Graduate Bulletin

Announcement of the
Graduate Division
1993-1994

San Diego State University
5300 Campanile Drive
San Diego, California
92182-0763
(619) 594-5200
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### Annual Calendar

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### 1993-1994 Academic Calendar

**SUMMER SESSIONS 1993**

(Petition for concurrent master's degree credit must be filed during the week of any summer session that concurrent credit is to be earned.)

- May 21: Graduate admissions for fall semester 1993 closed to foreign students.
- June 5: Graduate Record Examination General Test. Applicants should contact the Test Office five weeks in advance of the test date.
- June 1-18: Term A (3 weeks).
- June 1-25: Term B (4 weeks).
- June 1-July 9: Term C (6 weeks).
- June 1-Aug. 20: Term Z (12 weeks).
- June 11: Graduate admissions for fall semester 1993 closed.
- June 14: Graduate School Foreign Language Test. Applicants should contact the Test Office two weeks in advance of the test date.
- June 14: Last day to apply for summer graduation with an advanced degree, Graduate Division.
- June 19: Graduate Management Admission Test. Applicants should contact the Test Office two weeks in advance of the test date.
- June 21-July 23: Term D (5 weeks).
- June 21-July 30: Term F (6 weeks).
- June 21-Aug. 13: Term F (8 weeks).
- July 4-5: Holiday-Independence Day.
- July 4-5: Graduate Record Examination General and Subject Tests. Applicants should contact the Test Office five weeks in advance of the test date.
- July 26: Final day for submitting thesis to the Thesis Review Service. (Theses will be accepted on an at-risk basis up to the last working day of the term, but unless final processing is completed by noon, August 20, the student will be required to resubmit for graduation in any subsequent term in which the student expects to graduate.)
- July 26: Last day for submitting thesis to the Thesis Review Service, to ensure graduation in August.
- August 2-20: Term H (3 weeks).

**FALL SEMESTER 1993**

(Petition for concurrent master's degree credit must be filed during the first three weeks of the semester that concurrent credit is to be earned.)

- May 21: Graduate admissions for fall semester 1993 closed to foreign students.
- June 5: Graduate Record Examination General and Subject Tests. Applicants should contact the Test Office five weeks in advance of the test date.
- June 11: Graduate admissions for fall semester 1993 closed.
- June 14: Graduate School Foreign Language Test. Applicants should contact the Test Office five weeks in advance of the test date.
- August 1: Applications for admission or readmission to San Diego State University for the spring semester 1994 accepted. Applications are accepted after August 31 only until enrollment quotes are met.
- August 23: First day of fall semester. Opening date of the academic year for faculty.
- August 23-27: Orientation and advising days.
- August 26-27: Testing and advising days.
- August 30: First day of classes.
- Aug. 30-Sept. 13: Late Registration.
- August 31: Graduate admissions for spring semester 1994 closed to foreign students.
- September 6: Holiday-Labor Day.
- September 13: Last day to drop classes.
Academic Calendar

September 17  Last day to file petition for concurrent master's degree credit for fall semester 1994.

September 20 Last day to apply for December graduation with an advanced degree. Graduate Division.

September 20 Last day to add classes or change grading basis.

September 20 Last day to withdraw officially from the University for fall semester 1993.

September 27 Census.

October 6 Graduate School Foreign Language Test. Applicants should contact the Test Office five weeks in advance of the test date.

October 9 Graduate Record Examination General and Subject Tests. Applicants should contact the Test Office five weeks in advance of the test date.

October 16 Graduate Management Admission Test. Applicants should contact the Test Office five weeks in advance of the test date.

November 1 Applications for admission or readmission to San Diego State University for the fall semester 1994 accepted. Applications are accepted after November 30 (postmarked) only until enrollment quotas are met.

November 15 Final day for submitting theses to the Graduate Division prior to being taken to the Thesis Review Service. (Theses will be accepted on an at-risk basis up to the last working day of the semester, but unless final processing is completed by noon, December 28, the student will be required to reapply for graduation in any subsequent term in which the student expects to graduate.)

November 15 Final day for submitting theses to Thesis Review Service to ensure graduation in December.

November 25-27 Holiday—Thanksgiving recess. Staff holiday (no classes).

December 1 Graduate admissions for spring semester 1994 closed.

December 10 Last day of classes before final examinations.

December 10 Last day for submission of incomplete and SP grade removals (excluding thesis) for mid-year graduation with an advanced degree.

December 10 Last day for reporting results on comprehensive examinations to the Graduate Division by department or college.

December 11 Graduate Record Examination General and Subject Tests. Applicants should contact the Test Office five weeks in advance of the test date.

December 11-18 Final examinations.

December 20 Winter recess begins.

December 20-24 Holiday—Winter recess. Staff holiday (no classes).

December 27 Final day for depositing approved thesis at Aztec Shops Copy Center. (Noon deadline.)

December 28 Grades due from instructors. (Noon deadline.)

December 28 Last day to apply for a leave of absence for fall semester 1993.

December 28 Last day of fall semester.

December 31 Holiday—New Year’s. Staff holiday (no classes).

January 3-5 Final day for filing spring semester 1994 closed to foreign students.

January 5 Last day for submitting thesis to Graduate Division.

January 15 Graduate Management Admission Test. Applicants should contact the Test Office five weeks in advance of the test date.

February 14 Last day to apply for refunds.

February 18 Last day to file petition for concurrent master's degree credit for spring semester 1994.

February 18 Last day to add classes or change grading basis.

February 18 Last day to withdraw officially from the University for spring semester 1994.

February 19 Last day to apply for May graduation with an advanced degree, Graduate Division.

February 25 Census.

March 19 Graduate Management Admission Test. Applicants should contact the Test Office five weeks in advance of the test date.

March 26 Last day of classes before spring recess.

March 28-April 2 Spring recess.

April 4 Classes resume.

April 6 Graduate School Foreign Language Test. Applicants should contact the Test Office two weeks in advance of the test date.

April 9 Graduate Record Examination General and Subject Tests. Applicants should contact the Test Office five weeks in advance of the test date.

April 16 Final day for submitting thesis to the Graduate Division prior to being taken to the Thesis Review Service.

April 16 Final day for submitting thesis to Thesis Review Service to ensure graduation in May. (Theses will be accepted on an at-risk basis up to the last working day of the semester, but unless final processing is completed by noon on May 27, the student will be required to reapply for graduation in any subsequent term in which the student expects to graduate.)

SPRING SEMESTER 1994

(Petition for concurrent master’s degree credit must be filed during the first three weeks of the semester that concurrent credit is to be earned.)

August 31 Graduate admissions for spring semester 1994 closed to foreign students.

January 15 Graduate Management Admission Test. Applicants should contact the Test Office five weeks in advance of the test date.

January 17 Holiday—Martin Luther King, Jr. Day. Staff holiday (no classes).

January 24 First day of spring semester. Opening date of semester for faculty.
Academic Calendar

May 3 Last day for submitting approved doctoral dissertations to the Graduate Division for May commencement.
May 19 Last day of classes before final examination period.
May 20 Study and consultation day.
May 21-28 Final examinations.
May 20 Last day for submission of incomplete and SP grade removals (excluding theses) for May graduation with an advanced degree.
May 20 Last day for reporting results on comprehensive examinations to the Graduate Division by department or college for May graduation with an advanced degree.
May 21 Graduate admissions for fall semester 1994 closed to all foreign students.
May 22-29 Commencement.
May 27 Final day for depositing approved thesis at Aztec Shops Copy Center. (Noon deadline.)
May 30 Holiday-Memorial Day, Staff holiday (no classes).
June 2 Grades due from instructors. (Noon deadline.)
June 2 Last day to apply for a leave of absence for spring semester 1994.
June 4 Graduate Record Examination General Test. Applicants should contact the Test Office five weeks in advance of the test date.
June 16 Graduate School Foreign Language Test. Applicants should contact the Test Office two weeks in advance of the test date.
June 18 Graduate Management Admission Test. Applicants should contact the Test Office five weeks in advance of the test date.

SUMMER SESSIONS 1994
(Petition for concurrent master's degree credit must be filed during the first week of any summer session that concurrent credit is to be earned.)

<table>
<thead>
<tr>
<th>Session</th>
<th>Dates</th>
<th>Units</th>
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<tbody>
<tr>
<td>Term A</td>
<td>June 20-July 22</td>
<td>Term D (5 weeks)</td>
<td>$529.00</td>
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<tr>
<td>Term E</td>
<td>June 20-July 29</td>
<td>Term F (6 weeks)</td>
<td>$654.00</td>
</tr>
<tr>
<td>Term F</td>
<td>June 20-Aug. 12</td>
<td>Term G (6 weeks)</td>
<td>$529.00</td>
</tr>
<tr>
<td>Term G</td>
<td>July 4</td>
<td>Holiday-Independence Day. Staff holiday (no classes).</td>
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<tr>
<td>Term H</td>
<td>July 11-Aug. 19</td>
<td>Term C (6 weeks)</td>
<td>$378.00</td>
</tr>
<tr>
<td>Term I</td>
<td>July 26</td>
<td>Final day for submitting thesis to the Thesis Review Service to ensure graduation in August.</td>
<td></td>
</tr>
<tr>
<td>Term J</td>
<td>August 1-19</td>
<td>Term B (4 weeks).</td>
<td></td>
</tr>
<tr>
<td>Term K</td>
<td>August 13</td>
<td>Term A (3 weeks).</td>
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</tr>
<tr>
<td>Term L</td>
<td>August 13</td>
<td>Final day for submission of incomplete and SP grade removals (excluding theses) for summer graduation with an advanced degree.</td>
<td></td>
</tr>
<tr>
<td>Term M</td>
<td>August 13</td>
<td>Last day for reporting results on comprehensive examinations to the Graduate Division by department or college.</td>
<td></td>
</tr>
<tr>
<td>Term N</td>
<td>August 19</td>
<td>Final day for depositing approved thesis at Aztec Shops Copy Center. (Noon deadline.)</td>
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</table>

(To be used as an employee work calendar.)

Schedule of Fees

1993-1994

Fees and tuition are subject to change without notice by the Trustees of The California State University.

For updated information regarding the fee structure for 1993-94 refer to the fall Class Schedule.

Fees MUST be paid prior to calling REGULINE. Checks accepted for exact amount of fees. Overpayments of $5.00 or less are refunded only if received prior to first day of class. Your check is returned by the bank for any reason, your registration may be canceled and you will be billed $30.00. (To cover cost of processing charge of $10.00 and late fee of $20.00). Payment of fees for REGULINE or late registration should be made by check or money order. The university reserves the right to refuse payment by personal check from those individuals who have previously had items returned un-paid by their bank. Refunds may be applied against other amounts due the university. Checks to be made payable to SDSU. Do not enclose cash. (Mastercard/VISA is NO LONGER ACCEPTED FOR PAYMENT OF REGISTRATION FEES. NONRESIDENT AND OUT-OF-STATE Tuition, OR DUPLICATE DEGREE Tuition.)

ADMINISTRATIVE / FINANCIAL HOLDS

All administrative and financial holds must be cleared prior to enrollment for registration or other university services. See "Debts Owed to the Institution" below for acceptance of payment by the university. This does not constitute completion of registration or guarantee of services in any kind of administrative or financial hold exists. Pay your fees promptly. Payments to clear financial holds must be made by cash, money order, or certified check. Personal checks or charge cards will NOT be accepted.

REGISTRATION FEES - ALL STUDENTS:
(On basis of units earned.)

<table>
<thead>
<tr>
<th>Units Attempted</th>
<th>Registration Fee</th>
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<tbody>
<tr>
<td>0 units - 6 units</td>
<td>$529.00</td>
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<tr>
<td>6.1 or more units</td>
<td>$654.00</td>
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The above fee also includes a Student Activity Fee of $15.00, a Student Union Fee of $63.00, a Facilities Fee of $3.00, an Instructionally Related Activities Fee of $15.00, a Health Services Fee of $55.00, and a State University Fee of $378.00 or $654.00, depending on unit load.

Imperial Valley Campus students pay a Student Union Fee of $16.00. See Imperial Valley Campus bulletin for details.

Tuition and mandatory fees are determined by the number of units taken, including those in excess of fifteen.

No fees of any kind shall be required of or collected from those individuals who qualify for such exemption under the provisions of the Alien Patrrch Scholarship Act.

Legal residents of California are not charged tuition.

REGISTRATION INSTALLMENT PAYMENT PLAN

An installment payment plan is available for students who wish to pay their registration fees in two payments. There are a

Schedule of Fees

$33.00 service charge for this service, paid at the time the initial registration payment is made. Additional information and instructions are available in the Class Schedule or may be obtained from the University Cashiers Office.

TUITION FOR NONRESIDENT STUDENT

(Foreign and Out-of-State)
Tuition will be charged for all units attempted.

Per unit: $246.00

(Tuition is payable in addition to registration fees listed above. For fee-paying purposes, zero unit and half-unit courses are assessed as one unit. See Liability for Payment section for additional important information.)

Health insurance (mandatory for foreign students)
Per year, approximately: $350.00

DUPLICATE DEGREE TUITION

Recent legislation requires that the CSU charge duplicate degree tuition to students pursuing a second bachelor's, second master's, or second doctoral degree. As this catalog goes to press, personal credential seeking students are exempt from these fees. Second degree seeking students in any one of the following categories can also be exempt from the duplicate degree tuition by signing an affidavit of eligibility for the exemption available from the University Cashiers Office.

1. Dislocated workers certified by a state agency in accordance with Title 3 of the Federal Job Training Partnership Act.

2. Displaced homemakers, as defined in the Higher Education Act of 1964, as amended (20 U.S.C. 1001 et seq.).

3. Recipients of benefits under the Aid to Families with Dependent Children Act.

The Supplemental Security Income or State Supplementary Program, or a general assistance program.

4. Nonresident students except those for whom nonresident tuition has been waived.

Duplication degree tuition, per unit: $150.00

TUTION INSTALLMENT PAYMENT PLAN

A tuition installment payment plan is available for students required to pay non-resident (foreign and out-of-state) or duplicate degree tuition. Tuition normally must be paid prior to the first day of class. A service charge equal to 15% of each installment payment is required. Additional information may be obtained from the University Cashiers Office.

PARKING FEES

Nonresident parking space, per semester: $72.00

Parking space, per semester: $32.00

Less than four-wheeled, self-propelled vehicle (motorcycle, moped): $18.00

MISCELLANEOUS FEES

(Fees payable when service is rendered.)

Application for admission or readmission (nonrefundable), $25.00

Dependent Children Program, The Supplementary Security Income or State Supplementary Program: $25.00

Act of 1964, as amended (20 U.S.C. 1001 et seq.).

Legal residents of California are not charged tuition.

Registration Installment Payment Plan

An installment payment plan is available for students who wish to pay their registration fees in two payments. There are a

(To be used as an employee work calendar.)

(Tuition is payable in addition to registration fees listed above. For fee-paying purposes, zero unit and half-unit courses are assessed as one unit. See Liability for Payment section for additional important information.)

Health insurance (mandatory for foreign students)
Per year, approximately: $350.00

DUPLICATE DEGREE TUITION

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Schedule of Fees

Registration installation payment plan service charge... 33.00
Tuition (Foreign, Out-of-State, Duplicate)
Deposit (time for exemption fee or registration fees or tuition or foreign, out-of-state or duplicate degree). MasterCard or Visa charge cards will continue to be accepted for other payments, such as housing, parking, health services, continuing education, and miscellaneous over-the-counter payments. Students are reminded that banks will provide cash advance against credit card if needed to cover registration payments.

CREDIT CARDS
The University Cashiers Office no longer accepts MasterCard or Visa for the registration payment plan. See registration fees or tuition (foreign, out-of-state or duplicate degree). MasterCard or Visa charge cards will continue to be accepted for other payments, such as housing, parking, health services, continuing education, and miscellaneous over-the-counter payments. Students are reminded that banks will provide cash advance against credit card if needed to cover registration payments.

LIABILITY FOR PAYMENT
All registration fees are due at the time of the term when instruction begins. A student who paid fees but never obtained a refund application for the course is liable for payment of all registration fees related to units held, except as provided for by the refund policy. All continuing students participating in RegLine must make registration payments by the deadline as instructed. Non RegLine registration payments must be made at the time of registration.

Refund applications are available at the Cashiers Office. The process is not complete until all fees due are paid and you are officially enrolled in classes through Admissions and Records. For additional information, contact the Cashiers Office at the time you file your refund application.

Refund of Nonresident (Foreign and Out-of-State) and Duplicate Degree Tuition
Refunds are not automatic whether or not you receive classes through the registration process. You must apply for the refund by the refund deadline.

Refunds may be applied against other amounts due the University.

Complete Withdrawal.
For eligible to be refunded for registration fees, a student withdrawing completely from the University must cancel their registration with the Office of Admissions and Records at the time the withdrawal is requested. A Complete Withdrawal is the same as the commencement of instruction (Refund Deadline). All late fees will be refunded less any amount due to the University. You UNIVERSITY CASHIERS FEE RECEIPT CARD MUST BE RETURNED AT THE TIME YOU FILE YOUR REFUND APPLICATION. (See Class Schedule for deadline dates. Note that the refund deadline is prior to the end of the twelfth week of classes.

Fees Based on Unit Load. A student dropping from 6 units or more to 6 units or less, or a student who paid maximum fees but never obtained 6.0 units, or a student who paid fees but never obtained any units. Must file a refund application with the Cashiers Office, Student Services Building, Room 2620, not later than 14 days following the commencement of instruction (Refund Deadline). All late fees will be refunded less any amount due to the University. FOR ADDITIONAL INFORMATION, CONTACT THE CASHIERS OFFICE OR TELEPHONE 594-5253.

DISQUALIFIED AND LEAVE OF ABSENCE CANDIDATES.
If your registration is cancelled because of disqualification or by obtaining an approved leave of absence, registration fees will be refunded upon (1) notification from Admissions and Records that appropriate action has been taken and (2) return of your fee receipt card and application for refund to the Cashiers Office.

Refund of Nonresident (Foreign and Out-of-State) and Duplicate Degree Tuition
REFUNDS ARE NOT AUTOMATIC. WHETHER OR NOT YOU RECEIVE CLASSES THROUGH THE REGISTRATION PROCESS, YOU MUST APPLY FOR THE REFUND.

Tuition paid for a course scheduled to continue for an entire semester may not be refunded. However, in accordance with the schedule below, if an application for a refund is received by the Cashiers Office within the following time limits, the amount of refund is rounded down to the nearest dollar. No refund is allowed for equipment or supplies. Specific items may be returned for a refund of unused portion. For additional information, contact the Cashiers Office at the time you file your refund application.

Amount of Refund

<table>
<thead>
<tr>
<th>Period</th>
<th>Amount of Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-30 days</td>
<td>100 percent of fee</td>
</tr>
<tr>
<td>31-45 days</td>
<td>75 percent of fee</td>
</tr>
<tr>
<td>46-60 days</td>
<td>50 percent of fee</td>
</tr>
<tr>
<td>Over 60 days</td>
<td>None</td>
</tr>
</tbody>
</table>

Refund of Parking Fees
This schedule refers to calendar days, commencing on the date of the term when instruction begins.

Nonreserved space per semester.

<table>
<thead>
<tr>
<th>Period</th>
<th>Amount of Refund</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-20 days</td>
<td>75 percent of fee</td>
</tr>
<tr>
<td>21-30 days</td>
<td>50 percent of fee</td>
</tr>
<tr>
<td>31-60 days</td>
<td>25 percent of fee</td>
</tr>
<tr>
<td>Over 60 days</td>
<td>None</td>
</tr>
</tbody>
</table>

The above schedule applies to the following categories of students:

- Full-time students
- Part-time students
- On-campus housing
- Off-campus housing
- On-campus programs
- Off-campus programs

LATE REGISTRATION FEE
The Late Registration Fee ($25) pertains to those students who register during Late Registration. Newly admitted students are eligible for a reduced Late Registration Fee provided by Admissions and Records for details. The registration process is not complete until all fees due are paid and you are officially enrolled in classes through Admissions and Records.

APPEALS PROCESS - CASHIERS OFFICE
An appeals process exists for students who believe that inadequate exceptions from published policy. Students should file a "Petition for Special Consideration." The petition must be filed with the Cashiers Office at the time of the appeal. The petition will be reviewed and a decision will be made by the end of the twelfth week of classes.

SUMMER SESSION FEES
Refer to Summer Sessions Bulletin for schedule of fees.

Parking fees (nonreservable spaces)... (per week) $4.80

EXTENSION COURSE FEES
Refer to Extended Studies Bulletin for schedule of fees.

EXEMPTIONS
Students under Public Law 89.87, 815, California state veterans' dependents, or state rehabilitation programs will have tuition and fees paid under provisions of these respective programs.

EXEMPTION FROM PAYING FEE INCREASE
San Diego State University offers a fee waiver program for California residents 60 years of age and older. Both undergraduate and postbaccalaureate students may participate in the program. Participants register for classes on a space-available basis after regularly matriculated students have been accommodated. Undergraduate and postbaccalaureate students must apply for admission to the program. The program waives the $55 admission application fee and regular registration fees (except for a nominal $3 fee). However, recent legislation requires that duplicate degree tuition will be exempt from this fee. Participants must apply for admission during the regular application period for spring term and be admitted under regular admission requirements. Participants register for classes on a space-available basis after regularly matriculated students have completed registration. For additional information, contact the Office of Admissions and Records.

ALAN PATTEE SCHOLARSHIPS
One-time scholarship offers to active military service members enrolled in classes at San Diego State University campus, according to the Alan Pattee Scholarship Act. Ed. Code 16841.41. Students qualifying for these benefits are known as Alan Pattee Scholars. For further information contact the Admissions and Records Office, which determines eligibility.
Schedule of Fees

Procedure for the Establishment or Change of a Student Activity Fee

The law governing The California State University provides that a student activity fee may be established by student referendum with the approval of two-thirds of those voting. The Student Activity Fee was established at San Diego State University by student referendum in 1955. The fee, which can be increased or decreased by a similar referendum, is approved or vetoed by the Chancellor. An increase or decrease in the fee requires two-thirds approval of students voting on a referendum called for by a petition signed by 10 percent of the regularly enrolled students (Education Code, Section 89300), subject to approval by the Chancellor. An increase or decrease in the student activity fee may be approved by the Chancellor only following a referendum on the fee increase approved by a majority of students voting. Student activity fees support a variety of cultural and recreational programs, child care centers, and special student support programs.

Debts Owed to the Institution

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

Institutional and Financial Assistance Information

The following information concerning student financial assistance may be obtained from the Financial Aid Office, Student Services Building, Room 3605, 594-6323.

1. Student financial assistance programs available to students who enroll at San Diego State University;
2. The methods by which such assistance is distributed among recipients who enroll at San Diego State University;
3. The means, including forms, by which application for student financial assistance is made and requirements for accurately preparing such an application;
4. The rights and responsibilities of students receiving financial assistance; and
5. The standards the students must maintain to be considered to be making satisfactory academic progress for the purpose of establishing and maintaining eligibility for financial assistance.

Information concerning San Diego State University policies regarding any refund due to the federal Title IV student assistance programs as required by the regulations is available from the Financial Aid Office, Student Services Building, Room 3605, 594-6323.

The following information concerning the cost of attending San Diego State University is available from the Financial Aid Office, Student Services Building, Room 3605, 594-6323.

<table>
<thead>
<tr>
<th>Cost of Attendance for the 1993-94 Academic Year</th>
<th>Living off Campus</th>
<th>Living on Campus</th>
<th>Commuting from Home</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration fee for materials, service, student activity</td>
<td>$1500</td>
<td>$1500</td>
<td>$1500</td>
</tr>
<tr>
<td>Books and supplies</td>
<td>$76</td>
<td>$76</td>
<td>$76</td>
</tr>
<tr>
<td>Room and board</td>
<td>$5106</td>
<td>$5106</td>
<td>$5106</td>
</tr>
<tr>
<td>Transportation</td>
<td>$684</td>
<td>$684</td>
<td>$684</td>
</tr>
<tr>
<td>Personal</td>
<td>$1728</td>
<td>$1728</td>
<td>$1728</td>
</tr>
<tr>
<td>Total</td>
<td>$10,604</td>
<td>$9486</td>
<td>$6000</td>
</tr>
</tbody>
</table>

In addition to the registration fee, non-resident (foreign) and out-of-state and duplicate degree students pay a tuition fee (see Schedule of Fees section). All fees and costs are subject to change without notice.
San Diego State University was founded on March 13, 1897 for the training of elementary school teachers. The seven faculty and ninety-one students of the then Normal School's first class met on November 1, 1896 in temporary quarters downtown while the first unit of the main building of the campus was under construction at El Cajon Boulevard where El Cajon Boulevard begins. The curriculum was limited at first to English, history, and mathematics, but it broadened rapidly under the leadership of Samuel T. Black, who held the position of State Superintendent of Public Instruction to become the first President (1896-1910). Under the vigorous administration of the second president, Edward L. Hardy (1910-1935), the School was reorganized as a four-year State Teachers' College in 1911, and control was transferred from a local board of trustees to the State Board of Education. In the same year, the two-year San Diego Junior College, the antecedent institution to the present Community Colleges, was incorporated as a branch of San Diego State, where it remained until 1946. It became clear early that the only collegiate institution in San Diego could not grow out of a 17-acre site, and a campaign to begin in the 1920s to build a new campus. The Legislature agreed, provided the city furnish a new site and buy the old one. In 1926 the present campus, on what was then the far eastern border of the city, was approved by the electorate.

In February 1931, the college moved to the seven mission-style buildings of the present campus, surrounding what is still called the Main Quad. In 1935, the Legislature removed the word "teachers" from the name of the institution and authorized the expansion of degree programs into areas other than teacher preparation. In the same year, Walter R. Hepner (1935-1952) was appointed president, and the institution entered a period of slow growth and then, with the coming of war, of accelerated expansion. At the end of World War II, enrollment had fallen to 1,918.

In the next quarter century, under Dr. Hepner and subsequently under Malcolm A. Love (1952-1971), enrollments increased phenomenally to over 25,000 students. In 1960, the College became a part of the newly created California State College system, under a statewide Board of Trustees and a Chancellor. In 1971, recognizing that the institution had in fact achieved the status of a university, the Legislature renamed the system The California State University and Colleges, and shortly afterward reconstituted this institution San Diego State University.

Today, San Diego State University is a major urban comprehensive institution. It is the unquestioned leader in The California State University system. With over 28,000 students it is one of the largest institutions in the western United States.

SDSU is a teaching university with strong research programs. Research and scholarship strengthen the instruction. SDSU students receive in the classroom and laboratory. SDSU's faculty conducts more than $45 million in funded research each year. These projects provide unusual opportunities for students who can work alongside faculty using the latest equipment. The excitement of discovery spreads to the classroom, creating a unique learning experience.

To better accommodate its students, the campus continues to add physical facilities. It currently encompasses over 4.5 million square feet in 44 academic buildings. Included are Arts Center, the first student union building in the CSU system; the Dramatic Arts building with one of the finest theaters in the nation; the Music building, with its Recital Hall; and the 320,000 square foot Malcolm A. Love Library. The Health Services facility, Art and Humanities classroom buildings, and additional residence halls and parking facilities make up the core of buildings added in the 1970s. Several renovation projects have improved facilities for nursing, physical education, physics, health, and sciences in the 1980s. Currently in the construction and planning stages are numerous additions to buildings, a student financed Activities Center, additional student housing, parking and major additions to the Engineering building and the Library.

The University campus covers 747 acres, the master's in 54, and the doctorate in 9.

There are five multidisciplinary honor societies on campus that help to reinforce the high academic standards of the campus. They include Golden Key, Mortar Board, Phi Beta Kappa, Phi Eta Sigma, and Phi Kappa Phi. In addition, there are a number of disciplinary honor societies that recognize superior scholarship and leadership in specific academic fields.

Mission and Goals of San Diego State University

The mission of San Diego State University is to provide well-balanced, high quality education for undergraduate and graduate students and to contribute to knowledge and the solution of problems through excellence and distinction in teaching, research, and service.

San Diego State University provides an environment that encourages the intellectual development of students. Its undergraduate and graduate programs in the liberal arts and sciences are designed to help students learn about themselves, their cultural and social heritage, and their physical environment. Additionally, students are challenged to understand how advancements in these areas may influence their present lives and their futures.

Professional programs, while including many of these broad goals, are designed to meet the needs of the students who seek specific employment in many diverse fields. The University is concerned with developing leaders in cultural, economic, educational, scientific, social, and technical fields.

Closely related to the teaching mission of the University is student faculty research. Involvement in research ensures that both students and faculty maintain currency in their disciplines and acquire a broad understanding of knowledge. Graduate study at San Diego State University at the master's and doctoral levels emphasizes creative scholarship, original research, and the development and utilization of new techniques.

Located in a large and ethnically diverse metropolitan center bordering Mexico and on the Pacific Rim, the University uses the social, cultural, scientific, and technical resources of this region to enrich its teaching and research programs. Through its teaching, research, and service, the University is primarily responsive to the people of California as well as to the needs of the regional, national, and international communities it serves. The University also seeks to utilize the social and human resources of higher education both in the United States and abroad.

Accreditation

San Diego State University is accredited by the Accrediting Commission for Community and Junior Colleges and of The Western Association of Schools and Colleges. It is also approved to train veterans under the G.I. Bill.

San Diego State University's programmatic accreditation is through membership in the following associations:

- Accrediting Council on Health Services Administration
- American Association of Colleges of Nursing
- American Association of Colleges for Teacher Education
- American Chemical Society
- American Council on Education for Journalism and Mass Communication
- American Psychological Association
- American Speech-Language Hearing Association
- Educational Standards Board and Professional Services Board
- California Commission on Teacher Credentialing
- Council on Education for Public Health
- Council on Education of the Deaf
- Council on Rehabilitation Education
- Council on Social Work Education
- Foundation for Interior Design Education Research
- National Association of School Psychologists
- National Association of Schools of Music
- National Association of Schools of Public Affairs and Administration
- National Association of Schools of Theatre
- National Council for Accreditation of Teacher Education
- National League for Nursing
- National Recreation and Parks Association
- The University is a member of the Council of Graduate Schools
- U.S.A. and the Western Association of Graduate Schools
- The College of Business Administration and the School of Accountancy are accredited by the American Assembly of Colleague Schools of Business at both the undergraduate and graduate levels. Several College of Business Administration programs are registered with the International Board of Certified Financial Planners.
- The College of Engineering undergraduate programs in aerospace, civil, electrical and mechanical engineering are accredited by the Accreditation Board for Engineering and Technology, Inc.
- The School of Nursing is accredited by the California Board of Registered Nursing, National League for Nursing, and California Community College Board of Trustees.
- The Didactic Program in Dietetics in the Dietetics of Family and Consumer Sciences is approved by the American Dietetics Association.

In addition, preparation for many other professions is provided. It is the policy of the student refer to the various courses of study listed in the catalog.

San Diego State University maintains and promotes a policy of non-discrimination and non-harassment on the basis of race, religion, creed, age, sex, marital status, national origin, handicap, sexual orientation, and national origin.

The Affirmative Action Program is a University effort affecting every level of activity. The policy prohibits as a statement of this University's moral commitment to the right of all persons to equal opportunity in a nondiscriminating, harassment-free atmosphere.

San Diego State University places high priority on that objective and expects all members of the University to fully support this policy.

Refer to the Regulations of the Graduate Division section of the California State University policy pertaining to nondiscrimination.
Administration

Principal Officers of Administration

President of the University ............................................ Thomas B. Day
Vice President for Academic Affairs ......................... Ronald H. Hopkins
Vice President for Business and Financial Affairs .......... William L. Erickson
Vice President for Student Affairs ................................. Daniel B. Nowak
Vice President for University Relations and Development ....... Harry R. Albers

THE GRADUATE COUNCIL
The Graduate Council of San Diego State University consists of the Dean of the Graduate Division and Research (chairman), the Vice President for Academic Affairs, the Associate and Assistant Deans of the Graduate Division, members of the faculty from the various schools and colleges, and two classified graduate students. For the academic year, the membership of the Council was as follows:

James W. Cobble ........................................ Dean of the Graduate Division and Research
Ronald H. Hopkins .................................. (ex officio) Vice President for Academic Affairs
Don L. Bosseau ............................................. (ex officio) University Librarian
Lawrence B. Feltner .................................. Associate Dean of the Graduate Division
Penny L. Wright ........................................ Associate Dean of the Graduate Division
Irving Alan Sparks ........................................ Assistant Dean of the Graduate Division
Lee Brown .................................................. Department of Journalism
Deborah G. Chaffin ........................................ Department of Philosophy
John F. Cocky ........................................... Department of Aerospace Engineering and Engineering Mechanics
Larry Fierman ............................................. Department of Psychology
Joan M. Fogg ................................................ Department of Geological Sciences
Gary H. Gentry .......................................... School of Accountancy
Gary M. Grudzinski ..................................... School of Teacher Education
Cheryl L. Mason ........................................ Department of Anthropology
Edward Omberg .......................................... Department of Fine Arts
Patricia Patterson ........................................ Department of Administration, Rehabilitation and Post-secondary Education
William E. Plaice .......................................... Department of Administration, Rehabilitation and Post-secondary Education

Ilia K. Rigby .................................................. Department of Art
Andrew Y. J. Saetow ................................... Department of Electrical and Computer Engineering
Donna J. Thal ............................................. Department of Communication Disorders
Tene Mullberg ........................................... Student Representative

ACADEMIC DEANS
College of Arts and Letters ........................................ Paul J. Strand
College of Business Administration .............................. Allen R. Belden
College of Education ............................................ Ann L. Moore
College of Engineering ............................................ George T. COFF
College of Health and Human Services ...................... Peter A. Dial
College of Professional Studies and Fine Arts .................. Joyce M. Gattas
College of Sciences ............................................. Donald R. Short
College of Extended Studies ..................................... William P. Locke
Division of Undergraduate Studies .............................. Carole A. Scott
Imperial Valley Campus ........................................ David Ballmer


**Graduate Division**

Students who need specific information or assistance are invited to visit the Graduate Division, which is located in Room 220 of the Administration Building, or telephone (619) 594-5213.

The Graduate Division is composed of all departments and academic units of the University that offer graduate study and programs leading to advanced degrees. The Graduate Council is delegated University-wide jurisdiction over all matters relating to graduate studies, subject only to the right of review by the Senate. The Council's responsibility is broad and includes, but is not limited to, the development of University-wide policy on graduate programs, graduate student affairs, graduate research and scholarship, and the participation of faculty in graduate programs.

The Graduate Dean is the chief administrative officer of the Graduate Division and is assisted by two associate deans and an assistant dean. The Graduate Dean takes general responsibility for the development, improvement, and administration of all postbaccalaureate and graduate study at the University, as well as for the research activities of faculty and graduate students.

Graduate study is highly exacting and requires intense study and scholarship and not merely the completion of a prescribed set of courses. Further, thesis and dissertation research requires the development of intellectual skills and the demonstration of creativity that can only be achieved through dedicated and persistent scholarship. The University has the necessary faculty and facilities to offer such opportunities in over 50 different areas of knowledge.

**Authorized Graduate Degrees**

**DOCTOR OF PHILOSOPHY**

- Biology
- Chemistry
- Clinical Psychology
- Ecology
- Education

**MASTER OF ARTS**

The Master of Arts degree is offered in the following fields:

- Anthropology
- Art
- Asian Studies
- Biology
- Chemistry
- Communication Disorders
- Drama
- Economics
- Education
- English
- French
- Geography
- History
- Interdisciplinary Studies
- Latin American Studies

**MASTER OF SCIENCE**

- Acoustics
- Accountancy
- Aerospace Engineering
- Applied Mathematics
- Astronomy
- Biology
- Business Administration
- Chemistry
- Child Development
- Civil Engineering
- Computer Science
- Counseling
- Electrical Engineering
- Geological Sciences
- Geology
- History
- International Relations
- Interdisciplinary Studies
- Latin American Studies
- Linguistics
- Mathematics
- Mechanical Engineering
- Microbiology
- Nursing
- Nutritional Sciences
- Physics
- Political Science
- Psychology
- Public Health
- Radiological Health Physics
- Rehabilitation Counseling
- Statistics
- total quality management
- real estate
- taxation
- quality management

**Graduate Concentrations**

A concentration is defined as an aggregate of courses within a degree major designed to give a student specialized knowledge, competence, or skill. Completion of a concentration is noted on the student’s transcript.

**Concentration:**

- Art (MA)
- Biology (MA or MS)
- Concentrations:
- computer science
- education
- psychology
- public health
- nursing
- public administration
- Master of Public Health
- Master of Social Work

**Communicative Disorders (MA)**

**Concentrations:**

- speech-language pathology
- audiology
- education of the hearing impaired
- communicative sciences

**Drama (MFA)**

**Concentrations:**

- acting
- design and technical theatre
- musical theatre

**Education (MA)**

**Concentrations:**

- counseling
- educational leadership
- educational research
- educational technology
- elementary curriculum and instruction
- policy studies in language and cross-cultural education
- reading education
- secondary curriculum and instruction
- special education

**Geography (MA)**

**Concentrations:**

- resources and environmental quality
- transportation

**Psychology (MS)**

**Concentrations:**

- clinical psychology
- industrial and organizational psychology
- public administration

**Public Administration (MFA)**

**Concentrations:**

- city planning
- criminal justice administration
- public telecommunications administration

**Public Health**

**Concentrations (MHA):**

- biometry
- environmental health
- epidemiology
- health promotion
- health services administration
- maternal and child health
- occupational health

**Concentrations (MS):**

- environmental health sciences
- industrial hygiene
- toxicology

**Admission**

- for the 1993-94 academic year.

**Statistics (MS)**

**Concentration:**

- biostatistics

**Credentials Offered**

**Teaching Credentials**

- Adapted physical education
- Multiple subject
- Multiple subject bilingual cross-cultural
- language and academic development (BCLAD)
- Multiple subject with a cross-cultural
- language and academic development (CLAD)

**Specialist Certifications**

- Bilingual/cross-cultural
- Reading/language arts
- Resource specialist certificate of competence
- Special education
- Communication handicapped
- Gifted
- Learning handicapped
- Physically handicapped
- Visually handicapped

**Service Credentials**

- Administrative
- Clinical rehabilitative
- Health (school nurse)
- Pupil personnel (school counseling)
- School psychology

**Graduate Certificate Programs**

**(nondegree)**

- Certificate in applied linguistics and English as a second language (ESL)
- Certificate in bilingual (Spanish) special education
- Certificate in early intervention specialist
- Certificate in instructional microcomputer software design
- Certificate in instructional technology
- Certificate in language development specialist
- Certificate in preventive medicine residency
- Certificate in professional services bilingual/multicultural
- Certificate in rehabilitation administration
- Certificate in supported employment and transition specialist
- Certificate in teaching emotionally disturbed

**Admission:**

- for the 1993-94 academic year.

