Associate Professor of Drama
B.A., M.A., California State College; M.A., Cornell University
- EARICK, ARTHUR D. (1960), Professor of Geography
B.A., Indiana University; M.A., Ph.D., University of Michigan
- EBERSON, PETER D. (1967), Lecturer in Psychology
A.B., Swarthmore College; Ph.D., University of California, Los Angeles
- EDWARDS, RICHARD A. (1964), Assistant Professor of English
B.A., University of California, Santa Barbara; M.A., Yale University
- EDWARDS, ROBERT E. (1966), Professor of Psychology and Chairman, Psychology Department
B.S., M.S., University of Oregon; Ph.D., University of Washington
- EGBERT, RUSSELL J. (1968), Associate Professor of Mathematics
B.A., University of California, Riverside; M.S., Ph.D., University of Arizona
- EHMANN, GERHARD E. (1959), Dean of Educational Services and Summer Session, and Pro-
fessor of Education
B.A., Occidental College; M.A., Ed.D., University of California, Los Angeles
- ELLMORE, R. TERRY (1968), Assistant Professor of Drama
B.A., M.A., Washington State University
- EL-SADEN, MUNIR R. (1966), Professor of Engineering
B.Sc., University of Denver; M.S., Ph.D., University of Michigan
- ENELL, GEORGE O. (1965), Assistant Professor of Speech
B.A., Pomona College; B.D., Fuller Theological Seminary; M.A., Ph.D., University of Southern
California
- EPSTEIN, CYRIL R., Assistant Professor of English
B.A., University of California, Santa Barbara; M.A., Yale University
- ETUE, GEORGE E. (1963), Associate Professor of History
B.A., Union College; M.A., Ph.D., University of California
- EVJENTH, HENRY A. (1964), Assistant Professor of Art
B.A., M.A., California State College, Long Beach

* On leave 1968-69.

Faculty and Administration

- FARDY, PAUL S.** (1967), Assistant Professor of Physical Education
B.S., State University of New York; M.S., Ph.D., University of Illinois
- FARMER, MARJORIE M.** (1965), Lecturer in English
B.A., M.A., California State College, Fullerton
- FASHEH, ISSA I.** (1966), Librarian II
B.A., University of California, Los Angeles; M.L.S., University of Southern California
- FELDMAN, DAVID M.** (1964), Associate Professor of Spanish
B.A., University of Southern California; M.A., Ph.D., Cornell University
- FELDMAN, ROBERT S.** (1964), Associate Professor of History
B.S., Illinois State University; M.A., Ph.D., Indiana University
- FERARU, ANNE T.** (1966), Assistant Professor of Political Science
B.A., Wilson College; M.A., Columbia University; Docteur de l'universite, University of Lyons
- FERGUSON, GERALDINE T.** (1968). Lecturer in Education
B.A., Denison University; M.A., Ohio State University
- FESSENDEN, SETH A.** (1959), Professor of Speech
B.S., M.S., University of Illinois; Ph.D., New York University
- FIERMAN, MORTON C.** (1963), Professor of Education
B.A., Western Reserve University; M.H.L., D.D., Hebrew Union College; M.A., Tulsa University; Ed.D., Arizona State University
- FISCHER, HERTA D.** (1967), Librarian III
B.A., University of Berlin; M.A., University of Denver
- * **FISHER, JOEL M.** (1968), Assistant Professor of Political Science
B.S., University of Southern California; M.A., University of California; Ph.D., Claremont Graduate School
- FLEMING, JAMES C.** (1968), Director of New Educational Horizons Program
B.A., M.A., San Francisco State College
- FLETCHER, ROBERT F.** (1965), Associate Professor of Science and Mathematics Education
B.A., M.A., San Diego State College; Ed.D., Stanford University
- FLICKEMA, THOMAS O.** (1966), Assistant Professor of History
A.B., Hope College; M.A., Ph.D., Wayne State University
- FORREST, C. DORSEY** (1966), Professor of Marketing
B.S., Northwestern University; M.B.A., University of Southern California; Ph.D., Ohio State University
- FOSTER, BERNARD E.** (1968), Director of Development
New York University and Public Relations Institute
- FOSTER, JULIAN F. S.** (1963), Associate Professor of Political Science
B.A., M.A., New College, Oxford, England; Ph.D., University of California, Los Angeles
- FRANKLIN, CLYDE W., JR.** (1968), Assistant Professor of Sociology
B.A., Agricultural, Mechanical and Normal College of Arkansas; M.A., Atlanta University; Ph.D., University of Washington
- FRIEND, GEORGE L.** (1964), Assistant Professor of English
B.A., Miami University; M.A., Ph.D., University of Illinois
- FRYE, MICHAEL W.** (1967), Assistant Professor of Accounting
B.S., University of California, Los Angeles; J.D., University of San Diego; C.P.A.
- FULLER, CYNTHIA** (1967), Instructor in English
B.A., University of Arizona; M.A., University of Massachusetts
- FULTON, MARTIN W.** (1965), Assistant Professor of Physical Education
B.A., M.A., California State College, Los Angeles; H.S.D., Indiana University
- FUSZEK, RITA M.** (1964), Associate Professor of Music
B.M., Butler University; M.M., Michigan State University
- GERFEN, RICHARD L.** (1967), Assistant Professor of Education
B.A., M.A., California State College, Los Angeles
- GIACUMAKIS, GEORGE, JR.** (1963), Associate Professor of History
B.A., Shelton College; M.A., Ph.D., Brandeis University
- † **GILBERT, RICHARD C.** (1963), Professor of Mathematics
B.A., Harvard College; Ph.D., University of California, Los Angeles