**Program approval pending. Contact Center for Research in Mathematics and Science Education for program information.**
Graduate Teaching Associates

Graduate teaching associates may be obtained by qualified graduate students pursuing a master’s degree in the areas of anthropology, art, astronomy, biological sciences, business administration, chemistry, communicative disorders, drama, economics, education, English, family studies and consumer sciences, French, geography, geological sciences, history, linguistics, mathematical sciences, music, music, physical education, physics, psychology, sociology, Spanish, speech communication, and telecommunications and film. In addition, all doctoral programs offer such appointments.

Qualifications for appointment include admission to San Diego State University with classified or conditionally classified graduate standing for the purpose of obtaining an advanced degree. Appointment is for a period of either one semester or the academic year. Reappointments following an appointment of one semester or one academic year is dependent upon satisfactory performance in graduate studies, as prescribed by the Graduate Division, departmental need for the continued service in the department, and upon satisfactory teaching performance.

The combined teaching assignment and coursework permitted during one semester is 15 units unless an excess of this amount is authorized by the Graduate Dean.

Information concerning an appointment as a graduate teaching associate may be obtained from the head of the department, school, or college in which the applicant wishes to obtain the advanced degree. A Handbook for Graduate Assistants and Graduate Teaching Associates is published by the Graduate Division.

Graduate Assistantships

Graduate assistantships not involving teaching duties and permitting up to 20 hours of service per week for full-time appointment are available in most of the departments and schools. Applicants for graduate assistantships must be admitted to San Diego State University with classified or conditionally classified graduate standing, and enroll in and complete each semester at least six units of coursework listed on the official program of study.

Appointment to a graduate assistantship is for a period of either one semester or the academic year. Reappointment or extension of an appointment is dependent upon satisfactory performance in graduate studies, as prescribed by the Graduate Division, satisfactory completion of assigned duties, and upon departmental need for the continued service in the department.

Information concerning an appointment as a graduate assistantship may be obtained from the head of the department, school, or college in which the applicant wishes to obtain the advanced degree.

Graduate Scholarships and Awards

A scholarship is a monetary award given to outstanding students in recognition of their academic excellence, leadership, achievements, and promise. They are provided by private donors, corporations, professional associations, and alumni.

Scholarships may also be obtained by private students upon their own initiative. Occasionally, scholarships are designated for the general graduate university scholarship program and are designated for specific majors. Eligible students will be notified through a faculty announcement or, if time permits, by the Scholarship Office through the mail.

Some scholarships are based on professional or academic excellence, and others on financial need. The facilities of San Diego State University for graduate study and research are available in all areas, which includes the Graduate Division.

Graduate Study in the Summer Sessions

San Diego State University summer sessions, a graduate student may earn credit in residence that may be used to satisfy the requirements for an advanced degree or for credentials. Students planning to offer work taken in a summer session only to satisfy the requirements for an advanced degree, must apply for admission to the University with classified graduate standing at the Office of Admissions and Records. No more than 12 units of coursework earned in each summer may be included on a program of study for an advanced degree. Students pursuing an advanced degree in summer only must attend for a minimum of three summers to complete a degree.

The acceptance of courses taken in the summer sessions by other colleges or by a teacher’s local school board for salary schedule purposes is entirely optional with the college or school board concerned.

The regular Summer Sessions Bulletin, which includes the registration form and all necessary information about the summer sessions, is available for distribution after March 15.

Graduate Study for Foreign Students

The facilities of San Diego State University for graduate study are available to qualified graduates of foreign universities on the same basis and under the same regulations as apply to graduates of colleges and universities in the United States.

Admission procedures for foreign graduate students are stated in the section on Admission of Graduate Students in this bulletin.

Veterans and Graduate Study

San Diego State University is approved to train veterans under the G.I. Bill. Veterans who are interested in graduate work should visit the campus Veterans Affairs Office located in Student Services Building, Room 1510 for information and counseling regarding veterans’ benefits prior to the date of registration.

California State Graduate Fellowship Program

California residents may apply for graduate fellowships administered by the California Student Aid Commission, 1410 Fifth Street, Sacramento, California, 95814. Applications are available in the Financial Aid Office during the annual application period (December to early February). The deadline to submit applications for the 1993-94 academic year is March 3, 1993.

Financial Aid

Student financial aid programs are intended to provide assistance to students who do not have the necessary financial assistance resources to meet educational costs. For scholarships recognizing need and not based on financial need, see the Scholarships section. Only United States citizens and permanent residents are eligible to apply for financial aid.

San Diego State University makes every effort to advise students of all available financial aid programs. Financial aid is available in the form of loans, grants, and part-time employment for eligible students. Since funds are limited and there are program deadlines, not all eligible applicants are awarded aid.

Information about all state, federal, and institutional aid programs is available from the Financial Aid Office, (619) 594-6323. A financial aid brochure, which describes the available programs and the eligibility requirements, is available from the Financial Aid Office.

Applying for Aid

To be considered for first priority funding, aid applicants must file an Application for Federal Student Aid by March 1, and submit all required supporting documents to the Financial Aid Office by April 15 of the calendar year prior to the academic year for which aid is being requested. An application and supporting documents received after these dates will be processed and funds will be awarded to high-need applicants if funds are available.

Applications for Federal Student Aid may be obtained from high schools and any college financial aid office in California.

An additional application form is required for the Guaranteed Student Loan Program, on which a student loan made available from a participating lender.

Graduate Equity Fellowship Program

California residents who are members of underrepresented groups at the graduate level (ethnic minority, female, disabled) may apply for this grant administered through the Graduate Division.

Applicants must file an Application for Graduate Student Aid by the stated deadline (see below, "Applying for Aid"). They must also file an application with the Graduate Division by early April for the annual award that begins with the fall semester.

Applying for Aid

To be considered for first priority funding, aid applicants must file an Application for Student Aid by March 1, and submit all required supporting documents to the Financial Aid Office by April 15 of the calendar year prior to the academic year for which aid is being requested. An application and supporting documents received after these dates will be processed and funds will be awarded to high-need applicants if funds are available.

Applications for Federal Student Aid may be obtained from high schools and any college financial aid office in California.

An additional application form is required for the Guaranteed Student Loan Program, on which a student loan made available from a participating lender.
Admission to Postbaccalaureate and Graduate Study

Admission to San Diego State University for postbaccalaureate study is open to those applicants judged by the University to be fully qualified. The requirements listed below are the minimum required for admission to the University. For many programs, the departmental and college admission requirements are additional requirements. Prospective applicants should refer to the Graduate Division Bulletin and departmental listings. Students are also advised to contact the department offices as soon as graduate work is contemplated in the final baccalaureate year for advice as to how to proceed. Some departments stop reviewing applications earlier than others because limited space is available.

Importance of Filing Complete, Accurate, and Authentic Application for Admission Documents

San Diego State University advises prospective students that they must supply correct and authentic information on the application for admission, residence questionnaire, and financial aid forms. Further, applicants must submit authentic and official transcripts of all previous academic work attempted. Failure to file complete, accurate, and authentic application documents may result in denial of admission, cancellation of academic credit, suspension of probationary admission, absence of a recommendation to the college of the institution awarding the degree from the institution awarding the degree, or cancellation of academic credit of admission. Cancellation of academic credit may result in the student's inability to obtain acceptable proof of immunizations, Student Health Services will provide immunizations at no cost.

Application Procedures

All applicants for any type of postbaccalaureate status (master's degree applicants, those seeking credentials or advanced certificates, and those interested in taking courses for personal or professional growth) must file a complete application within the appropriate filing period. A complete application for postbaccalaureate status includes all of the materials required for undergraduate applicants (Part A) plus the supplementary graduate admissions application (Part B). Postbaccalaureate applicants who graduated from San Diego State University the preceding term are also required to complete and submit an application and the $55 nonrefundable application fee. Since applicants for postbaccalaureate programs are not limited to the choice of a single campus on each application, applicants must file separate applications to alternative campuses or later changes of campus choice will be minimal. In the event that a postbaccalaureate applicant wishes to be considered for admission to more than one campus, it will be necessary to submit separate applications (including fees) to each. Applications may be submitted from the Office of Admissions and Records or the Graduate Division of any California State University campus. Students enrolled in dietetics, medical technology, nursing, or health care setting may be further restricted to the Graduate Division of the California State University campus.

Measles and Rubella Immunizations

Health Screening Provisions

In addition to demonstrating immunity to measles and rubella at Student Health Services, some students may be further required to present documentation to other campus officials. Students subject to this additional screening include:

- Students enrolled in health-related fields, such as medical technology, nursing, and any practicum, student teaching, or fieldwork involving preschool-age children and/or school-age children or taking place in a hospital or health care setting.
- Immunization documentation should be mailed or brought to the Health Services, Immunization Program, 5300 Campus Drive, San Diego, CA 92162. For those students unable to obtain acceptable proof of immunizations, Student Health Services will provide immunizations at no cost.

Application and Admission Process

Students seeking classified admission to graduate programs at San Diego State University must submit all of the required documents to the Office of Admissions and Records, the school or department, and the Graduate Division. Specific departmental listing for the admission requirements and procedures to meet minimum general academic standards for admission to the Graduate Dean. After all the documents are received by the Office of Admissions and Records, they are sent to the specific department for an admission recommendation. Even though a student may meet minimum general academic standards for admission to a graduate or professional degree, each department reserves the right to require a denial or conditional admission based upon the evaluation of documentation supplied by the applicant as well as the standing of the applicant relative to others who have applied to the specific graduate program.

The recommendation of the department or school is then sent to the Graduate Dean for an independent evaluation and the advising department's recommendation conflicts with the judgment of the Graduate Dean, consultation will ensue between the Dean and the department, but the final decision remains with the Graduate Dean.

The student will be notified of the decision by the Graduate Dean through the Office of Admissions and Records.

General Admission Requirements

All applicants for any type of postbaccalaureate status at San Diego State University must:

- hold an acceptable baccalaureate degree from an institution accredited by a regional accrediting association or have completed equivalent academic preparation as determined by the Graduate Dean;
- have a grade point average of at least 2.5 (when A equals 4) in the last 60 semester (90 quarter) units attempted (this calculation may not include lower division courses taken after award of a baccalaureate degree); and
- have been in good standing at the last institution attended.

Applicants who do not qualify for admission under provisions (a) and (b) may be admitted by special action if the Graduate Dean determines that there is other academic or professional evidence sufficient to warrant such action.

Members of the faculty of San Diego State University holding appointments at or above the rank of instructor or lecturer may not be admitted to degree programs at this University. Faculty may register for courses as unclassified students.

Special Action Admissions

Determination of the admissibility of students by special action shall be governed by the following guidelines when applicable:

All applicants for admission by special action must submit at least two letters of recommendation from faculty at the baccalaureate degree institution.

1. Students holding baccalaureate degrees from accredited institutions who award credit primarily on a pass/fail basis may be admitted provided they meet the following requirements:
   a. At least 60 semester units of letter-graded coursework with a grade point average of 2.5 or above are included on the student transcripts. Half of these must be at the upper division level.
   b. If the student's transcripts include less than 60 semester units of letter-graded coursework as described above, the applicant may be considered for admission on the basis of the student receiving a satisfactory score on both the verbal and quantitative sections of the GRE or GMAT with a minimum mean score of 500 on the verbal and 650 on the quantitative sections of the GRE or 260 on the GMAT. This requirement may be satisfied by the applicant presenting satisfactory evidence of advanced degrees, teaching credentials, or professional licenses.

2. Students holding baccalaureate degrees from accredited institutions that award credit for prior learning (CLEP) may be admitted provided that:
   a. The student meets the 60-unit requirement as described in 1 above when general admission requirements are not met.
   b. At least 24 semester units of credit in the major field are awarded by the Council on Undergraduate Laboratory Accreditation (CUALA) study during a period of matriculation at the degree-granting institution, or
   c. The student provides evidence of prior learning.

3. In some circumstances, students holding a baccalaureate degree from an institution with limited accreditation or students holding a degree that requires less than four years for completion may be admitted to postbaccalaureate standing provisionally for the purposes of validating the degree for equivalency. At the determination of the Graduate Dean, the degree may be validated if the student completes or has completed a general education program comparable in scope to the general education requirements of San Diego State University. Students who expect to enter an advanced degree program must have completed all the prerequisites prior to admission to the program. Students in these categories must provide a numbered application for admission procedures courses; no units completed prior to validation of the baccalaureate degree may be included subsequently in an advanced degree program.

Examination Requirements

The University requires that applicants for admission to most advanced degree programs and advanced certificate programs present satisfactory scores on the Graduate Record Examination (GRE) General Test. In addition, some programs require that applicants also present satisfactory scores on the Graduate Record Examination (GRE) Subject Test. Students applying for admission to programs requiring GRE General Test scores must refer to the program listing for specific information. Applicants for admission to the College of Business Administration will take the Graduate Management Admissions Test (GMAT); students applying for admission to programs requiring GRE General Test scores must refer to the program listing for specific information.

TOEFL Requirement

All graduate and postbaccalaureate applicants, regardless of citizenship, whose preparatory education was principally in a
An advanced degree. To advance to candidacy for an advanced degree, a student must meet the criteria specified under General Admission Requirements. Admission with postbaccalaureate standing (classified) does not constitute admission to advanced degree curricula. Students with postbaccalaureate standing (unclassified) may not enroll in 600-, 700-, 800-, and 900-numbered courses.

Postbaccalaureate Standing (Classified)

A student wishing to be admitted to a program leading to a candidacy for an advanced degree must meet the criteria specified under General Admission Requirements. A student must also meet the professional, personal, and scholastic standards described by the appropriate department. The student should contact the department or school for information concerning specific admission requirements and should submit a department application during the appropriate term. Admission with postbaccalaureate standing (classified) does not constitute admission to, or assurance of consideration for, advanced degree curricula.

Graduate Standing (Classified)

A student wishing to be admitted to a program of study leading to an advanced degree must meet the criteria specified under General Admission Requirements and must:

1. Achieve a satisfactory score on the GRE General Test or GMAT.
2. Have completed an undergraduate major appropriate to the field in which the student desires to earn an advanced degree.
3. Satisfy the special departmental or college requirements as stated in the University Bulletin under "Fields of Study and Courses of Instruction." Assistant to the Dean of Student Affairs, to the Dean of the Graduate College.

Students admitted with graduate standing (classified) are admitted to authorized advanced degree curricula and are classified as graduate standing (classified or conditionally classified). Upon admission, the student should request that the department or the Graduate Division file a change of status form with the Graduate Division.

Conditional Graduate Standing (Classified)

A student wishing to be admitted to a program of study leading to an advanced degree who meets the criteria specified under General Admission Requirements but who has deficiencies in the criteria for graduate standing (classified) may be granted conditional graduate standing (classified), if the deficiencies can be met by specific additional preparation, including qualifying examinations. Otherwise, the student may request continued enrollment. Students admitted with conditional graduate standing (classified) are admitted to authorized advanced degree curricula and are classified as graduate standing (classified or conditionally classified). Once the conditions established by the department, school, or college have been met, the student should request that the program graduate division file a change of status form with the Graduate Division.

Continuing Students

Students enrolled in the University with postbaccalaureate standing may request acceptance into an advanced degree curriculum with graduate standing (classified or conditionally classified). Applications for such continuing students are available in the Graduate Division. Except in special circumstances, students with postbaccalaureate standing (unclassified) may not enroll in 600-, 700-, 800-, and 900-numbered courses.

Second Bachelor's Degree

Second bachelor's degrees are awarded by most departments. Currently, Bachelor of Arts, Bachelor of Science, Bachelor of Liberal Studies - Emphasis in Three Departments, Mexican American Studies, and Telecommunications and Film do not participate in the second bachelor's degree program. A student wishing to earn a second bachelor's degree must apply for admission to San Diego State University during the filing period for undergraduate applicants. Students admitted with conditional graduate standing (classified) are admitted to authorized advanced degree curricula and are classified as graduate standing (classified or conditionally classified). In addition, applicants to the impacted majors (Criminal Justice Administration, Journalism, Nursing, and Public Administration) must apply during the first month of the undergraduate application filing period. Upon receipt of the application for admission, students will be sent a separate application for a second bachelor's degree.

Admission to a second bachelor's degree program is based on a review of the student's academic record and the applicant's academic record. Applicants must be eligible for admission as a postbaccalaureate student, meet all undergraduate admission requirements, and have completed the prerequisites for the new field of study. Graduation from an institution of higher education in California or meeting the precalculus requirements for the first degree. The student must fulfill all current requirements for the bachelor's degree, including any deficiencies that may be limited to General Education, major, upper division, and foreign language if required by the major. Students are subject to undergraduate policies and procedures, including rules governing deadlines, course work, and academic probation and discharge policies.

A second bachelor's degree is not granted automatically. When eligible for graduation, students must submit an application to the Office of Admissions and Records. When the student meets the criteria specified under General Admission Requirements, the student must apply and be accepted in one of the programs prescribed at San Diego State University.

A transcript will be considered official and accepted to meet the regulations governing admission only if forwarded directly to San Diego State University by the institution attended. The applicant must request the school or college to send the transcript to the Office of Admissions and Records, San Diego State University, 5500 Campanile Drive, San Diego, CA 92182-1002, so that the transcript can be sent along with the application. For more details, refer to the section on Application for Graduation of the bulletin for additional information and applications.

Conditional Graduate Standing (Classified)

A student wishing to be admitted to a program of study leading to an advanced degree who meets the criteria specified under General Admission Requirements but who has deficiencies in the criteria for graduate standing (classified) may be granted conditional graduate standing (classified), if the deficiencies can be met by specific additional preparation, including qualifying examinations. Otherwise, the student may request continued enrollment. Students admitted with conditional graduate standing (classified) are admitted to authorized advanced degree curricula and are classified as graduate standing (classified or conditionally classified). Once the conditions established by the department, school, or college have been met, the student should request that the program graduate division file a change of status form with the Graduate Division.

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For additional information and second bachelor's degree applications, contact the Office of Admissions and Records.

Filing of Records

The student must file promptly with the Office of Admissions and Records official transcripts from EACH college attended including all extension, correspondence, summer session, or evening courses, even if no courses were completed. Graduate students must file transcripts in duplicate if they plan to enter an advanced degree program.

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For additional information and second bachelor's degree applications, contact the Office of Admissions and Records.
Admission to Postbaccalaureate and Graduate Study

Applicants for admission as either graduates or undergraduates whose education has been in a foreign country must file an application for admission, official transcripts, and scores of the Test of English as a Foreign Language (TOEFL). This test is administered in most countries. The University must receive test scores before admission can be granted. Information as to the time and place at which this test is given may be obtained by writing to: Educational Testing Service, Princeton, New Jersey, 08540, USA.

This requirement must be completed as a condition for classified graduate standing. Students who do not have an adequate command of English may be required to enroll in one or more English language courses during their first semester at San Diego State University. Depending upon students' performance on the placement test and their academic background, they may be required to enroll in one or more English language courses.

Applicants must be in good academic standing at their last place of attendance. Further tests of English language proficiency may be administered to students whose native language is not English.

Concurrent Postbaccalaureate Credit

Applicants for admission as either graduates or undergraduates whose education has been in a foreign country must file an application for admission, official transcripts, and scores of the Test of English as a Foreign Language (TOEFL). This test is administered in most countries. The University must receive test scores before admission can be granted. Information as to the time and place at which this test is given may be obtained by writing to: Educational Testing Service, Princeton, New Jersey, 08540, USA.

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Regulations of the Graduate Division

Student Responsibility for Catalog Information

Students are individually responsible for the information contained in the bulletin. Although the Graduate Division attempts to preserve requirements for academic policies subject to this bulletin, information contained herein is subject to change from year to year as university rules, policies, and curricula change. Failure to keep informed of such annual changes will not exempt students from whatever consequences may result.

Changes in Rules and Policies

Although every effort has been made to assure the accuracy of the information in this catalog, students and others who use the bulletin should note that laws, rules, and policies change from time to time and that these changes may alter the information contained in this publication. Changes may come in the form of statutes enacted by the Legislature, rules and policies adopted by the Board of Trustees of The California State University, by the Chancellor or designee of The California State University or by the President or designee of this institution. Further, it is not possible to publish this size of this book to include all of the rules, policies and other information that pertain to the student, San Diego State University, and The California State University. Additional information about these rules and policies may be obtained from the University's current academic catalog, the bulletin for the school, or administrative office. Each semester, the Class Scheduling and Student Information Handbook outlines changes in academic policy and procedure and current deadlines that are of importance to students.

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

Privacy Rights of Students in Education Records

The federal Family Educational Rights and Privacy Act of 1974 (20 U.S.C. § 1232g) and regulations adopted thereunder (34 C.F.R. 99 and California Education Code Section 67100) set out requirements designed to protect the privacy of students concerning their education records maintained by the campus. Specifically, the statute and regulations govern access to student records and the release of such records. In brief, the student has the right to request that student access to records directly related to the student and an opportunity for a hearing to challenge such records on the grounds that they are inaccurate, misleading or otherwise inappropriate. The right to a hearing under the law does not include any right to challenge the appropriateness of a grade as determined by the instructor. The law generally requires that written consent of the student be received before releasing personally identifiable data about the student from records other than a specified list of exceptions. The institution has adopted a set of policies and procedures concerning implementation of the statutes and the regulations on the campus. Copies of these policies and procedures may be obtained at the Office of the Vice President for Student Affairs. Information included in the campus statement of policies and procedures are: (1) the types of student records and the information contained therein; (2) the official responsible for the maintenance of each type of record; (3) the location of access lists which indicate persons requesting or receiving information from the record; (4) policies for reviewing and expunging records; (5) the access rights of students, (6) the procedures for challenging the content of student records; (7) the cost which will be charged for reproducing copies of records; and (8) the right of the student to file a complaint with the Commissioner of Education, the President or designee of the above board have been established by the Department to investigate and adjudicate violations and complaints. The office designated for this purpose is The Family Educational Rights and Privacy Act Office (FERPA), U.S. Department of Education, 330 C Street, Room 4511, Washington, D.C. 20202.

The campus is authorized under the Act to release "directory information" concerning students. "Directory information" includes the student's name, address, telephone listing, date and place of birth, major field of study, participation in officially recognized sports and activities, and the student's height and weight of members of the University, classes in which the student is enrolled, school, or administrative office. Each semester, the Class Schedule and Student Information Handbook outlines changes in academic policy and procedure and current deadlines that are of importance to students.

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**General Regulations**

are applicable as general elective credit toward an undergraduate degree at SDSU. Courses X-01 through X-49 are designated as lower division and X-50 through X-79 and X-397 are designated as upper division. It is the policy of the academic department or college to determine if X-01 through X-79 level courses are applicable to a major, a minor, or toward specified electives. The X-01 through X-49 courses are offered in conjunction with certificate programs only. Courses at the X-01 through X-79 level are not acceptable on advanced degree programs. Courses offered as X-397 are not acceptable toward an undergraduate or graduate degree.

**Grading System**

Grades and grade points per unit used in reporting are as follows:

- A: average for superior performance
- B: average for satisfactory performance
- C: (minimally passing), 2 points
- D: (unsatisfactory for graduate credit, course must be repeated), 1 point
- F (failing), 0 points

- SP (satisfactory progress), not counted in the grade point average
- W (withdrawn), not counted in the grade point average
- AU (audit), no credit earned and not counted in the grade point average
- CR (credit), signifying units earned, but not counted in the grade point average
- NC (no credit), no credit earned and not counted in the grade point average

All grades earned in the 79 level are not acceptable on advanced degree programs.

**Withdrawal Grade - "W"**

The symbol "W" indicates that the student was permitted to drop a course after the first four weeks of instruction because of a verified serious and compelling reason.

**Plus/Minus Grading**

A plus/minus grading system is utilized at San Diego State University. A student's grade is not utilized at the discretion of the individual instructor. The grades of A+, A-, A, B+, B, B-, C+, C, C-, D+, D, D- are specifically designated as points and/or grade points in the calculation of grade point averages as follows:

- A+: 4.3
- A+: 4.0
- B+: 3.3
- B+: 3.0
- A: 4.0
- A: 3.7
- B: 3.0
- B: 2.7
- C+: 2.3
- C+: 2.0
- C: 1.7
- C: 1.3
- D+: 2.0
- D+: 1.7

**Satisfactory Progress Grade - "SP"**

The "SP" symbol is used in connection with courses that extend over the entire academic year and indicates that work in the course is satisfactory and that advancement toward graduation progress and has been evaluated and found to be satisfactory. The assignment of a precise grade may not be completed until the completion of the class period and the class is due to circumstances clearly beyond the student's control. The control and the assignment of an Incomplete is not practicable. All such requests must be accompanied by appropriate verification. Ordinarily, withdrawals in this category will involve total withdrawal from the University, except that credit, or an Incomplete, may be assigned for courses in which sufficient work has been completed to permit an evaluation to be made. Requests to withdraw under such circumstances must be approved by the Graduate Dean or designee.

**Auditing - "AU"**

Enrollment as an auditor is subject to permission of the instructor provided that enrollment in a course as an auditor shall be permitted only after previous consultation with the professor that work was satisfactory. It is the responsibility of the student to bring pertinent information to the attention of the instructor to the student and to the grade point average; I (authorized incomplete), no credit earned. The decimal values of plus and/or minus grades are as follows:

- A+ = 4.3
- A- = 4.0
- B+ = 3.3
- B- = 3.0
- A = 4.0
- A- = 3.7
- B = 3.0
- B- = 2.7

**Credit/No Credit Courses - "Cr/NC"**

Students may enroll for credit/no credit only in those courses designated in the Graduate Bulletin for credit/no credit only. The symbol "CR" is used to designate satisfactory completion of Courses 797, 798, 799A, and certain 500-600-700- and 800-numbered courses specifically designated in the Graduate Bulletin and Course Schedule. Failure to complete satisfactorily such courses will result in the assignment of "NC." No other 600-700, 800- or 900-numbered courses may be taken for credit/no credit. No 500-numbered courses graded credit/no credit, except those offered only for credit/no credit, are acceptable on a master's degree program except in the College of Education. Graduate courses for which the "SP" symbol is appropriate are specifically designated in the departmental listings of this bulletin.

A student whose graduation record carries a grade of "SP" will be graduated provided they are otherwise eligible for graduation. However, the SP cannot be used as graduation credit toward a graduate degree. If students do not wish to be graduated with a grade of SP on their record, they must officially cancel their application for graduation.

**Authorized Incomplete Grade - "I"**

The symbol "I" (Incomplete Authorized) indicates that a portion of required coursework has not been completed and evaluation of the work completed has been delayed due to unforeseen, but fully justifiable, reasons and that there is still a possibility of earning credit. It is the responsibility of the student to bring pertinent information to the instructor and to reach agreement on the means by which the remaining course requirements will be satisfied. The conditions for removal of the Incomplete shall be reduced by written notice to the student and given to the student with a copy placed on file with the department chair until the Incomplete is removed or the time limit for removal has passed. An Incomplete shall not be assigned when the only way the student could make up the work would be to attend a major portion of the class when it is next offered. A final grade is assigned when the work agreed upon has been completed and evaluated.

**Unauthorized Incomplete Grade - "U"**

The symbol "U" is used to represent authorized incomplete for credit/no credit provided the following statement is informally presented to the Office of the Dean of the College of Education:

"In the opinion of the instructor, the number of required coursework has not been completed and evaluation of the work completed has been delayed due to unforeseen, but fully justifiable, reasons and that there is still a possibility of earning credit. It is the responsibility of the student to bring pertinent information to the instructor and to reach agreement on the means by which the remaining course requirements will be satisfied." The conditions for removal of the Incomplete shall be satisfied by written notice to the student and given to the student with a copy placed on file with the department chair until the Incomplete is removed or the time limit for removal has passed. An Incomplete shall not be assigned when the only way the student could make up the work would be to attend a major portion of the class when it is next offered. A final grade is assigned when the work agreed upon has been completed and evaluated.

**Withdrawals**

A student who has been assigned the grade SP for the required courses shall not be permitted to drop a course after the first four weeks of instruction because of a verified serious and compelling reason.

A student who has been assigned the grade SP for the required courses shall not be permitted to drop a course after the first four weeks of instruction because of a verified serious and compelling reason. For details see the section of this bulletin under Basic Requirements for the Master's Degree.
they will not, however, be calculated into the San Diego State University grade point average.

Approval of educational leaves of absence will be granted only to graduate students who have completed a minimum of one semester at San Diego State University and who are in good academic standing. Leaves will not be granted to students on probation, students who are subject to disqualification or have been disqualified, or students who qualify for a change from under-graduate to graduate status.

Readmission

An enrolled student is eligible (if not disqualified) to stay out one semester on a per-sonal leave of absence. Registration in the semester of approved leave of absence and advance registration materials will automatically be mailed to the last address on file.

A student who withdraws from the University for more than one semester must file an application for readmission with a $55 application fee. If the student was enrolled at another institution subsequent to the last attendance at San Diego State University, an official transcript showing work completed must be sent by the transfer institution directly to the Office of Admissions and Records before readmission can be completed. SJSU students in good academic standing will retain their original catalog status if they are absent from the University for no more than one semester.

Repeated Courses

Ordinarily, a graduate student may not repeat courses which have been taken as part of his official master's degree program. With prior permission of the graduate adviser, however, a graduate student may repeat any course which is a part of the official program of study in which a grade of C or D, or F, has been received. When a graduate student in any category of admission repeats a course in which a grade of P has been earned, both grades will remain on the student's permanent record and both grades will be calculated in the grade point average. If a student repeats a course in which a U grade has been earned, the original U grade and the permanent record, but only the second grade will be used in computation of the grade point average. A course in which a U grade has been earned may be repeated only once. Repeated courses may not be taken for credit/no credit. Students who have successfully repeated a "U" graded course should notify the Office of Admissions and Records so that they may receive the appropriate grade adjustment of their grade point average.

Probben and Disqualification

Scholastic Probation

A graduate student in any admission category shall be placed on academic probation if the student fails to maintain a cumulative grade point average of at least 2.5 in all units attempted subsequent to admission to the university.

Students in a graduate degree program in conditional or classified standing should consult the section of this bulletin entitled "General Requirements for Doctoral Programs" and "Basic Requirements for the Master's Degree" for grade point average requirements for each graduate program.

Scholastic Disqualification

A graduate student in any admission category shall be subject to disqualification from further attendance at the University if, while on academic probation, the student fails to earn sufficient grade points to warrant removal from probationary status.

Any graduate student who has been admitted to an advanced degree program whose performance is judged to be unsatisfactory, with respect to scholastic or professional standards established by the Graduate Council, may be academically disqualified. Disqualification usually results from failure to fulfill conditions for fully classified admission within the established deadlines. Failure to fulfill conditions for fully classified admission within the established deadlines; failure to perform in a thesis or comprehensive examination; or failure in professional or scholastic performance.

Departments or schools of the University may also recommend that the Graduate Dean dismiss the University any graduate student whose performance in a degree, certificate, or credential program is judged unsatisfactory with respect to the scholastic or professional standards of the program.

Petition for Readmission

A graduate student who is disqualified from further attendance at the University for any academic or professional reason may request reinstatement by filing a petition with the Graduate Division. A student who has not attended the University for one or more semesters after disqualification will also be required to apply for readmission during the specified filing period. Petition forms are available at the Graduate Division.

Students who were disqualified for failure to meet the scholastic or professional standards in a particular program may not subsequently enroll in courses carrying graduate credit in that program without approval of the program graduate adviser and the Vice President. Students who enroll in such courses without prior approval, the corresponding academic credit may not be used to meet the curricular requirements of the program.

Administrative Academic Probation and Disqualification

Administrative Academic Probation

A student may be placed on administrative academic probation by action of the Graduate Dean for any of the following reasons:

1. Withdrawal from all or a substantial portion of a program of studies in two successive terms or in any three terms.
2. Repeated failure to progress toward the stated degree or objectives of the program; or a failure to meet the student's academic obligations when such failure appears to be due to circumstances within the control of the student.
3. Failure to comply, after due notice, with an academic requirement or regulation which is routine for all students or a defined group of students for a specified term.

Administrative Academic Disqualification

A student who has been placed on administrative academic probation may be dismissed from further attendance if:

1. The conditions for removal of administrative academic probation are not met within the period specified.
2. The student becomes subject to academic probation while on administrative academic probation.
3. The student has been placed on administrative academic probation for a defined group of students for which the student has been placed on administrative academic probation previously, although not currently in such status.
General Regulations

(1) The term "member of the campus community" is defined as meaning California State University Trustees, academic, nonacademic professional, staff, full-time or part-time students, and such other persons while such other persons are on campus property or at a campus function.

(2) This Article contains the following provisions:
(a) real or personal property in the possession of, or under the control of, the Board of Trustees of The Califor-nia State University.
(b) all campus feeding, retail or residence facilities whether operated by a campus or by a campus au-dienced.
(c) the intra-campus transportation system.

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

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

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

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

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

41302. Disposition of Fees: Campus Emergency

The President of the campus may place on probation, suspend, or expel a student for one or more of the causes enumerated in this article, as well as for any reason or causes not specifically enumerated in this article, at any time, provided that such action be taken in good faith and in the interest of justice, and provided further that if any student for the semester, quarter, or summer session in which he is enrolled as a student, would be the basis for disciplinary proceedings pursuant to Sections 41301 or 41302.

41303. Conduct by Applicants for Admission.

The President of the campus may place on probation suspension, the student shall not, without prior written permission of the President or designated representative, enter any campus of The California State University other than to attend the hearing; immediate吊is condition of interim suspension shall be grounds for expulsion.

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San Diego State University is a publicly assisted institution legislatively empowered to certify competence and accomplishment in general and discrete categories of knowledge. The President is vested with the authority to certify competence and accomplishment in those to whom they assign grades and whom they recommend for degrees. Failingly or willfully to ignore or to allow students' ascription of other than the purpose of formal education, and to fail the public trust.

The objective of university endeavor is to advance knowledge by increasing and refining knowledge and is, therefore, ill-served by students who indulge in plagiarism. Accordingly, one who is suspected or accused of disregarding, concealing, aiding, or committing plagiarism must, because of the gravity of the offense, be assured of thorough, impartial, and conclusive investigation of any accusation. Likewise, one must be liable to an appropriate penalty, even secession from the University and in some cases revocation of an advanced degree, should the demonstrated plagiarism clearly call into question one's general competence or accomplishments.

Transcripts of Record

A student may obtain an official academic transcript by filing an application at the Cashiers Office. A fee is charged for all transcripts and must be paid in advance. Ten to fifteen days should be allowed for the processing and mailing of the transcript. Transcripts from other schools or colleges become the property of this University and will not be released or copied.

Unofficial Transcripts

Students may obtain an unofficial copy of their SDSU transcript by paying the unofficial transcript fee at the Office of Admissions and Records, and such transcript is usually available on an immediate basis. However, during peak periods, the Office of Admissions and Records reserves the right to offer a 4-hour turn-around. These records do not bear the seal of the University and are not suitable for transfer purposes. Unofficial copies will be made ONLY of the SDSU transcript.

Final Examinations

No final examination shall be given to individual students before the time specified in the Class Schedule. Any student who finds it impossible to take a final examination on the date scheduled must make arrangements with the instructor to have an incomplete grade reported and must take the deferred final examination within the time allowed for making up incomplete grades.

Transfer, Extension, Foreign, or Open University Course Credit

Some lower division courses for individual programs, as indicated in Part Three of this bulletin, the maximum amount of transfer and San Diego State University extension course credit accepted for course credit; the Master of Fine Arts degree (including a maximum of 9 units of extension credit); and the Master of Science degree in Rehabilitation Counseling which permits 30 units (including a maximum of 9 units of extension credit), the Master of Social Work degree which permits 25 units not only to the citizenry of the State of California to guarantee the honest and ethical conduct in those to whom they assign grades and whom they recommend for degrees. Failingly or willfully to ignore or to allow students' ascription of other than the purpose of formal education, and to fail the public trust.

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General Requirements for
Doctoral Degrees

The degree Doctor of Philosophy (Ph.D.) is offered jointly by San Diego State University and cooperating universities in biology, chemistry, clinical psychology, engineering sciences, applied mechanics, mathematics and science education, and public health with the University of California, San Diego; in ecology with the University of California, Davis; in education with the Claremont Graduate School; and in geography with the University of California, Santa Barbara. The general requirements in these programs are identical; however, each program has some specific requirements that will be found in Part Three of this bulletin under Biology, Chemistry, Ecology, Education, Engineering, Geography, Mathematics and Science Education, Psychology, and Public Health.

Students who wish to become candidates for the degree Doctor of Philosophy should understand that the degree is granted for original, independent, imaginative, and self-critical research alone. For those candidates who wish to prepare for a career in an academic institution the degree is also oriented toward excellence and enthusiasm in teaching. Students with acceptable baccalaureate degrees will normally spend at least three years of full-time study in earning the degree. Except for those in the education program, doctoral students must be enrolled on at least one of the cooperating campuses each term they are in the program unless granted an official leave of absence.

Admission to Graduate Study

An applicant for admission to a doctoral program must be admitted to regular graduate standing in the appropriate campus of the University of California or the Claremont Graduate School and to San Diego State University. Fees and regulations governing the doctoral programs are found in the Graduate Divisions Bulletins of San Diego State University and in the Graduate Divisions Bulletins of each of the cooperating campuses of the University of California or the Claremont Graduate School. Formal admission to the two universities with appropriate graduate standing occurs when the student is formally accepted by the graduate deans of each of the two universities. Applicants are advised to consult the appropriate director at San Diego State University for specific details on application procedures.

Residency Requirements

After formal admission to a doctoral program, the student must spend at least one year in full-time residence on each of the two campuses. The definition of residence must be in accord with the regulations of the university cooperating with SDSU. At San Diego State University, the definition of a unit of residence consists of registration in and completion of at least six semester units each semester of the required year’s residence. Except for the program in education, students must be enrolled at one campus or the other each semester or quarter in order to maintain good standing.

Financial Support

Doctoral students are eligible to apply for financial aid through the Financial Aid Office at San Diego State University. The SDSU Foundation provides some scholarship funds to cover all or part of the fees and tuition required by each institution for students in many of the doctoral programs. These funds are partially derived from the Richard G. Ahrens Memorial Scholarship and Reuben C. Marks Endowment Funds. In addition, most programs offer doctoral students financial support by providing them with appointments as research assistants, graduate assistants, or graduate teaching associates.

Procedures

Doctoral students are expected to make steady progress toward completion of requirements for the degree. The time required is not expressed as units of credit or semesters of attendance but rather depends on the mastery of the subject matter field and completion of a satisfactory dissertation at a minimum. Doctoral students must maintain a 3.0 grade point average in all coursework attempted to remain in good standing. Some programs may have additional GPA requirements.

Information on records, transcripts, fees, details of registration, petitions, and rules and regulations governing graduate students enrolled in the doctoral program is available from the graduate dean at each of the two cooperating institutions for each degree program.