* On leave 1968-69.

† On leave spring 1969.

- GILDE, JOSEPH M. (1965), Assistant Professor of English
B.A., Syracuse University; M.A., Ph.D., University of Chicago
- GILMORE, JAMES L. (1968), Professor of Education
B.A., Willamette University; M.S., University of Oregon; Ph.D., Stanford University
- GLEESON, LARRY A. (1966), Assistant Professor of Art
B.A., Dartmouth College; M.A., Ph.D., University of California, Los Angeles
- GOOD, KAYE M. (1963), Associate Professor of Speech
B.A., Washington State College; M.A., California State College, Long Beach
- GOULD, BETTY W. (1965), Associate Professor of Education
B.A., University of Southern California; M.A., Fresno State College
- GRANELL, LEE E. (1960), Associate Professor of Speech and Chairman, Speech Department
B.A., San Diego State College; M.A., Ph.D., University of Southern California
- GRAVES, LEVERN F. (1960), Professor of Economics
B.A., Ph.D., University of California
- GRAY, J. JUSTIN (1961), Associate Dean, School of Letters, Arts and Science; and Professor of Music
B.Mus., University of Michigan; M.Mus., Eastman School of Music; D.Mus., University of Southern California
- GREENFIELD, DAVID W. (1966), Assistant Professor of Zoology
A.B., Humboldt State College; Ph.D., University of Washington
- GREENWOOD, JOAN V. (1963), Associate Professor of English and Coordinator of Freshman English
B.A., Wellesley College; M.A., Ph.D., Stanford University
- GUSTAFSON, GEORGE A. (1968), Assistant Professor of Accounting
B.A., Michigan State University; M.B.A., University of Michigan
- HAAKER, ANNABELLE M. (1965), Associate Professor of English
B.A., University of Texas; M.A., Claremont Graduate School; Ph.D., Shakespeare Institute, University of Birmingham
- HAGEDORN, ROBERT B. (1966), Associate Professor of Sociology
B.A., San Francisco State College; M.A., University of Washington; Ph.D., University of Texas
- HALL, WILLIAM K., JR. (1967), Assistant Professor of Management
B.M.E., Georgia Institute of Technology; M.S., San Diego State College
- HANAUER, ERIC S. (1966), Assistant Professor of Physical Education
B.S., George Williams College; M.S., University of California, Los Angeles
- HANSEN, ARTHUR A. (1966), Assistant Professor of History
B.A., M.A., University of California, Santa Barbara
- * HARDMAN, O. CLYDE (1965), Assistant Professor of Accounting
B.S., M.S., University of Utah
- † HARDY, B. CARMON (1966), Assistant Professor of History
B.A., Washington State University; M.A., Brigham Young University; Ph.D., Wayne State University
- HARLOW, CAROLINE W. (1968), Assistant Professor of Political Science
B.A., St. Catherine's College; M.A., University of Minnesota
- HARLOW, ROBERT L. (1968), Assistant Professor of Economics
A.B., Bates College; M.A., Ph.D., Yale University
- HARRIS, BARBARA ANN (1967), Assistant Professor of Speech
B.S., Ohio State University; M.A., Temple University; Ph.D., University of California, Los Angeles
- HARTSIG, BARBARA A. (1959), Professor of Education, and Director, Elementary Education Program
B.A., Occidental College; M.S., University of Southern California; Ed.D., University of California, Los Angeles
- HAYDEN, MARY H. (1965), Instructor in English
B.A., California State College, Fullerton; M.A., University of California, Riverside
- HAYNER, HELEN L. (1965), Librarian II
B.A., State University of New York; B.S. in L.S., Syracuse University