Qualifying Examinations, Advancement to Candidacy, and the Dissertation

Although the procedural details of each doctoral program vary somewhat within the different programs, the general requirements are:

1. The student is examined by a committee representing the faculty of the cooperating institutions for knowledge of the field of study. This examination, called a Qualifying Examination, ordinarily consists of both written and oral parts. The purpose of this examination is to satisfy the faculty of the cooperating departments that the student is adequately prepared in the discipline to warrant continuation in the program.

2. After passing the Qualifying Examination the student applies to the graduate dean at the cooperating campus with which the student is associated for advancement to candidacy. After approval by both graduate deans, the student will be notified of advancement to candidacy by the graduate dean, University of California campus or Claremont Graduate School.

3. A dissertation (thesis) on a subject chosen by the candidate and approved by a committee chosen by the Graduate Councils of the cooperating institutions is required of every candidate. Approval of the dissertation by this committee affirms that the candidate has conducted an organized, independent investigation that has added significantly to the body of knowledge in the particular field and that has been reported in a satisfactory manner. Upon completion of the dissertation, the candidate must pass an oral examination conducted by a joint committee in which the student is required to show the relationship of the dissertation to the general field in which the subject lies and to answer specific questions concerning the investigations. In addition to meeting the dissertation filing requirement of the cooperating campus, doctoral students are required to provide one bound copy of the dissertation for deposit in the San Diego State University library. Binding must meet the ALA library standard.

Award of Degree

The degree Doctor of Philosophy in Biology, Chemistry, Clinical Psychology, Ecology, Education, Engineering Sciences/Applied Mechanics, Geography, Mathematics and Science Education, or Public Health will be awarded jointly by the Regents or Trustees of the cooperating institution and the Trustees of The California State University in the names of San Diego State University and the appropriate cooperating university campus. Students may participate in the commencement ceremonies of both institutions providing they have completed all degree requirements, including the submission of copies of the approved dissertation to the two graduate offices, by the deadlines of the respective institutions. The deadline dates of the cooperating institutions will vary. Students who intend to participate in the commencement ceremonies at San Diego State University should consult the academic calendar for the last date to submit an approved copy of the dissertation to the Graduate Division. San Diego State University also requires that the students apply for graduation in any term they intend to graduate. Consult the academic calendar for the deadline date.
Basic Requirements for the Master's Degrees

To receive the master's degree at San Diego State University, the candidate must have completed the following general requirements of the Graduate Division and the specific requirements listed in the appropriate sections of Part Three of this bulletin.

Official Programs of Study

Official programs of study are to be submitted to the Graduate Division for approval after the student has been granted full classified graduate standing. The programs must be submitted prior to the time the program is approved in the Graduate Division.

Official master's degree programs of study, as recommended by the graduate adviser and approved by the Graduate Dean, are binding unless the student withdraws from the University. Withdrawal is defined as having taken no courses during a calendar year.

A student who withdraws from the University and is later readmitted with classified graduate standing may, with the consent of the graduate adviser and the Graduate Council, continue or begin a new official program of study or may be required to submit a new program that complies with the requirements of the current Graduate Bulletin.

When course requirements listed on an official master's degree program deviate from those prescribed in the Graduate Bulletin, the student must submit to the Graduate Dean a petition for adjustment of academic requirements.

It is the student's responsibility to complete the specific courses on the list of the official program of study. No course may be permitted unless approved by the graduate adviser and the Graduate Council. Credit is not to be earned from an official program of study after the course has been completed. This petition applies to a course for which a student has registered and received an "Incomplete" or "SP" grade.

Foreign Language Requirement

Departments that require students to pass a foreign language examination may direct a student to complete one of the following options or a combination thereof: a departmental examination administered either by the department or by the appropriate foreign language department, the appropriate part or parts of the MLA Comprehensive French Language Test, and the appropriate part or parts of the MLA Comprehensive Spanish Language Test (GSFLT). Students may not attempt the MLA Comprehensive French Language Test and the MLA Comprehensive Spanish Language Test (GSFLT) simultaneously.

Advancement to Candidacy

A student who holds classified graduate standing at San Diego State University and who meets its scholastic, professional, and personal standards may be considered for advancement to candidacy for the master's degree provided an official program of study has been filed and approved by the graduate adviser and the Graduate Dean.

Degree Requirements

graduate adviser. Not more than a total of six units in courses numbered 797 and 798 will be accepted for credit toward the degree.

Master of Business Administration Degree

Between 30 and 60 units (depending upon the student's background) of 600- and 700-numbered courses specified by the College of Business Administration, at least 21 of which must be completed in residence. Not more than nine units of approved transfer credit are acceptable for this degree. Not more than a total of six units in courses numbered 797 and 798 will be accepted for credit toward the degree.

Master of City Planning Degree

Fifty-seven units of approved 500-, 600-, and 700-numbered courses, 30 of which must be specified in the bulletin in effect at the time the program is approved. At least 30 units of course work must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 57 units for the degree. Not more than a total of nine units in courses numbered 797 and 798 will be accepted for credit toward the degree.

Master of Fine Arts in Art Degree

Sixty units of 500-, 600-, and 700-numbered courses specified by the Department of Art History and Comparative Literature at least 21 of which must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 58 units for the degree. No more than a total of six units in course 798 will be accepted for credit toward the degree.

Master of Fine Arts in Creative Writing Degree

Fifty-four units of 500-, 600-, and 700-numbered courses specified by the Department of English and Comparative Literature at least 36 of which must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 60 units for the degree. No more than a total of six units in course 798 will be accepted for credit toward the degree.

Master of Fine Arts in Drama Degree

Sixty units of 500-, 600-, and 700-numbered courses specified by the Department of Drama, at least 39 of which must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 45 units for the degree. Not more than a total of six units in course 798 will be accepted for credit toward the degree.

Master of Public Health Degree

Fifty-eight units of approved 500-, 600:, and 700-numbered courses specified by the School of Public Health, at least 33 of which must be completed in residence. Courses required to remove undergraduate deficiencies are in addition to the minimum 60 units for the degree. Not more than a total of six units in courses numbered 797 and 798 will be accepted for credit toward the degree.

Graduate Grade Point Averages

Graduate grade point averages at least 3.0 (B) must be maintained in:

1. All courses listed on the official degree program required to complete undergraduate deficiencies.
2. All courses listed on the official degree program.
3. All courses, 300-level and above, taken at San Diego State University concurrently with or subsequent to the earliest course required for the master's degree program, including courses accepted for transfer credit.

No transfer or extension credit may be used to improve the grade point average of units completed at San Diego State University whether computed to determine the average on the official degree program or the overall average.

Grades Restriction for Master's Degree Programs

No course in which a final grade below "C" (2.0) was earned may be used to satisfy the requirements for an advanced degree. No 500-numbered courses graded Credit/No Credit or those offered for Credit/No Credit only are acceptable on a master's degree program. No undergraduate courses graded Credit/No Credit may be assigned to the deficiencies listed on a master's degree program. At least 70 percent of the units used to fulfill the minimum requirements on a master's degree program shall be letter graded.

Units graded Credit/No Credit earned in practice, field experience, or otherwise stated as specific requirements for a graduate degree will not be included in the determination of the number of non-letter graded units allowable on the program of study.

Degree Time Limitations

In all advanced degree curricula offered at San Diego State University, no course completed more than seven years prior to the date on which all requirements for the degree are completed cannot be used to satisfy unit requirements of the official program of study. This includes a course for which a student has registered and received an "Incomplete" or "SP" grade. On the recommendation of the department or school concerned, the
Degree Requirements

Graduate Council may extend the time for students who pass an examination covering the content of each outdated course. With the approval of the graduate adviser and the Graduate Dean, an outstanding, more than two courses per semester, is more than two terms longer than one calendar year from the date of validation. A course or program may be validated by examination only once.


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Thesis Committee

In consultation with the graduate adviser, a student will select a chair for the thesis committee. The student, the graduate adviser, and the thesis committee chair select the other faculty members who will be asked to serve on the thesis committee. The student needs to obtain the signature of the thesis chair, the other committee members, and the Graduate Dean on the Appointment of Thesis Committee Form and submit it to the Graduate Division and Research. After the committee is approved, the student may enroll in Course 799A, Thesis, through the Graduate Division and Research.

Normally, the thesis committee is composed of three full-time faculty members. At least two of the members of the thesis committee, including the chair of the committee, must hold permanent, non-visiting faculty appointments. Two of the committee members should be members of the department or of the interdisciplinary faculty area in which the thesis is written. The third committee member should be from a department other than the department in which the thesis is written.

Thesis Research Involving Human Subjects and Animal Subjects

Students conducting thesis research involving human subjects must submit a proposal protocol to the departmental Human Subjects Committee (where applicable) and then to the University Committee on Protection of Human Subjects (CPHS). Students should allow enough time to complete all paperwork. Certain categories of research with human subjects may qualify for exemption from full committee review. Appropriate forms and forms for protocols or claims of exemptions can be obtained from the CPHS Office or from the Graduate Division.

Up on written CPHS approval and certification of exemption from CPHS review, students can register for the thesis. Literature review and other work not involving human subjects may be conducted prior to candidacy from the Graduate Division and have an officially approved thesis or project committee form on file in the Graduate Division.

Theses in Foreign Languages

As presentations of original research to the academic community, theses are ordinarily prepared for the University in the English language. In certain cases, however, a student's thesis in the history and literary analysis of non-English languages and literatures may be presented in the subject language. When this is deemed academically appropriate for the specific research topic by the departmental graduate adviser and the proposed thesis committee, the appointment of the student's thesis committee and the authorization of the thesis research by the Graduate Dean shall be based on the provisions that (1) all abstract of the thesis shall be presented in English and (2) all members of the thesis committee shall be fluent in the subject language and (3) student competency in standard written English shall be demonstrated through satisfactory completion of graduate courses in research methods.

Submission of Theses

Completion of the academic process for final acceptance of a thesis requires that the thesis be approved by a formally appointed committee of the faculty and by the Graduate Dean. The thesis is submitted for review and approval by the Graduate Dean. Following review, the student will be permitted to register for a grade in the thesis course. A thesis is granted final approval. Students will not be required to submit a paper copy of the thesis. However, the student will be asked to serve on the thesis committee. The student and the thesis committee chair select the other faculty members who will be asked to serve on the thesis committee. The student needs to obtain the signature of the thesis chair, the other committee members, and the Graduate Dean on the Appointment of Thesis Committee Form and submit it to the Graduate Division and Research.

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PART THREE

Courses and Curricula
Courses and Curricula

This section contains the specific requirements for all graduate degrees authorized at San Diego State University by the Board of Trustees of The California State University. These specific requirements of departments or schools supplement and are in addition to the basic requirements for advanced degrees as stated in Part Two of this bulletin. All official master’s degree programs must be prepared in conformity with the specific requirements for the degree in question.

In addition, courses acceptable for credit toward an advanced degree are listed under major fields and areas of concentration. Each course is listed by department number, title, and units. Not all courses are offered every semester or every academic year. Ordinarily each listed course will be offered not less than once during a two-year period. Refer to the Class Schedule or the Summer Session Bulletin for the courses offered in a particular semester.

San Diego State University reserves the right to withdraw any course listed in the class schedule for which the enrollment is not sufficient to warrant the organization of a class.

Postbaccalaureate (Unclassified) Enrollment

A postbaccalaureate student (unclassified) is not eligible to enroll in 600-, 700-, 800-, and 900-numbered courses except by special permission. All credit earned by a postbaccalaureate student (unclassified) is subject to evaluation as to its acceptance for graduate credit in a master's degree curriculum. Classified or conditionally classified students whose status is changed to postbaccalaureate (unclassified) for any reason may not enroll in any 600-, 700-, 800-, or 900-numbered course in the program in which they were previously classified without the consent of the graduate advisor of the program and the Graduate Dean. Students who enroll under such conditions without consent may be administratively disqualified, or if they complete any courses, those courses may not be used subsequently to meet any degree requirements.

Prerequisites for Graduate Courses

Graduate level (600-, 700-, 800-, and 900-numbered) courses require, as general prerequisites, graduate standing, and competence in the specified field as indicated by a substantial level of performance in the undergraduate level. Unless otherwise specified in the course description, students who have not completed the stated prerequisite must notify the instructor by the end of the second week of class in order for the instructor to determine if the student has completed the equivalent of the prerequisite.

Special Prerequisites for Registration in 798 and 799A

Registration in course 798, Special Study, must be assigned by the student through the instructor, the major adviser, and the chair of the department concerned. Forms for this purpose are available in the departmental offices.

Only those students who have been advanced to candidacy and who have an officially appointed thesis committee are permitted to register for course 799A, Thesis. The student must obtain clearance for registration in this course from the Graduate Division. Failure to obtain this clearance may result in cancellation of enrollment.

Special Prerequisite for Registration in 89

Registration in course 899, Doctoral Dissertation, is limited to those doctoral students who have been advanced to candidacy and who have an officially appointed dissertation committee.

Thesis Extension (799B)

This course is intended solely for those graduate students who have had prior registration in Thesis 799A with an assigned grade symbol of SP. Students are required to register in 799B (0 units, Cr/NC) in any semester or term following assignment of SP in course 799A. In which they expect to use the facilities and resources of the University, also, they must be registered in the course when the completed thesis is granted final approval.

Unit or Credit Hour

In the listing of courses that follows, figures in parentheses indicate the unit value of the course. One unit or credit hour represents 50 minutes of recitation or lecture, together with the required preparation, or three hours of laboratory work or two hours of activities, each week for a semester.

Anthropology

In the College of the Arts and Letters

Faculty

Dan Whitney, Ph.D., Professor of Anthropology, Chair of Department

Joseph H. Bart, Ph.D., Professor of Anthropology

Philip J. Greenfield, Ph.D., Professor of Anthropology

Edward O. Henry, Ph.D., Professor of Anthropology

Ronald S. Himes, Ph.D., Professor of Anthropology

Larry L. Leach, Ph.D., Professor of Anthropology

(Graduate Adviser)

Lori K. Lippold, Ph.D., Professor of Anthropology

Wade C. Pendleton, Ph.D., Professor of Anthropology

Vivien J. Roth, Ph.D., Professor of Anthropology

Dan Whitney, Ph.D., Professor of Anthropology

Mary Jane Moore, Ph.D., Associate Professor of Anthropology

(Graduate Adviser)

Alexander Sonek Jr., Ph.D., Assistant Professor of Anthropology

Assistantships

Sources of financial assistance available to qualified graduate students in anthropology each academic year include two Norton Alien Scholarships, the Paul Eddel Internship in Archaeology, graduate teaching assistantships. Application forms and additional information may be obtained from the chair of the department.

General Information

The Department of Anthropology, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in anthropology. The Master of Arts in anthropology provides systematic training through two specializations; (1) general anthropology specialization, with a strong theoretical component, for students who anticipate working in an academic setting, and (2) an applied anthropology specialization primarily for those who plan to seek employment in the nonacademic sector. This specialization is concerned with the application of anthropological method and theory to practical problems in business, government, and other settings.

The research and instructional facilities provided by the Department of Anthropology include laboratories for California archaeology, ethnology, linguistics, physical anthropology, and wetlands. In addition, a large number of B- and lower-division files available in the community include the Museum of Man, the San Diego Zoo, and various internship sites for applied research.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin. In addition, students seeking the Master of Arts degree in anthropology must have completed or complete at least 15 upper division units including Anthropology 301, Principles of Physical Anthropology, Anthropology 302, Principles of Archaeology, Anthropology 303, History of Ethnological Theory, and Anthropology 304, Principles of Anthropological Linguistics, or the equivalent to those required for an undergraduate major in anthropology at San Diego State University. The student must have an overall 3.0 B grade point average in undergraduate courses or consent of the department.

Copies of transcripts and GRE General Test scores are to be sent to the Office of Admissions and Records. In addition to these documents and the University admission forms, students applying to the department are asked to submit (1) at least three letters of recommendation, if possible, in a position to judge academic ability, and (2) at least one typed example of their previous work (e.g., a term paper or an original experiment). Materials should be submitted by December 1 for admission for spring semester and May 1 for the fall semester.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin. In addition, students enrolled in the Anthropology specialization must: (1) satisfactorily complete all four core seminars (601, 602, 603, and 604) with a minimum grade point average of 3.0, and no less than a B grade in each of the four core seminars, and (2) according to the specific recommendations of the Department of Anthropology, pass either an examination demonstrating working knowledge of an appropriate foreign language, or complete a sequence of at least one lower division and one upper division course (with a grade point average of 2.0 or better) in either:

(a) foreign language recommended by the department, or
(b) Anthropology 580 (Anthropological Data Analysis) or one of the following sequences in statistics: Sociology 201 and 406 or 407, Psychology 270 and 472, Biology 215 and 597B, Mathematics 250 and 350A.

Those students who choose the Anthropology specialization must: (1) satisfactorily complete three core seminars (601, 602, 603, and 604) with the graduate coordinator with a minimum grade point average of 3.0, or complete the sequence of B- and lower-division courses available in the community (2) satisfactorily complete Anthropology 701 (Seminar in Applied Anthropology), and (3) satisfactorily complete a lower division course in quantitative methods (Biology 215, Psychology 270, Sociology 201, or Mathematics 250) and Anthropology 580 (Anthropological Data Analysis) with no less than a B in each course. After having been advanced to candidacy, students in either the General Anthropology or Applied Anthropology specialties must submit a thesis proposal for approval by the departmental graduate advisory committee.
Specific Requirements for the Master of Arts Degree
(Major Code: 22021)

In addition to meeting the basic requirements for the Master of Arts degree as described in Part Two of this bulletin, students selecting the General Anthropology specialization must complete a graduate program of at least 30 units of which at least 24 units must be in 600- and 700-numbered courses in anthropology, to include:

1. Anthropology 601, 602, 603, and 604 (with a minimum grade point average of 3.0, and no less than a B- grade in each of these core seminars);
2. Anthropology 580 (3 and Anthropology 701 (3) (both courses to be taken prior to advancement to candidacy) and prior to internship placement);
3. Anthropology 795 (4) (to be taken after advancement to candidacy);

All graduate students must take a final oral examination on the general field of the thesis which must be passed as a requirement for the degree. Only Plan A, requiring the thesis, is permitted for the Master of Arts degree in anthropology.

Courses Acceptable on Master's Degree Programs in Anthropology

UPPER DIVISION COURSES

500. Primate Social Behavior (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101.
Analysis of modes of primate socialization and development of social behavior with emphasis on communication, group structure, aggression, and sex. Various methods of analysis and observation practiced utilizing primate collection at the San Diego Zoo.

501. Paleoanthropology (3)
Prerequisite: Anthropology 101. Recommended: Anthropology 301.
Fossil evidence for human evolution. Comparative and functional anatomy of fossil human and infrahuman primates; geochronology, palaeov兠ology, and cultural associations; taxonomic implications.

502. Microevolution (3)
Prerequisite: Anthropology 101. Recommended: Anthropology 301.
The evolution of human populations over a short period of time. Interaction of the evolutionary forces of mutation, selection, drift and gene flow with the cultural systems of human populations.

503. Human Variation (3)
Prerequisite: Anthropology 101.
Morphological, physiological, and genetic aspects of human variation. Significance of this diversity in the biological adaptations of human populations.

504. Primate Anatomy (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101.
Primate anatomy, both regional and systemic, including skeletal, cardiovascular and digestive systems; the integument and otoiyngology of primates.

505. Human Osteology (3)
Prerequisite: Anthropology 101. Recommended: Anthropology 301 and/or Biology 150.
Identification of individual bones and teeth; sex, age, and racial variation; stature reconstruction; continuous and discontinuous morphological variations; paleopathology. Training in observations, measurements, and analyses.

506. Physical Anthropology of the Living (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101. Recommended: Anthropology 301 and/or Biology 150.
Identification of individual bones and teeth; sex, age, and racial variation; stature reconstruction; continuous and discontinuous morphological variations; paleopathology. Training in observations, measurements, and analyses.

507. Genetic Markers and Anthropology (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 101.
Use of genetic markers to study the populations of human populations. Biology of blood groups, serum proteins, enzymes, etc., and analyses of gene frequencies. Significance of genetic markers in evolutionary studies.

508. Medical Anthropology (3)
Prerequisite: Anthropology 101 or 102.
Evolution and ecology of disease, medical beliefs and practices in non-Western cultures, and complexities of healthcare delivery in planaristic societies.

509. Culture and Biological Aging (3)
Prerequisites: Anthropology 101 or 102.
Do different cultures age at different rates? Theories of biological aging; genetics of longevity; and cultural influences on biological aging. Process of aging and roles of the aged in various cultures.

520. Ethnographic Field Methods (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 102.
The problems and techniques of obtaining data in ethnological and social and anthropological fieldwork: preparation, gaining and maintaining rapport, evaluating data, participant observation. A review of literature followed by work with informants.

526. Cultural Change and Processes (3)
Prerequisites: Anthropology 102 and six upper division units in anthropology.
Patterns of change in subsistence, social structure, and belief systems. Processes of change including diffusion, acculturation, individual innovation, and directed change among contemporary and historic peoples.

529. Urban Anthropology (3)
Prerequisites: Anthropology 102 and six upper division units in anthropology.
Urban adaptations of past and present societies. Descriptive topics and applied concerns regarding urban origins, migrations, kinship, family, ethnicity, stratification, and change. Ethnographic examples drawn from Western and non-Western societies.

532. Culture and Personality (3)
Prerequisite: Anthropology 102.
The relationship of individual personality to culture in a variety of cultures. A consideration of various theories and studies in the social and personality sciences.

560. Advanced Archaeological Field Methods (3)
One lecture and six hours of laboratory.
Prerequisite: Anthropology 312.
Advanced projects in excavation and stabilization of ruins, archaeological surveys, laboratory analyses and preparation of reports.

561. Archaeological Laboratory Methods (3)
Two lectures and three hours of laboratory.
Prerequisite: Anthropology 560.
Application of palynology, paleontology and relevant technicolors. Individual laboratory research project required. (Formerly numbered Anthropology 561A.)

580. Anthropological Data Analysis (3)
Two lectures and three hours of laboratory.
Prerequisites: Anthropology 101 or 102 and a statistics course. Recommended: Psychology 270 or Sociology 201.
Computer oriented data analysis class utilizing anthropological computer systems. Special section of the SPSS computer workshop is required.
Anthropology

582. Regional Anthropology (3)
Prerequisite: Anthropology 102.
Study of societies in a major geographical region of the world such as Africa, the Arctic, East Asia, Europe, Latin America, the Middle East, North America, Oceania, or South Asia. See Class Schedule for specific content. May be repeated with new content. Maximum credit six units.

583. Topical Anthropology (3)
Prerequisite: Anthropology 102.
Study of a major subdiscipline such as political anthropology, economic anthropology, social anthropology, psychological anthropology, cultural ecology, applied anthropology, race and variation, or environmental archaeology. Maximum credit six units applicable to a master's degree. May be repeated with new content. See Class Schedule for specific content.

761. Seminar in Applied Anthropology (3)
Prerequisite: Classified standing and/or consent of staff.
Students will be assigned to various government and private agencies in which anthropological theory can be applied. Supervision will be shared by departmental graduate advisory committee and/or on-the-job supervisor. Maximum credit nine units; three units applicable to a master's degree.

795. Internship in Anthropology (3-9) Cr/NC
Prerequisite: Classified graduate standing and/or consent of staff.
History and theory in anthropological data collection, analysis, and interpretation.

GRADUATE COURSES

600. Seminar (3)
An intensive study in advanced anthropology. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

601. Seminar in Physical Anthropology (3)
Prerequisite: Twelve upper division units in anthropology.
History and theory in physical anthropology stressing the significant literature on such topics as functional anatomy, human paleontology, population genetics, and primatology.

602. Seminar in Archaeology (3)
Prerequisite: Twelve upper division units in anthropology.
History and theory in archaeological data collection, analysis, and interpretation.

603. Seminar in Ethnology (3)
Prerequisite: Twelve upper division units in anthropology.
History and theory in ethnology stressing the significant literature on such topics as cultural behavior, structural-functional analysis and description, personality and culture, and sociocultural change.

604. Seminar in Linguistics (3)
Prerequisite: Twelve upper division units in anthropology.
History and theory of linguistics stressing the significant literature on such topics as language and cognition, descriptive linguistics, lexicostatistics, and transformational analysis.

608. Seminar in Regional Anthropology (3)
Prerequisite: Twelve upper division units in anthropology.
Study of a major world region such as Africa, the Arctic, East Asia, Europe, Latin America, the Middle East, North America, Oceania, or South Asia. Maximum credit six units applicable to a master's degree. May be repeated with new content. See Class Schedule for specific content.

621. Seminar in Topical Anthropology (3)
Prerequisite: Twelve upper division units in anthropology.
Study of a major subdiscipline such as political anthropology, economic anthropology, social anthropology, psychological anthropology, cultural ecology, applied anthropology, race and variation, or environmental archaeology. Maximum credit six units applicable to a master's degree. May be repeated with new content. See Class Schedule for specific content.

Office: Art 505
Telephone: (619) 594-6511

Faculty

Frederick J. Orth, M.F.A., Professor of Art, Chair of Department
Joan F. Asztai, M.F.A., Professor of Art
Richard J. Baker, M.F.A., Assistant Professor of Art
Walter E. Coten, M.F.A., Professor of Art
Jesus Y. Dominguez, M.F.A., Professor of Art
Janet B. Eiser, Ph.D., Professor of Art
Arlete M. Fich, M.A., Professor of Art
Allen W. Miller, M.F.A., Professor of Art
Expense Ray, M.F.A., Professor of Art
Ma K. Rigby, Ph.D., Professor of Art, Graduate Adviser, Art History
Gail C. Roberts-Fieids, M.A., Professor of Art, Graduate Coordinator, Studio Arts
John J. Rogers, M.S., Professor of Art
Helen Z. Shirk, M.F.A., Professor of Art
Janet L. Cooling, M.F.A., Associate Professor of Art
Gerald C. Dumbo, M.F.A., Associate Professor of Art
Joanne Hayakawa, M.F.A., Associate Professor of Art
Robert A. Marshfield, M.F.A., Associate Professor of Art
Susan C. Merritt, M.A., Associate Professor of Art
Richard A. Burkett, M.F.A., Assistant Professor of Art
Eric R. Mosney, M.F.A., Assistant Professor of Art
Kerry Ann Nelson, M.S., Assistant Professor of Art
Tina Marie Yoppell, M.A., Assistant Professor of Art

Art in the College of Professional Studies and Fine Arts

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin. In general, the student must have completed a bachelor's degree in studio art or the equivalent from an accredited institution, including twelve units of art history, six units of which comprise a survey of the history of Western art. A grade point average of 3.25 or better in upper division art courses is required. Students must also be able to show that they are adequately advanced to carry out projects which measure up to graduate standards. This requirement will be measured by a formal presentation of a portfolio of work to the graduate faculty in the area of emphasis. Students seeking admission for the fall semester must submit graduate review applications and portfolios to the graduate coordinator by March. Applications and portfolios for the spring semester are due October 1.

Advancement to Candidacy

In addition to meeting the requirements for advancement to candidacy as described in Part Two of this bulletin, all students must have (1) completed a minimum of 30 units on the official program with a minimum grade point average of 3.00, and (2) been reviewed by the graduate faculty of the emphasis area and received approval of an acceptable body of graduate work completed since classified standing fulfilling the requirements of the area of emphasis.

Specific Requirements for the Master of Fine Arts Degree

(Major Code: 10022)

Candidates for the M.F.A., in addition to meeting the requirements for advancement to candidacy, must complete a 60-unit graduate program which includes a minimum of 45 units at the 600- and 700-level. An additional 15 units at the 600- and 700-level are recommended. The Master of Fine Arts degree requires an additional 30 units in the area of specialization and professional seminars, with the expectation that the student will achieve a higher level of excellence and distinction in the chosen area of specialization.
sculpture, and printmaking). With approval of the Chair and graduate coordinator a student may focus on a program of study combining two studio art fields. Six units must be included in art history, art criticism, and aesthetics courses. Nine units must be included on the program from studio electives outside the area of emphasis or electives in other departments. Art 799A. Thesis must be included on the program. In addition, there will be an oral examination of each candidate by the graduate faculty of the Department of Art. This examination will occur at the time of the candidate's master's exhibition, and will encompass an in-depth discussion of the thesis project.

No more than 15 units of graduate work may be transferred from another institution. Requests for more than six units must be approved by a committee of representatives from the area of emphasis. Applicants holding an M.A. degree in studio art from an accredited institution may transfer up to 30 units upon recommendation of the faculty in the area of emphasis, and approval of the graduate coordinator of the Art Department. Candidates must be prepared to spend at least two semesters (24 units) in residence as full-time students. Coursework taken as a graduate student to fulfill undergraduate deficiencies may not be used to satisfy any unit requirement for the M.F.A. degree program. A 3.0 grade point average must be maintained at all times. Continuation in the program will be determined by a review of each candidate by the graduate faculty in the emphasis area. This review will be held upon completion of 30 units in the M.F.A. program, or at any time upon request of the graduate coordinator.

Master of Arts Degree in Art Admission to Graduate Study

**Studio Arts**

All students must satisfy the general requirements for admission to the University with a classified graduate standing, as described in Part Two of this bulletin. In general, students must have completed an undergraduate major in art with a minimum of 24 upper division units, including two semesters of work in the general history of art, before they will be permitted to enter the graduate program. Students must also be able to show they meet the standards expected of graduate students by carrying out projects which measure up to graduate standards. In studio areas this requirement will be measured by a formal presentation (the Graduate Review) to the graduate faculty of a portfolio of examples of the candidate's undergraduate or postbaccalaureate work. The candidate should be well enough to demonstrate the knowledge and abilities demonstrated by students in Part Two of this bulletin. All students must complete an undergraduate major in art with a concentration in art history or studio arts and the Master of Fine Arts degree is an original body of work of creative art approved by a written report. All theses and written reports accepted in satisfaction of a requirement for the master's degree are cataloged and accessioned in the library. Color slides of the project must be provided by the candidate and are retained in the slide library. Each copy of art history theses must be given to the Department of Art.

Courses Acceptable on Master's Degree Programs in Art

**UPPER DIVISION COURSES**

500. **Advanced Drawing** (3)

- Six hours.
- Prerequisites: Art 203 and 204.
- Drawing emphasizing the qualitative aspect of visual subject matter. Maximum credit six units.

501. **Professional Orientation in the Arts** (3) I, II

- Prerequisite: Twelve units of upper division art or graduate standing in art.
- Conditions met in professional art world as well as opportunities available: Exhibitions, marketing system, legal and tax responsibilities, public and private collections, grants, fellowships and professional positions investigated.

502. **Inter-Media** (1-3) I, II

- Two hours for each unit of credit.
- Prerequisites: Art 102 and 103.
- Process and materials in place and space. Maximum credit six units.

503. **Advanced Waterbase Media** (3)

- Six units.
- Prerequisites: Art 500. Six units.
- Approaches in contemporary concept in waterbase painting. Maximum credit six units.

504. **Advanced Painting** (3) I, II

- Six hours.
- Prerequisites: Art 404. Six hours.
- Approaches in contemporary concepts in painting. Maximum credit six units.

505. **Advanced Waterbase Media** (3) I, II

- Six hours.
- Prerequisites: Art 405. Six hours.
- Approaches in contemporary concepts in waterbase painting. Maximum credit six units.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>506</td>
<td>Contemporary Issues for Studio Artists (3)</td>
<td>Prerequisites: Upper division or graduate standing in art and consent of instructor.</td>
<td>I</td>
</tr>
<tr>
<td>509</td>
<td>Relief Printmaking (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>510</td>
<td>Intaglio Printmaking in Color (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>511</td>
<td>Lithography Printmaking in Color (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>512</td>
<td>Serigraphy (3) Offered only at VCU</td>
<td>Six hours.</td>
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<tr>
<td>516</td>
<td>Advanced Sculpture (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>520</td>
<td>Advanced Ceramics (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>523</td>
<td>Advanced Furniture Design (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>525</td>
<td>Advanced Graphics (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>526</td>
<td>Clay and Glaze Technology in Ceramic Design (3)</td>
<td>Six hours.</td>
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<td>531</td>
<td>Advanced Jewelry and Metalwork (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>532</td>
<td>Advanced Metalstamping (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
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<tr>
<td>533</td>
<td>Textile Techniques in Metal (3)</td>
<td>Six hours.</td>
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<tr>
<td>534</td>
<td>Advanced Weaving (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>535</td>
<td>Advanced Nonwoven Textile Construction (3) I, II</td>
<td>Six hours.</td>
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</tr>
<tr>
<td>536</td>
<td>Advanced Textile Design (3) I, II</td>
<td>Six hours.</td>
<td>I, II</td>
</tr>
<tr>
<td>537</td>
<td>Advanced Graphic Imagination (3) I, II</td>
<td>Six hours.</td>
<td></td>
</tr>
<tr>
<td>542</td>
<td>Advanced Professional Problems in Graphic Design (3) I, II</td>
<td>Prerequisites: Art 441 or 541; or consent of instructor by portfolio review.</td>
<td>I, II</td>
</tr>
<tr>
<td>546</td>
<td>History of American Art (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, and architecture from the Native American art and Colonial Period to the present.</td>
<td></td>
</tr>
<tr>
<td>547</td>
<td>Twentieth Century European Art to 1945 (3) I, II</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, and architecture from the Native American art and Colonial Period to the present.</td>
<td></td>
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<tr>
<td>548</td>
<td>Advanced Drawing and Illustration for Graphic Design (3) I, II</td>
<td>Prerequisites: Art 443. Refinement of formal visual imagery and advanced illustration problems.</td>
<td></td>
</tr>
<tr>
<td>549</td>
<td>Advanced Visual Communication Media (3)</td>
<td>Six hours.</td>
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<tr>
<td>553</td>
<td>Textile Techniques in Metal (3)</td>
<td>Six hours.</td>
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<tr>
<td>554</td>
<td>Advanced Materials in Ceramic Design</td>
<td>Six hours.</td>
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<tr>
<td>555</td>
<td>Advanced Nonwoven Textile Construction</td>
<td>Six hours.</td>
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</tr>
<tr>
<td>556</td>
<td>Advanced Textile Design (3) I, II</td>
<td>Advanced individual design in weaving. Maximum credit six units. Maximum combined credit of nine units in Art 234, 334, and 354.</td>
<td></td>
</tr>
<tr>
<td>557</td>
<td>Advanced Textile Design (3) I, II</td>
<td>Six hours.</td>
<td></td>
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<tr>
<td>558</td>
<td>Advanced Textile Design (3) I, II</td>
<td>Advanced textilology of the French Revolution to 1900.</td>
<td></td>
</tr>
<tr>
<td>559</td>
<td>Advanced Textile Design (3) I, II</td>
<td>Advanced individual design in weaving. Maximum credit six units. Maximum combined credit of nine units in Art 234, 334, and 354.</td>
<td></td>
</tr>
<tr>
<td>560</td>
<td>History of American Art (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, and architecture from the Native American art and Colonial Period to the present.</td>
<td></td>
</tr>
<tr>
<td>561</td>
<td>Art of Pre-Hispanic America (3)</td>
<td>Prerequisite: Upper division standing. Art of ancient Meso-America, Central America, Caribbean and South America from earliest times until contact with Europe.</td>
<td></td>
</tr>
<tr>
<td>564</td>
<td>Art of China (3) II</td>
<td>Prerequisite: Art 263. Historical review of Chinese art from prehistoric times through the Ching Dynasty.</td>
<td></td>
</tr>
<tr>
<td>565</td>
<td>Art of Japan (3) II</td>
<td>Prerequisite: Art 263. History of Japanese art from prehistoric times to the mid-20th century.</td>
<td></td>
</tr>
<tr>
<td>566</td>
<td>Art of Crete, Mycenae, Greece, and Rome (3)</td>
<td>Prerequisite: Art 263. Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.</td>
<td></td>
</tr>
<tr>
<td>572</td>
<td>Coptic and Byzantine Art (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.</td>
<td></td>
</tr>
<tr>
<td>573A</td>
<td>Early Renaissance Art in Italy (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.</td>
<td></td>
</tr>
<tr>
<td>573B</td>
<td>Late Renaissance Art in Italy (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.</td>
<td></td>
</tr>
<tr>
<td>573C</td>
<td>Renaissance Art in Italy (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.</td>
<td></td>
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<tr>
<td>574</td>
<td>Northern Renaissance Art (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.</td>
<td></td>
</tr>
<tr>
<td>575</td>
<td>Baroque and Rococo Art (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.</td>
<td></td>
</tr>
<tr>
<td>576</td>
<td>Arts of Native North America (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.</td>
<td></td>
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<tr>
<td>577</td>
<td>History of Architecture (3)</td>
<td>Prerequisites: Art 258 and 259. Development of painting, sculpture, architecture, and crafts from prehistoric times to the fifth century A.D.</td>
<td></td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Units</td>
<td>Prerequisites</td>
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<tr>
<td>581</td>
<td>History and Theory of Environmental Design (3) II</td>
<td>3</td>
<td>Art 258 and 259</td>
</tr>
<tr>
<td>586</td>
<td>Art Practicum Seminar (3) I</td>
<td>3</td>
<td>Twenty upper division units in art and concurrent assignment to student teaching. Discussion, readings, and research study related to art presentation strategies.</td>
</tr>
<tr>
<td>591</td>
<td>Gallery Exhibition Design (3) I, II</td>
<td>6</td>
<td>Art 591</td>
</tr>
<tr>
<td>592</td>
<td>Gallery Exhibition Design (3) I, II</td>
<td>6</td>
<td>Art 591</td>
</tr>
<tr>
<td>593</td>
<td>History and Methodology of Art History (3)</td>
<td>3</td>
<td>十二 upper division units in art and history major or minor. Readings and discussions on the historiography of art and on modern methodologies for art historical research.</td>
</tr>
<tr>
<td>596</td>
<td>Advanced Studies in Art and Art History (1-4)</td>
<td>1-4</td>
<td>Twelve upper division units in art and art history and consent of instructor. Advanced topics in art and art history. May be repeated with consent. See Class Schedule for specific content. Limit of nine units of any combination of 296, 296, 596 courses applicable to a bachelor’s degree. Maximum credit of six units of 596 applicable to a bachelor’s degree. Maximum credit of three units of 596 applicable to a master’s degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master’s degree.</td>
</tr>
<tr>
<td>600</td>
<td>Drawing (3)</td>
<td>3</td>
<td>Art 500</td>
</tr>
<tr>
<td>604</td>
<td>Painting (3)</td>
<td>3</td>
<td>Art 405, 504 and 506.</td>
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<tr>
<td>609</td>
<td>Printmaking (1-3)</td>
<td>1-3</td>
<td>Art 405</td>
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<tr>
<td>615</td>
<td>Sculpture (3)</td>
<td>3</td>
<td>Art 516</td>
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<tr>
<td>623</td>
<td>Advanced Furniture Design (3)</td>
<td>3</td>
<td>Art 523</td>
</tr>
<tr>
<td>625</td>
<td>Crafts (1-3)</td>
<td>1-3</td>
<td>Six hours.</td>
</tr>
<tr>
<td>627</td>
<td>Advanced Clay and Glaze Technology in Ceramic Design (3)</td>
<td>3</td>
<td>Art 425</td>
</tr>
<tr>
<td>631</td>
<td>Seminar in Jewelry and Metalwork (3)</td>
<td>3</td>
<td>Art 531</td>
</tr>
<tr>
<td>634</td>
<td>Seminar in Textile Design (3)</td>
<td>3</td>
<td>Art 334</td>
</tr>
<tr>
<td>641</td>
<td>Graphic Communication (1-3)</td>
<td>1-3</td>
<td>Six hours.</td>
</tr>
<tr>
<td>650</td>
<td>Creative Environmental Design (1-3)</td>
<td>1-3</td>
<td>Six upper division units in interior design, architecture or city planning. Creative study of the design of interior design, architecture and city planning. Maximum credit six units applicable to the M.A. degree; nine units applicable to the M.F.A. degree in art.</td>
</tr>
<tr>
<td>694</td>
<td>Seminar in the Principles of Design in the Space (3)</td>
<td>3</td>
<td>A semester course in art appreciation. An intensive study of the activity of creative expression and aesthetic appreciation in the area of visual experience. The analysis of original works of art. Maximum credit six units applicable to the M.A. degree.</td>
</tr>
</tbody>
</table>
Asian Studies
In the College of Arts and Letters

Faculty Members of the Center for Asian Studies
M. Alphonse Banyan, Ph.D.; Professor of Economics, Director of Center
Milton M. Chen, Ph.D., Professor of Information and Decision Sciences
Li-Rong Lily Cheng, Ph.D., Professor of Communicative Disorders
Paochin Chu, Ph.D., Professor of History
Alvin D. Coor, Ph.D., Professor of History
Thomas B. Cox, Ph.D., Professor of History
Thomas S. Doroshke, Ph.D., Professor of Linguistics
Waldo Heinrichs, Ph.D., Professor of History, The Dwight E. Morrow Chair in American Foreign Relations
Edward O. Henry, Ph.D., Professor of Anthropology
Ronald S. Himes, Ph.D., Professor of Anthropology
Yoshiko Higurashi, PhD., Professor of Japanese
Edward O. Henry, Ph.D., Professor of Anthropology
David V. C. Yi-yu Cho Woo, EdD., Professor of Chinese
Ruben G. Rumbaut, PhD., Professor of Sociology
Marcia Ray T. Smith Jr., PhD., Professor of History (Graduate Adviser)
Larry C. DuFault, Ph.D., Associate Professor of History

The program is designed to offer systematic advanced training in Asian studies and to prepare students for further graduate study in Asian studies beyond the Master of Arts degree.