* On leave 1968-69.

† On leave spring 1969.

Faculty and Administration

- HAYNER, PAUL C. (1964), Professor of Philosophy, and Chairman, Philosophy Department
B.A., Union College; B.D., Union Theological Seminary; Ph.D., Columbia University
- HEIN, RAYMOND (1961), Professor of Art
B.A., M.A., California State College, Long Beach
- HEINZE, BETTY L. (1965), Assistant Professor of English
B.A., California State College, Fullerton; M.A., University of Southern California
- HELIN, RONALD A. (1963), Associate Professor of Geography
B.A., Ph.D., University of California, Los Angeles; M.A., Miami University
- HENGVELD, DENNIS A. (1967), Assistant Professor of English
B.A., Hope College; M.A., Rice University
- HENRY, DONALD R. (1966), Assistant Professor of Drama
B.A., State College of Iowa; M.A., University of Washington; Ph.D., University of Wisconsin
- HENRY, LESTER E. (1968), Lecturer in Art
B.A., California State College, Fullerton; M.F.A., Claremont Graduate School
- HIERMAN, LINDA E. (1965), Librarian III
B.A., California State College, Los Angeles; M.L.S., University of California, Los Angeles
- HERRON, LOIS S. (1959), Director, Office of Faculty Records
B.S., M.S., University of Illinois
- HIEGEL, GENE A. (1966), Assistant Professor of Chemistry
B.S., Ph.D., University of Wisconsin
- HILL, SAMUEL A., JR. (1968), Assistant Professor of Business Law
B.S., California State College, Long Beach; M.B.A., J.D., University of Southern California
- HIPOLITO, JANE W. (1968), Lecturer in English
A.B., University of California, Riverside; M.A., Ph.D., University of California, Los Angeles
- HIRSCH, A. JAY (1966), Professor of Accounting
B.A., M.S., The Pennsylvania State University; Ph.D., University of Illinois
- HITCHCOCK, LEONARD A. (1966), Instructor in Philosophy
B.A., University of Iowa; M.A., Claremont Graduate School
- HO, CHEE LEUNG (1968), Assistant Professor of Engineering
B.Sc., Queen's University; M.Sc., Ph.D., California Institute of Technology
- HODGES, ROBERT R. (1965), Associate Professor of English
B.A., Valparaiso University; M.A., University of Missouri; Ph.D., Stanford University
- HOLMES, EMMA E. (1961), Associate Professor of Education
B.A., Mount Holyoke College; M.A., University of Illinois; Ph.D., State University of Iowa
- HORTON, MELVIN E. (1967), Assistant Professor of Economics
B.S., University of Missouri; M.B.A., City College of New York; M.A., Ph.D., University of Washington
- HOUGH, GRANVILLE W. (1968), Lecturer in Management
B.S., United States Military Academy; M.S., M.E., University of Southern California; B.Ad., M.S., George Washington University
- HUEBNER, WAYNE V. (1968), Associate Professor of English
B.A., M.A., Ph.D., University of Minnesota
- HUGHES, CHARLOTTE B. (1967), Associate Professor of English
B.A., University of Oregon; A.M., Ph.D., Brown University
- HUNT, EUGENE B. (1966), Professor of Engineering
B.S., South Dakota State College; M.S., Kansas State College; Ph.D., Purdue University
- HUNTER, DOREEN M. (1967), Assistant Professor of History
A.B., Stanford University; M.A., University of California
- HUOTARI, FRANCES I. (1966), Assistant Professor of Chemistry
B.S., M.S., Montana State University; Ph.D., University of Minnesota
- HYINK, BERNARD L. (1960), Vice President, Academic Affairs, and Professor of Political Science
B.A., University of Redlands; M.A., University of California; Ph.D., University of Southern California
- *IMHOFF, MYRTLE M. (1960), Professor of Education
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* On leave 1968-69.

Faculty and Administration

- IVY, GREGORY D. (1965), Professor of Art
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- JACOBSON, PERRY E., JR. (1963), Associate Professor of Sociology and Acting Chairman,
Sociology Department
B.A., Hamline University; M.S., Iowa State University; Ph.D., University of Minnesota
- JAFFEE, STANLEY (1967), Assistant Professor of Psychology
B.A., University of California; M.S., San Diego State College; Ph.D., University of California,
Riverside
- JAMES, GEORGE R. (1968), Lecturer in Art
B.A., M.A., California State College, Long Beach
- JANOTA, HARVEY F. (1968), Associate Professor of Chemistry
B.S., Texas Lutheran College; Ph.D., The University of Texas
- JOESINK-MANDEVILLE, LEROY V. (1966), Assistant Professor of Anthropology
B.A., Sacramento State College; M.A., Mexico City College
- JOHNSON, ELMER L. (1964), Professor of Physical Education, and Chairman, Health Education,
Physical Education and Recreation Department
B.A., Moorhead State College; M.Ed., University of Minnesota; Ed.D., University of Southern
California
- JOHNSON, RAYNOLDS (1961), Assistant Professor of Communications
B.A., California State College, Los Angeles; M.A., Stanford University
- JOHNSTON, DAVIS R. (1968), Assistant Professor of Physics
B.Sc., University of Akron; M.Sc., Ph.D., University of California, Los Angeles
- *JONES, HAZEL J. (1960), Associate Dean, School of Letters, Arts and Science; and Professor
of English
B.A., Western State College of Colorado; M.S., Ed.D., University of Southern California
- JORDAN, JAMES E. (1965), Assistant Professor of History
B.A., Washburn University; M.A., Ph.D., University of California
- JORDAN, JOHN R. (1965), Assistant Professor of Art
B.A., M.F.A., University of California, Los Angeles
- JOSEPH, ROGER (1967), Assistant Professor of Anthropology
B.A., University of Nevada; M.A., Ph.D., University of California, Los Angeles
- JOUN, YOUNG P. (1965), Associate Professor of Quantitative Methods
B.A., Seoul National University; M.A., Ph.D., University of Washington
- KANE, PAUL W. (1968), Lecturer in Education
A.B., Clark University; M.A., University of Wyoming
- KAPLAN, DONALD E. (1964), Associate Professor of Speech
B.A., University of California, Los Angeles; M.A., California State College, Long Beach
- KARSON, BURTON L. (1965), Assistant Professor of Music
B.A., M.A., D.M.A., University of Southern California
- KASUN, JACQUELINE R. (1965), Associate Professor of Economics
B.A., University of California; M.S., Ph.D., Columbia University
- KATZ, FRED (1968), Lecturer in Anthropology
Diploma, National Orchestral Society, Carnegie Hall
- KAWAKAMI, DANIEL T. (1967), Counselor, Student Personnel Services
A.B., Washington University; M.A., University of Hawaii; Ph.D., Columbia University
Teachers College
- KEELE, LUCY MELHUIISH (1967), Assistant Professor of Speech
B.A., M.A., University of Oregon
- KELER, ALVIN J. (1966), Assistant Professor of Drama
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- KELLER, R. TYRONE (1968), Assistant Professor of Political Science
B.S., Brigham Young University
- KEMMERLY, JACK E. (1968), Associate Professor of Engineering
B.E.E., Catholic University of America; M.S., University of Denver; Ph.D., Purdue University
- KERAN, DONALD W. (1961), Librarian III
B.A., University of California, Los Angeles; M.S., University of Southern California
- KERCIU, G. RAY (1963), Associate Professor of Art
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Faculty and Administration