Admission to Graduate Study
In addition to meeting the requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin, the student must present a Bachelor of Arts degree with a major in Asian Studies or its equivalent, as approved by the graduate committee of the Center for Asian Studies. A student whose preparation is deemed inadequate by the graduate committee will be required to complete specific courses in addition to the minimum of 30 units required for the degree.

Advancement to Candidacy
All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin. In addition, all students must demonstrate a reading knowledge, at least at the intermediate level, of a relevant foreign language approved by the graduate committee of the Center for Asian Studies. If Chinese or Japanese is required, the requirement may be fulfilled by completing 16 units of coursework in the particular language, the last four units with a grade of C (2.0) or better.

Specific Requirements for the Master of Arts Degree (Major Code: 03011)
In addition to meeting the requirements for classified graduate standing and the basic requirements for the Master of Arts degree, as described in Part Two of this bulletin, the student must complete a minimum of 30 units from courses acceptable on master's degree programs, including Asian Studies 600 and 799A, with not less than 24 units in courses on Asian content distributed as shown below.

<table>
<thead>
<tr>
<th>Asian Studies</th>
<th>600 and 799A Level Courses</th>
<th>500 600 and 799B Level Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 units</td>
<td>3 units</td>
<td>3 units</td>
</tr>
<tr>
<td>6 units</td>
<td>3 units</td>
<td>3 units</td>
</tr>
<tr>
<td>15 units</td>
<td>9 units</td>
<td>3 units</td>
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</tbody>
</table>

The remaining six of the total 30 units will be elective, subject to graduate committee approval. The total program may not include more than nine units in 500-level courses.

Only Plan A, requiring the thesis, is offered for the Master of Arts degree in Asian Studies. A final oral examination on the general field of the thesis must be passed as a requirement for the degree.

All programs will be approved by the graduate committee of the Center for Asian Studies.

Courses Acceptable on Master's Degree

Programs in Asian Studies

UPPER DIVISION COURSES

Asian Studies Courses
560. History of Japanese Business and Trade (3) I, II
Prerequisites: Upper division standing and consent of instructor. Japanese business and trade from 1600 to present. Emphasis on Japan's rapid development since 1868, interplay of social and economic forces, structure of Japanese business system, and problems of international trade.

596. Selected Studies in Asian Cultures (3)
Topics on various aspects of Asian studies. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a master's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

Anthropology Course
582. Regional Anthropology (3)

Geography Courses
554. World Cities: Comparative Approaches to Urbanization (3)
596. Advanced Topics in Geography (1-3)

History Courses
561A-561B. Asia and the West (3-3)
562. Civilization of India: The Great Traditions (3)
563. Modern India and Its Neighbors (3)
564A-564B. Southeast Asia (3-3)
565. Revolution and Social Change in Asia (3)
566. Chinese Civilization: The Great Traditions (3)
567. China's Contemporary Revolution (3)
568. Communist Party and the Chinese Revolution (3)
569. Japanese Civilization (3)
570. Medieval Japan (3)
596. Selected Studies in History (1-4)

Philosophy Course
575. A Major Philosopher

Religious Studies Courses
506. Spiritual Traditions of India (3)
580. A Major Figure

Sociology Course
511. Modern Japanese Society (3)
596. Topics in Comparative Societies (3)

GRADUATE COURSES

Asian Studies Courses
600. Seminar in Interdisciplinary Methods (3)
650. Seminar in Comparative Religion (1-3)

690. Seminar in Asian Studies (3)
Theory and practice of interdisciplinary studies. Bibliography, research tools and presentation of findings in Asian studies.

797. Research (1-3) Cr/InC/Sp
Research in one of the aspects of Asian studies. Maximum credit six units applicable to a master's degree.

799A. Thesis (3) Cr/InC/Sp
Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/InC/Sp
Prerequisite: Prior registration in Thesis 799A with an assigned grade of 'CR'. Registration required in any semester or term following assignment of SP in Thesis 799A in which the student expects to complete the thesis. The student must be registered in the course when the completed thesis is granted final approval.

Anthropology Courses
500. Seminar (3)
520. Seminar in Regional Anthropology (3)
570. Seminar in Development and Planning (3)
750. Seminar in Economic History and Institutions (3)
654. Seminar in International Business Finance (3)

Geography Courses
564. Topics in Comparative Urbanization (3)
721. Seminar in Development of Geographic Thought (3)
725. Seminar in Regional Geography (3)
740. Seminar in Human Geography (3)
750. Seminar in Urban Geography (3)

History Courses
601. Seminar in Historical Method (3)
565. Directed Reading in Asian History (3)
555. Seminar in Asian History (3)

Linguistics Course
795. Seminar in Linguistics (3)

Management Courses
722. Seminar in International Strategic Management (3)
728. Seminar in Business Planning (3)

Geography Courses
769. Seminar in International Marketing (3)

Philosophy Course
596. Seminar in Seminar Topics (3)

Political Science Courses
565. Seminar in General Comparative Political Systems (3)
568. Seminar in Comparative Political Systems (3)
569. Seminar in the Political Systems of the Developing Nations (3)
675. Seminar in International Relations (3)

Sociology Course
770. Seminar in Population and Demography (3)

Teacher Education Course
565. Comparative Education (3)

* Acceptable when of relevant content.

Preparation of a project or thesis for the master's degree.

All 797 (Research) and 799 (Special Study) courses in named departments, when relevant, are also applicable upon approval by the graduate committee.
Astronomy

In the College of Sciences

OFFICE: Physics/Astronomy 210
TELEPHONE: (619) 594-6182

Faculties
Robert J. Angione, Ph.D., Professor of Astronomy, Chair of Department, Director of Mount Laguna Observatory
C. T. Daub Jr., Ph.D., Professor of Astronomy (Graduate Adviser)
Arthur Young, Ph.D., Professor of Astronomy
Paul B. Diaz, Ph.D., Associate Professor of Astronomy
Thomas L. May, Ph.D., Associate Professor of Astronomy
Allen W. Shafter, Ph.D., Associate Professor of Astronomy
Freddie D. Tabert, Ph.D., Associate Professor of Astronomy
Robert Leach, Ph.D., Senior Staff Scientist (equivalent rank of Senior Professor)

Adjunct Faculty
William R. Knach, Ph.D., Astronomy
Andrew T. Young, Ph.D., Astronomy

Assistantship
Graduate teaching assistantships in astronomy are available to a few qualified students. Application blanks and additional information may be secured from the chair of the department.

General Information

The Department of Astronomy, in the College of Sciences, offers graduate study leading to the Master of Science degree in astronomy for further graduate work leading to the doctorate, or for professional purposes. The observatory which is located 45 road miles east of the campus includes three reflectors with apertures of 40, 24, and 16 inches. The 40-inch telescope is operated jointly with the University of Illinois. Auxiliary equipment for the telescopes includes photoelectric photometers, spectrographs, and photographic and CCD cameras for direct imaging. A dormitory for faculty and a shop/laboratory building complete the main research facilities at the observatory. Additionally, each telescope dome contains both CRT and graphics terminals and online reduction. A central, general-purpose, Sun Spare statistic computer, connected via Ethernet. In addition, approximately 20 PCs are connected to the Sun via STARLAN.

A main research interest in the department is the study of the structure and evolution of stars derived from the investigation of eclipsing and interacting binary stars. These studies make use of both photometry and spectroscopy at the observatory. Stellar evolution is further studied with photometry of star clusters. Information on the late stages of stellar evolution comes from both theoretical and observational studies of planetary nebulae. Galaxies are investigated through surface photometry using direct photography and the iodimeter. Theoretical and observational studies are underway on planetary atmospheres and the optical properties of the earth's atmosphere.

Graduate students are extensively involved in many of these research programs. Students also may make use of observatory facilities in support of their own research.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the university with classified graduate standing. In addition, the student must have an overall grade point average of at least 2.75 in the last 60 units of his undergraduate work and must have prepared in astronomy and related sciences substantially equivalent to that required for the bachelor's degree in astronomy at San Diego State University. Applicants transferring to San Diego State University must submit two letters of recommendation.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as specified in Part Two of this bulletin. In addition, students may be required to take a qualifying examination during their first semester of residence.

Specific Requirements for the Master of Science Degree

(Major Code: 19111)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must also meet the following departmental requirements in a 30-unit program:

1. Complete at least 18 units of 600- and 700-numbered courses in astronomy including 799A (Thesis, 3 units).
2. Complete at least 12 additional units of graduate level or approved 500 level courses in astronomy or related fields as approved by departmental committee.
4. A reading knowledge of scientific French, German, or Russian is recommended. Facility with a scientific computing language is desirable.

Courses Acceptable on Master's Degree

Programs in Astronomy

UPPER DIVISION COURSES

530. Celestial Mechanics (3)
Prerequisite: Physics 450.
Fundamental dynamics of celestial bodies, the central force motion, two-body motion, restricted 3-body and n-body problems. Orbital calculations, including first order perturbations of orbital elements and the motion and dynamics of earth satellites.

596. Advanced Topics in Astronomy (2 or 3) I, II
Prerequisite: Consent of instructor.
Selected topics in theoretical astronomy or astrophysics. May be repeated with new content upon approval of Instructor. See Class Schedule for specific content. Limit of nine units of any combination of 596, 496, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a bachelor's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

GRADUATE COURSES

600. Seminar (2 or 3)
Prerequisite: Consent of instructor.
An intensive study in advanced astronomy. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

610. Binary Stars (3)
Prerequisite: Astronomy 450.
Visual, spectroscopic, and eclipsing binary stars. Review of observational techniques. Methods of orbital analysis with applications emphasizing determination of fundamental stellar properties, such as mass, radius, temperature, and luminosity. Implications for stellar evolution.

620. Galactic Structure (3)
Prerequisite: Astronomy 450.
Survey of basic observational data for determining structure of Milky Way Galaxy. Includes gravity, rotation, stellar distributions, solar motion, stellar populations, kinematics and dynamics of general and peculiar stellar motions.

630. Stellar Atmospheres and Interiors (3)
Prerequisite: Astronomy 450.
Gas thermodynamics and equations of state. Production of stellar continuum radiation and spectral lines. Theories of radiative and convective energy transport. Interior structure and evolution of stars.

640. Interstellar Matter (3)
Prerequisite: Astronomy 450 and Mathematics 537.

660. Extragalactic Astronomy (3)
Prerequisite: Astronomy 450.
Morphology, radio, and optical properties, dynamics, and evolution of normal galaxies. Current interpretations of peculiar galaxies and QSO's. Observational cosmology.

680. Astronomical Techniques (3)
Prerequisites: Astronomy 350 and 450.
Basic methods of data acquisition and analysis. Emphasis is given to CCD direct imaging, spectroscopy, and photometry. Direct experience with telescopes and instruments at Mount Laguna Observatory, as well as with the department computing and image processing facility. (Formerly numbered Astronomy 617.)

979. Research (1-3) Cr/NC/SP
Prerequisite: Classified graduate standing. Research in one of the fields of astronomy. Maximum credit six units applicable to a master's degree.

980. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor. Individual study. Maximum credit six units applicable to a master's degree.

979A. Thesis (3) Cr/NC/SP
Prerequisite: Prior registration in Thesis 799A with an assigned grade of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

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Faculty

Carol A. Bennett, Ph.D., Professor of Biology, Chair of Department
Michael F. Allen, Ph.D., Professor of Biology (Graduate Coordinator, Biology)
J. David Archibald, Ph.D., Professor of Biology
Frank T. Andrews, Ph.D., Professor of Biology
Sanford L. Bernstein, Ph.D., Professor of Biology
Richard L. Boeck, Ph.D., Professor of Biology
Michael J. Brandt, Ph.D., Professor of Biology (Graduate Advisor, Microbiology)
Roger E. Carpenter, Ph.D., Professor of Biology
Lois E. Carpenter, Ph.D., Professor of Biology
Boyd D. Collier, Ph.D., Professor of Biology
Gerald C. Detterman, Ph.D., Professor of Biology
George W. Cox, Ph.D., Professor of Biology
Roger A. Davis, Ph.D., Professor of Biology
Deborah M. Dexter, Ph.D., Professor of Biology
Thomas A. Ebert, Ph.D., Professor of Biology
Richard F. Ford, Ph.D., Professor of Biology
Terrence G. Frey, Ph.D., Professor of Biology
Christopher C. Glembocki, Ph.D., Professor of Biology
Barbara B. Henningsen, Ph.D., Professor of Biology
Don Haneski S. Ph.D., Professor of Biology
Stuart H. Hubert, Ph.D., Professor of Biology
Gerhard J. Huber, Ph.D., Professor of Biology
Kenneth D. Johnson, Ph.D., Professor of Biology
Neil Knoyten, Ph.D., Professor of Biology
Skander Kriem, Ph.D., Professor of Biology
Lorrey R. McClennaghan Jr., Ph.D., Professor of Biology
Ronald E. Monroe, Ph.D., Professor of Biology
James W. Neid, Ph.D., Professor of Biology, Associate Dean of the College of Sciences
Walter C. Pfeiffer, Ph.D., Professor of Biology
Paul J. Paulin Jr., Ph.D., Professor of Biology
Jacques Perrault, Ph.D., Professor of Biology
David L. Rayle, Ph.D., Professor of Biology
Robert R. Rinhart, Ph.D., Professor of Biology
Roger A. Sahbehadi, Ph.D., Professor of Biology
Michael G. Simpson, Ph.D., Professor of Biology
James F. Steenbergen, Ph.D., Professor of Biology
Constantine Tchantchis, Ph.D., Professor of Biology
Joy B. Zedler, Ph.D., Professor of Biology
Paul H. Zedler, Ph.D., Professor of Biology
Judith W. Zykowsky, Ph.D., Professor of Biology
Vernon L. Aida, Ph.D., Associate Professor of Biology
Annalisa Berta, Ph.D., Associate Professor of Biology
Carol Bauchat, Ph.D., Associate Professor of Biology
Wayne F. Daughtery, Jr., Ph.D., Associate Professor of Biology
William P. Dietl, Ph.D., Associate Professor of Biology
David G. Fitch, Ph.D., Associate Professor of Biology
Zoe Haraz, Ph.D., III, Ph.D., Associate Professor of Biology
William M. Thalassin, Ph.D., Associate Professor of Biology
Kathy S. Williams, Ph.D., Associate Professor of Biology
Susan L. Williams, Ph.D., Associate Professor of Biology
Nancy M. Carmichael, Ph.D., Assistant Professor of Biology
Stevon D. Claude, Ph.D., Assistant Professor of Biology
Greg L. Herrns, Ph.D., Assistant Professor of Biology
Kale Kehlren, Ph.D., Assistant Professor of Biology
Paulo M. Mah, Ph.D., Assistant Professor of Biology
Kathleen L. McGuire, Ph.D., Assistant Professor of Biology

Assistantships

Graduate Assistantships and graduate non-teaching assistantships in biology are available to a limited number of qualified students. Application blanks and additional information may be obtained from the graduate coordinator in Biology.

General Information

The Department of Biology in the College of Sciences offers graduate study leading to the degrees of Master of Arts and Master of Science in Biology and the Master of Science degree in microbiology. In addition, the Department of Biology offers a joint doctoral program with the University of California, San Diego, and the City University of New York. The graduate group offers a joint doctoral program with the Graduate Program in Marine Science.

Modern life science building provides facilities for graduate study in the biological sciences. Additional facilities available in the community include the San Diego Zoo (the world-famous research branch), the National Cancer Institute, the National Institutes of Health, the National Science Foundation, and the San Diego Natural History Museum. The Natural History Museum, the National Undersea Research Center, the San Diego Natural History Museum, and the San Diego State University also operate a marine laboratory on Mission Bay and has access to research sites in the Chula Vista, Fortuna Mountain, and Ternecula (Riverside County).

Section I: Master's Degree Programs

The Master of Arts degree in biology is considered to be an advanced academic degree designed to prepare students for entrance into graduate study in the biological sciences. In addition, the Department of Biology offers a joint program in microbiology. Details of the joint doctoral program with the University of California, San Diego, and the City University of New York can be found in the graduate program in ecology. The graduate group offers a joint doctoral program with the Graduate Program in Marine Science.

Admission to Graduate Study

In addition to the requirements for admission to the University with classified graduate standing as described in Part Two of this bulletin, the student must complete a graduate program of 30 units of upper division and graduate courses selected, with the approval of the graduate adviser, from the biological sciences as listed below or from closely related fields. A total of at least 15 of these units must be in 600- and 700-numbered courses, including course 799A. Thesi. A maximum of six units of the required 30 may be selected from acceptable courses offered in the College of Education. A final oral examination on the field of the thesis and its implications in the broad fields of biology is also required.

Specific Requirements for the Master of Arts Degree in Biology

In addition to meeting the requirements for classified graduate standing, as described in Part Two of this bulletin, the student must complete a graduate program of 30 units of upper division and graduate courses selected, with the approval of the graduate adviser, from the biological sciences as listed below or from closely related fields. A total of at least 15 of these units must be in 600- and 700-numbered courses, including course 799A. Thesi. A maximum of six units of the required 30 may be selected from acceptable courses offered in the College of Education. A final oral examination on the field of the thesis and its implication in the broad fields of biology is also required.

Specific Requirements for the Master of Science Degree in Biology

In addition to meeting the requirements for classified graduate standing, as described in Part Two of this bulletin, the student must complete a graduate program of 30 units of upper division and graduate courses selected, with the approval of the graduate adviser, from the biological sciences as listed below or from closely related fields. A total of at least 15 of these units must be in 600- and 700-numbered courses, including course 799A. Thesi. A maximum of six units of the required 30 may be selected from acceptable courses offered in the College of Education. A final oral examination on the field of the thesis and its implication in the broad fields of biology is also required.
Microbiology

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as stated in Part Two of this bulletin. Satisfactory progress on the thesis research will be prerequisite to obtaining departmental approval for advancement.

Specific Requirements for the Master of Science Degree in Microbiology

(Major Code: 04111)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete a graduate program of 30 units of upper division and graduate courses selected, with the approval of the graduate adviser, from the biological sciences and closely related fields.

Not less than 18 units must be selected from courses in the area of microbiology to include not less than 15 units of 600- and 700-numbered courses. Among the 600- and 700-numbered courses selected, the student's program must include Biology 799A, Thesis or Project; and at least four units of seminar. A maximum of six units of the required 30 units may be selected from acceptable courses offered in other related areas including the College of Education.

A final oral examination on the field of the thesis and its implications in the broad field of microbiology is required.

Section II: Doctoral Programs

Biology (Cell and Molecular)

(Major Code: 04011)

The cooperating faculties of the Departments of Biology at the University of California, San Diego and at San Diego State University offer a joint doctoral program in biology (cell and molecular). The research interests of the participating faculty members cover a wide range of biological problems which represent the interdisciplinary nature of modern biology. The University of California and San Diego, and San Diego State University.

Advising Committee

Upon admission to the program the joint doctoral graduate adviser of the two institutions will establish an advising committee for the student. This committee will consist of six faculty members. One member of the committee must be from SDSU and one member from UCSD.

Residency Requirements

After formal admission to the joint doctoral program, the student must spend the academic year in full-time residence on the campus of each participating institution. The residence requirement may be waived by the student's advising committee. The residence requirement must be met for completing and filing the dissertation.

Course Requirements

There is no specific number of courses required for the doctoral program in biology, except a one-year graduate course including genetics, cellular and molecular biology. Prior to taking the qualifying examination, every student is expected to have a firm understanding of modern biological principles. Usually students will be expected to complete a set of at least four laboratory research projects, and such rotations may be fulfilled on either campus. Course work may be selected from offerings at either UCSD or SDSU.

Qualifying Examinations

Joint Qualifying Committee

A five-member committee, composed of appropriate numbers of faculty members from each of the cooperating institutions, will recommend to the advising committee for each student and approved by the graduate deans from each institution. The student's dissertation adviser cannot be a member of the joint qualifying committee.

The joint qualifying committee will conduct an oral comprehensive examination which will integrate the student's understanding of modern biological principles. The examination will be prepared by the joint program and will be administered by the student's dissertation adviser. The candidate must pass this examination in order to be admitted to candidacy. Upon successful completion of the qualifying examination the student must make application to the Graduate Division at UCSD for advancement to candidacy. Upon application of the candidate fee to UCSD, and after approval by the graduate deans on both campuses, the student will be notified of his advancement to candidacy by the UCSD Graduate Division.

Joint Dissertation Committee

Upon successful completion of the qualifying examination, the student will have satisfied the requirements for advancement to candidacy, a joint dissertation committee consisting of at least three faculty members is nominated by the graduate advisers and appointed jointly by the Graduate Deans at UCSD and UCSD. The student's dissertation research adviser will be the chair of this committee. At least one member of this committee must be from SDSU and one member from UCSD.

Dissertation

Following successful completion of the qualifying examination, the major remaining requirement for the Ph.D. degree will be satisfactory completion of a dissertation consisting of original and significant research conducted under the guidance of a faculty member. The dissertation will be evaluated with respect to the dissertation research adviser and UCSD and SDSU must be met for completing and filing the dissertation.

Award of the Degree

The Doctor of Philosophy degree in biology will be awarded jointly by the Regents of the University of California and the Trustees of The California State University in the names of both cooperating institutions.

Financial Support

The Department of Biology at UCSD endeavors to provide adequate support to all students, so that full time can be devoted to research, training, and study. During 1992-93, the support package included tuition support, a stipend for the year, and funds for research supplies. All students are required to obtain teaching experience, which normally means that a student will perform limited duties as a graduate teaching assistant.

Faculty

The following faculty members of the cooperating institutions participate in the joint doctoral program and are responsible for research and instruction.

San Diego State University

Graduate Adviser: S. Krisans.

Residency Requirements

All formal admission to the joint doctoral program, the student must spend at least one academic year in full-time residence on the campus of both institutions. The definition of residence must be in accord with the regulations of the University of California, Davis, and San Diego State University.

Advising Committee

Upon admission to the program the Joint Doctoral Graduate Advisors of the two institutions will establish an advising committee. This committee will consist of three faculty members chosen jointly from the two cooperating institutions. In consultation with the student, the committee will develop the student's course of study and will establish the student's Joint Qualifying Committee. At least one member of the advising committee must be from SDSU and one from UCD.

Course Requirements

There is no specific number of courses required for the joint doctoral program in ecology. Prior to taking the qualifying examination, every student is expected to have a firm understanding of modern biological principles, and to be conversant with several areas of ecology. Students are expected to fulfill course requirements in human ecology and physico-chemical ecology, as well as in biological ecology. Courses may be selected from offerings at either UCD or SDSU.

Qualifying Examinations

Joint Qualifying Committee

A five-member committee, composed of appropriate numbers of faculty members from each of the cooperating institutions, will advise the student and approve the Graduate Deans from each institution. The student's dissertation adviser cannot be a member of the joint qualifying committee.

The joint qualifying committee will conduct an oral comprehensive qualifying examination, which will evaluate the student's understanding of modern biological principles. The examination will focus on four areas related to the major research interest of every student. These areas will generally be microorganisms, plant systems, terrestrial systems, and aquatic systems. The examination will include written and oral components.

Courses Acceptable on Master's and Doctoral Degree Programs in Biology

UPPER DIVISION COURSES

506. Special Topics in Entomology (3-4)
Prerequisite: Biology 462.
Treatement of some aspect of entomology, such as biological control, microbial control or forest entomology, not covered in regularly scheduled courses. See Class Schedule for specific content. Maximum credit nine units. Maximum credit six units applicable to a master's degree. (Formerly numbered Biology 506A.)

507. Evolution and Ecology of Marine Mammals (3)
Prerequisite: Biology 354.
Introduction to studies of marine mammals. Habitat and behavioral relationships. Taxonomy of marine mammals.

513. Marine Microbiology (2)
Prerequisites: Biology 350 or an introductory course in microbiology and consent of instructor.
Microbiological population of estuary and ocean waters; interactions with other organisms and the physical and chemical environment. Special areas of emphasis may include oceanographic techniques, particularly the coastal environment.

514. Marine Biology (4)
Prerequisites: Three lectures and three hours of laboratory.
Biology of algae and seagrasses, including identification, life histories, evolution, morphology, physiology, and ecology.

515. Marine Invertebrate Biology (4)
Prerequisites: Three lectures and three hours of laboratory. Structure and function, ecology, behavior, physiology, and phylogenetic relationships of marine invertebrate animals.

516. Interstitial Ecology (3-4)
Prerequisites: Three lectures per week. Four units at the graduate level; three and four hours of laboratory. Max. credits: 3.

517. Biological Oceanography (4)
Prerequisites: Three lectures and six hours of laboratory.

518. Fisheries Biology (3)
Structure and function, distribution and ecology of mammals of the world.

521. Advanced General Microbiology (2)
Prerequisites: Biology 350 or an introductory course in microbiology and consent of instructor.
Structure and function of the selective isolation and characterization of important groups of soil and water bacteria.

522. Evolution of Vertebrate Structure (4)
Prerequisites: Two lectures and six hours of laboratory.

527. Animal Behavior (4)
Prerequisites: Biology 201.
Behavioral bases of animal behavior with emphasis on the ethological approach, including the evolution and adaptive significance of animal behavior.

533. Plant Structure and Function (3)
Prerequisites: Two lectures and six hours of laboratory.

534. Plant-Soil Ecology (3)
Prerequisites: Biology 201, 1. Recommended: Geography 505.
Plant-soil relationships from an ecological perspective. Biotic interactions controlling soil fertility and plant growth.

535. Plant Ecology (4)
Prerequisites: Biology 201.

536. Plant-Microbe Interactions: From Molecules to Ecosystems (3)
Prerequisites: Biology 352 and 354; Chemistry, 361A. Current theories of plant-microbe interactions including recognition, specificity, and regulation of ecosystem structure and function. Emphasis on modern molecular and population theories.

539. Restoration Ecology (3)
Prerequisites: Biology 354.
Ecological concepts pertaining to the restoration of disturbed ecosystems, including plant succession, the diversity of man-made ecosystems, below-ground biota, mineral cycling, succession, and other organisms and processes on disturbed lands.

540. Conservation Ecology (3)
Prerequisites: Biology 354. Human impacts on ecosystems, the resultant endangerment and extinction of plant and animal species, and strategies for the protection and recovery of threatened forms.

557. Animal Behavior (4)
Prerequisites: Biology 215, Biology 210 or Psychology 211 and 212. Biological bases of animal behavior with emphasis on the ethological approach, including the evolution and adaptive significance of animal behavior.

560. Ichthyology (4)
Prerequisites: Biology 201.
Structural changes that have occurred in organ systems of vertebrates during the course of evolution.

562. Herpetology (4)
Prerequisites: Biology 201.
Structural changes that have occurred in organ systems of vertebrates during the course of evolution.

563. Plant Systematics (4)
Prerequisites: Biology 201.

564. Plant-Soil Ecology (3)
Prerequisites: Biology 201, 1. Recommended: Geography 505.
Plant-soil relationships from an ecological perspective. Biotic interactions controlling soil fertility and plant growth.

565. Plant Ecology (4)
Prerequisites: Biology 201.

567. Plant Ecology (4)
Prerequisites: Biology 201.

568. Plant Ecology (4)
Prerequisites: Biology 201.

569. Plant Ecology (4)
Prerequisites: Biology 201.

570. Animal Behavior (4)
Prerequisites: Biology 215, Biology 210 or Psychology 211 and 212. Biological bases of animal behavior with emphasis on the ethological approach, including the evolution and adaptive significance of animal behavior.

571. Ecological Oceanography (4)
Prerequisites: Three lectures and six hours of laboratory.

572. Mammalogy (4)
Prerequisites: Three lectures and six hours of laboratory.

573. Animal Behavior (4)
Prerequisites: Biology 215, Biology 210 or Psychology 211 and 212. Biological bases of animal behavior with emphasis on the ethological approach, including the evolution and adaptive signifi-
542. Ecology of Genetically Engineered Organisms (3)
Two lectures and one hour of colloquium.
Prerequisites: Biology 201 and 202. Recommended: Biology 300 and 310.
Ecological and evolutionary implications of their use.

543. Ecological Methods (1-3)
Three hours of laboratory per unit.
Prerequisites: Biology 215 and 354 or 454. Methods of study in the field and in laboratory. Interpretation of results. Labs may be combined with class meetings during academic year.

546. Molecular Approaches in the Medical Laboratory (3)
One lecture and six hours of laboratory.
Prerequisites: Biology 350 and 356; Chemistry 361A and 361B.
Application of recombinant DNA and molecular cell biology techniques in modern medical laboratory; theory and practice.

545. Molecular Virology (2)
Prerequisites: Biology 356. Recommended: Biology 550.
Molecular aspects of structure, genetics, and replication of viruses; virological patterns of viral infection; diagnostic virology, and antiviral vaccines and drugs; emphasis on human pathogens.

546. Animal Physiology (3)
Prerequisites: Biology 201 and 202; Chemistry 230 or 231; Physiology of vertebrate and invertebrate animals with emphasis on diversity of solutions to physiological problems and on functional integration of organ systems.

546L. Radiation Biology Laboratory (3)
Prerequisites: Biology 100 or 201 and 202; Physics 180 and 182B. Recommended: Biology 356.
Principles underlying radiological reactions of ionizing radiations. Effects of ionizing radiations at the biochemical, cellular, organ, and organism levels.

546M. Plant Physiology (3)
Prerequisites: Biology 201 and 202; Chemistry 361A or 361B.
Activities of plants, including photosynthesis, ion transport, translocation, water relations, growth and development.

547. Regional Field Studies in Biology (1-3)
One to three weeks periods during vacations and summer sessions, may be combined with class meetings during academic year.
Prerequisites: At least twelve units in the biological sciences, including Biology 201, and consent of instructor.
Extended field studies of the flora, fauna, and biotic communities of major natural regions of western North America. May be repeated with new content. Maximum credit six units.

548. Systems Ecology (4)
Three lectures and three hours of laboratory.
Prerequisites: Biology 354, Mathematics 122 or 150 or 156, and consent of instructor.
Theory and techniques of systems analysis and mathematical modeling as applied to ecological problems.

549. Microbial Genetics and Physiology (2)
Prerequisites: Biology 350 and 352; Chemistry 361A.
Physiology of microbial growth, bacterial structure and function, genetics of bacteriophages and bacteria.

550. Prokaryotic and Eukaryotic Molecular Biology (4)
Prerequisites: Biology 352 and 356. Recommended: Biology 361A and 361B.

551. Recombinant DNA (3) I, II
Prerequisites: Chemistry 361A, Biology 350, 352, 356, and 361A.
Introduction to recombinant DNA techniques.

551L. Recombinant DNA Laboratory (2)
Prerequisites: At least twelve units in the biological sciences, including Biology 201 and 202. Recommended: Biology 356.
The laboratory determination of the effects of ionizing radiation on biological systems. Emphasis on experimental approaches.

551M. Plant Molecular Biology (3)
Prerequisites: Biology 356 and Chemistry 361A. Recommended: Biology 550 or 556.
Principles of plant growth, development and adaptation from modern molecular biology perspective including techniques of plant biotechnology and applications of genetic engineering to agriculture.

556. Molecular Endocrinology (3)
Prerequisite: Biology 356.
Molecular mechanisms of endocrine hormone biosynthesis, secretion, and actions.

557. Molecular Pharmacology (3)
Prerequisite: Biology 356. Recommended: Biology 567.
Molecular mechanisms of pharmacological agents. Emphasis on drugs that interact with nervous and endocrine systems.

558. Parasitology (4)
Two lectures and six hours of laboratory.
Prerequisite: Biology 100 or 102. Introduction to the study of parasites with special reference to those of humans. Laboratory including identification of important human parasites, and collection and preservation of local forms.

559. Pathogenic Bacteriology (4)
Two lectures and six hours of laboratory.
Prerequisite: Biology 350 with a minimum grade of C.
Bacterial and rickettsial agents of disease in man and other animals. Consideration of host-parasite relationships, the biology of disease, and host agents and mechanisms of host resistance. Laboratory experience in isolation and identification of bacterial pathogens.

560L. Developmental Biology (3)
Prerequisite: Biology 352.
Analysis of development with emphasis on embryonic differentiation.

561. Embryology (4)
Two lectures and six hours of laboratory.
Prerequisites: Biology 201 and 202.
Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.

562. Hematology (3)
Two lectures and three hours of laboratory.
Prerequisite: Biology 350.
Study of normal and pathological blood with chemical, physical and microscopic methods.

563. Molecular Immunology (3)
Prerequisites: Biology 202 and Chemistry 361A. Recommended: Biology 532 and 556B.
Comprehensive selection and discussion of human cadavers with major emphasis on the regional approach.

564. Microbiology (3)
Prerequisite: Biology 356. Recommended: Biology 567.
Cellular and molecular aspects of the immune response. Genetics of immunoglobulins, major histocompatibility complex, lymphocyte activation and its manifestations on the immune response, and immunological research techniques.

565. Neurobiology (3)
Prerequisite: Biology 201.
Theoretical and practical aspects of the immune response. Genes and genetic regulation of immune responses.

566. Plant Molecular Biology (3)
Prerequisites: Biology 356 and 361A.
Molecular aspects of the immune response. Genetics of immunoglobulins, major histocompatibility complex, lymphocyte development and their manifestations on immune responsiveness, lymphocyte immunopathologies including AIDS, and contemporary immunological techniques.

567. Biochemistry (3)
Prerequisites: Biology 350 or 590 or Psychology 260.
Analysis of development with emphasis on cellular and organ system levels.

568. Medical Entomology (4)
Three hours of laboratory.
Prerequisites: Biology 350 and credit or concurrent registration in Biology 585.
Role of insects and other arthropods in the transmission and control of human diseases and vector-borne diseases.

569. Medical Microbiology (2)
Prerequisite: This course fulfills a requirement for the bachelor's degree.
Medical microbiology.

570. Neurobiology (3)
Prerequisite: Biology 356 or 590 or Psychology 260.
Medical microbiology.

571. Genetics of Genetically Engineered Organisms (3)
Prerequisite: Biology 201 and 202. Recommended: Biology 356.

572. Genetics and Genomics (3)
Prerequisite: Biology 201 and 202. Recommended: Biology 356.

573. Medical Microbiology (2)
Prerequisites: Biology 350 and 356; Chemistry 361A and 361B.
Principles of plant growth, development and adaptation from modern molecular biology perspective including techniques of plant biotechnology and applications of genetic engineering to agriculture.

576. Medical Entomology (4)
Three lectures and three hours of laboratory. See Class Schedule for lecture/lab format.
Prerequisite: Biology 201.
Role of insects and other arthropods in the transmission and control of human diseases and vector-borne diseases.

577. Embryology (4)
Two lectures and six hours of laboratory.
Prerequisites: Biology 201 and 202.
Studies in comparative gametogenesis, morphogenesis, and reproductive physiology.

578. Immunohematology (2)
Prerequisite: Biology 201.
Theory of blood grouping and typing with emphasis on recent advances. Procedures for identification of immune disorders and tests to determine compatibility.

579. Basic Immunology (3)
Prerequisites: Biology 356 and 358. Recommended: Biology 561.
Cellular and molecular aspects of the immune response. Genetics of immunoglobulins, major histocompatibility complex, lymphocyte activation and its manifestations on the immune response, and immunological research techniques.

580. Microbiology (3)
Prerequisite: Biology 356 or 590 or Psychology 260.
Analysis of development with emphasis on cellular and organ system levels.

581. Medical Microbiology (2)
Prerequisite: Biology 350 and 356.
Medical microbiology.

582. Molecular Pharmacology (3)
Prerequisite: Biology 356. Recommended: Biology 567.
Molecular mechanisms of pharmacological agents. Emphasis on drugs that interact with nervous and endocrine systems.

583. Pathogenic Bacteriology (4)
Two lectures and six hours of laboratory.
Prerequisite: Biology 350 with a minimum grade of C.
Bacterial and rickettsial agents of disease in man and other animals. Consideration of host-parasite relationships, the biology of disease, and host agents and mechanisms of host resistance. Laboratory experience in isolation and identification of bacterial pathogens.

584. Physiology of Human Systems (4)
Three lectures and one hour of laboratory.
Prerequisites: Biology 201 and 202. Recommended: Chemistry 361A and 361B.
Human physiology presented at cellular and organ system levels: membrane transport, nerve excitation, muscle contraction, cardiovascular physiology, kidney function, hormone function, reproduction and digestion. For students majoring in a natural science or engineering.

585. Biochemistry (3)
Prerequisites: Biology 350 and 358. Recommended: Biology 561.
Cellular and molecular aspects of the immune response. Genetics of immunoglobulins, major histocompatibility complex, lymphocyte activation and its manifestations on the immune response, and immunological research techniques.

586. Medical Microbiology (2)
Prerequisite: This course fulfills a requirement for the bachelor's degree.
Medical microbiology.

587. Basic Immunology (3)
Prerequisite: Computer science I.
Advanced selected topics in modern biology. May be repeated with new content. See Class Schedule for specific content. Limit of units of any combination of 495, 496, 596 courses applicable to a bachelor's degree. Maximum combined credit of six units of 595 and 596 applicable to a 30-unit master's degree. Additional units acceptable with the approval of the graduate advisor.
694. Advanced Topics in Virology (1-4)  
Prerequisites: Biology 530 and 534.  
May be repeated with new content. See Class Schedule for specific content. Maximum credit four units applicable to a master's degree.

696. Advanced Topics in Biology (1-3)  
Prerequisite: Consent of instructor. Intensive study in specific areas of biology. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

710. Advanced Topics in Ecology (2-4)  
Prerequisites: Biology 354 and consent of instructor. Selected topics in ecology. May be repeated with new content and consent of the graduate advisor in ecology. Maximum credit six units applicable to a master's degree.

725. Aquatic Ecology (3)  
Two lectures and three hours of laboratory.  
Prerequisites: Biology 354 and consent of instructor. Application for collecting permit must be made at least six weeks before class begins at the Coastal and Marine Institute (LS-239). Ecological concepts as applied to benthic and pelagic populations and communities in fresh water and marine environments.

730. Behavioral Ecology (3)  
Two lectures and three hours of laboratory.  
Prerequisites: Biology 354, 354L and consent of instructor. Recommended: Biology 527. Behavioral mechanisms relating animals to their physical and biotic environment.

740. Seminar in Phylogenetic Systematics (3)  
Prerequisite: Biology 354. Theory and practice in systematics utilizing cladistic approach to elucidating phylogenetic relationships.

750. Population and Community Ecology (3)  
Two lectures and three hours of laboratory.  
Prerequisite: Biology 354. Formulation, analysis and experimental testing of the theories of the structure and dynamics of ecological systems at the population and community level.

770. Seminar in Systematics and Evolution (2-3)  
Prerequisite: Consent of instructor. Selected topics in systematics and evolution. May be repeated with new content. See Class Schedule for specific content. Maximum credit four units applicable to a master's degree.

879. Thesis or Project Extension (0) Cr/NC  
Prerequisite: Admission to the doctoral program. Preparation of the dissertation for the doctoral degree. Enrollment is required during the term in which the dissertation is approved.
Molecular Biology

Faculty
Sandra H. Bernstein, Ph.D., Professor of Biology (Molecular Biology Institute Director)
Arthur W. Ziskind, Ph.D., Professor of Biology (MBI Associate Director)
Carol A. Barrett, Ph.D., Professor of Biology
Richard L. Blumen, Ph.D., Professor of Biology
Michael L. Breindl, Ph.D., Professor of Biology (Graduate Advisor)
A. Stephen Dahms, Ph.D., Professor of Chemistry
Richard J. Laub, Ph.D., Professor of Chemistry
Kenneth D. Johnson, Ph.D., Professor of Biology
Christopher A. Stephen Dahms, Ph.D., Professor of Chemistry
Gerald G. Johnson, Ph.D., Professor of Biology
Roger A. Davis, Ph.D., Professor of Biology
Kathleen L. McGuire, Ph.D., Assistant Professor of Biology
Michael J. Breindl, Ph.D., Professor of Biology
William E. Stumpf, Ph.D., Professor of Chemistry (Graduate Advisor)
Constantine Touloukian, Ph.D., Professor of Biology
Steve D. Close, Ph.D., Assistant Professor of Biology (Graduate Adviser)
Greg L. Harris, Ph.D., Assistant Professor of Biology
Kathleen L. McGuire, Ph.D., Assistant Professor of Biology
Adjoint Faculty
Robert A. Bohrer, J.D., LL.M., Professor of Law, California Western School of Law

General Information
The Molecular Biology Institute (MBI) administers the Master of Arts and Master of Science degrees in biology with an emphasis in molecular biology. The MBI is currently composed of members from the Departments of Biology and Chemistry and is designed to serve these departments in the coordination, support and enhancement of research and training in the molecular biological sciences. Graduate teaching assistantships in biology and chemistry are available to qualified students. Application blanks and additional information may be obtained from the coordinator of the biology graduate program.

Admission to Graduate Study
Candidates for admission may come from a variety of disciplines in the biological and physical sciences. Ultimately, the degree work in molecular biology will be carried out under the supervision of MBI members.

In addition to the general requirements for admission to the University with classified standing as described in Part Two of this bulletin, a student must satisfy the following admission requirements before being recommended for admission with classified standing:

1. Possess a bachelor's degree with a major in a biological or physical science equivalent to that offered at State University.
2. Have a grade point average of 2.75 or better in work taken for the baccalaureate degree.
4. Have a score in the 60th percentile or better on the GRE Subject Test in Biology. This includes the test in biology, or chemistry or the tests in biochemistry, cell biology, and molecular biology. Subject examinations in other natural science disciplines will be considered.
5. Supply three letters of reference that describe the applicant's potential for graduate work and research capabilities. Students who do not meet all of the above requirements for admission with classified standing may be admitted with conditionally classified graduate standing upon the recommendation of the MBI faculty. Students so admitted will be advised as to the nature of their deficiency and the time allowed to achieve full classified graduate standing.

Advancement to Candidacy
All students must satisfy the general requirements for advancement to candidacy, including the foreign language requirement for the master of arts degree, as stated in Part Two of this bulletin. Satisfactory progress on the thesis research proposal will be prerequisite to obtaining departmental approval for advancement.

Specific Requirements for the Master of Arts or Master of Science Degree
(Major Code: 04161)

In addition to meeting the requirements for classified graduate standing, the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete a graduate program of 30 units of upper division and the graduate courses selected, with the approval of the MBI graduate adviser, from the courses listed below. At least 15 units of the courses selected must be in 600- and 700-numbered courses including 799A, Thesis or Project. The student must complete a total of at least nine units of Molecular Biology 601 and six units of Molecular Biology 610 with the approval of the graduate adviser of molecular biology, a student may substitute for Molecular Biology 610 another 600 or 700 numbered course. A final oral examination on the thesis will be administered by the thesis committee; in addition, a formal public presentation of the thesis will be required.

Emphasis in Molecular Biology

Courses Acceptable for the Emphasis in Molecular Biology

UPPER DIVISION COURSES

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>536</td>
<td>Plant-Microbe Interactions: From Molecules to Ecosystems (3)</td>
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<tr>
<td>549</td>
<td>Microbial Genetics and Physiology (2)</td>
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<tr>
<td>550</td>
<td>Prokaryotic and Eukaryotic Molecular Biology (4)</td>
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<td>551</td>
<td>Recombinant DNA (3)</td>
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<tr>
<td>551L</td>
<td>Recombinant DNA Laboratory (2)</td>
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<tr>
<td>552</td>
<td>General Virology (2)</td>
</tr>
<tr>
<td>552L</td>
<td>General Virology Laboratory (2)</td>
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<tr>
<td>553</td>
<td>Molecular Approaches in the Medical Laboratory (3)</td>
</tr>
<tr>
<td>554</td>
<td>Molecular Virology (2)</td>
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<tr>
<td>556</td>
<td>Radiation Biology (3)</td>
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<td>557</td>
<td>Plant Physiology (3)</td>
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<td>558</td>
<td>Topics in Cellular Biology (3)</td>
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<td>559</td>
<td>Molecular Plant Biology (2)</td>
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<td>563</td>
<td>Molecular Endocrinology (3)</td>
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<td>566</td>
<td>Molecular Pharmacology (3)</td>
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<td>567</td>
<td>Neurobiology (3)</td>
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<td>569</td>
<td>Developmental Biology (3)</td>
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<td>571</td>
<td>Embryology (4)</td>
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<td>575</td>
<td>Cellular and Molecular Immunology (3)</td>
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<tr>
<td>575L</td>
<td>Immunology Laboratory (1)</td>
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<td>576</td>
<td>Pharmacology of Human Systems (4)</td>
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<td>577</td>
<td>Advanced Immunology (3)</td>
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<td>578</td>
<td>Scanning Electron Microscopy (2)</td>
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<tr>
<td>579</td>
<td>Radiosotope Techniques in Biology (4)</td>
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<td>580</td>
<td>Computers in Biomedical Research (3)</td>
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<td>585</td>
<td>Special Topics in Biology (1-3)</td>
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<td>586</td>
<td>Uridinucleotide Methods in Biology (3)</td>
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<td>587</td>
<td>Multivariate Statistical Methods in Biology (5)</td>
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<td>590</td>
<td>Virology (2)</td>
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<td>593</td>
<td>Membrane Biochemistry (3)</td>
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GRADUATE COURSES IN MOLECULAR BIOLOGY

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<tbody>
<tr>
<td>550</td>
<td>Advanced Physical Chemistry (3)</td>
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<td>551</td>
<td>Instrumental Methods of Chemical Analysis (2)</td>
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<tr>
<td>556A-560B</td>
<td>General Biochemistry (3-3)</td>
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<td>567</td>
<td>Physical Biochemistry (3)</td>
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<tr>
<td>567L</td>
<td>Biochemistry Laboratory (2)</td>
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<td>569</td>
<td>Advanced Special Topics in Chemistry (1-3)</td>
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GRADUATE COURSES

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<tbody>
<tr>
<td>600</td>
<td>Seminar (2-3)</td>
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<tr>
<td>648</td>
<td>Seminar in Immunology (2-3)</td>
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<tr>
<td>694</td>
<td>Advanced Topics in Virology (1-4)</td>
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<td>696</td>
<td>Advanced Topics in Biology (1-3)</td>
</tr>
<tr>
<td>750</td>
<td>Molecular Biophysics (3)</td>
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<tr>
<td>795</td>
<td>Laboratory Techniques (2 Cr/NC)</td>
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<tr>
<td>797</td>
<td>Research (1-3 Cr/NC/SP)</td>
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<td>798</td>
<td>Special Study (1-3 Cr/NC/SP)</td>
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Chemistry

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>711</td>
<td>Chemical Thermodynamics (3)</td>
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<tr>
<td>712</td>
<td>Chemical Kinetics (3)</td>
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<tr>
<td>751</td>
<td>Separations Science (3)</td>
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<tr>
<td>760</td>
<td>Advanced Topics in Biochemistry (1-3)</td>
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<tr>
<td>762</td>
<td>Enzymology (2)</td>
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<td>763</td>
<td>Cell Regulation (2)</td>
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<td>764</td>
<td>Membrane Biochemistry (3)</td>
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<tr>
<td>790</td>
<td>Seminar (1-3)</td>
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<tr>
<td>791</td>
<td>Research Seminar (1)</td>
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<td>792</td>
<td>Bibliography (1)</td>
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<tr>
<td>797</td>
<td>Research (1-3 Cr/NC/SP)</td>
</tr>
<tr>
<td>798</td>
<td>Special Study (1-3 Cr/NC/SP)</td>
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GRADUATE COURSES IN MOLECULAR BIOLOGY

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>110</td>
<td>Seminar in Molecular Biology (1-3)</td>
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<tr>
<td>601</td>
<td>Colloquium in Molecular Biology Research (1 Cr/NC/SP)</td>
</tr>
</tbody>
</table>

Recent research advances in the Molecular Biology Institute and established outside investigators. May be repeated with new content. Open only to students admitted to the molecular biology program or by permission of the graduate adviser for molecular biology. Maximum credit six units, three of which are applicable to a master's degree.

610. Advanced Topics in Molecular and Cell Biology (1-4)

Prerequisite: Consent of instructor

Evaluation of current literature in molecular biology. May be repeated with new content. Maximum credit six units applicable to a master's degree.

610. Advanced Topics in Molecular and Cell Biology (1-4)

Prerequisite: Graduate standing in a life or physical science.

Intensive study in specific areas of molecular and cell biology. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.
Biostatistics and Biometry

In the College of Sciences and the College of Health and Human Services

Faculty Committee for Biostatistics and Biometry

Boyd D. Collier, Ph.D., Professor of Biology
Amanda L. Colbeck, Ph.D., Professor of Mathematical Sciences
Craig A. Molgaard, Ph.D., M.P.H., Professor of Public Health
King-Jong Lui, Ph.D., Associate Professor of Mathematical Sciences
David W. MacKay, Ph.D., Associate Professor of Mathematical Sciences
Donald L. Smythe, Ph.D., Associate Professor of Public Health
Duanle L. Staffey, Ph.D., Assistant Professor of Mathematical Sciences

General Information

San Diego State University provides preparation for bio-statistically oriented careers by offering biostatistics related coursework, research opportunities and biostatistical consulting experience within regular degree programs in the Departments of Biology, Mathematical Sciences, and Graduate School of Public Health. A Master of Science degree in statistics with concentration in biometry may be earned in the Department of Mathematical Sciences, and a Master of Public Health degree with concentration in biometry may be earned in the Graduate School of Public Health. Degrees in general biostatistics or biometry are not offered by the University. However, a Master of Science degree in biostatistics or biometry may be earned as a special major (see the appropriate section in this bulletin).

Specific courses in biostatistics and biometry listed below are offered with the cooperation of faculty from the participating departments. Biostatistics and biometry courses that specialize in applications to biology are offered in the Department of Biological Sciences. Students in biology specializing in applications to public health are offered in the Department of Mathematical Sciences. The Department of Mathematical Sciences offers courses in addition to the above listed courses, some courses in statistics and biostatistics that are more mathematically oriented.

Courses

Biostatistics Courses

Mathematics Courses

Advisers: Collier, 594-6448
Lui, 594-7245

Biostatistics (3)
Probability (3)
Introduction to Probability (3)
Mathematical Statistics (3)
Mathematical Statistics (3)
Stochastic Processes (3)
Computer Oriented Statistical Analysis (3)

554B. Advanced Computer Oriented Statistical Analysis (3)
556B. Multivariate Statistical Methods in Biology (3)
561A. Mathematical Statistics (3)
561B. Mathematical Statistics (3)
563. Stochastic Processes (3)
564A. Computer Oriented Statistical Analysis (3)

Advanced Computer Oriented Statistical Analysis (3)
Multivariate Statistical Methods in Biology (3)
Mathematical Statistics (3)
Statistical Computing (3)
Nonparametric Statistics (3)
Sample Surveys (3)
Multivariate Analysis (3)
Linear Statistical Hypothesis Testing (3)
Design of Experiments (3)
Survival Analysis (3)
Categorical Data (3)
Advanced Biostatistical Methods (3)
Advanced Biostatistical Methods (3)

Public Health Courses

Biostatistics (3)
Advanced Statistical Methods in Public Health (3)
Applications of Multivariate Statistics in Public Health (3)

Biostatistics and Biometry Office: Business Administration/Mathematics 448 Telephone: (619) 594-5217

Assistantships

Graduate teaching assistantships and graduate non-teaching assistantships in business administration are available to a limited number of qualified students. Application blanks and additional information may be obtained from the Assistant to the Graduate Advisor.

General Information

The College of Business Administration offers graduate study leading to the Master of Business Administration degree, Master of Science degree in Business Administration and the Master of Science degree in Accountancy. The major focus of the Master of Science degree in Accountancy is to provide a broad education in business for the student. The Master of Science degree in Business Administration is designed to provide additional education and specialization in business subjects for the student who has an undergraduate degree in one of the business subject fields.

The objective of the Master of Science degree in Accountancy is to prepare students for careers as professional accountants in financial institutions, government, industry, nonprofit organizations, and public practice. The basic conceptual knowledge of accounting and business can be obtained through an undergraduate degree or by otherwise meeting the prerequisites for the M.S. degree in Accountancy. The program offers the opportunity for greater depth of education by allowing the students to concentrate early, coursework in courses of specialized study in accounting. The student's degree in Accountancy can be accredited by the American Assembly of Collegiate Schools of Business.

The College of Business Administration offers graduate study leading to the Master of Business Administration degree is designed to provide additional education and specialization in business subjects for the student who has an undergraduate degree in one of the business subject fields.

Admission to the Graduate Program in the College of Business Administration

A current student of San Diego State Normal College of Business Administration who meets the requirements for admission to the Master of Business Administration degree program is eligible to apply simultaneously for admission to the master's degree program. The student must meet the minimum University Graduate grade point requirements. Before enrollment in one of the College of Business Administration master's degree programs, the student must be competent in the operation of personal computers, including word processing and spreadsheets. These skills are required in graduate business courses.

Transcripts and test scores must be on file at San Diego State University sufficiently in advance of the expected date of registration for a decision to be made. For fall admission the GMAT should be taken prior to April 1 and for spring admission, prior to August 1. Details concerning the GMAT may be obtained from the Test Office, San Diego State University, or by writing to the Educational Testing Service, 159 Airport Road, Princeton NJ 08541.

Business Administration Degree

Admission to the Degree Curriculum

Regulations governing admission to the University and to the College of Business Administration are outlined above and in Part Two of this bulletin.

Advance ament to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as described in Part Two of this bulletin.

Specific Requirements for the Master of Business Administration Degree

(Major Code: 05011)

In addition to meeting the requirements for classified graduate status in the basic major, the student must complete an approved program of study containing between 30 and 60 units of 600- and 700-numbered courses. No 500-numbered courses may be included. The exact number of units for each student will depend on the extent of the previous coursework in business administration. Students with no previous coursework in business administration or related fields will normally be expected to complete 60 units. Students with a recent undergraduate degree in business administration has normal expected to complete 30 units. Up to nine units of coursework may be accepted for transfer. Transfer courses must be strictly graduate courses taken in a professionally accredited program.

At least 21 of the total units required must be completed in residence at San Diego State University, and at least nine units of coursework in the College of Business Administration must be completed after advancement to candidacy.

The requirements for the degree are as follows:

1. To be immediately after admission to the curriculum for the Master of Business Administration degree, the student must complete a three-unit course in each of three
Field: Business Administration

2. Complete each of the following core of eleven courses for which an equivalent has not been satisfactorily completed.
   - ACCTG 610 Financial Accounting (3)
   - FIN 615 Financial Management (3)
   - SD 602 Statistical Analysis for Business (3)
   - MGT 611 Organizational Behavior and Human Resources Management (3)
   - MGT 626 Seminar in Policy Formulation (3)
   - MKT 605 Marketing (3)

3. Complete 30 units in the following two categories of specialization and electives. For students that would be required to complete more than 60 units of 600- and 700-numbered courses will be sent to the student upon the recommendation of the College of Business Administration and the approval of the advisor. At least 15 units in coursework outside the specialization listed below, three units of which must include Business Administration 999A, Thesis (Plan A), or Directed Readings in Business Administration, in the appropriate department. Students choosing the Directed Readings option must then pass a comprehensive examination in their last semester of coursework in lieu of the thesis (Plan B).

   a. Core: Complete each of the following core of ten courses for which an equivalent has not been satisfactorily completed.
      - ACCTG 201 Financial Accounting Fundamentals (3)
      - ACCTG 202 Managerial Accounting Fundamentals (3)
      - ECON 101 Principles of Economics (3)
      - ECON 102 Principles of Economics (3)
      - ECON 201 Statistical Methods (3) OR
      - MATH 119 Elementary Statistics for Business (3)
      - ECON 421 Business Cycles (3)
      - FIN 323 Fundamentals of Finance (3)
      - IDS 180 Principles of Information Systems (3)
      - IDS 302 Introduction to Production and Operations Management (3)
      - MGT 350 Management and Organizational Behavior (3)
      - MKT 370 Marketing (3)
      - MATH 120 Calculus for Business Analysis (3)

   b. Electives: At least 15 units in coursework outside the specialization listed below, three units of which must include Business Administration 999A, Thesis (Plan A), or Directed Readings in Business Administration, in the appropriate department. At least 15 units in coursework outside the specialization listed below, three units of which must include Business Administration 999A, Thesis (Plan A), or Directed Readings in Business Administration, in the appropriate department. Students choosing the Directed Readings option must then pass a comprehensive examination in their last semester of coursework in lieu of the thesis (Plan B).

   c. Specializations: Major Code
      - Accounting: 05021
      - Finance: 05041
      - Financial Services: 05043
      - Human Resource Management: 05151
      - Information Systems: 07021
      - International Business: 05131
      - Management: 05061
      - Management Science: 05072
      - Marketing: 05076
      - Production and Operations Management: 05153
      - Real Estate: 05111

5. Electives: At least 15 units in coursework outside the specialization and the core, no more than six units in the department offering the specialization, and no more than nine units in any other department. Additional electives may be needed to total the minimum 30 units required for the degree.

6. Not more than a total of six units in courses 797, Research, and 798, Special Study, combined, will be accepted for credit toward the degree.

7. For regulations concerning grade point averages, final approval of the granting of degree, award of the degree, and diplomas, see the section entitled "Basic Requirements for the Master's Degree." In Part Two of this Bulletin.

Candidates for the Master of Business Administration degree must complete Information Systems and Management Information Systems in courses 280 or equivalent may not be counted toward the master's degree under any circumstance.

Master of Science Degree in Business Administration

Admission to the Degree Curriculum

In addition to meeting the requirements for classified graduate standing in the University and admission to the College of Business Administration, as described in Part Two of this Bulletin, the student must have successfully completed the following courses or their equivalents before enrolling in 600- and 700-numbered courses listed on the official master's degree program.

- ACCTG 201 Financial Accounting Fundamentals (3)
- ACCTG 202 Managerial Accounting Fundamentals (3)
- ECON 101 Principles of Economics (3)
- ECON 102 Principles of Economics (3)
- ECON 201 Statistical Methods (3) OR
- MATH 119 Elementary Statistics for Business (3)
- ECON 421 Business Cycles (3)
- FIN 323 Fundamentals of Finance (3)
- IDS 180 Principles of Information Systems (3)
- IDS 302 Introduction to Production and Operations Management (3)
- MGT 350 Management and Organizational Behavior (3)
- MKT 370 Marketing (3)
- MATH 120 Calculus for Business Analysis (3)

In addition, the student's advisor may request satisfactory completion of additional prerequisite courses in the student's proposed field of specialization.

Notice of admission to a curriculum with classified graduate standing will be sent to the student upon the recommendation of the College of Business Administration and the approval of the Dean of the Graduate Division and Research.

Advancement to Candidacy

All candidates for the Master of Science degree must complete 2.5 units in coursework outside the specialization and the core, no more than six units in the department offering the specialization, and no more than nine units in any other department. Additional electives may be needed to total the minimum 30 units required for the degree.

In addition to meeting the requirements for classified graduate standing in courses 797, Research, and 798, Special Study, combined, will be accepted for credit toward the degree.

For regulations concerning grade point averages, final approval of the granting of degree, award of the degree, and diplomas, see the section entitled "Basic Requirements for the Master's Degree." In Part Two of this Bulletin.

Specific Requirements for the Master of Science Degree

In addition to meeting the requirements for classified graduate standing in courses 797, Research, and 798, Special Study, combined, will be accepted for credit toward the degree. Each of the concentrations for the Master of Science degree in Business Administration require Plan A. For regulations concerning grade point averages, final approval of the granting of degree, award of the degree, and program leading to a Master of Business Administration and a Master of Latin American Studies, the primary objectives of the master's degree program are to offer preparation in the fields of business administration and Latin American studies for the purpose of providing knowledge and skills necessary to promote and engage in business relationships within a Latin American field, cultural, and linguistic milieu, in Latin America or in the United States. For information, contact the Chair of the Latin American Studies Committee or the Associate Dean in the College of Business Administration.

Admission to Graduate Study

Since this program combines disparate disciplines, applicants are required to submit GMAT scores and should have substantial academic backgrounds in the humanities and social sciences. Applicants should also have a background in Spanish or Portuguese language and literature. It is expected that all students in the master's degree program will be full time, so that all coursework will be completed within the academic year in which the student is admitted.

Specific Requirements for the MBA/MAD Degree

(Major Code: 49061)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this Bulletin, the student must complete an officially approved course of study of not less than 60 units as outlined below:

1. Complete each of the following core of ten courses for which an equivalent has not been satisfactorily completed.

   a. Core: Complete each of the following core of ten courses for which an equivalent has not been satisfactorily completed.
      - ACCTG 201 Financial Accounting Fundamentals (3)
      - ACCTG 202 Managerial Accounting Fundamentals (3)
      - ECON 101 Principles of Economics (3)
      - ECON 102 Principles of Economics (3)
      - ECON 201 Statistical Methods (3) OR
      - MATH 119 Elementary Statistics for Business (3)
      - ECON 421 Business Cycles (3)
      - FIN 323 Fundamentals of Finance (3)
      - IDS 180 Principles of Information Systems (3)
      - IDS 302 Introduction to Production and Operations Management (3)
      - MGT 350 Management and Organizational Behavior (3)
      - MKT 370 Marketing (3)
      - MATH 120 Calculus for Business Analysis (3)

2. Complete 12 units in Business Administration to include:
   - ACCTG 600 Financial Accounting (3)
   - ACCTG 610 Managerial Accounting (3)
   - FIN 604 Investments for Executives (3)
   - FIN 615 Financial Management (3)
   - IDS 602 Statistical Analysis for Business (3)
   - IDS 609 Management Information Systems (3)
   - IDS 612 Production and Operations Management (3)
   - MGT 601 Management of Organizations (3)
   - MGT 611 Organizational Behavior and Human Resources Management (3)
   - MGT 605 Marketing (3)
   - MGT 607 Taxation (3)
   - MGT 611 Organizational Behavior and Human Resources Management (3)

3. Complete 12 units in Latin America Studies to include:
   - FN 654 Seminar in Comparative Industrial Relations (3)
   - MGT 671 Seminar in Comparative International Relations (3)
   - MGT 671 Seminar in Comparative International Relations (3)
In addition, the student must complete MGT 797 (Research) and BA 799A (Thesis). This thesis in Business Administration will treat a Latin American related topic and will be supervised by a thesis committee whose chair is a member of the College of Business faculty with international business expertise and at least one faculty member from the Latin American studies program.

Transfer units will not be accepted toward the concurrent MBA/MA degree program. Graduate study or degrees obtained previously will not be accepted toward meeting the unit requirements of the concurrent MBA/MA degree program.

If a student after entering the concurrent MBA/MA program returns to a single degree program, all the requirements for the single degree program must be met.

### Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy as described in Part Two of this bulletin. In addition, 1) the student will be required to complete Spanish 302 (or its equivalent), or Portuguese 302 (or its equivalent), and pass an oral and written examination administered by the Department of Spanish and Portuguese Languages and Literatures; 2) all core courses in business and Latin American studies must be completed prior to advancement with a minimum grade point average of 3.0 and no grade less than a B- in any core course; 3) they have been recommended for advancement by the combined faculty advisory committee.

Upon advancement to candidacy, the student will enroll in Management 797 (Research) and BA 799A (Thesis). A thesis (Plan A, incorporating theory, method, and analytic techniques from both disciplines) is the culminating experience for the concurrent program leading to the MBA and MA degrees.

### Courses Acceptable on Master's Degree Programs in Business Administration

#### GRADUATE COURSES

#### Courses Acceptable on Master's Degree Programs in Business Administration

#### MGT 710 Seminar in World Business Environment (3)
#### MGT 723 Seminar in International Strategic Management (3)
#### MGT 769 Seminar in International Marketing (3)

3. Complete 24 units in courses of Latin American content, including the following required courses:

- LA 598 Special Study (3) Cr/NC/SP
- HST 640 Directed Reading in Latin American History (3)
- POL S 661 Seminar in the Political Systems of the Developing Nations (3)
- POL S 667 Seminar in Latin American Political Systems (3)

The remaining nine units will be selected from the following list of courses, with at least one from the California Western School of Law courses highly recommended.

#### Latin American Studies Courses

- 560. Latin America After World War II (3)
- 798. Special Studies in Latin America (3)

#### Economics Courses

- 565. U.S.-Mexico Economic Relations (3)
- 567. Political Systems of Latin America (3)

#### Geography Courses

- 654. Topics in Comparative Urbanization (3)*
- 720. Seminar in Regional Geography (3)*

#### History Courses

- 551A-551B. Mexico (3-4)
- 552. Brazil (3)
- 553. Caribbean Island Nations (3)
- 554. The Andean Republics of South America (3)
- 555. Modernization and Urbanization in Latin America (3)
- 556. Guerrilla Movements in Latin America (3)
- 558. Latin America in World Affairs (3)
- 559. Central America (3)
- 640. Directed Reading in Latin American History (3)
- 795. Area Studies in History (3) Cr/NC**

#### Political Science Courses

- 566. Political Change in Latin America (3)
- 567. Political Systems of Latin America (3)
- 568. The Mexican Political System (3)
- 569. Seminar in General Comparative Political Systems (3)**
- 675. Comparative Perspectives (3)**
- 795. Problem Analysis (3)**

#### California Western School of Law Courses**

- 498. Indian Law (1)
- 510. Taxation (3)
- 610. Immigration Law
- 625. International Business Transactions
- 636. International Organizations
- 643. Private International Law
- 644. Public International Law
- 703. Latin American Law

* Repeatable with new content and approval of advisory committee.
** Acceptable when of relevant content.
*** These courses, or their equivalents, students must apply toward the fulfillment of the provisions of the affiliation agreement with the California Western School of Law.

The Vern E. Odmark Chair in Accounting

Established in recognition of Dr. Vern E. Odmark for his 25 years of teaching at SDSU, basic support is provided by contributions from friends, alumni, and corporations, including many major national accounting firms. The chair acknowledges the University's efforts to maintain the high standards of teaching excellence and professionalism that characterized Odmark's career.

Dr. Vern E. Chow has held the position since its creation in 1984. He is widely recognized throughout the country for his breadth of his research and technical thoroughness.

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### The Vern E. Odmark Chair in Accounting

...
Management 405 International Business Strategy and Integration (3)
Marketing 370 Marketing (3)
Mathematics 120 Calculus for Business Analysis (3)

Satisfactory completion means that the student’s grade in each course must be “B” (3.0) or better and that the course must have been completed within seven years prior to the first course completed on the master’s degree program. In addition, the student’s advisor may request satisfactory completion of additional prerequisites.

Notice of admission to a curriculum with classified graduate standing will be sent to the student only upon the recommendation of the College of Business Administration and the approval of the Dean of the Graduate Division and Research.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as described in Part Two of this bulletin.

Specific Requirements for the Master of Science Degree in Accountancy

(Major Code: 05021)

In addition to meeting the requirements for classified graduate standing as described above and the general requirements for masters’ degrees as described in Part Two of this bulletin, the student must complete a graduate program of 30 approved units including at least 21 units in 600- and 700-numbered courses, of which at least 15 units must be in accountancy courses at San Diego State University. The accountancy courses must include at least 12 units in accountancy courses numbered 650 and above. Under Plan A, the Accounting student must complete at least 30 semester units beyond prerequisites in accounting in the accounting discipline.

Accountancy 506, Auditing; Accounting 590, Internship Accounting Issues; and Accounting 690, Seminar in Accounting Information Systems, are required unless the student has completed the equivalent course(s) as a part of their undergraduate preparation. Graduate tax students may replace Accounting 506, Auditing; and Accounting 690, Seminar in Accounting Information Systems, with Accounting 626, Audit/Systems.

The program must include at least 24 units in business administration and economics. Not more than a total of six units in courses 797, Research, and 798, Special Study, may be accepted for credit toward the degree.

The following specifications are available for the Master of Science Degree in Accountancy:

1. Corporate Accounting
2. Professional Accounting
3. Taxation

For regulations concerning grade point average, final approval for the granting of the degree, award of the degree, and diploma, see the section entitled “Basic Requirements for the Master’s Degree,” in Part Two of this bulletin.

Courses Acceptable on Master’s Degree Program in Accountancy

UPPER DIVISION COURSES

501. Advanced Accounting Problems (4) I, II
Prerequisites: Minimum grade of C in Accounting 300. Credit or concurrent registration in Accounting 301. Proof of completion of prerequisites required: Grade report or copy of transcript. Problems involved in partnerships, consignments, consolidations, receivables, foreign exchange, fund accounting, and other specialized areas. (Formerly numbered Accountancy 514.)

502. Advanced Managerial Accounting (3)
Prerequisite: Minimum grade of C in Accounting 302. Proof of completion of prerequisites required: Grade report or copy of transcript. Use of accounting information systems for managerial decision making. Introduction to decision-making situations which use accounting information for full or partial resolution. Consideration of uncertainty, decision theory and specific decision contexts. (Formerly numbered Accountancy 512 and Business Administration 416.)

504. Federal Income Tax II (4) I, II, S
Prerequisite: Minimum grade of C in Accounting 404. Proof of completion of prerequisites required: Grade report or copy of transcript. Taxation of corporations, partnerships, estates, and trusts. Gift and estate tax. (Formerly numbered Accountancy 511 and Business Administration 411.)

506. Auditing (4) I, II
Prerequisites: Accounting 301, 406; Information and Decision Systems 201. Proof of completion of prerequisites required: Grade report or copy of transcript. Internal control in the design of accounting systems; flowcharting technology; ethics and responsibilities of the auditor; operational auditing; procedures for verification of financial statements; auditor’s reports. (Formerly numbered Accountancy 534.)

508. Accounting for Not-For-Profit Organizations (3)
Prerequisites: Accounting 300. Proof of completion of prerequisites required: Grade report or copy of transcript. Principles of fund accounting useful in state and local governmental units, hospitals, colleges, and universities. Comparisons with commercial accounting emphasized. Includes study of budgetary accounting, appropriations, encumbrances, internal checks and auditing procedures. (Formerly numbered Accountancy 515 and Business Administration 415.)

590. Macro Accounting Issues (4) I, II
Prerequisites: Accounting 301, 302, 404, 406; credit or concurrent registration in Accounting 506. Proof of completion of prerequisites required: Grade report or copy of transcript. Macro-accounting issues: Political environment under which financial statements are prepared. Economic consequences of accounting standards. Ethical and social issues in financial reporting. Objectives and economic consequences of tax policy. Regulation of auditors. Management control systems. (Formerly numbered Accountancy 518.)

596. Contemporary Topics in Accounting (1-3)
Prerequisites: Accounting 301, 302, 404, 406; credit or concurrent registration in Accountancy 506. Proof of completion of prerequisites required: Grade report or copy of transcript. Contemporary topics in modern accounting. May be repeated with new content. See Class Schedule for specific course offerings.

600. Financial Accounting Practice and Theory (4)
Prerequisite: Accounting 600. Applications of federal income tax laws on selected management decisions, such as, buy/sell decisions, sale/lease decisions, current and deferred corporate income tax planning. Recognition of tax hazards and tax savings. (Formerly numbered Accounting 600.)

626. Audit/Systems (4)
Prerequisites: Accounting 610 and 620. Design and internal control perspectives of accounting information systems. Systems analysis, decision support systems, and implementation are investigated. Duties, responsibilities, and ethics of the auditor; auditor’s reports and procedures for verification of financial statements. (Formerly numbered Accounting 629.)

560. Tax Research and Planning (3)
Prerequisite: Credit or concurrent registration in Accounting 504. Tax research with emphasis on solving tax planning problems. Introduction to statutory, administrative, and judicial sources of tax law. (Formerly numbered Accounting 640.)

651. Seminar in Corporate Tax (3)
Prerequisite: Credit or concurrent registration in Accountancy 650. Corporate tax problems involving distributions, liquidations, reorganizations, redemptions, and personal holding companies, accumulated earnings tax, and thin capitalization. (Formerly numbered Accounting 636.)
Accountancy

652. Seminar in Federal Estate and Gift Tax (3)
Prerequisite: Credit or concurrent registration in Accountancy 650.
Estate and gift tax problems. Income taxation of trust and estates. (Formerly numbered Accountancy 644.)

653. Seminar in Tax Practice (3)
Prerequisite: Credit or concurrent registration in Accountancy 650.
Tax practice procedures as they affect the practitioners' dealing with the IRS, statute of limitations, ethical problems, penalties, interest, tax fraud. (Formerly numbered Accountancy 645.)

654. Seminar in Partnership Taxation (3) I, II
Prerequisite: Credit or concurrent registration in Accountancy 650.
Partnership tax problems involving partnership formation, operations, distributions and liquidations. (Formerly numbered Accountancy 646.)

659. Seminar in Taxation Topics (3)
Prerequisite: Credit or concurrent registration in Accountancy 650.
Theoretical treatment of selected topics in taxation. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree. (Formerly numbered Accountancy 635.)

660. Seminar in Accounting Theory (3)
Prerequisite: Accountancy 501.
Historical development of accounting principles and theory, problems in valuation, income determination, and statement presentation. (Formerly numbered Accountancy 639.)

661. Seminar in International Accounting (3)
Prerequisite: Accountancy 600.
Theories, practices, and concepts which underlie development of standards of financial reporting for enterprises engaged in international trade and business. (Formerly numbered Accountancy 641.)

663. Financial Statement Analysis (3)
Prerequisite: Accountancy 600.
Illustrative cases and problems to analyze methods for communicating information about financing and operating activities of corporate firms, and techniques for evaluating the information. (Formerly numbered Accountancy 675.)

670. Seminar in Auditing (3)
Prerequisite: Accountancy 506.
Selected concentrated issues in auditing. (Formerly numbered Accountancy 642.)

671. Seminar in Compilation and Review Services (3)
Prerequisite: Accountancy 506.
Applications cases on engagements to compile or review financial statements of nonpublic entities under accounting and review services standards. (Formerly numbered Accountancy 647.)

680. Seminar in Managerial Accounting (3)
Prerequisite: Accountancy 610.
Managerial cost accounting concepts and procedures, including budgeting, planning, cost control, advisory functions, measurement of divisional profitability, product pricing, and investment decisions. (Formerly numbered Accountancy 638.)

690. Seminar in Accounting Information Systems (3)
Prerequisites: Accountancy 610 and Information and Decision Systems 612.
Design of accounting systems. Current trends as discussed in the literature. Computerized procedures for internal and external reporting. (Formerly numbered Accountancy 637.)

694. Seminar in Public Accounting Consulting (3)
Prerequisite: Accountancy 610.
Study through cases of the analytical approach and goals applied by public accounting consultants to businesses. Current and proposed form of organization, finances, operations, systems, and controls.