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- KETTERINGHAM, WILLIAM J. (1966), Assistant Professor of Geography
B.A., University of California, Los Angeles; M.A., Stanford University
- *KILKER, DOROTHY K. (1965), Instructor in English
B.A., M.A., California State College, Fullerton
- KIM, KUMSUN (1968), Librarian II
B.A., Ewha Woman's University; M.L.S., University of Oregon
- KIM, YUNG MIN (1967), Assistant Professor of Political Science
A.B., M.A., Indiana University
- KINCAID, DESMOND (1966), Assistant Professor of Music
B.A., University of California, Santa Barbara; B.A., M.A., University of Washington
- KING, LAWRENCE J. (1968), Lecturer in Marketing
B.S., M.S., Colorado State University
- KINGDON, FREDERICK H. (1969), Lecturer in Education
A.B., Drake University; M.A., University of Iowa; Ed.D., University of Colorado
- KIRPALANI, RAMCHAND T. (1968), Lecturer in Management
B.M.E., University of Bombay; M.S., Massachusetts Institute of Technology
- KLASSEN, VURYL J. (1965), Associate Professor of Mathematics
B.A., Butler University; M.S., Ph.D., University of Arizona
- KLASSEN, VYRON M. (1965), Associate Professor of Mathematics
B.A., Butler University; M.S., Ph.D., Virginia Polytechnic Institute
- KLEIN, SIDNEY (1968), Professor of Economics and Chairman, Economics Department
B.S., University of California, Los Angeles; A.B., University of Southern California; Ph.D., Columbia University
- KLINE, WALTER D. (1963), Professor of Spanish and Chairman, Foreign Languages and Literatures Department
B.A., Indiana State Teachers College; M.A., University of Wisconsin; Ph.D., University of Michigan
- KRAVITZ, BERNARD (1961), Associate Professor of Education
B.A., University of Southern California; M.A., Ed.D., University of California
- KRETER, LEO E. (1968), Associate Professor of Music
B.A., Carleton College; M.A., D.M.A., Cornell University
- KRISHNAMURTHY, SUNDARAM (1968), Assistant Professor of Engineering
B.Sc., University of Ceylon; M.S., Ph.D., Rensselaer Polytechnic Institute
- KRIVANEK, JARA A. (1968), Assistant Professor of Psychology
B.A., Sydney University; Ph.D., University of California, Irvine
- KUNI, MASAMI (1964), Associate Professor of Drama
B. Humanities, Matsue Kota Gakko University, Japan; Bungakushi, Tokyo Imperial University; Ph.D., Friedrich Wilhelm University
- LACKEY, PAT N. (1966), Assistant Professor of Sociology
A.B., Southwest Missouri State College; M.A., Ph.D., University of Pittsburgh
- LAFFY, JOHN D. (1963), Associate Dean, School of Business Administration and Economics; and Associate Professor of Economics
B.S., New Mexico State University; M.A., Ph.D., University of Texas
- LAGERBERG, DONALD E. (1968), Assistant Professor of Art
A.B., M.A., University of California, Los Angeles
- LAKE, ERNEST G. (1966), Professor of Education, and Director, School Administration Program
B.A., Montana University; M.Ed., Ed.D., Harvard University
- LAKE, JEANETTE M. (1964), Librarian III
B.A., Mount Holyoke College; M.S., University of Southern California
- LANCASTER, WAYNE H. (1967), Assistant Professor of Economics
B.A., California State College, Fullerton
- LANDON, JOSEPH W. (1960), Professor of Music and Chairman, Music Department
B.A., Occidental College; M.A., Claremont Graduate School; Ed.D., University of Southern California

* On leave 1968-69.