696. Seminar in Selected Topics (3)
Prerequisite: Credit or concurrent registration in Accountancy 650.
Intensive study in specific areas of accountancy. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

790. Directed Readings in Accountancy (3) Cr/NC
Prerequisite: Advancement to candidacy.
Preparation for the comprehensive examination for the M.S. program or the M.B.A. program under Plan B.

797. Research (3) Cr/NC/SP
Prerequisite: Advancement to candidacy.
Research in the area of accountancy. Maximum credit six units applicable to a master's degree.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.
Individual study: Maximum credit six units applicable to a master's degree.

OFFICE: Student Services 3356
TELEPHONE: (619) 594-5329

Faculty
Natalie P. Vasilya, Ph.D., Professor of Finance, Chair of Department
L. W. Wilcox, Ph.D., Professor of Finance
Kamei M. Haddad, Ph.D., Professor of Finance
Robert C. Hutchins, D.B.A., Professor of Finance (Graduate Adviser)
William A. Nye, Ph.D., Professor of Finance
Melit K. Saatczid, Ph.D., Professor of Finance (Graduate Adviser, International Business)
James L. Short, Ph.D., Professor of Finance (Graduate Adviser, Real Estate)
William E. Sterl, Ph.D., Professor of Finance
Peter A. Vandenbergh, D.B.A., Professor of Finance
Thomas D. Wagner, Ph.D., Professor of Finance
Graduate Adviser, Financial and Tax Planning, Associate Dean for Academic Affairs, College of Business Administration
Russell L. Block, J.D., Associate Professor of Finance
John C. Bost, J.D., Associate Professor of Finance
Antony C. Cherin, Ph.D., Associate Professor of Finance (Graduate Adviser, Financial Services)
David P. Dwyer, Ph.D., Associate Professor of Finance (Graduate Adviser)
Arthur L. Houston, Jr., Ph.D., Associate Professor of Finance
Edward O'Brien, Ph.D., Associate Professor of Finance
Kamei S. Schedonek, D.B.A., Associate Professor of Finance
Robert W. Whilbo, Ph.D., Associate Professor of Finance
Andrew C. Do, Ph.D., Assistant Professor of Finance
Robert C. Hanson, Ph.D., Assistant Professor of Finance
Lisa A. Halperin, J.D., Associate Professor of Finance
Tong Sun Kim, Ph.D., Assistant Professor of Finance
Moon H. Song, Ph.D., Assistant Professor of Finance (Graduate Adviser)

Courses Acceptable on Master's Degree Programs in Business Administration

521. Individual Insurance Management (3) II
Prerequisites: Undergraduate: Completion of lower division requirements for the major. Graduate: Completion of the prerequisite core.
Economic, legal, social and ethical considerations of individual, business and group insurance including life, health, property, liability and social insurance. Risk exposure and policy analysis. Employee benefits and pension planning including regulation and taxation issues. Not open to students with credit in Finance 525.

589. Personal Financial Planning (3)
Prerequisites: Finance 327 and credit or concurrent registration in Accountancy 404.
Financial planning process including data gathering, cash flow and debt considerations, goal programming (including retirement and education funding), integration, plan formulation and implementation. Practice management considerations including establishment of ethical and legal, client and professional relationships. Not open to students with credit in Finance 525.

GRADUATE COURSES

604. Legal Environment for Executives (3)
Legal environment of business, government regulation, social and ethical considerations in the administration of justice, substantive law of contracts, property, agency, and business organizations.

615. Financial Management I (3)
Prerequisites: Accountancy 600 and Information and Decision Systems 602.
Role of finance in firm, financial planning and control, management of working capital, time value of money, valuation, risk analysis, basic capital budgeting, long-term financing, international aspects of financial decisions.

616. Managerial Economics (3)
Prerequisite: Economics 603.
Role of economic theory in management analysis and decision. Study of demand, cost, and supply theories from a business viewpoint.

617. Financial Management II (3)
Prerequisite: Finance 615.
Develops topics to include asset pricing, capital budgeting techniques, dividend policy and financing decisions, applications of options and futures, term structure of interest rates, regulation of financial markets, leasing decisions, corporate control. Not open to students with credit in Finance 650.

651. Seminar in Investments (3)
Prerequisite: Finance 615.
Characteristics of financial markets and instruments. Contemporary as well as traditional approaches to problems of pricing individual securities; portfolio selection and analysis techniques; analysis of financial markets; measurement of risk; return, and investment valuation.

652. Seminar in Security Analysis and Portfolio Management (3)
Prerequisite: Finance 615.
Characteristics of financial markets and instruments. Contemporary as well as traditional approaches to problems of pricing individual securities; portfolio selection and analysis techniques; analysis of financial markets; measurement of risk; return, and investment valuation.
Finance

654. Seminar in International Business Finance (3)
Prerequisite: Finance 615.
International financial instruments, markets, and institutions; international trade and capital flows; foreign exchange risks and their management, direct and portfolio investment; implications for conduct of global business.

655. Seminar in Financial Markets (3)
Prerequisite: Finance 615.
Analysis of money and capital markets. Emphasis on factors of influence and sources and uses of data. Survey of literature in the field.

656. Seminar in Financial Institutions (3)
Prerequisite: Finance 615.
Change in financial institution management thought. Trends in asset management theory and liability management theory. Current events in financial institutions; changes likely to occur and proposed changes in laws and regulations.

657. Financial Counselling (3)
Prerequisite: Assignment to candidacy and Finance 651.
Decision-making process and theory of individual financial needs. Planning and implementation of financial strategies that aid in meeting family goals. Counseling. Ethics. Preparation of financial plans using cases and individuals.

658. Seminar in Options and Futures (3)
Prerequisite: Finance 615.
Applications of options and futures in corporate finance and investments. Analytical and numerical methods of option pricing.

690. Directed Readings in Finance (3) Cr/NC
Prerequisite: Consent of staff; to be arranged with department.
For research in areas of finance. Credit available for a maximum of six units, for a total of 24 units to be applied toward the Ph.D. degree.

709. Research (3) Cr/NP
Prerequisite: Assignment to candidacy.
Research in the area of finance. Maximum credit six units applicable to a master's degree.

780. Seminar in Real Estate and Urban Development (3)
Prerequisite: Finance 615 or Economics 603.
Real estate market functions and operations. Real estate finance and appraisal theories and approaches. Models of urban land use and urban development. Issues in real estate decision making.

783. Seminar in Real Estate Finance and Investment (3)
Prerequisite: Finance 780.
Theories and factors governing the financial functions of lenders, business and governmental agencies in real estate lending operations. Analysis of real estate investment by financial institutions, corporations, individuals and government.

105. Unit Master's Degree.

784. Seminar in Real Property Valuation (3)
Prerequisite: Finance 780.

790. Directed Readings in Finance (3) Cr/NC
Prerequisite: Assignment to candidacy.
Preparation for the comprehensive examination for those students in the M.B.A. program under Plan B.

797. Research (3) Cr/NP
Prerequisite: Assignment to candidacy.
Research in the area of finance. Maximum credit six units applicable to a master's degree.

Special Study (1-3) Cr/NP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.
Individual study. Maximum credit six units applicable to a master's degree.

Information and Decision Systems

OFFICE: Student Services 3375
TELEPHONE: (619) 594-5316

Faculty

James R. Lackritz, Ph.D., Professor of Information and Decision Systems, Chair of Department

612. Production and Operations Management (3)
Prerequisite: Information and Decision Systems 602.
Survey of operations to include master scheduling, material requirements planning, inventory management, capacity planning, production activity control, location analysis, automation and computerized systems, layout planning, linear programming, queuing, simulation, quality control, project planning.

680. Information Systems Hardware and Software (3)
Prerequisite: Information and Decision Systems 607.
Computer architecture, programming languages, programming systems, and operating systems.

683. Program, Data, and File Structures (3)
Prerequisite: Information and Decision Systems 607.
Program structures and data structures commonly used in business processing. File organization and processing strategies. Improving storage and processing efficiencies.

684. Small Computer Systems for Business (3)
Prerequisite: Information and Decision Systems 607.
Features of small computer systems, microcomputers, minicomputers, personal devices for small systems. Programming languages, operating systems, and software packages for small systems.

686. Database Management Systems (3)
Prerequisite: Information and Decision Systems 609.
Applications of database management systems in business. Design and administration of database processing systems applications.

687. Data Communications and Distributed Data Processing (3)
Prerequisite: Information and Decision Systems 680.
Applications of data communications hardware, software, and services to business data processing. Design and implementation of network applications and distributed processing systems.

688. Information Systems in Organizations (3)
Prerequisite: Information and Decision Systems 609.
Organizing and administrating the information systems function. Information and its relationships to business decision making. Managing the computer center and information center.

691. Decision Support Systems (3)
Prerequisite: Credit in concurrent registration in Information and Decision Systems 688.
Design, implementation, and integration of computerized decision support systems into business management. Problems of representation, modeling, and simulation.

695. Information Systems Development I (3)
Prerequisite: Information and Decision Systems 609.
System development life cycle. Life cycle methodologies with emphasis on analysis of requirements using structured methodology and automated tools. Feasibility study, developmental strategies, needs management, and prototyping.

Courses Acceptable on Master's Degree

Programs in Business Administration

GRADUATE COURSES

602. Statistical Analysis for Business (3)
Prerequisite: Information and Decision Systems 602.
Measures of central tendency and variation, sampling and various statistical tests such as analysis of variance, F test, t test and chi square. Simple and multiple correlation.

609. Management Information Systems (3)
Prerequisite: Information and Decision Systems 602.
Role of information in organizational management. Typical management information subsystems. Design and management of management information systems.
697. Information Systems Development II (3)
Prerequisite: Information and Decision Systems 695.
Business information systems design, installation, and implemen-
tation as part of the systems development life cycle. Struct-
ured design, prototyping, controls, the make vs. buy decision, selection of hardware and software.

700. Artificial Intelligence Applications for Business (3)
Prerequisite: Information and Decision Systems 609.
Applications of artificial intelligence techniques to business.
Strategies for representing knowledge, Knowledge engineering, knowledge base and inference. Use of consultation paradigms, languages, tools, and artificial intelligence environment.

741. Seminar in Systems Assessment and Deployment for Total Quality Management (3)
Prerequisite: Information and Decision Systems 612.
Use of systematic approaches in development of total quality management. Evaluation, analysis, system reliability, Taguchi systems and robust design, quality function deployment, process evaluation, benchmarking, and Baldwin assessment.

742. Seminar in Computer Simulation for Business (3)
Prerequisite: Information and Decision Systems 609 and 612.
Computer simulation techniques for analysis of complex decision problems. Implementation of optimization algorithms through use of the digital computer.

743. Japanese Industrial and Production Systems (3)
Prerequisite: Economics 603.
Japanese production systems addressed historicality to include industrial-grouping-Keiretsu system, industrial practices, new product development, production system, quality control and Kanban system, automated production technology, distribution system, integration of production and distribution, and competitive strategies.

744. Seminar in Total Quality Management and Productivity (3)
Prerequisite: Information and Decision Systems 612.
Philosophy and technical total quality management as applied in business and industry. Quality and productivity applications of total quality and total productivity (TQC) and just-in-time (JIT) systems in industrial problems. Cases and studies from the United States, Japan, and other industrialized countries.

745. Business Forecasting (3)
Prerequisite: Information and Decision Systems 612.
Forecasting for the firm. Models for forecasting short term, intermediate and long term business horizons.

698. Seminar in Advanced Data Analysis (3)
Prerequisite: Information and Decision Systems 652.
Applications of various statistical techniques and design of experiments for business. Advanced ANOVA and Taguchi designs, multiple regression modeling methodologies, and multivariate techniques, such as factor analysis, judgement analysis, multiple discriminant analysis, multivariate analysis of variance, and canonical correlation.

749. Seminar in Applied Behavioral Measurement (3)
Prerequisite: Information and Decision Systems 602.
Measurement processes useful in analyzing such areas as teamwork, leadership, job satisfaction, attitudes, motivation, total quality management, and customer satisfaction. Development and use of technologies including Likert, Thurstone, Guttman, pairwise comparison, forced-choice, semantic-differential, C-E diagrams, and review of existing instruments used in business-related settings.

750. Project Management (3)
Prerequisite: Information and Decision Systems 612.
Managing projects. Includes network modeling, defining activities and tasks, estimating and reporting, single and multiple resource allocation and leveling. Computerized project management software will be used.

751. Seminar in Scheduling Systems (3)
Prerequisite: Information and Decision Systems 612.
Scheduling systems. Capacity requirements management, production activity control, inventory control and project management.

752. Seminar in Materials Requirement Planning (3)
Prerequisite: Information and Decision Systems 612.
Product structure, master scheduling and materials requirement planning (MRP).

596. Advanced Topics in Management (3)
Prerequisite: Six upper division units in management.
Advanced special topics in management. See Class Schedule for specific content details. Combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a bachelor's degree. Minimum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

670. Seminar in Staffing and Development Systems (3)
Prerequisites recommended: Management 601, 611 or equivalent courses in the behavioral sciences and Information and Decision Systems 602.
Strategic and ethical considerations in staffing and human resource development. Design and operation of staffing and development systems. Review of practice, law, and other environmental forces influencing staffing and development activities.

671. Seminar in Comparative Industrial Relations (3)
Prerequisites: Management 601 and 611.
Study of industrial relations systems in varied organizational and cultural settings. Public policy and employee unionization relationship in both union and non-union settings. Examples from worldwide industrial societies.

672. Seminar in Human Resource Appraisal and Reward Systems (3)
Prerequisites recommended: Management 601 and 611 or equivalent course in the behavioral sciences, and Information and Decision Systems 602.
Strategic and ethical considerations in appraising and rewarding people at work. Design and operation of appraisal and compensation systems. Review of practice, law, and other environmental forces influencing appraisal and compensation activities.

679. Seminar in Human Resource Management Strategies (3)
Prerequisites: Credit or concurrent registration in two of the following: Management 670, 671, and 672.
Current issues in human resource management to include job design, staffing, training, evaluation, and compensation. Correlations among organizational strategies, environmental pressures, and human resource strategies and practices.

696. Seminar in Selected Topics (3)
In-depth study in specific areas of management. May be repeated with new content. See Class Schedule for specific content. Maximum credit of six units applicable to a master's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

710. Seminar in World Business Environment (3)
Prerequisite: Economics 616.
The nature, dimensions and motives of international business. Impact of environmental factors. The nature of the multinational corporation, the importance of national and multinational control and policies for international business management.

720. Seminar in Behavioral Sciences for Management (3)
Prerequisites: Management 601 and 611.
Applications of findings from behavioral sciences to management problems and decisions. Study of organization cultures and subcultures. Impact of human behavior on the enterprise.
Management

724. Seminar in the Entrepreneur (3)
Prerequisites: Management 601 and 611.
Examination of the entrepreneurial approach; concepts, theories, and techniques of managerial innovation and implementation; analysis of entrepreneurial skills.

725. Seminar in Industry Analysis and Competitive Strategy (3)
Prerequisites: Management 601, Finance 615 and 616, Marketing 605.
Concepts and tools for studying the structure of industries and implications for strategy formulation. Competition in different market environments: high technology, global, mature, and declining.

727. Seminar in Organizational Change and Development (3)
Prerequisites: Management 601 and 611.
Process of developing human resources and organizations. Theories of organizational development; tools and techniques of analysis and organizational development programs.

728. Seminar in Business Planning (3)
Prerequisites: Management 601, Finance 615, Marketing 605, and advancement to candidacy.
Strategic decision making, long-range forecasting, and corporate planning with major emphasis on product-market relationships.

729. Seminar in Organizational Issues (3)
Prerequisites: Management 601 and 611.
Issues in organizations in modern society: organization design, environmental interface, and political processes. See Class Schedule for specific content.

731. Seminar in Strategic Management of Technology and Innovation (3)
Prerequisites: Completion of MBA core.
Assessment of technological competencies and formation of entry strategies for high-technology markets. Managing project teams and high-technology professionals.

790. Directed Readings in Management (3) Cr/NC
Prerequisite: Advanced to candidacy.
Preparation for comprehensive examination for those students in the MBA program under Plan B.

797. Research (Cr/NC/SP)
Prerequisite: Advanced to candidacy.
Research in the area of management. Maximum credit six units applicable to a master’s degree.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Approval of instructor.
Preparation and arrangement of special study. Individual study. Maximum credit six units applicable to a master’s degree.

763. Seminar in Sales Management (3)
Prerequisite: Marketing 605.
Sales management and personal selling decisions and strategies in business organizations.

764. Seminar in Marketing Price Policy (3)
Prerequisite: Marketing 605.
Study of pricing strategy and price determination in business organizations.

766. Seminar in Market Analysis and Research (3)
Prerequisites: Marketing 605 and Information and Decision Systems 612.
Application of statistical and mathematical methods to market problems, consumer research, and product analysis.

767. Seminar in Business Marketing Management (3)
Prerequisite: Marketing 605.
Management of marketing decisions particular to organizational customers and prospects. Emphasizes marketing to private, commercial, institutional, and governmental customers in both domestic and global markets.

768. Seminar in Industrial and Government Procurement Management (3)
Prerequisites: Marketing 605 and Management 601.
Procurement methods used in industry and government; internal departmental operations, interrelationships with other government departments; supplier selection, pricing/cost analysis, contract negotiation, and special characteristics of government procurement.

769. Seminar in International Marketing (3)
Prerequisite: Marketing 605.
The impact of cultural, social, political, economic, and other environmental variables on international marketing systems and the decision-making process of multinational marketing operations.

779. Advanced Marketing Strategy (3)
Prerequisites: Marketing 605 and advancement to candidacy.
Development, implementation, and evaluation of marketing strategy and planning. Role of marketing planning in overall corporate strategic planning process. Use of contemporary techniques and models in strategic planning process.

790. Directed Readings in Marketing (3) Cr/NC
Prerequisite: Advancement to candidacy.
Preparation for the comprehensive examination for those students in the MBA program under Plan B.

792. Research (Cr/NC/SP)
Prerequisite: Advancement to candidacy.
Research in the area of marketing. Maximum credit six units applicable to a master’s degree.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of instructor.
Preparation and arrangement of special study. Individual study. Maximum credit six units applicable to a master’s degree.

Marketing

OFFICE: Student Services 3229
TELEPHONE: (619) 594-5317

Faculty
George E. Belch, Ph.D., Professor of Marketing, Chair of Department
Michael A. Belch, Ph.D., Professor of Marketing
Robert W. Haas, D.B.A., Professor of Marketing
Rathel A. Kreitler, D.B.A., Professor of Marketing (Graduate Adviser)
Donald Sechler, Ph.D., Professor of Marketing
Ronald W. Sump, Ph.D., Professor of Marketing
Phoebe K. Tu, Ph.D., Professor of Marketing (Graduate Adviser)
Dino T. Vaiter, Ph.D., Professor of Marketing
Thomas R. Woron, Ph.D., Professor of Marketing
Massoud M. Saghafi, Ph.D., Associate Professor of Marketing
Rajesh Kanwar, Ph.D., Assistant Professor of Marketing

Courses Acceptable on Master's Degree
Programs in Business Administration

GRADUATE COURSES

605. Marketing (3)
Role and function of marketing in the organization and society. Planning, implementation, and evaluation of marketing strategies and programs. Not open to students with credit in Marketing 730.

696. Seminar in Selected Topics (3)
Intensive study in specific areas of marketing. May be repeated with new content. See Class Schedule for specific content.

701. Seminar in Marketing Analysis and Programs (3)
Prerequisite: Marketing 605.
Analysis and planning of marketing programs. Emphasis on quantitative assessment, market measurement and forecasting, budgeting, organization and development of marketing strategy. Integration of marketing programs concerning product plans, pricing, promotion and distribution.

760. Seminar in Consumer Behavior (3)
Prerequisite: Marketing 605.
The study of consumer behavior in relation to marketing strategy and the changing environment of business.

761. Seminar in New Products Marketing (3)
Prerequisite: Marketing 605.
The study of new products management in relation to planning and implementation of marketing strategy.

762. Seminar in Advertising Management (3)
Prerequisite: Marketing 605.
Advertising and sales promotion in relation to the planning and implementation of marketing strategy.

763. Seminar in Sales Management (3)
Prerequisite: Marketing 605.
Sales management and personal selling decisions and strategies in business organizations.

764. Seminar in Marketing Price Policy (3)
Prerequisite: Marketing 605.
Study of pricing strategy and price determination in business organizations.

766. Seminar in Market Analysis and Research (3)
Prerequisites: Marketing 605 and Information and Decision Systems 612.
Application of statistical and mathematical methods to market problems, consumer research, and product analysis.

767. Seminar in Business Marketing Management (3)
Prerequisite: Marketing 605.
Management of marketing decisions particular to organizational customers and prospects. Emphasizes marketing to private, commercial, institutional, and governmental customers in both domestic and global markets.

768. Seminar in Industrial and Government Procurement Management (3)
Prerequisites: Marketing 605 and Management 601.
Procurement methods used in industry and government; internal departmental operations, interrelationships with other government departments; supplier selection, pricing/cost analysis, contract negotiation, and special characteristics of government procurement.

769. Seminar in International Marketing (3)
Prerequisite: Marketing 605.
The impact of cultural, social, political, economic, and other environmental variables on international marketing systems and the decision-making process of multinational marketing operations.

779. Advanced Marketing Strategy (3)
Prerequisites: Marketing 605 and advancement to candidacy.
Development, implementation, and evaluation of marketing strategy and planning. Role of marketing planning in overall corporate strategic planning process. Use of contemporary techniques and models in strategic planning process.

790. Directed Readings in Marketing (3) Cr/NC
Prerequisite: Advancement to candidacy.
Preparation for the comprehensive examination for those students in the MBA program under Plan B.

792. Research (Cr/NC/SP)
Prerequisite: Advancement to candidacy.
Research in the area of marketing. Maximum credit six units applicable to a master’s degree.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Approval of instructor.
Preparation and arrangement of special study. Individual study. Maximum credit six units applicable to a master’s degree.
Chemistry
In the College of Sciences

Faculty
Mony A. Ring, Ph.D., Professor of Chemistry, Chair of Department
Linda E. Bennett, Ph.D., Professor of Chemistry
James W. Cobb, Ph.D., Professor of Chemistry, Dean of the Graduate Division and Research
Dewitt Collay, Jr., Ph.D., Professor of Chemistry
A. Stephen Dahms, Ph.D., Professor of Chemistry
Edward J. Geibbs, Ph.D., Professor of Chemistry
Vincent J. Lauris, Ph.D., Professor of Chemistry
Herbert G. Lehmann, Ph.D., Professor of Chemistry
H. Edward O'Neal, Ph.D., Professor of Chemistry (Graduate Adviser)
William H. Richardson, Ph.D., Professor of Chemistry
Stephen B. Roader, Ph.D., Professor of Physics and Chemistry
Clay M. Sharts, Ph.D., Professor of Chemistry
William E. Stumpf, Ph.D., Professor of Chemistry
William G. Tang, Ph.D., Professor of Chemistry
John H. Woodson, Ph.D., Professor of Chemistry
Dale A. Chaffee, Ph.D., Associate Professor of Chemistry
Thomas E. Cole, Ph.D., Associate Professor of Chemistry
Diane K. Smith, Ph.D., Assistant Professor of Chemistry

Assistantships
Graduate teaching assistantships and graduate research assistantships in chemistry are available to a limited number of qualified students. Application blanks and additional information may be secured from the graduate adviser in the Department of Chemistry.

General Information
The Department of Chemistry in the College of Sciences offers graduate study leading to the Master of Arts degree, the Doctor of Philosophy degree, and the Master of Science degree. The degree program in the Master of Arts degree is offered jointly with the Department of Physics. The Doctor of Philosophy degree programs are offered in the following areas: inorganic, organic, and physical chemistry; biochemistry; nuclear chemistry; analytical chemistry; and physical chemistry.

The Department provides a substantial inventory of modern chemical equipment and facilities for support of the many active research programs. Included are systems or the performance of the following major types of chemical separations: moderate- and high-resolution mass spectrometry; ultraviolet-visible spectrometry; infrared and Raman spectroscopy; mass spectrometry; radioisotopic tracer techniques; mass spectrometry; neutron activation; and neutron interrogation.

Specific Requirements for the Master of Arts Degree (Major Code: 19051)
In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must pass an oral examination in his thesis area. The examination shall be taken during the fifth semester in residence.

Specific Requirements for the Master of Science Degree (Major Code: 19051)
In addition to meeting the requirements for classified graduate standing, the student must satisfy the basic requirements for the master's degree as described in Part Two of this bulletin. The student must pass a final oral examination on his thesis.

Courses Acceptable on Master's and Doctoral Degree Programs in Chemistry
UPPER DIVISION COURSES
501. Chemical Oceanography (3)
Three lectures and occasional field trips.
Prerequisites: Chemistry 201 and 231. Strongly recommended: Chemistry 401B and Oceanography 300 or 320.

510. Advanced Physical Chemistry (3)
Prerequisite: Chemistry 410B.
Mathematical tools essential to solving problems in chemical thermodynamics, statistical mechanics, chemical kinetics, quantum chemistry and molecular structure and spectroscopy, with applications.

Section II. Doctoral Program
(Major Code: 19051)
The cooperation of the departments of Chemistry at the University of California, San Diego and at San Diego State University enables graduate study in chemistry to the doctorate degree, and to find research activity and direction in a great variety of specific problems. In order that the student may participate effectively in this program, the entering student will be required to have a mastery of the undergraduate curriculum in undergraduate curriculum, physical, organic, analytical, and inorganic chemistry. All appli-
cants will be expected to present the equivalent of one year of physics and of mathematics at least through integral calculus. Students should be prepared to take placement examinations which will be administered by a joint committee and will cover the fields of inorganic, organic, and physical chemistry.

On admission to the program, the student is guided by Requirements for the Doctoral Program given in Part Two of this bulletin. The student will normally spend their first year in the program completing their year of residency at the University of California, San Diego. It is desirable for the student to complete the qualifying examination by the end of the fifth semester and to be advanced to candidacy.

Faculty
The following faculty members of the Department of Chemistry: the cooperating institutions participate in the joint doctoral program, being available for direction of research and as departmental members of joint doctoral committees.

University of California, San Diego
Graduate Advisor: M. Thiemans
Committee Members: Kyte, Siegel, Sinha, Trogler
San Diego State University
Graduate Advisor: J. E. O'Neal
Committee Members: Bennett, Chaffee, Cobb, Cofey, Cole, Dahms, Grubbs, Lau, Lehmann, O'Neal, Richardson, Ring, Roader, Sharts, Smith, Stumpf, Tong

Courses Acceptable on Master's and Doctoral Degree Programs in Chemistry

OFFICE: Chemistry, Geology 304
TELEPHONE: (619) 549-3595

Section II. Doctoral Program
(Major Code: 19051)
The cooperation of the departments of Chemistry at the University of California, San Diego and at San Diego State University enables graduate study in chemistry to the doctorate degree, and to find research activity and direction in a great variety of specific problems. In order that the student may participate effectively in this program, the entering student will be required to have a mastery of the undergraduate curriculum in undergraduate curriculum, physical, organic, analytical, and inorganic chemistry. All appli-
cants will be expected to present the equivalent of one year of physics and of mathematics at least through integral calculus. Students should be prepared to take placement examinations which will be administered by a joint committee and will cover the fields of inorganic, organic, and physical chemistry.

On admission to the program, the student is guided by Requirements for the Doctoral Program given in Part Two of this bulletin. The student will normally spend their first year in the program completing their year of residency at the University of California, San Diego. It is desirable for the student to complete the qualifying examination by the end of the fifth semester and to be advanced to candidacy.

Faculty
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Graduate Advisor: M. Thiemans
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Graduate Advisor: J. E. O'Neal
Committee Members: Bennett, Chaffee, Cobb, Cofey, Cole, Dahms, Grubbs, Lau, Lehmann, O'Neal, Richardson, Ring, Roader, Sharts, Smith, Stumpf, Tong

Courses Acceptable on Master's and Doctoral Degree Programs in Chemistry

UPPER DIVISION COURSES
501. Chemical Oceanography (3)
Three lectures and occasional field trips.
Prerequisites: Chemistry 201 and 231. Strongly recom-
mended: Chemistry 401B and Oceanography 320 or 341.
The application of the fundamentals of chemistry to the study of oceans.
510. Advanced Physical Chemistry (3)
Prerequisite: Chemistry 410B.
Mathematical tools essential to solving problems in chemical thermodynamics, statistical mechanics, chemical kinetics, quantum chemistry and molecular structure and spectroscopy, with applications.

520A-520B. Inorganic Chemistry (3-3) I. II
Prerequisites: Credit or concurrent registration in Chemistry 410B. Chemistry 520A is prerequisite to 520B.
Nature of chemical bond and an advanced systematic study of representative and transition elements and their compounds.

530. Theoretical Organic Chemistry (3)
Prerequisite: Chemistry 410B. Recommended: Credit or concurrent registration in Chemistry 410B.
Electronic and physical properties of organic molecules; struc-
ture-properties and electronic structure of molecules (qualitative molecular orbital theory); stereochirnery, and linear free-energy relationships.

537. Organic Qualitative Analysis (4)
Two lectures and six hours of laboratory.
Prerequisites: Chemistry 431 and credit or concurrent regis-
tration in Chemistry 410A. Recommended: Chemistry 417 and 457.
Chemical, physical, and spectral methods discussed and employed to determine structure of organic compounds. Purifi-
cation and separation techniques stressed.

550. Instrumental Methods of Chemical Analysis (2) I
Prerequisites: Chemistry 431 and credit or concurrent regis-
tration in Chemistry 410B; concurrent registration in Chemistry 457 for undergraduate students only.
Theory and application of those instrumental methods of chemical separation and analysis most frequently used in all sub-
disciplines of chemistry.

551. Analytical Chemistry (3) II
Prerequisite: Chemistry 550.
Expanded treatment of instrumental methods for separation and quantification not covered in Chemistry 550. Non-instru-
mental separations, quantitative organic microanalysis, sampling theory and techniques, reaction rate applications and interpreta-
tion of experimental data.

560A-560B. General Biochemistry (3-3)
Prerequisites: Chemistry 431 and credit or concurrent regis-
tration in Chemistry 410A.
The structure, function, metabolism, and thermodynamic relationships of chemical entities in living systems. Not open to students with credit for Chemistry 361A-361B.

561. Physical Biochemistry (3)
Prerequisites: Chemistry 201, 431, 518B or 560B, Physics 180B.
Fundamental principles of physical chemistry, including ther-
odynamics and kinetics as applied to the field of biochemistry.

567. Biochemistry Laboratory (2)
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Chemistry 361A.
Theory and practice of procedures used in study of life at molecular level. Includes purification and characterization of enzymes, isolation of cell components, and use of radioactive tracer techniques.

571. Environmental Chemistry (3)
Prerequisites: Chemistry 230 or 231; consent of instructor for all other majors.
Fundamentals of chemistry applied to environmental prob-
lems. Chemistry of ecosystems, analysis of natural constituents and pollutants; sampling methods; transport of contaminants; regulations and public policy.
596. Advanced Special Topics in Chemistry (1-3)
Prerequisite: Consent of instructor.
Advanced selected topics in modern chemistry. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 596, 497, 598 courses applicable to a bachelor's degree. Maximum credit six units of 596 applicable to a bachelor's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

GRADUATE COURSES

711. Chemical Thermodynamics (3)
Prerequisite: Chemistry 410B.
Chemical thermodynamics and an introduction to statistical thermodynamics.

712. Chemical Kinetics (3)
Prerequisite: Chemistry 410B.
Theory of rate processes, applications of kinetics to the study of reaction mechanisms.

713. Quantum Chemistry (3)
Prerequisite: Chemistry 410B.
Quantum mechanics of atomic and molecular systems, applications to chemical bonding theory.

721. Mechanisms of Inorganic Reactions (3)
Prerequisite: Chemistry 520A.
Mechanisms in inorganic reactions with an emphasis on coordination chemistry.

730. Advanced Topics in Organic Chemistry (1-3)
Prerequisite: Chemistry 431.
Selected topics in organic chemistry. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

731. Mechanisms of Organic Reaction (3)
Prerequisites: Chemistry 410B and 431. Recommended: Chemistry 520.
Reactivity and mechanism in organic reactions.

732. Advanced Organic Chemistry (3)
Prerequisite: Chemistry 431.
Applications and limitations of organic reactions from the viewpoint of synthesis.

750. Advanced Topics in Analytical Chemistry (1-3)
Prerequisite: Chemistry 550.
Selected topics from the field of analytical chemistry. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

751. Separations Science (3)
Prerequisites: Chemistry 550 and 711.
Theoretical bases for separation techniques important in analytical chemistry. Chemical and physical interactions between components of different classes of separation systems, including selection and optimization of operational parameters.

753. Analytical Spectroscopy (3)
Prerequisite: Chemistry 550.

760. Advanced Topics in Biochemistry (1-3)
Prerequisite: Chemistry 560B.
Selected topics in biochemistry. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

762. Enzymology (2)
Prerequisite: Credit or concurrent registration in Chemistry 410B.
Theory and techniques used in the study of the mechanism of action of enzymes.

763. Cellular Regulation (2)
Prerequisites: Chemistry 361A-361B or 560A-560B.
The biochemistry of cellular regulatory mechanisms in eukaryotic cells. The regulation of gene transcription, in mRNA translation and post-translational processes, including the mechanisms and regulation of intracellular protein turnover.

764. Membrane Biochemistry (3)
Prerequisites: Chemistry 361A-361B or 560A-560B.
Membrane structure and function. Biophysical and biochemical properties of membranes from procaryotic and eucaryotic cells and animal cell viruses; biosynthesis and assembly of integral membrane components; molecular basis of solute transport, energy coupling, cell surface transformation, and cellular recognition, adhesion and fusion.

790. Seminar (1-3)
An intensive study in advanced chemistry. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

791. Research Seminar (1)
Prerequisite: Consent of department chair.
Discussions on current research by students, faculty, and visiting scientists. Each student will make a presentation based on the current literature.

792. Bibliography (1)
Exercise in the use of basic reference books, journals, and specialized bibliographies, preparatory to the writing of a master's project or thesis.

797. Research (1-3) Cr/INC/SP
Prerequisite: Consent of instructor.
Research in one of the fields of chemistry. Maximum credit six units applicable to a master's degree.

798. Special Study (1-3) Cr/INC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.
Individual study. Maximum credit six units applicable to a master's degree.

799A. Thesis (3) Cr/INC/SP
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/INC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university. Each student must be registered in the course when the completed thesis is granted final approval.

City Planning
Refer to the section on Public Administration and Urban Studies.
Communicative Disorders

In the College of Health and Human Services

OFFICE: Communications Clinic 118
TELEPHONE: (619) 594-6774

Vera Gutierrez-Clellen, PhD., Assistant Professor of Communicative Disorders

Diane J. ThaI, Ph.D., Associate Professor of Communicative Disorders

Edmund Alan C. Nichols, PhD., Professor of Communicative Disorders

Michael Robert E. Novak, Ph.D., Professor of Communicative Disorders

Kathee M. Christensen, PhD., Professor of Communicative Disorders

Li-Rong Lilly Cheng, Ph.D., Professor of Communicative Disorders

In the College of Health and Human Services, offers graduate study leading to accredited by the Educational Standards Board of the American Speech-Language-Hearing Association for teachers of the hearing impaired is accredited by the Department of Communicative Disorders, Chair of Department

General Information

The Department of Communicative Disorders, in the College of Health and Human Services, offers graduate study leading to the Master of Arts degree in communicative disorders, and to the certificates described below. The master's degree program is accredited by the Educational Standards Board of the American Speech-Language-Hearing Association, and the training program for teachers of the hearing impaired is accredited by the Council on Education for Hearing Impaired. The Department offers advanced study in speech and hearing science, speech-language pathology, audiology, and the rehabilitation of the deaf.

The programs utilize the facilities of the Communications Clinic, which includes observation rooms, departmental reference collection, and speech and hearing science laboratories. In the laboratories, students use personal computers, microcomputers for diagnostic, audiometric, spectral signal analyzer, acoustic immittance equipment, hearing aid analyzer, digital audiometer, electrocochleogram, visual speech diagnostic equipment, and a variety of other equipment for diagnostic and treatment purposes.

In addition, the Department utilizes an off-campus multispecialty diagnostic and rehabilitation center. Students and faculty participate in providing direct delivery of clinical services to clinic patients, and in the development of new programs.

The Department utilizes an off-campus multispecialty diagnostic and rehabilitation center. Students and faculty participate in providing direct delivery of clinical services to clinic patients, and in the development of new programs.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with classified graduate standing as described in Part Two of this bulletin.

Candidates for admission to classified graduate standing, including credential candidates, are reviewed by the faculty as a whole, and by a faculty committee from one of the three areas of the department: speech-language pathology, audiology, and education of the hearing impaired (ideal). To initiate this review, a candidate for admission indicates which of these programs he or she intends to enter. The criteria for admission are described as follows:

1. In considering the candidate's statement of purpose, content, style and clarity of presentation are primary points.
2. Three letters of recommendation from appropriate persons who can and do attest to the candidate's high potential for graduate study are required by the reviewing faculty.
3. A grade point average of 3.0 overall or 3.5 during the last 60 units of college or university study will be necessary for consideration.
4. A GRE General Test score of 950 (combined verbal and quantitative) is a criterion for admission. Candidates with high grade point averages, 3.5 or above, may be admitted conditionally if the 950 criterion is not met. In such cases, the condition of admission is that the candidate take and pass the GRE General Test 950 or above during the first semester of residence in the department. Continuing in the program may be contingent upon fulfilling this condition.

In cases where these criteria are not met, exceptional circumstances may permit a balance of a different nature in one area.

Each candidate who is admitted subject to meeting the graduate level may be admitted conditionally, subject to faculty review at the end of the first semester of residence. A postbaccalaureate level credential candidate must be reviewed for classified or conditionally classified postbaccalaureate level standing prior to enrollment in clinical practicum. The following courses are controlled for this purpose:

Communicative Disorders 526, 545, 546, 556.

All transfer students planning a program to include Communication Disorders 500, 600 and 700 level courses must be approved by the department; complete two units of Communicative Disorders 799A, Thesis for Plan A, or Plan B (Communicative Disorders 797-2 units and 798-1 unit).

Undergraduate Preparation

Undergraduate Preparation includes coursework equivalent to the following offerings in the College of Health and Human Services.

Admission to Graduate Study

All students must satisfy the general requirements for admission to classified graduate standing as described in Part Two of this bulletin. In addition, students seeking the Master of Arts degree in communicative disorders are required to have completed Communicative Disorders 600.