Faculty and Administration

- LANE, SYLVIA (1965), Associate Professor of Finance and Chairman, Finance Department
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- LANGE, IRENE L. (1965), Assistant Professor of Marketing
B.S., M.S., Ph.D., University of Illinois
- LANGWORTHY, WILLIAM C. (1965), Associate Professor of Chemistry
B.S., Tufts University; Ph.D., University of California
- LAWRENCE, JOHN ERIC (1966), Instructor in Communications
B.A., University of California; B.P.A., Art Center College of Design; M.A., California State College, Long Beach
- LAY, L. CLARK (1960), Professor of Mathematics Education
B.S., Aurora College; M.A., University of Southern California; Ed.D., University of California, Los Angeles
- LAYDEN, WILLIAM T. (1966), Lecturer in Marketing
B.S., M.B.A., University of Southern California
- LEDER, HANS H. (1965), Professor of Anthropology and Chairman, Anthropology Department
B.A., New York University; M.A., Ph.D., Stanford University
- LEE, LOUISE G. (1964), Foreign Student Adviser
B.S., University of Wisconsin; M.A., California State College, Fullerton
- LEMMON, ROBERT A. (1963), Associate Professor of Education
B.S., M.A., Ohio State University; Ed.D., Colorado State College
- LEPPER, MARY K. (1965), Assistant Professor of Political Science
B.A., California State College, Fullerton; Ph.D., Florida State University
- LEPPER, ROBERT E. (1965), Associate Professor of Science and Mathematics Education
B.S., M.A., San Jose State College; Ph.D., Florida State University
- LEWIS, DANIEL G. (1963), Professor of Music
B.A., San Diego State College; M.A., Claremont Graduate School
- LINDLEY, RICHARD H., Professor of Psychology
B.A., Ph.D., University of California
- LINDNER, WILLIAM A. (1966), Assistant Professor of Psychology
A.B., Columbia College; Ph.D., Indiana University
- LITTLE, ARAMINTA A. (1968), Associate Professor of Physical Education
B.S., M.F.A., University of North Carolina; Ph.D., University of Southern California
- LIVENGOD, EDWARD B. (1960), Librarian III
B.A., University of Redlands; M.S., University of Southern California
- LOCKAREFF, MICHAEL A. (1968), Assistant Professor of Management
B.A., University of Southern California; M.B.A., Ph.D., University of California, Los Angeles
- LOCKETT, PETER P. (1968), Assistant Professor of Accounting
B.S., University of California; M.S., University of Southern California; C.P.A.
- LOLLICH, LANOR L. (1968), Assistant Professor of Drama
B.A., University of California, Santa Barbara; M.A., University of Oregon
- * LONG, EMMETT T. (1959), Associate Dean of Students, Director of Relations with Schools, and Professor of Speech
B.A., Pepperdine College; B.A., M.A., University of California; Ed.D., University of Southern California
- LOUBET, JUDITH W. (1968), Assistant Professor of Management
B.A., University of Arizona; M.A., University of Pennsylvania; Ph.D., Montpellier University
- LUNDSTROM, WILLIAM J. (1968), Lecturer in Marketing
B.S., Purdue University; M.B.A., Indiana University
- LYNN, ARTHUR W. (1962), Counselor and Test Officer
B.A., University of Redlands; M.A., Claremont Graduate School
- LYNN, JOANNE L. (1966), Lecturer in English
B.A., Pomona College; M.A., California State College, Fullerton
- LYON, MICHAEL T. (1967), Assistant Professor of Art
B.A., M.A., University of Washington
- MACK, MARTIN P. (1968), Assistant Professor of Art
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* On leave 1968-69.