Specific Requirements for the Master of Arts Degree

(Major Code: 12201)

In addition to meeting the requirements for classified graduate standing and the bachelor of the master's degree as described in Part Two of this bulletin, the student must complete a graduate program of at least 30 units. A student must complete Communication Disorders 500 and 797. After Plan B has been selected, the student must complete a research paper as approved by the department; complete two units of Communication Disorders 797, Research; and pass a comprehensive examination (which may be repeated only twice). Students enrolled in Communicative Disorders 797 or 799A must participate in the department's professional development seminar unless excused by the coordinator of the graduate program. No more than six units of coursework outside the department acceptable on the graduate level may be applied to the master's degree.

The Department of Communicative Disorders offers four concentrations leading to the Master of Arts degree. Each concentration requires completion of a specific pattern of graduate units described below:

A. Concentration in Speech-Language Pathology. This concentration has a clinical focus and may be used to satisfy some of the academic preparation for the Certificate of Clinical Competence in Speech-Language Pathology from the American Speech-Language-Hearing Association and for licensure from the State of California. Students are required to complete coursework in all of the following areas:

1. Voice Disorders
2. Articulation/Phonology Disorders
3. Adult Language Disorders
4. Child Language Disorders

The coursework may be taken during undergraduate or graduate study.

Undergraduate Preparation


Graduate Preparation. Required courses: Communicative Disorders 526, 545, 546, 556. Admission to graduate study leading to the Master of Arts degree in Communicative Disorders 500, 600, 610, 611, 640, 644, 647, and 648. A postbaccalaureate program for licensed teachers of the deaf, with an emphasis on clinical diagnostic procedures, is available in the Basic, Intermediate, and Advanced levels.

Students electing to pursue the Certificate of Clinical Competence should complete, in addition to the required courses listed above, the required clinic courses or clinic hours.

B. Concentration in Audiology. This concentration has a clinical focus and may be used to satisfy some of the academic preparation for the Certificate of Clinical Competence in Audiology from the American Speech-Language-Hearing Association and for licensure from the State of California.

Undergraduate Preparation. Undergraduate preparation includes coursework equivalent to the following offerings in the College of Health and Human Services. Students interested in graduate study in audiology with a research environment requiring a strong scientific foundation may enroll themselves in this concentration.

Undergraduate Preparation. Undergraduate preparation includes coursework equivalent to the following offerings in the College of Health and Human Services. Students interested in graduate study in audiology with a research environment requiring a strong scientific foundation may enroll themselves in this concentration.

Admission to Graduate Study

All students must satisfy the general requirements for admission to classified graduate standing as described in Part Two of this bulletin. In addition, students seeking the Master of Arts degree in communicative disorders are required to have completed Communicative Disorders 600.

Specific Requirements for the Master of Arts Degree

(Major Code: 12201)

In addition to meeting the requirements for classified graduate standing and the bachelor of the master's degree as described in Part Two of this bulletin, the student must complete a graduate program of at least 30 units. A student must complete Communication Disorders 500 and 797. After Plan B has been selected, the student must complete a research paper as approved by the department; complete two units of Communication Disorders 797, Research; and pass a comprehensive examination (which may be repeated only twice). Students enrolled in Communicative Disorders 797 or 799A must participate in the department's professional development seminar unless excused by the coordinator of the graduate program. No more than six units of coursework outside the department acceptable on the graduate level may be applied to the master's degree.

The Department of Communicative Disorders offers four concentrations leading to the Master of Arts degree. Each concentration requires completion of a specific pattern of graduate units described below:

A. Concentration in Speech-Language Pathology. This concentration has a clinical focus and may be used to satisfy some of the academic preparation for the Certificate of Clinical Competence in Speech-Language Pathology from the American Speech-Language-Hearing Association and for licensure from the State of California. Students are required to complete coursework in all of the following areas:

1. Voice Disorders
2. Articulation/Phonology Disorders
3. Adult Language Disorders
4. Child Language Disorders

The coursework may be taken during undergraduate or graduate study.

Undergraduate Preparation


Graduate Preparation. Required courses: Communicative Disorders 526, 545, 546, 556. Admission to graduate study leading to the Master of Arts degree in Communicative Disorders 500, 600, 610, 611, 640, 644, 647, and 648. A postbaccalaureate program for licensed teachers of the deaf, with an emphasis on clinical diagnostic procedures, is available in the Basic, Intermediate, and Advanced levels.

Students electing to pursue the Certificate of Clinical Competence should complete, in addition to the required courses listed above, the required clinic courses or clinic hours.

B. Concentration in Audiology. This concentration has a clinical focus and may be used to satisfy some of the academic preparation for the Certificate of Clinical Competence in Audiology from the American Speech-Language-Hearing Association and for licensure from the State of California.

Undergraduate Preparation. Undergraduate preparation includes coursework equivalent to the following offerings in the College of Health and Human Services. Students interested in graduate study in audiology with a research environment requiring a strong scientific foundation may enroll themselves in this concentration.

Undergraduate Preparation. Undergraduate preparation includes coursework equivalent to the following offerings in the College of Health and Human Services. Students interested in graduate study in audiology with a research environment requiring a strong scientific foundation may enroll themselves in this concentration.

Admission to Graduate Study

All students must satisfy the general requirements for admission to classified graduate standing as described in Part Two of this bulletin. In addition, students seeking the Master of Arts degree in communicative disorders are required to have completed Communicative Disorders 600.
Communicative Disorders

700 numbered courses from engineering, linguistics, philosophy, psychology, and other departments may be included in the fifteen units of electives with the approval of the department's graduate committee.

Credentials

The Department of Communicative Disorders offers academic and practica coursework applicable to two credentials in the Ryan Credential Program. Students desiring to work in the public schools with speech, language, or hearing impaired pupils may choose the Special Education Specialist Credential for the Communication Handicapped (CH) or the Clinical-Relativative Services Credential (CRS) as listed in the Graduate Bulletin. Each credential is competency based, that is, specified competencies have been identified as requirements for areas of specialization by the Commission for Teacher Credentialing. Candidates may satisfy institution requirements, therefore, by either satisfactory completion of required courses or their equivalency, or by demonstrating equivalent competencies by experience or examination. Candidates may enter the CH or CRS credential program at undergraduate or graduate level. Each credential has designated areas of specialization. Students entering the program to teach the deaf or deaf-blind must include the requirements of the CH credential. Students preparing to serve as school audiologists must follow the CRS credential program.

Special Education Specialist Credential for the Communication Handicapped (CH)

The Special Education Specialist Credential for the Communication Handicapped prepares students for an emphasis in one or more of the following areas of handicap:

1. Concurrently or prior to completion of the special education major, complete the single subject credential (preliminary or clear) or the multiple subject credential (preliminary or clear). Students may choose to:
   a) Major in Liberal Studies offered by the College of Education in conjunction with specified communicative disorders courses.
   b) Pursue a departmental major; complete specified prerequisites for the College of Education; pass the National Teacher Examinations prior to entering the College of Education professional education sequence.

2. Complete a minimum of one year of study, including:
   a) Three units of Speech and Hearing (LSH) Communicative Disorders Including: Psychology 101, 260.
   b) Advanced work in the area of specialization in the Department of Communicative Disorders, including: Psychology 101, 260, Physics 201.
   c) Additional work in the area of specialization in the Department of Communicative Disorders, including:
      i) Communication Handicapped Specialization: Specific coursework Communicative Disorders 106, 205, 320, 321, 322, 940, 340L, 358, 500, 511, 512, 513, 540, 545, 546, 671 or 673 and 932.
      ii) Additional coursework required for the specific area of specialization in the Department of Communicative Disorders (Special Oral Language, Deaf, Deaf-Blind, Speech and Hearing) selected by the student in conjunction with the adviser in the Program for Education of the Deaf.

3. A minimum of 30 postbaccalaureate semester units which must include the courses for a master's degree, is required of all candidates.

   Additional prerequisites required for this course.

Clinical-Relativative Services Credential (CRS) Credentials (Credential Code: 00990)

Clinical-Relativative Services (CRS) Credentials are available in the following areas:

   Language: Speech and Hearing (LSH)
   Audiology
   Severe Language Handicapped/Asphasia (SLH)

A minimum of 30 postbaccalaureate semester units which must include the courses for a master's degree, is required of all candidates. The following courses in Communicative Disorders are required: Communicative Disorders 106, 110, 205, 320, 321, 322, 340, 341, 500, 511, 517, 525, 540, 545, 560, 630, and 671 or 673. Courses from other departments may be included. Students should consult with appropriate advisors in the College of Education for specific requirements.

Program

Persons interested in the Special Education Specialist Credential shall:

1. Concurrently or prior to completion of the special education major, complete the single subject credential (preliminary or clear) or the multiple subject credential (preliminary or clear). Students may choose to:
   a) Major in Liberal Studies offered by the College of Education in conjunction with specified communicative disorders courses.
   b) Pursue a departmental major; complete specified prerequisites for the College of Education; pass the National Teacher Examinations prior to entering the College of Education professional education sequence.

2. Complete a minimum of one year of study, including:
   a) Three units of Speech and Hearing (LSH) Communicative Disorders Including: Psychology 101, 260, Physics 201.
   b) Advanced work in the area of specialization in the Department of Communicative Disorders, including: Psychology 101, 260, Physics 201.
   c) Additional work in the area of specialization in the Department of Communicative Disorders, including:
      i) Communication Handicapped Specialization: Specific coursework Communicative Disorders 106, 205, 320, 321, 322, 940, 340L, 358, 500, 511, 512, 513, 540, 545, 546, 671 or 673 and 932.
      ii) Additional coursework required for the specific area of specialization in the Department of Communicative Disorders (Special Oral Language, Deaf, Deaf-Blind, Speech and Hearing) selected by the student in conjunction with the adviser in the Program for Education of the Deaf.

3. A minimum of 30 postbaccalaureate semester units which must include the courses for a master's degree, is required of all candidates.

   Additional prerequisites required for this course.

Licenses and Certificate

Preparation Leading to the Certificate of Clinical Competence from the American Speech-Language Hearing Association

Students may complete the academic and clinical practice requirements leading to the Certificate of Clinical Competence in Speech-Language Pathology (CCSP) or to the Certificate of Clinical Competence in Audiology (CCA) given by the American Speech-Language Hearing Association. The certificate requires 60 units of coursework, 30 units of which must be completed at the graduate level. 300 clock hours of supervised clinical experience, 150 hours of which must be completed at the graduate level, a clinical fellowship year, and a national examination. The academic and practice requirements must meet certain specifications. Consult an adviser in the area in which certification is desired for specific information.

Preparation Leading to the Professional Certificate from the Council of the State of Education of the Deaf

Students may complete the academic and practica requirements leading to the Professional Certificate given by the Council of the State of Education of the Deaf. The Professional Certificate requires a specific pattern of courses and teaching experiences. Consult an adviser in the Program for Education of the Deaf for more information.

Preparation Leading to State Licensure in Speech Pathology or Audiology

Students may complete the academic and practica requirements leading to state licensure in Speech Pathology or Audiology. The following courses in Communicative Disorders include:

   Language: Speech and Hearing (LSH)
   Audiology
   Severe Language Handicapped/Asphasia (SLH)

   Additional coursework required for the specific area of specialization in the Department of Communicative Disorders (Special Oral Language, Deaf, Deaf-Blind, Speech and Hearing) selected by the student in conjunction with the adviser in the Program for Education of the Deaf.

   A minimum of 30 postbaccalaureate semester units which must include the courses for a master's degree, is required of all candidates.

   Additional prerequisites required for this course.

Degree Programs in Speech Pathology and Audiology

500. Language Structure (3)

Preparation leading to the above degree requires 106 and 320. Recommended: Linguistics 101. Study of the design features of language as they relate to communication and language use.

501. Voice Disorders: Children (3)

Preparation leading to the above degree requires 106 and 320. Prerequisite: Communicative Disorders 322. The sequence focuses on the nature and management of voice disorders. Laboratory involves measurements of vocal dimensions and perceptual training for diagnosis and remediation of voice disorders.

505. Remediation for Hearing Disability: School and Children (3)

Preparation leading to the above degree requires 106 and 320. The course is developmentally appropriate understanding of stuttering as a communicative disorder; explanations for learning of delayed behavior, application of principles from laboratory for school setting with delayed speech. (Formerly numbered Communicative Disorders 422.)
511. Speech Reading and Auditory Training (3)
Prerequisites: Communicative Disorders 320 and 340, communicative examination. Recommended: Communicative Disorders 357, 500 and 513.
Theory and methods of speech reading; auditory rehabilitation methods including sound amplification systems.

512. Articulation Disorders and Methods (3)
Prerequisites: Communicative Disorders 320, 321, and 340. Special methods of orientation and treatment in prevention and remediation of articulatory disorders. Includes emphasis on speech habilitation of hearing impaired, cognitive and motor processing.

513. Language Disorders and Methods (2) I, II
Prerequisites: Communicative Disorders 320, 321, 340, 500, 511.
Theories and research in language acquisition and language disorders. Assessment of, and intervention with, language impaired children, including hearing impaired individuals.

514. Diagnostic Methods in Speech-Language Pathology (3)
Prerequisites: Grade of C or better in Communicative Disorders 512, 513, 517.
Principles and procedures in assessing communication disorders in children and adults. Includes case histories, testing, materials, interviewing, clinical reporting and practice with selected assessment tools. Twelve hours of observation of diagnostic practitioners required.

525. Introductory Clinical Practice (1)
Eight hours of orientation; thereafter two hours of practicum and one hour of supervision per week.
Prerequisites: Consent of department; Communicative Disorders 320, 321, 512, 513.
Orientation to the clinic, supervised observation, and practice with representative speech and language problems.

526. Clinical Practice in Speech-Language Pathology (1-2), II, S
Two hours of practicum and one hour of staff supervision.
Prerequisites: Communicative Disorders 110 and grade of C or better in Communicative Disorders 512, 513, 517.
Supervised practice with representative speech and language problems. Up to two units may be taken concurrently; maximum credit three units.

541. Clinical Practice with Hard of Hearing (1) I, II, S
Three hours of laboratory.
Prerequisite: Grade of C or better in Communicative Disorders 542.
Supervised practicum with pure tone, speech, and special audiologic testing and with hearing aid evaluation. One unit represents two hours of clinical contact and one hour of staffing per week. Up to three units may be taken concurrently; maximum credit three units.

542. Audiology: Application (3)
Prerequisite: Communicative Disorders 340L.
Practitioner level; emphasis on application of diagnostic audiology, masking, impedance audiometry, tests for nonorganic and for sensorineural hearing loss; reporting test results; audiometer calibration.

543. Clinical Practice in Audiology Assessment (1-3) I, II, S
Three hours of practicum.
Prerequisite: Grade of C or better in Communicative Disorders 542.
Supervised practicum in audiovisual assessment of hearing clients. One unit represents two hours of clinical contact and one hour of staffing per week. Up to three units may be taken concurrently; maximum credit three units.

544. Clinical Practice with Individuals in Deaf Education (3)
Prerequisite: Consent of department; Communicative Disorders 546 and 610.
Supervised practicum in aural rehabilitation of students with hearing impairments. One unit represents 24 hours of direct clinical practice. Qualified transfer students must enroll in at least one unit and may not exceed two units.

545. Diagnostic Methods in Audiology (3)
Prerequisite: Communicative Disorders 340L.
Practitioner level; emphasis on application of diagnostic audiology, masking, impedance audiometry, tests for nonorganic and for sensorineural hearing loss; reporting test results; audiometer calibration.

546. Clinical Practice with Hard of Hearing (1) I, II, S
Three hours of laboratory.
Prerequisite: Grade of C or better in Communicative Disorders 542.
Supervised practicum in aural rehabilitation of hearing clients. One unit represents two hours of clinical contact and one hour of staffing per week. Up to three units may be taken concurrently; maximum credit three units.

547. Hearing Conservation and Audiometry for School Nurses (3)
Prerequisite: Registered nurse.
Builds on registered nurse's knowledge of anatomy, physiology, and medical surgical treatment of disease as it relates to auditory and vestibular function. Designed to give background in hearing screening (pure tone and impedance) and awareness of ramifications of hearing loss in children necessary for referral and follow-up. Fulfills three-unit requirement for the School Nurse Credential and may be used toward the six-unit State Audiomteric Certificate requirement. Not open to students with credit in Communicative Disorders 205, 340, 341.

548. Communication and Auditory Information (3)
Prerequisite: Communicative Disorders 458.
Theory of sign language for the classroom interpreter. Emphasis on speech, oral sign, signed idioms and appropriate usage for the academic setting.

562. Oral Communication for the Hearing Impaired (3)
Prerequisites: Communicative Disorders 512 and 550.

563. Multicultural Perspectives in Communication with Deaf Individuals (2)
Prerequisite: Demonstrated intermediate competence in American Sign Language, International English, or spoken Mandarin.
Review and analysis of research in multicultural lifespan communication processes in deaf individuals. Emphasis on communication needs in health care, public school and informal social settings.

564. Communication Problems of the Aging (3)
Prerequisite: Twelve upper division units in an appropriate major.
Normal communication processes and aging, including memory and cognition for speech and language, and physiological changes; speech and language pathologies; hearing problems and rehabilitation, including hearing aids, psychoacoustic aspects of communication, including family dynamics; and resources available within the community. Open to majors and nonmajors.

566. Selected Topics in Communicative Disorders and Science (1-4) I, II, S
Twelve units in communicative disorders and science courses.
Specialized study of selected topics from the area of speech-language pathology, audiology, education of the hearing impaired, and speech and hearing science. See Class Schedule for specific content. Limit of nine units of any combination of 596, 696, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596. Maximum credit of three units of 596 applicable to a master's degree. Maximum combined credit of 12 units of 596 and 696 applicable to a 30-unit master's degree.

600. Graduate Seminars in Communicative Disorders (1-3) I, II
Three hours of seminar.
Open to graduate students in communicative disorders or related fields. Not open to graduate students with credit in Communicative Disorders 596 and 696.

601. Seminar in Speech and Hearing Science (3)
Prerequisite: Classified graduate standing.
Instrumentation and measurement techniques in communicative disorders and sciences. Techniques applied to the specific clinical and research areas of speech, hearing, and language.

602. Adult Language Disorders (3)
Prerequisite: Communicative Disorders 539. Recommended: Communicative Disorders 500 and 513.
Research in diagnosis and therapy for adults with disorders of symbolization and syntax.

603. Seminar in Neurophysiological Communication Disorders (3)
Prerequisite: Communicative Disorders 539.
Research in diagnosis and theories of treatment for persons with speech and language disorders associated with facial paralysis and other neurophysiological disorders.

604. Seminar in Craniofacial Disorders (3)
Prerequisites: Communicative Disorders 321, 340, and 50 hours of supervised practicum. Recommended: Concurrent registration in Communicative Disorders 626.
Review of research in diagnosis and therapy for persons with cleft palate and other craniofacial disorders.

605. Seminar in Fluency Disorders (3)
Prerequisite: Communicative Disorders 622. Recommended: Concurrent enrollment in Communicative Disorders 626.

606. Seminar in Voice Pathology (3)
Prerequisites: Communicative Disorders 321 and 501. Concurrent registration in Communicative Disorders 626.

607. Phonological Disorders (3)
Prerequisites: Communicative Disorders 512, 517, 526. Recommended: Concurrent registration in Communicative Disorders 626.
Applications of phonological principles and procedures for evaluation and remediation of unintelligible speech patterns in children.

608. Motor Speech Disorders (3)
Prerequisite: Communicative Disorders 539.
Dysarthria and apraxia of speech. Techniques of differential diagnosis and treatment of these motor speech disorders. Formerly numbered Communicative Disorders 560.

610. Hearing Amplification (3)
Prerequisites: Communicative Disorders 340 and 542.
Hearing aid components, function, troubleshooting and client orientation. Hearing aid evaluations, fittings, and electroacoustical testing of hearing aid analyzers. (Formerly numbered Communicative Disorders 543.)

611. Aural Rehabilitation (3)
Prerequisite: Communicative Disorders 511. Recommended: Communicative Disorders 540 and 541.
Technological, theoretical, and methodological issues related to the habilitation and rehabilitation of hearing impaired children and adults.

613. Child Language Disorders (3)
Prerequisite: Communicative Disorders 539. Recommended: Communicative Disorders 500 and 513.
Research in diagnosis and treatment for children with disorders of symbolization. Not open to students with credit in Communicative Disorders 602, Child Language.
614. School Age Children Language Development and Disorders (3) 
Prerequisites: Communicative Disorders 526. 
Contrastive study of normal and disordered language development in children five years through adolescence, including syntax, semantics, pragmatics, figurative language and metalinguistics. Integration of assessment and intervention for language disorders and associated speech and language based reading and writing disorders. Not open to students with credit in Communicative Disorders 554A, 554B, 554C.

618. Diagnostic Practicum in Speech-Language Pathology (1) 
Six hours of supervision. 
Prerequisites: Grade of C or better in Communicative Disorders 517 and 526. 
Supervised clinical practice in diagnostic methods. (Formerly numbered Communicative Disorders 518 and 528.)

619. Diagnostic Practicum in Communicative Disorders: Multidisciplinary Assessment (1) 
Six hours of supervision. 
Prerequisites: Grade of C or better in Communicative Disorders 517, Credit or concurrent registration in Communicative Disorders 526. 
Participation in central process of SDSU Interdisciplinary Center for Health and Human Services, including diagnostic team assessments and staffings. (Formerly numbered Communicative Disorders 519 and 528.)

626. Advanced Clinical Practice in Speech-Language Pathology (1-3) 
Three hours of supervision per unit. 
Prerequisites: Communicative Disorders 340, 526, and departmental approval. 
Supervised work with representative advanced speech and language disabilities. Twenty-six hours of practicum required per unit. Maximum credit four units. Up to two units may be taken concurrently.

627. Advanced Field Clinical Practice in Speech-Language Pathology (1-3) Cr/NC (1-3) 
Three hours of laboratory per unit. 
Prerequisite: Communicative Disorders 626. 
Supervised practicum with speech and language problems. One unit represents 36 hours of direct clinical practice. Maximum credit four units. Up to three units may be taken concurrently.

530. Family Communication Dynamics (3) 
Prerequisites: Communicative Disorders 322 and 526. 
Communication environment in the home, Parent-child interaction, functional and organic speech disorders. (Formerly numbered Communicative Disorders 530.)

640. Seminar in Psychosocial Aspects of Communication (3) 
Prerequisites: Communicative Disorders 542 and credit or concurrent registration in Communicative Disorders 600. 
Psychosocial aspects of communicative disorders. 

644. Medical Audiology (3) 
Prerequisites: Communicative Disorders 542 and credit or concurrent registration in Communicative Disorders 600. 
Problems of diagnosis, referral and report writing. Testing in medical setting and medically significant hearing pathologies.

645. Advanced Clinical Practice in Audiology (1-2) Cr/NC 
Three hours of laboratory. 
Prerequisite: Communicative Disorders 545. 
Advanced clinical work in hearing evaluation. Maximum credit four units. Up to two units may be taken concurrently.

646. Advanced Clinical Practice with Hard of Hearing (1) Cr/NC 
Three hours of laboratory. 
Prerequisites: A minimum of two units in Communicative Disorders 506, 546 and/or 626. Recommended: Credit or concurrent registration in Communicative Disorders 512, 513, and 610. 
Supervised practice with problem hearing cases. Maximum credit four units. Up to two units may be taken concurrently.

647. Auditory Evoked Potentials and Electrophysiological Techniques (3) 
Prerequisite: Credit or concurrent registration in Communicative Disorders 600. 
Theoretical and practical aspects of auditory evoked potentials, e.g., ABR, M. U. L., late potentials, and electrophysiological tests. (Formerly numbered Communicative Disorders 649.)

647L. Applications of Electrophysiological Techniques (2) 
Six hours of supervised laboratory experience. 
Prerequisite: Communicative Disorders 647. 
Supervised experience in performing electrophysiological tests, e.g., auditory evoked potentials and ENG. Emphasis on equipment operation, test procedures, and interpretation of responses. Applies material covered in Communicative Disorders 647.

648. Pediatric Audiology (3) 
Prerequisite: Credit or concurrent registration in Communicative Disorders 600. 
Auditory assessment techniques for infants and young children. Embryology of auditory system; development of auditory behavior. (Formerly numbered Communicative Disorders 645.)

654. Seminar in Physiological Phonetics (3) 
Prerequisite: Communicative Disorders 512. 
Phonetic analysis of complex speech sounds, including transitional movements, based on a phonetic concept.

655. Curriculum for the Communicatively Impaired (3) 
Prerequisite: Communicative Disorders 512 and 513; Communicative Disorders 526 or 556. 
Application of cognitive processing theory to development and evaluation of curricula, materials, and procedures. Selection of learning modalities and appropriate modification of curricula. (Formerly numbered Communicative Disorders 555 and Special Education 575.)

566. Advanced Clinical Practice with the Deaf (1) Cr/NC 
Three hours of laboratory. 
Prerequisites: Communicative Disorders 511, 512, 513, and 556. 
Supervised clinic practicum at an advanced level with representative deaf cases. Maximum two units per semester, maximum credit four units.

657. Seminar in Differential Diagnosis of the Hearing Impaired (3) 
Prerequisites: Communicative Disorders 511, 512, 526, 646, or 656. Recommended: Concurrent registration in Communicative Disorders 556. 

658. Seminar in Deafness (3) 
Prerequisites: Communicative Disorders 550 and 556. 
Problems of deafness, evaluation of research, interdisciplinary approach to aural habilitation. Offered every other year. See Class Schedule for specific content and semester offered.

659. Seminar in Education of Deaf-Blind Children and Youth (3) 
Prerequisite: Communicative Disorders 656. 
Interdisciplinary approach to education of deaf-blind children and youth. Development of communicative competence. Offered in alternate years. See Class Schedule for specific content and semester offered.

670. Seminar in Professional Issues in Communicative Disorders (3) 
Prerequisite: Credit or concurrent registration in Communicative Disorders 600. 
Ethical and legal issues, practice standards, employment and business considerations (including hearing aid dispensing), supervision, and private practice.

671. Assessing the Bilingual Child with Communicative Disorders (3) 
Prerequisites: Communicative Disorders 500 and Linguistics 553. 
Assessment procedures applicable for bilingual child with communicative disorders. Consideration of available instruments, appropriateness for target populations and validity of adaptations. (Formerly numbered Communicative Disorders 571.)

672. Seminar in Remediation of Communicative Disorders in the Bilingual Population (3) 
Prerequisites: Communicative Disorders 671. 
Intervention strategies and procedures for bilingual individuals with communicative disorders. Selection criteria, factors influencing planning, program models and specific procedures for different ethnic groups and types of communicative disorders. (Formerly numbered Communicative Disorders 572.)

673. Seminar in Communicative Disorders in Bilingual Spanish-English Populations (3) 
Prerequisites: Communicative Disorders 500 and demonstrated Spanish language competence. 

675. Augmentative Communication (3) 
Prerequisites: Communicative Disorders 500 and 526 or 546. 
Alternative and augmentative approaches, strategies and technology for individuals with severe communicative impairments. Assessment and intervention. Project required. (Formerly numbered Communicative Disorders 565.)
676. Assistive Device Program for Communicatively Handicapped (2)
Prerequisite: Communicative Disorders 618.
Assessment of communication skills of disabled individuals, environmental needs and appropriateness of augmentative communication aids. Remediation recommendations. Maximum credit four units. (Formerly numbered Communicative Disorders 566.)

699A. Selected Topics in Communicative Disorders and Sciences (1-3)
Prerequisite: Graduate standing.
In-depth study in specific areas of audiology, education of hearing impaired, speech and hearing science, and speech-language pathology. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master’s degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master’s degree.

797. Research (2) Cr/NC/SP
Prerequisites: Advancement to candidacy and consent of the department chair.
Research in speech-language pathology, deaf education or audiology. Maximum credit two units available to a master’s degree. Participation in the department’s professional development seminar is required unless waived by the coordinator of the graduate program.

798. Special Study (1-3) Cr/NC/SP
Prerequisites: Communicative Disorders 650 and consent of staff, to be arranged with department chair and instructor. Individual study. Maximum credit six units applicable to a master’s degree.

799A. Thesis or Project (3) Cr/NC/SP
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master’s degree. Participation in the department’s professional development seminar is required unless waived by the coordinator of the graduate program.

799B. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis or Project 799A with an assigned grade symbol of SP.
Registration required in any semester or term following approval of a project or thesis proposal. Registration may be repeated as long as the student expects to use the facilities and resources of the university; student must be registered for the course when the completed thesis or project is granted final approval. Participation in the department’s professional development seminar is required unless waived by the coordinator of the graduate program.

929. Orientation to Public School Practicum (1)
Prerequisites: Communicative Disorders 517. Minimum of 100 hours of supervised clinical practicum and departmental approval. Concurrent registration in Communicative Disorders 933 or 953.
Goals, materials and procedures for organizing and administering language and hearing programs in the school. (Formerly numbered Communicative Disorders 529.)

933. Clinical Practice in Public Schools (4 or 5) I, II Cr/NC
Prerequisites: Credit or concurrent registration in Communicative Disorders 929; four units of practice, post-baccalaureate standing. California Basic Education Skills Test, Certificate of Clearance; departmental approval prior to admission.
Clinical practice in elementary or secondary schools or community colleges in speech-language pathology or audiology. Applies only toward the Clinical Rehabilitation Services Credential (CRS) or for the Certificate of Clinical Competency in Speech-Language Pathology (ASHA). Enroll in Communicative Disorders 933A for the Language, Speech and Hearing Credential (LSH). Candidates seeking the Special Class Authorization in Severe Language Handicaps (SLH) Credential must enroll in both sections Communicative Disorders 933A and 933B, sequentially or concurrently. (Formerly numbered Communicative Disorders 433.)

A. Clinical Practice in the Public Schools: Language, Speech and Hearing, 4 units (120 clock hours).
B. Clinical Practice in the Public Schools: Severe Language Handicaps, 5 units (150 clock hours).

953. Directed Internship: Communication Handicapped (1-3) I, II Cr/NC
Prerequisites: Two units of Communicative Disorders 550 and one unit of Communicative Disorders 656 or Communicative Disorders 529 and four units of Communicative Disorders 526, 546, 560, 646. Basic teaching credential. Prior to admission applicant must complete two required departmental approval. Application to take course should be made during preceding semester.
Teaching in public school with exceptional individuals. Applies toward the Special Education Specialist Credential in the Communication Handicapped (Deaf, Deaf-Blin, Speech and Hearing or Severe Oral Language) and Certificate of Clinical Competency in Severe Language Handicaps. Prerequisites: Successful completion of the Communication Handicapped (Deaf, Deaf-Blin, Speech and Hearing or Severe Oral Language) Program or Professional Certificate from the Council on Education of the Deaf. Applicants should consult with coordinator of Speech-Language Pathology or coordinator of Education of Hearing Impaired for specific hour requirements. (Formerly numbered Communicative Disorders 453.)

OFFICE: Business Administration/Mathematics 203
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Faculty
John D. Elwin, Ph.D., Professor of Mathematical Sciences, Chair of Department
Kari Anantha, Ph.D., Professor of Mathematical Sciences
Sara Basse, Ph.D., Professor of Mathematical Sciences
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John L. Carroll, Ph.D., Professor of Mathematical Sciences
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Marko I. Uskokovic, Ph.D., Professor of Mathematical Sciences
Carl F. Edgcomb, Ph.D., Associate Professor of Mathematical Sciences
MS. Computer Science Graduate Advisor
Klaus Stewart, Ph.D., Associate Professor of Mathematical Sciences
Mahmood Tabesh, Ph.D., Associate Professor of Mathematical Sciences
Vernor S. Vinge, Ph.D., Associate Professor of Mathematical Sciences
Roger E. Whitney, Ph.D., Associate Professor of Mathematical Sciences

Assistantships
Graduate teaching assistantships in computer science are available to a limited number of qualified students. Application blanks and additional information may be secured from the chair of the Department of Mathematical Sciences.

General Information
The Department of Mathematical Sciences, in the College of Sciences, offers graduate study leading to the Master of Science degree in Computer Science. The areas in which courses are offered include software, systems, architecture, artificial intelligence and computer science theory.
Master’s level research projects are available in the following areas of computer science: distributed systems, multiprocessing, operating systems, graphics, neural networks, formal languages, numerical analysis, robotics, signal processing, and computational complexity. Specialized laboratories exist for microprocessors, architecture, graphics, and robotics and intelligent machines.

Admission to Graduate Study
All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin.

Advancement to Candidacy
All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin. In addition, the student must have passed a qualifying examination in their area.

Computer Science

In the Department of Mathematical Sciences
In the College of Sciences

Specific Requirements for the Master of Science Degree in Computer Science

(Major Code: 07011)

In addition to the requirements for the master’s degree of standing and the basic requirements for the master’s degree as described in Part Two of this bulletin, the student must meet the following departmental requirements:

1. Complete a minimum of 30 units of 500-, 600-, and 700-level courses selected with the approval of the advisor. In addition to meeting the requirements for classified graduate standing, the student must complete 799A in accordance with the approval of the advisor. All programs must include at least 24 units chosen from computer science and mathematics, and satisfy the following requirements:

a. At least 2 units of graduate (600-700) courses (excluding 797, 798, 799A)

Applications and Other Topics: Computer Science 514, 500, 552, 553, 554, 555, 556, 566, 568, 650, 655, 658, 692, 693, 696.

2. With departmental approval, students may select Plan A (thesis), and must complete 799A in accordance with the approval of the advisor. An oral examination on the subject of the thesis is required. Students selecting Plan B must pass written comprehensive examinations as determined by the department.

Courses Acceptable on Master’s Degree Programs in Computer Science

UPPER DIVISION COURSES

514. Database Theory and Implementation (3) Prerequisite: Computer Science 310 and Mathematics 245. Database systems architecture, storage structures and access techniques. Relational model, relational algebra and calculus, normalization of relations, hierarchical and network models. Current database systems.

520. Advanced Programming Languages (3) Prerequisite: Computer Science 237, 310, and 320. Object oriented programming, concurrent programming, logic programming. Implementation issues.

530. Systems Programming (3) I, II
Prerequisites: Computer Science 237 and 310.
Design and implementation of systems software. Relationship between software design and machine architecture. Topics from assemblers, loaders and linkers, microprocessors, compilers, debuggers, editors, introduction to software engineering. Large project required. Not acceptable for the M.S. degree in computer science.

532. Software Engineering (3)
Prerequisites: Computer Science 310 and 320.
Theory and methodology of programming complex computer software. Analysis, design, and implementation of programs. Team projects required.

550. Artificial Intelligence (3)
Prerequisites: Computer Science 108 and either Mathematics 245 or 523.

552. Advanced Artificial Intelligence (3)
Prerequisites: Computer Science 310, 320, and 550.
Presentation of logic based programming languages and their usefulness in artificial intelligence, including areas such as expert systems and natural language translation. Implementation and use of chaining, recursion, lists. Substantial programming practice.

553. Neural Networks (3)
Prerequisites: Computer Science 320 and Mathematics 245.
Principles of neural networks, their theory and applications.

554. Aspects of Interactive Computer Graphics (3)
Prerequisites: Computer Science 310 and Mathematics 254.
Theoretical and practical concepts and software requirements related to use of interactive computer graphics. Mathematical functions used in 3D graphics; data structures and language both for programming graphical systems and for communications between a user and a graphical system.

555. Raster Computer Graphics (3)
Prerequisites: Computer Science 310 and 320.
Bit map graphics, algorithms to connect between different formats and enhancement of pictures.

556. Robotics: Mathematics, Programming, and Control (3)
Prerequisites: Computer Science 320, Mathematics 254, knowledge of the C programming language.
Robotic systems including manipulators, actuators, sensors, and controllers. Algebraic methods for spatial description of solid objects, manipulator kinematics and control. Robot programming languages and robot programming systems.

558. Computer Simulation (3)
Prerequisites: Computer Science 310 and Mathematics 550.
Methodology of simulation for discrete and continuous dynamic systems. State-of-the-art programming techniques and languages. Statistical aspects of simulation. Students will design, program, execute, and document a simulation of their choice.

560. Algorithms and Their Analysis (3) I, II
Prerequisites: Computer Science 310 and Mathematics 245.
Algorithms for solving frequently occurring problems. Analysis of algorithms, lower bounds, analysis of merges and graph problems (shortest paths, depth first and breadth first searches), and others. NP-complete problems. Not acceptable for the M.S. degree in Computer Science.

562. Automata Theory (3)
Prerequisites: Mathematics 245 or 523A.

564. Introduction to Computability (3)
Prerequisites: Mathematics 245 or 523.
Definition of algorithm by abstract (Turing) machines. Universal Turing machines. Primitive recursive and recursive functions. The equivalence of the computational power of Turing machines and recursive functions. Limitations and capabilities of computing machines; the halting problem.

566. Queuing Theory (3)
Prerequisites: Computer Science 108 and Mathematics 550.
Performance prediction of computer networks and other systems (e.g., inventory control, customer service lines via queuing theory techniques. Operational analysis.

570. Operating Systems (3) I, II
Prerequisites: Computer Science 310, 350, and knowledge of the C programming language.
File systems, processes, CPU scheduling, concurrent programming, memory management, protection. Relationship between the operating system and underlying architecture.

572. Microprocessor Architecture (3)
Prerequisites: Computer Science 370 and knowledge of the C programming language.

574. Computer Security (3)
Prerequisites: Computer Science 310, Mathematics 245, 550, and credit or concurrent registration in Computer Science 570.
Principles of computer security and application of principles to operating systems, database systems, and computer networks. Topics include encryption techniques, access controls, and information flow controls.

575. Supercomputing for the Sciences (3)
Prerequisites: Extensive programming background in Fortran or C.
Interdisciplinary course, intended for all science and engineering majors. Advanced computing techniques developed for supercomputers. Overview of computer hardware, software tools, scientific computing and communications. Hands-on experience with CRAY.

576. Computer Networks and Distributed Systems (3)
Prerequisites: Credit or concurrent registration in Computer Science 570.
Local area networks and wide area networks; mechanisms for interprocess communication; rules for distribution of data and program functions.

596. Advanced Topics in Computer Science (1-4) I, II
Prerequisite: Consent of instructor.
Selected topics in computer science. May be repeated with the approval of the instructor. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a bachelor's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

For additional courses useful to computer scientists, see:

Mathematics 541. Introduction to Numerical Analysis and Computing
Mathematics 542. Introduction to Numerical Solutions of Differential Equations
Mathematics 561. Applied Graph Theory
Mathematics 579. Combinatorics

GRADUATE COURSES

620A. Formal Languages and Syntactic Analysis I (3)
Prerequisites: Computer Science 310, 320 or 520, and 562.
Regular, context-free, context-sensitive, and general grammars. Corresponding machine models. Chomsky and Greibach normal forms. Closure, decidability and undecidability properties. (Formerly numbered Computer Science 691A.)

620B. Formal Languages and Syntactic Analysis II (3)
Prerequisite: Computer Science 620A.
Properties of deterministic context-free languages. Backtrack and matrix based general parsing techniques. LL(k) and LR(k) based parser generators. Precedence grammars. (Formerly numbered Computer Science 691B.)