Faculty and Administration

- MARLEY, GERALD C. (1967), Assistant Professor of Mathematics
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- MASON, JOHN B. (1960), Professor of Political Science
B.A., Butler University; M.A., Ph.D., University of Wisconsin
- MASTROIANNI, GEORGE A. (1968), Assistant Professor of Communications
B.A., Pennsylvania State University; M.S., Syracuse University
- MATHIEU, G. BORDING (1960), Professor of French and German
B.S., M.A., Ph.D., Columbia University
- MATSON, DONALD D. (1967), Instructor in Physical Education
B.A., M.S., University of California, Los Angeles
- MAUCH, ANNETTA B. (1965), Instructor in English
B.A., Mexico City College; M.A., California State College, Fullerton
- MAXWELL, J. WILLIAM (1960), Professor of Communications and Chairman, Communications Department
B.A., University of Southern California; M.S., Columbia University; Ph.D., University of Iowa
- MAYER, HARVEY E. (1968), Assistant Professor of Russian and German
B.A., Stanford University; M.A., Ph.D., Harvard University
- MCCARTHY, MILES D. (1959), Dean, School of Letters, Arts and Science; and Professor of Biology
B.S., Westchester State Teachers College, Pennsylvania; Ph.D., University of Pennsylvania
- MCCARTY, FRANK L. (1966), Assistant Professor of Music
B.A., San Diego State College; M.A., University of Southern California
- MCCLANAHAN, LONNIE L., JR. (1966), Assistant Professor of Biology
B.S., University of Redlands; Ph.D., University of California, Riverside
- MCCLEARY, JAMES A. (1960), Professor of Botany
B.A., Asbury College; M.S., Ohio University; Ph.D., University of Michigan
- MCCLOUD, LELAND W. (1962), Professor of Management and Quantitative Methods
B.S., M.S., North Texas University; Ph.D., University of Texas
- MCCOMB, JOHN D. (1968), Assistant Professor of Sociology
A.B., University of California, Los Angeles
- MCCOMB, STUART F. (1959), Executive Dean and Professor of Education
B.A., Arizona State University; M.S., Ed.D., University of Southern California; LL.D., Upper Iowa University
- MCCULLOUGH, EDITH L. (1966), Assistant Professor of Education
B.A., Colorado State College; M.B.E., University of Colorado; Ph.D., University of Southern California
- MCFARLAND, RICHARD A. (1968), Assistant Professor of Psychology
A.B., University of California; Ph.D., University of California, Los Angeles
- MCGARRY, EUGENE L. (1962), Dean, School of Education; and Professor of Education
B.A., Cornell College; M.A., Northwestern University; Ph.D., State University of Iowa
- * MCKEE E. (1964), Assistant Professor of Business Law
B.B.A., University of Toledo; M.B.A., Michigan State University; LL.B., University of Michigan; C.P.A.
- MCKUSICK, ROSA A. (1967), Librarian III
B.A., Whittier College; M.A., Columbia University; Certificate in Librarianship, University of California
- McLAREN, ROBERT B. (1967), Assistant Professor of Education
A.B., Park College; B.D., McCormick Theological Seminary; M.A., University of Houston
- McNELLY, WILLIS E. (1961), Professor of English
B.A., Central YMCA College; M.A., Loyola University (Chicago); Ph.D., Northwestern University
- McWILLIAMS, KENNETH L. (1968), Assistant Professor of Zoology
B.S., Colorado State University; M.S., New Mexico State University; Ph.D., Indiana University
- MEE, R. KIRK (1968), Assistant Professor of Drama
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* On leave 1968-69.

- MEND, MICHAEL R. (1965), Assistant Professor of Sociology
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- MERRIFIELD, DORIS D. (1965), Associate Professor of German
M.A., Ph.D., The University of Texas
- * MERRITT, ROBERT E. (1967), Assistant Professor of Business Law
A.B., Sacramento State College; LL.B., University of California School of Law
- MICHAELS, ROBERT J. (1968), Assistant Professor of Economics
A.B., University of Chicago
- MICHALSKY, DONAL R. (1960), Associate Professor of Music
B.Mus., M.Mus., University of Southern California; D.M.A., University of Southern California
- MILLER, RONALD R. (1967), Assistant Professor of Mathematics
B.S., M.S., Texas Technological College; Ph.D., University of Arizona
- MILLER, RUSSELL H. (1968), Assistant Professor of English
B.A., Pennsylvania State University; M.A., Ph.D., University of Maryland
- MINOR, BENTON L. (1967), Lecturer in Music
B.A., University of California, Los Angeles
- MITCHELL, PHILLIP S. (1968), Assistant Professor of Quantitative Methods
A.B., University of California, Riverside; M.S., University of California, Los Angeles
- MLYNARYK, PETER M. (1967), Assistant Professor of Finance
B.S., Massachusetts Institute of Technology; M.B.A., University of Southern California
- MOFFET, J. BRYAN (1968), Assistant Professor of Education
A.B., M.A., Miami University; Ed.D., University of California, Los Angeles
- MONTANA, ANDREW F. (1963), Associate Professor of Chemistry and Chairman, Chemistry Department
B.S., Seattle Pacific College; Ph.D., University of Washington
- MORKRE, MORRIS E. (1967), Assistant Professor of Economics
B.A., University of Redlands; M.A., Northwestern University
- MORRIS, THOMAS D. (1964), Financial Aids Officer
B.A., M.Ed., Gonzaga University
- MORRISON, NETTIE L. (1968), Lecturer in Physical Education
B.A., California State College, Long Beach
- MORTON, HELEN L. (1963), College Medical Officer and Director of Student Health Center
B.A., University of Nevada; M.D., Medical College of Virginia
- MUELLER, FREDERICK W. (1968), Lecturer in Quantitative Methods
B.S., Pennsylvania State College; M.S., Western Reserve University
- MYERS, DION G. (1967), Assistant Professor of Art
B.F.A., University of Oklahoma; M.F.A., Claremont Graduate School
- NAGLE, D. BRENDAN (1968), Assistant Professor of History
B.A., Mungret College; B.A., Catholic University of America; M.A., Ph.D., University of Southern California
- NELSON, CALVIN C. (1967), Associate Professor of Education; and Director, Special Education Program
B.A., University of California; M.S., University of Miami; M.A., Ph.D., University of Oregon
- NELSON, MAX (1965), Professor of Speech
B.A., University of Akron; M.A., Ph.D., University of Michigan
- NEWELL, JAMES F. (1968), Assistant Professor of Psychology
B.A., University of California; Ph.D., University of Washington
- NICHOLS, E. RAY, JR. (1966), Associate Professor of Speech
B.A., M.A., Cornell University; Ph.D., University of Southern California
- NICHOLS, JOHN R. (1965), Associate Professor of Finance
B.S., Baldwin-Wallace College; M.A., Ph.D., Ohio State University
- NUDD, T. ROGER (1966), Associate Dean of Students and Director of Student Activities
B.S., M.S., University of Oregon; Ed.D., University of California, Los Angeles
- NYCUM, RUTH A. (1967), Librarian II
B.A., Kalamazoo College; M.S.L.S., University of Southern California
- OBLER, PAUL C. (1962), Professor of English
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* On leave 1968-69.

Faculty and Administration

- ODLE, DWIGHT R. (1967), Instructor in Drama
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- OLEYAR, RITA D. (1966), Assistant Professor of English
A.B., Seton Hill College; M.A., California State College, Fullerton; Ph.D., University of California, Irvine
- OLSEN, JOHN W. (1961), Professor of Art
B.Ed., University of California, Los Angeles; M.A., Ed.D., Columbia University
- OMALEV, ALEXANDER (1960), Professor of Physical Education and Coach of Basketball
B.A., M.S., University of Southern California
- ONORATO, MICHAEL P. (1965), Associate Professor of History
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- OVERBECK, WAYNE E. (1968), Lecturer in Communications
B.A., Whittier College; M.S., University of California, Los Angeles
- PALISI, BARTOLOMEO J. (1963), Associate Professor of Sociology
B.A., M.A., Brooklyn College; Ph.D., University of Nebraska
- PARTIN, ROBERT E. (1966), Professor of Art
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- † PASTOR, PAUL J. (1960), Professor of Physical Education
B.S., M.Ed., Springfield College; Ed.D., University of Oregon
- PAUL, M. JANE (1968), Assistant Professor of Music
B.Mus., M.Mus., University of Illinois
- PENÁ, ERVIE (1963), Instructor in Spanish
B.A., Mexico City College; M.A., University of Southern California
- PETALAS, URANIA C. (1965), Assistant Professor of English
B.A., M.A., San Fernando Valley State College
- PETTYJOHN, LEONARD F. (1968), Assistant Professor of Geography
B.S., Portland State College; M.S., University of Wisconsin
- PHILLIPS, DORIS G. (1965), Professor of Economics
B.A., Ph.D., University of California
- PICKERING, JERRY V. (1968), Assistant Professor of Drama
B.A., M.A., Sacramento State College
- PICKERSGILL, JOYCE E. (1966), Assistant Professor of Economics
B.A., Smith College; M.A., Ph.D., University of Washington
- PINE, FORREST S. (1968), College Personnel Officer
B.B.A., University of Pittsburgh; M.S., The George Washington University
- PITKIN, WILLIS L., JR. (1967), Assistant Professor of English
A.B., M.A., University of Southern California
- PIVAR, DAVID J. (1965), Associate Professor of History
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