624. Advanced Compiler Construction (3)
Prerequisite: Computer Science 524.
LR parsing; Attribute grammars and multipass translation; Intermediate representations; Global optimization; Global data flow analysis; Table compilation techniques; Symbolic error recovery and repair.

632. Advanced Software Engineering (3)
Prerequisite: Computer Science 532.
Theoretical and practical concepts associated with the specification, design, testing, and maintenance of large software systems. Use of automated tools in engineering such systems.

650. Seminar in Artificial Intelligence (3)
Prerequisite: Computer Science 550.
General problem-solving programs, expert problem solving, game playing programs, program recognition and natural language processing, understanding vision, manipulation, computer decision. May be repeated with new content with approval of graduate advisor. Maximum credit is six units applicable to a master's degree. (Formerly numbered Computer Science 676.)

656. Advanced Robotics (3)
Prerequisite: Computer Science 556.
Computer-based techniques for low-, medium-, and high-level robot control including sequential and parallel schemes for robot dynamics, robot programming and robot task planning.
660. Combinatorial Algorithms and Data Structures (3)
Prerequisite: Computer Science 560. Algorithm design techniques. Network flow and matching. Complexity analysis. NP-completeness, reductions among NP-complete problems. Approximation algorithms for NP-complete problems such as the traveling salesman problem. (Formerly numbered Computer Science 694B.)

662. Theory of Parallel Algorithms (3)

664. Theory of Computability (3)
Prerequisite: Computer Science 560 or 564. Turing machines and other formal models of computation. Recursive function theory. The Ackermann function. Solvable and unsolvable problems. (Formerly numbered Computer Science 690A.)

672. Microcomputer Software (3)
Prerequisite: Computer Science 572. Design and implementation of a real-time operating system for a state-of-the-art microprocessor. Applications of the operating system. (Formerly numbered Computer Science 681.)

674. Advanced Computer Architecture (3)
Prerequisite: Computer Science 572. Advanced computer architecture, including parallel and distributed architecture, and accompanying software and algorithmic issues. (Formerly numbered Computer Science 692B.)

678. Computer Performance Evaluation (3)
Prerequisite: Computer Science 558. Recommended: Computer Science 566. Performance evaluation of several aspects of computer systems. Measurement principles and techniques. System models. System optimization. (Formerly numbered Computer Science 690A.)

696. Selected Topics in Computer Science (3)
Prerequisite: Consent of instructor.
Intensive study in specific areas of computer science. May be repeated with new content. See Class Schedule for specific content. Maximum combined credit of six units of 596 and 696 applicable to a master's degree.

700. Applications of Computer Science (3)
Prerequisite: Classified graduate standing in mathematics or computer science. Topic to be chosen from such applications as theorem proving, simulation, learning theory, graphics definition languages. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

797. Research (1-3) Cr/NCjSP
Prerequisite: Six units of graduate level computer science courses. Research in computer science. Maximum credit six units applicable to a master's degree.

798. Special Study (1-3) Cr/NCjSP
Prerequisite: Consent of staff, to be arranged with department chair and instructor. Individual study. Maximum credit six units applicable to a master's degree.

799A. Thesis or Project (3) Cr/NCjSP
Prerequisite: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis or Project 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university, also must be registered in the course when the completed thesis or project is granted final approval.

For additional courses useful to computer scientists, see: Mathematics 693A-693B. Advanced Numerical Analysis

OFFICE: Dramatic Arts 204
TELEPHONE: (619) 594-6363

Faculty
Alice M. Arcus, M.F.A., Professor of Drama, Chair of Department
Ralph Funiciello, B.F.A., The Don W. Powell Chair in Scene Design
Anne-Charlotte Harvey, Ph.D., Professor of Drama
Michael L. Harvey, Ph.D., Professor of Drama
Peter F. Lanham, Ph.D., Professor of Drama
Margaret McKerrow, Ph.D., Professor of Drama
Terry L. O'Donnell, D.M.A., Professor of Drama
Mack Owen, Ph.D., Chair of Drama
Bebe Salser, M.F.A., Professor of Drama
Paula Kalatian, M.F.A., Associate Professor of Drama
William N. Reid, M.F.A., Associate Professor of Drama
R. Craig Wolf, M.F.A., Associate Professor of Drama
Rick Simas, M.A., Assistant Professor of Drama

Assistantships
Graduate teaching and non-teaching assistantships are available to a limited number of qualified students. Application forms and further information may be obtained from the department.

The Don W. Powell Chair in Scene Design
The Don W. Powell Chair in Scene Design was established through a trust provided by the late professor emeritus. Always concerned about students, Powell, who retired after 30 years with the drama department in 1987, established the chair in order to enhance theatre education at S.D. State U. The first holder of the Scene Design Chair is nationally acclaimed designer Ralph Funiciello.

General Information
The Department of Drama, in the College of Professional Studies and Fine Arts, offers graduate study leading to the Master of Arts degree and the Master of Fine Arts degree. The Master of Fine Arts degree is offered in the areas of design/technical theatre and musical theatre. The M.A. is a 30-unit program; the M.F.A. is a 60-unit program. Both programs of study limit the number of students accepted in order to offer individual attention and extensive opportunity to participate in theatre production. The Dramatic Arts building contains the prosenium-style Don Powell Theatre seating 500, with state-of-the-art computer lighting and sound control, and the flexible Experimental Theatre seating 200, rehearsal and recording areas, a design studio, paint shop, wig and makeup room, costume shop, full-scale scenic shop, and fully equipped costume laboratory.

Drama
In the College of Professional Studies and Fine Arts

Master of Arts Degree in Drama

Admission to Graduate Study

General requirements for admission to the University with classified graduate standing are described in Part Two of this bulletin. In addition, the student's advisor will judge the applicant capable of graduate work in drama. The judgment will be based on (1) the applicant's transcripts of prior academic work; (2) three current and relevant letters of recommendation from individuals familiar with the applicant's academic ability; (3) the applicant's scores on the GRE: General Test; and (4) an interview, when appropriate, revealing the applicant's ability to succeed in the chosen field of study. NOTE: M.A. applicants are accepted for Fall admission only. Application deadline is April 15 for the following Fall semester.

Advancement to Candidacy

All students in the Master of Arts program must meet the general requirements for advancement to candidacy, as described in Part Two of this bulletin. In addition, students seeking the Master of Arts degree in Drama (regardless of area of specialization) are required to have completed Drama 600 and to have removed any deficiencies assigned. It is recommended that all graduate students take Drama 600 during their first semester.

Specific Requirements for the Master of Arts Degree

(Major Code: 10071)
In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete a graduate program of a minimum of 30 units. Eighteen of the 30 units must be in 600- and 700-numbered courses in drama; an additional 6 units from 500-, 600- or 700-numbered drama courses; and the remaining 6 units may be selected from 500-, 600- or 700-numbered courses in drama or outside departments. PLEASE NOTE: Drama 600, 610, 621, 647A or 647B, and 799A are required courses for all Master of Arts candidates.

Master of Fine Arts Degree in Drama

Admission to Graduate Study

In addition to meeting the general requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin, a student must satisfy the following requirements before being recommended for classified graduate standing:

1. Achieve a score of not less than 1000 on the GRE General Test (combined verbal and quantitative).
2. Pass an oral examination and oral defense in an approved affiliated field with a grade point average of not less than...
For specific audition dates and locations, write to the Director, Graduate Acting Program, Department of Drama, San Diego State University, San Diego, CA 92182-0219.

Concentration in Design and Technical Theatre

In addition to meeting the admission requirements listed above, a student must demonstrate outstanding abilities in a particular area of design/technical theatre by submitting the following items:

1. Students primarily interested in design must submit a portfolio which contains sketches, renderings, graphics, floor plans, elevations, plots, color/fabric swatches, and photographs of productions, revealing the applicant's creative ability in the chosen area or areas of design.

2. Those students primarily interested in technical theatre must submit a portfolio which contains evidence of technical direction and management experiences in scenic, lighting, or costume technology and design.

3. A resume which contains documentation of participation in not less than five full-length theatrical productions.

4. Three letters of recommendation attesting to the candidate's academic, professional, and personal qualifications from academic or professional theatre sources.

For specific interview dates and locations, write to the Director, Design Program, Department of Drama, San Diego State University, San Diego, CA 92182-0219.

Concentration in Musical Theatre

In addition to meeting the admission requirements listed above, a student must demonstrate unusual artistic talent in the musical theatre area by providing:

1. A resume of musical theatre accomplishments.

2. An audition, either in person or via videotape, which would include two contrasting vocal selections, two contrasting monologues, and a dance/movement piece.

3. Three letters of recommendation attesting to the candidate's academic qualifications, and level of competence in musical theatre performance in the areas of acting, singing, and dancing.

For specific audition dates and locations, write to the Director, Musical Theatre Program, Department of Drama, San Diego State University, San Diego, CA 92182-0219.

This program admits new students every other year only. Application may be made spring of even numbered years for the following fall admission.

Advancement to Candidacy

All students must meet the general requirements for advancement to candidacy as described in Part Two of this bulletin. Candidates for the M.F.A. must have completed 30 units within their official program with a minimum grade point average of 3.0. A minimum of 24 units in the official program must be enrolled in and completed concurrently with or after advancement to candidacy. Students in each concentration must have successfully completed Drama 600 and removed any deficiencies noted by the faculty.

Specific Requirements for the Master of Fine Arts Degree (Major Code: 10072)

Fourty-five of the sixty units required must be completed in courses numbered 600 or above. The remaining units may be selected from 500-, 600-, or 700-numbered courses in drama or outside departments.

At least 30 units of the student's program must be completed in residence at San Diego State University, and the student must be in residence not less than two semesters. No more than six units in 791 will be accepted for credit toward the degree.

Concentration in Acting

No new students being admitted to program at this time.

Candidates for the M.F.A. with a concentration in acting, in addition to meeting the requirements for classified graduate standing, must complete a 60-unit graduate program consisting of the following courses: Drama 525, 600, 667 must be taken four times for a total credit of 12 units; 610, 621, 624, 630 (maximum 2 units), 631, 632, 633, 647, 746, 795, 799A.

Twelve additional units are to be selected from courses acceptable for graduate credit in the following areas: art, drama education, English, and comparative literature, history, linguistics, mass communication, music, physical education, speech communication, telecommunications and film. It is recommended that students include at least 3 units from Drama 523, 530A, 533B, 639, 551 among the 12 units of electives. In some circumstances, additional courses acceptable for graduate credit in other departments may be selected with the approval of the student's adviser.

Students in the concentration in acting will be reviewed by a faculty panel each semester to determine if their progress warrants continuation in the program. In conjunction with the completion of Drama 746 and 799A, students must complete an adjudicated performance thesis project established and approved by their thesis committee. This project will be supported by a written analysis/apologia.

Concentration in Design and Technical Theatre

Candidates for the M.F.A. with a concentration in design and technical theatre, in addition to meeting the requirements for classified graduate standing, must complete a 60-unit graduate program which includes a core of courses totaling 30 units as follows:

Drama 600, 610, 621, 643, 645, 646A, and 646B. Core studio course, Drama 643 (Collaborative Studies in Design), must be taken four semesters for a total of 12 units. The student must complete 15 units of practice in internship, and thesis/project under the course numbers Drama 642, 746, 795, and 799A.

Fifteen elective units are to be selected by the student and advised from graduate level courses in the following areas: art, drama, education, English and comparative literature, history, linguistics, mass communication, speech communication, telecommunications and film. In special circumstances courses acceptable for graduate credit in other departments may be selected with the approval of the student's adviser.

Candidates will prepare a production thesis project approved by their thesis committees. This project will be supported by a written analysis/apologia.
Courses Acceptable on Master's Degree Programs in Drama

**UPPER DIVISION COURSES**

510. Creative Drama II (3) I, II
- Prerequisite: Drama 310.
- Advanced techniques and procedures in teaching creative drama. Emphasis on a multicultural approach. Practical experience through fieldwork in elementary or middle school classrooms. (Formerly numbered Drama 511.)

515. Directing for Young Audiences (3) I, II
- Prerequisite: Drama 315.
- Techniques of directing productions for young audiences, casting, staging, characterization, rehearsal techniques.

520. History of Musical Theatre (3)
- Prerequisite: Upper division standing.
- Musical theatre from early Venetian operettas to musicals of modern times. Historical and critical approaches.

523. Stage Combat (2) I, II
- Four hours of activity. Prerequisite: Open to M.F.A. students.
- Advanced action principles for undergraduates. Admission to M.F.A. programs for graduate students.

532. Advanced Acting and Directing (3)
- Prerequisite: Drama 231.
- Acting students admitted by audition only; directing students by interview. Advanced action principles. Problems in acting and directing, theory and style related to the production of plays from great periods in theatre history, with attention to characterization, dramatic values, creative and production approaches. 553A: Shakespearean tragedy and history, melodrama, and farce. 553B: Greek tragedy. Shakespearean comedy. 553C: Modern drama.

539. Rendering for the Theatrical Designer (2) I, II
- Four hours of activity. Prerequisite: Drama 240B.
- Development of skills necessary for the theatrical designer to complete successful set and costume renderings, lighting studies, technical drawings, and portfolio presentation. (Formerly numbered Drama 560.)

540. Scene Design II (3) I, II
- Prerequisite: Drama 440 and 450.
- History of scene design and the application of contemporary styles to various types of dramatic production.

541. Scene Painting (2) I, II
- Four hours of activity. Prerequisite: Drama 450.
- Theories and techniques of scene painting, including both historical and modern procedures. Full scale projects executed in scenery studio.

543. Stage Property Design (2) I, II
- One lecture and two hours of activity. Prerequisite: Drama 450.
- Theories and techniques of property design for the theatre: script analysis, research methods, planning and budgeting principles, construction techniques and materials. Projects in property design for selected scripts.

546. Computer Systems and Special Effects Techniques in Stage and Television Lighting (3)
- Two lectures and three hours of laboratory. Prerequisite: Credit or concurrent registration in Drama 547.
- Functional study of computer systems in stage and television lighting with emphasis on realizing effective methods of utilizing such systems in production.

547. Lighting Design II (3) I, II
- Two lectures and three hours of laboratory. Prerequisite: Drama 447.
- Advanced design theories and lighting practice for theatre and dance. Laboratory and production related activities. (Formerly numbered Drama 548.)

548. Sound Design for the Theatre (3) I, II
- Two lectures and two hours of activity. Prerequisite: Drama 240B and 325.
- Theories and techniques of sound design and reinforcement for theatrical performance. Laboratory experience in sound production.

551. Costume, Movement, and Manners (3) I
- Prerequisite: Upper division standing or admission to the graduate program.
- Intensive study of period costumes and the movements and manners of selected historical periods: application to staging of plays from pre-modern theatre.

552. Costume Design II (3) II
- Prerequisite: Credit or concurrent registration in Drama 452.
- Advanced studies in costume design. Emphasis on theatrical style, rendering layout, design problems, materials, and budget.

554A. Costume Design Technology I (2) I, II
- Four hours of activity. Prerequisite: Drama 450.
- Current materials and practices of costume technology, advanced construction techniques, fabric selection and use, period methods of cutting and construction. (Formerly numbered Drama 554.)

554B. Costume Design Technology II (2) II
- Four hours of activity. Prerequisite: Drama 240B.
- Advanced costume craft construction techniques and management, practical procedures for sewing, cutting, sewing, fabric dyeing and painting, jewelry, and related crafts. (Formerly numbered Drama 554.)

555. Movement for the Theatre (2) I, II
- Four hours of activity. Prerequisite: Drama 130 or admission to the M.F.A. program.
- Movement techniques for the theatre student. Emphasis on movement patterns, phrase development, and musical theatre styles. Prerequisite: Admission to M.F.A. program. Maximum credit two units applicable to a bachelor's degree; maximum credit eight units applicable to the M.F.A. degree in drama. (Formerly numbered Drama 555A.)

559. Playwriting: The Full Length Play (3) I
- Prerequisite: Drama 325 or English 578. Recommended. English 588.
- Form and format of writing the full-length play. Problems in characterization, plot, and dialogue. Reading and analysis of full-length plays written by students.

596. Selected Topics in Drama (1-3) I, II
- Prerequisite: Twelve units in drama.
- A specialized study of selected topics from the areas of drama. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 596, 597. 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a 30-unit master's degree.

**GRADUATE COURSES**

600. Research and Bibliography (3)
- Basic reference works, scholarly and critical journals, introduction to bibliographical techniques; exercises and problems in methods and exposition of research as it relates to the various areas of theatre. Recommended for first semester of graduate work, and prerequisite for all research courses.

607. Acting Studio (3)
- Eight hours of activity. Prerequisite: Admission to M.F.A., concentration in acting or musical theatre. Individual vocal coaching/coaching devoted to diagnosis and correction of problems for students in M.F.A. concentration in acting or musical theatre. May be repeated to a maximum of four units.

611. Voice and Stage Speech I: Structure and Foundation (3)
- One lecture and four hours of activity. Prerequisite: Admission to M.F.A. in drama, concentration in acting. Training the natural voice. Emphasis on physical awareness and adjustment of phonetic and diaphragmatic breathing. Exercises designed to improve range, support, relaxation, projection, articulation, pronunciation. The Alexander technique and the International Phonetic Alphabet.

620. Voice and Stage Speech II: Expression and Mobility (3)
- One lecture and four hours of activity. Prerequisite: Drama 631.
- Technical vocal work in articulation, pronunciation to achieve standard English speech and eliminate regionalism. Textual analysis and spectroscopy with emphasis on language values and characterization in classic speech. Vocal adjustments for space requirements.

633. Voice and Stage Speech III: Ear Training and Stylization (3)
- One lecture and four hours of activity. Prerequisite: Drama 632.
- Principles of ear training to include intensive study of language styles and stage diction. Fundamentals of sight-singing and acting for the musical theatre student. Exercises and activities culminating in the ability to perform using stylized language.
Drama

634. Voice and Stage Speech IV: Comparative Studies (3)
Four-hour activity.
Prerequisite: Drama 633.
Integration of voice and movement skills. Comparative production techniques. Formulation of a personal vocal technique.

642. Theatre Practicum Skills (3) Cr/NC
Prerequisite: Admission to M.F.A. program.
Investigation and application of skills necessary to function of a theatrical design artist in theatrical scene design, lighting design or costume design. Experience and instruction in drafting, painting, color mixing, costume and pattern cutting, lighting and projection techniques, slide preparation, construction, and use of equipment and materials.

643. Collaborative Studies in Design (3)
Prerequisite: Admission to M.F.A. program in design/technical theatre. This course must be repeated each semester by the M.F.A. design student for a maximum of 12 units.
Design of theatrical productions with emphasis on artistic collaboration and integration of scenery, costumes, and lights. Attention to graphic presentation techniques as well as design productions.

644. Seminar in Stage Direction (3)
Prerequisite: Drama 643.
Research projects in the aesthetic principles and practices of stage direction with an emphasis on theory, technique, and historical development.

645. Seminar in Lighting for Stage and Television (3)
Prerequisites: Drama 644 or 547.
Projects concerned with the aesthetic and technical problems of stage lighting.

646. Seminar in Design for Stage and Television (3)
Prerequisite: Drama 542 or 552.
The principles of design in the theatre with an emphasis on the historical development of theatrical costume or scenic environment. The investigation of recent tendencies in styles and their evolution. Each section may be taken once for credit.
A. Costume Design
Prerequisite: Drama 440A or 440B.
B. Scene Design
Prerequisite: Drama 440A or 440B.

647. Seminar in History of Theatre and Drama (3)
Prerequisites: Drama 325, 460A and 660B.
A. British and Continental Theatre
B. American Theatre.

649. Topics in World Theatre (1-3)
Prerequisite: Admission to M.A. or M.F.A. program in drama.
Intensive study in specific areas of world theatre. Forms, technologies, genres, cultural expressions, and contemporary developments. See Class Schedule for specific content. May be repeated with new content. Maximum credit six units applicable to the M.A. or M.F.A. degree in drama.

650. Seminar in Musical Theatre Dance Repertory (3)
Prerequisites: Drama 555 and 623.
Intensive study of the various choreographic styles of the musical theatre from the viewpoint of the choreographer and director.

659. Musical Theatre Stage Direction (3)
Prerequisite: Drama 600.
Special problems in directing for the musical theatre. Formerly numbered Drama 555.

746. Theatre Internship (3) Cr/NC
Prerequisites: Drama 600 and consent of graduate coordinator and program director.
Professional field experience in areas of design/technical theatre, acting, directing, musical theatre, and theatre for youth audiences. Formerly numbered Drama 746B.

795. Practicum in Theatre Arts (1-6)
Prerequisite: Drama 600.
Faculty supervised projects in design/technical theatre, performance or direction leading to public presentation. Maximum credit six units.

798. Special Study (1-3) Cr/NC/SP
Prerequisites: Project/assignment to be arranged with the adviser. Individual study. Maximum credit six units applicable to a master's degree.

799A. Thesis or Project (3) Cr/NC/SP
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Drama 795 (Practicum in Theatre Arts) is a prerequisite if the student selects the preparation of a project. Preparation of a project report or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis or Project 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

Faculty
Rafael D. Bocky, Ph.D., Professor of Economics, Chair of Department
Norris C. Clement, Ph.D., Professor of Economics
Roger S. Feeney, Ph.D., Professor of Economics
Louis C. Green, Ph.D., Professor of Economics
Shoshana A. Crownberg-Schectman, Ph.D., Professor of Economics
Renatta K. Hageman, Ph.D., Professor of Economics
Arthur E. Kartman, Ph.D., Professor of Economics
Murugappa C. Madhavan, Ph.D., Professor of Economics
Woo Hyun Nam, Ph.D., Professor of Economics
Dean O. Popp, Ph.D., Professor of Economics; Associate Vice President for Faculty Affairs
Hemadu Singh, Ph.D., Professor of Economics
Douglas B. Stewart, Ph.D., Professor of Economics
Mark A. Thayer, Ph.D., Professor of Economics
Yanami P. Venkatesh, Ph.D., Professor of Economics
James B. Gerber, Ph.D., Associate Professor of Economics
(Graduate Advisor)
John H. Hambleton, Ph.D., Associate Professor of Economics
Michael C. Naushton, Ph.D., Associate Professor of Economics
Dan Steinberg, Ph.D., Associate Professor of Economics

Assistantships
Graduate assistantships in economics are available to a limited number of qualified students. Application forms and additional information may be obtained from the graduate adviser of the Department of Economics.

Scholarships
Annually the Center for Public Economics awards the $1000 Henry Cramer scholarship, the $300 Leonard Chadwick scholarship, the $600 Sidney Frears scholarship, the $300 Louis Freeman scholarship, the $600 Henry George scholarship, the $500 Walter Nettles scholarship, and a general $500 scholarship.

General Information
The Department of Economics, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in Economics. After completing the core analytical courses, students may elect general economic applications or focus on (1) microeconomic behavior and public economics or (2) macroeconomic performance and development policy.

Admission to Graduate Study
General requirements for admission to the University with classified graduate standing are described in Part Two of this bulletin. In addition, the graduate committee of the department must judge the applicant capable of graduate work in economics. The committee's judgment will be based on (1) the applicant's transcripts of prior academic work; (2) three letters of recommendations from individuals familiar with the applicant's academic ability; and (3) the applicant's scores on the GRE General Test (combined verbal and quantitative). The letters of reference should be addressed directly to the graduate adviser of the Department of Economics. Official transcripts must be received by the Admissions Office before the student is admitted. All documents should be on file by March 31 for fall admission and by November 30 for spring admission. Normally students should attempt to enter for fall semester.

Applicants are expected to have completed undergraduate courses in mathematical economics, intermediate micro and macro theory, and econometrics. Applicants whose preparation in economics and mathematics is judged inadequate by the graduate committee may be admitted with conditional graduate standing (classified). Students so admitted will be required to remove the deficiency by satisfactory performance on placement examinations or by additional coursework within an amount of time specified by the graduate adviser.

Advancement to Candidacy
In addition to the general requirements to candidacy described in Part Two of this bulletin, the student must have satisfactorily completed Economics 610, 620, 630, and 640 with a GPA of 3.0 and no grade less than a B. At the time of advancement to candidacy, students selecting Plan A must have a thesis proposal including an oral defense approved by the department graduate committee.

Specific Requirements for the Master of Arts Degree
(Major Code: 22041)
In addition to meeting the requirements for a classified graduate student status, the basic requirements for the master's degree described in Part Two of this bulletin, the student must complete an approved graduate program of at least 30 units. Each program must include Economics 610, 620, 630, and 640. No program may contain more than a combined total of six units of 500-level economics courses or approved courses outside economics.

Written comprehensive examinations covering the core fields of mathematical economics, macroeconomics, microeconomics, and econometrics are required for Plan B students. Students selecting Plan A must include Economics 799A in their program and complete a master's thesis. No program may contain more than six units from Economics 795, 797, 798, and 799A. Students selecting Plan B must take Economics 740A and 740B.

Economics
In the College of Arts and Letters
Microeconomic Behavior and Public Economics Specialization

Economics 700. Seminar in Microeconomic Applications
Topics include:
- Seminar in Consumer Demand and Utility
- Seminar in Labor Economics
- Seminar in Environmental Economics
- Seminar in Urban and Regional Economics
- Seminar in Tax Policy

Macroeconomic and Development Policy Specialization

Economics 720. Seminar in Development and Planning
Topics include:
- Seminar in Development Economics
- Seminar in Development Planning
- Seminar in International Trade and Commercial Policy

Economics 730. Seminar in Macroeconomic Policy
Topics include:
- Seminar in Monetary Institutions
- Seminar in International Monetary Policy
- Seminar in Business Cycles
- Seminar in Macroeconomic Modeling and Prediction
- Seminar in Economic History and Institutions

Economics 750. Seminar in Public Economics and Institutions (either specialization)

GRADUATE COURSES

603. Economic Analysis (3)
Prerequisites: Economics 320 and 321.
Economic analysis of the firm in a market economy and the economics of national income determination. Not open to students with credits for Economics 603 or 621. Not applicable to a master's degree in economics.

610. Mathematical Economics (3)
Prerequisites: Economics 307 and credit or concurrent registration in Economics 320.
Static and dynamic modeling of linear and nonlinear economic systems. Optimization techniques, matrix algebra, game theory, and differential equations. Cost function properties and dynamic production and taxation.

620. Macroeconomic Theory (3)
Prerequisites: Economics 320, 321, and credit or concurrent registration in Economics 610.
Static and dynamic theories of income, employment, and inflation in open and closed economies with emphasis on policy analysis. Alternative theories of investment and consumption and the role of expectations in the short and long run.

630. Microeconomic Theory (3)
Prerequisites: Economics 307, 320, 321, and credit or concurrent registration in Economics 610.
Theories of the operation of the firm and the market. Topics in welfare and general equilibrium. Duality and uncertainty.

640. Econometrics (3)
Prerequisites: Economics 341 and 610.
Measurement in economic models involving multiple regression analysis, simultaneous equation systems, and time series analysis.

696. Experimental Topics (3)
Prerequisites: Consent of instructor.
Research and lab work in a specified area. May be repeated with new content. See Class Schedule for specific content.

700. Seminar in Microeconomic Applications (3)
Prerequisites: Economics 630 or classified graduate standing in another department and consent of instructor.
Microeconomic applications to individuals, firms, or governments. Maximum credit six units of Economics 700 applicable to a master's degree. See Class Schedule for specific content.

710. Seminar in Macroeconomic Policy (3)
Prerequisites: Economics 630 or classified graduate standing in another department and consent of instructor.
Topics in macroeconomic policy in a market economy. Impact on individual and firm behavior. Maximum credit six units of Economics 710 applicable to a master's degree. See Class Schedule for specific content.

740A. Seminar in Applied Economic Research (3)
Prerequisites: Advancement to candidacy and 15 units credit from the approved program, including Economics 610, 620, 630, and 640. Concurrent registration in Economics 740A.
Advanced treatment of research design and methodology. Application of empirical techniques to selected problems.

740B. Workshop in Applied Economic Research (3)
Prerequisites: Advancement to candidacy and 15 units credit from the approved program, including Economics 610, 620, 630, and 640. Concurrent registration in Economics 740A.
Application of economic research techniques. Each student will choose, develop, and present an original research project.

750. Seminar in Economic History and Institutions (3)
Prerequisites: Economics 620, credit or concurrent registration in Economics 640, or classified graduate standing in another department, and consent of instructor.
Economic development in historical perspective. Maximum credit six units of Economics 750 applicable to a master's degree. See Class Schedule for specific content.

795. Internship in Economics (3) Cr/NC
Prerequisites: Economics 610, 620, 630, 640 and approval of graduate adviser.
Students will be assigned to various jobs where economics theory can be applied to decision making. Supervision will be shared by the graduate adviser and on-the-job supervisor.

797. Research (3) Cr/NC/SP
Prerequisites: Classified graduate standing and consent of instructor.
Independent research project in an area of economics.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff, to be arranged with department chair and instructor.
Individual study. Maximum credit six units applicable to a master's degree.

799A. Thesis (3) Cr/NC/SP
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
Education
In the College of Education

General Information
The College of Education offers graduate study leading to the Master of Arts degree in education with concentrations in the following: counseling, educational technology, elementary curriculum and instruction, secondary curriculum and instruction, administration and supervision, special education, educational research, and policy studies in language and cross-cultural education. Some of these concentrations are designed to permit concurrent completion of the requirements for the corresponding named advanced credentials.

Graduate study is also offered leading to the Master of Science degree in counseling and the Master of Science degree in rehabilitation counseling.
The Ph.D. degree in education with a multicultural component is offered cooperatively with The Claremont Graduate School.

Section I. Doctoral Program
Admission to Doctoral Study
To be considered for admission to the joint SDSU/CGS program, students must meet the following requirements for admission to both institutions with classified (full) graduate standing as outlined in the current respective catalogs. These include a master’s degree from an accredited institution, good academic standing in the last institution attended, and acceptable scores on the Graduate Record Examination. Normally, applicants are expected to hold a master’s degree in education from an acceptable accredited institution. Experience in the field is desirable. Students are admitted only in the fall of each academic year. Applicants must provide a copy of all transcripts of previous college work, three letters of recommendation, a 1,000-word personal statement and results of the Graduate Record Examination. For further information, refer to the College of Education, Office of Graduate Programs, Room Education 100K, or to the coordinators of the respective programs.

Section II. Master’s Degree Programs
Master of Arts Degree in Education
Admission to Graduate Study
The student must satisfy the general requirements for admission to the University with classified graduate standing as described in Part Two of this bulletin. In addition, the student must have completed a minimum of 12 units in professional education courses, or 18 units in coursework for the master’s degree in education. This is not applicable to students in the Departments of Administration, Rehabilitation and Postsecondary Education, Counseling and School Psychology, Educational Technology, and Special Education.

Advancement to Candidacy
A student desiring a Master of Arts degree in education with a concentration in preKindergarten educational leadership in instruction, counseling, educational technology, elementary curriculum and instruction, reading education or secondary curriculum and instruction may be advanced to candidacy upon completion of the basic requirements as described in Part Two of this bulletin. A student desiring a concentration in administration and supervision must meet all the above requirements in addition to the above, meet specific requirements for admission to the appropriate advanced credential program, and be preparing for a master’s degree concentration in counseling, policy studies, or in special education. In addition to the above, the student must meet specific admission requirements. (For further information, refer to the Office of Graduate Programs, Room Education 100K, or to the coordinators of the respective programs. Students in counselor education should contact the department for further information."

Specific Requirements for the Doctoral Program
Admission to Doctoral Study
Applicants must meet the following requirements for admission to both institutions with classified (full) graduate standing as outlined in the current respective catalogs. These include a master’s degree from an accredited institution, good academic standing in the last institution attended, and acceptable scores on the Graduate Record Examination. Normally, applicants are expected to hold a master’s degree in education from an acceptable accredited institution. Experience in the field is desirable. Students are admitted only in the fall of each academic year. Applicants must provide a copy of all transcripts of previous college work, three letters of recommendation, a 1,000-word personal statement and results of the Graduate Record Examination. For further information, refer to the College of Education, Office of Graduate Programs, Room Education 100K, or with the coordinators of the respective programs.

Selection of Plan A or Plan B
In general, applicants will be programmed for Plan B, the seminar plan. However, half way through the program, the College of Education has security an advisor and established a thesis plan. Any transition to Plan A may be requested. Plan A is designed for students who have a particular research problem or wish to investigate in some detail. Students are urged to take Education 690 (3 units) as early as possible in their first graduate year.

Concentrations
Educational Leadership
(Major Code: 08271)
The Master of Arts degree in education with a concentration in educational leadership provides increased knowledge and skill for the prospective administrator or supervisor. The concentration is intended for those who wish to pursue administrative or supervisory positions in education, including postsecondary institutions.

To apply for this concentration, a student must complete an application for admission to both the University and the educational leadership program. All applications should include at least two letters of recommendation from the school district, postsecondary institution or agency employer. All applicants should note that academic degree and experience required varies with the career goals of the student. All students will discuss the degree curriculum with the graduate advisor during the first semester in the program.

Note: Students in this concentration may earn a degree without a K-12 administrative credential in both teaching and the for the Preliminary Administrative Services Credential. The degree without the credential is designed for postsecondary administrators, foreign school administrators, school business managers, administrators of educational programs in private industry, civil services, or the military. Students must meet the academic, technical, and vocational objectives for those who have other administrative objectives in educational fields. Candidates who intend to pursue administrative careers in California public schools, grades K-12, will need to obtain the Preliminary Administrative Services Credential and then the Preliminary Administrative Services Credential. Candidates are advised to satisfy the requirements for the master’s degree in conjunction with the credential.

Specific Requirements for the Master of Arts degree in Education with a Concentration in Educational Leadership: A minimum of 30 units is required.
1. Core program: Six to nine units selected from the following:
   ARP 650 Principles of Educational Administration (3)
   ARP 651 Educational Leadership (3)
2. Six to nine units selected from the following:
   ARP 611 Curriculum Theory and Development in Postsecondary Education (3)
   ARP 630 Curriculum Design and Management (3)
   ARP 652 Seminar in Instructional Improvement and Evaluation (3)
   ARP 655 Managing Educational Organisations (3)
   ARP 730 Seminar in Adult Learning (3)
3. Electives selected with the approval of the graduate advisor (0-9 units).
4. The comprehensive examination is intended for those students who wish to pursue administrative or supervisory positions in education, including postsecondary institutions.

Note: Students are requested to consult with the appropriate master’s degree advisor at the beginning of their first graduate year and to the master’s degree. Students are urged to take Education 690 (3 units) as early as possible in their first graduate year.
Education

Program
Successful completion of 24-27 units which includes the following courses or equivalents:

ARP 701 School Law and Legal Issues for Administrators ............................................. 3
ARP 715 School Financial and Fiscal Management ................................................................ 3
ARP 720 Educational Personnel Management and Practices ............................................. 3
ARP 747 Instructional Leadership in a Multicultural Society .................................................. 3

1. Administrator Competency Evaluation Requirement:
ARP 799 Special Study
Field Experience Requirement: ARP 760 Internship in Educational Administration ........ 3-12

Total 24-27

Notes:
1. The program of study leading to this credential is the result of collaborative planning among the candidate, candidate's school district representative, Administrative Services Credential Coordinator, and faculty adviser.
2. This professional evaluation activity will result in issuing the framework for an individualized course of study for the internship experience.
3. Upon faculty advisement, students may be required to complete an additional six units of coursework.
4. Issuance of the Professional Administrative Services Credential requires completion of two years of successful full-time, K-12 administrative experience earned while holding the Preliminary Administrative Services Credential.

Electives selected with approval of adviser ................................................................. 3

Counseling (Major Code: 08261)

The Master of Arts degree in education with a concentration in counseling provides a sequential and integrated program of study in the theories, research, and practice of counseling. The program, usually with Plan B, is intended for individuals who desire to increase their understanding of human behavior and improve their interpersonal skills in their present profession or occupation. This program does not lead to a credential or license in counseling. Individuals seeking California certification in school counseling or school psychology or licensure in marriage, family, and child counseling should refer to the description of the Master of Science in Counseling program provided in the Counseling and School Psychology section of this bulletin. For further information, see the graduate adviser in the Department of Counseling and School Psychology.

1. Prerequisite: A basic background in education (minimum of 12 units of professional education) including at least one course in educational research.
2. ED 690 Procedures of Investigation and Report (3 units)

Core program (minimum of 15 units)

1. a. Common Core (3 units): CSP 600 Counseling Communication Skills (2), CSP 604L Counseling Preparatory (1) or CSP 601 Counseling Procedures (1)
3. c. Electives (4-6 units): CSP 650 Theory and Process of Counseling (3)

Electives selected with approval of adviser ................................................................. 3

EDUCATIONAL TECHNOLOGY CREDENTIAL

The Master of Arts degree in education with a concentration in educational technology enables students to prepare for careers as instructional technologists, educational specialists, instructional designers, trainers, and experts in educational computing. State-wide report coursework and internships in companies, agencies, and schools prepare candidates to analyze performance problems and design, develop and evaluate instructional strategies and products. Students graduate with a portfolio including educational computer software, instructional print materials, video, and interactive video programs. For further information, see the coordinator of educational technology. Course requirements follow:

1. Prerequisite: Varies with the career goal of the student. Students see educational technology as settings as diverse as the San Diego Zoo, UCSD Medical Center, and IBM. For most students, Educational Technology 540 and 541 are prerequisites. See adviser.
2. ED 690 Procedures of Investigation and Report (3 units)
3. Core program (15 units): The core is composed of courses in education and related fields, selected with the approval of the adviser on the basis of the student's interests and goals. A minimum of nine units must be taken in courses at the 600 and 700 level.
4. Electives (6-9 units) selected with the approval of the adviser.
5. Research (3-6 units) ED 791A Evaluation Techniques (3) or ED 791B/791C Practices of Investigation (1-3 or 795A-79B) Seminar (3-3 units) or ED 797B Thesis (3 units)

Specialization in Educational Computing within Educational Technology Concentration: Students specializing in educational computing must include among their 15 core units Educational Technology 540 and 541. Recommended electives to be approved by the program adviser include Educational Technology 553, 566, 664, 670, 671, 684, 772, and 773 Specialization in Education 650. Specialization prerequisites are Educational Technology 540 and 541.

Elementary Curriculum and Instruction

The Master of Arts degree in education with a concentration in elementary curriculum and instruction is designed to increase professional competence in the form of more breadth, depth, and technical skill in curriculum and instruction, either generally or in selected areas of specialization.

1. Prerequisite: A basic background in education (minimum of 12 units) to include curriculum and methods, growth and development, educational psychology, and history of education.
2. ED 690 Procedures of Investigation and Report (3 units)

Electives selected with approval of adviser ................................................................. 3

EDUCATIONAL TECHNOLOGY CREDENTIAL

The Master of Arts degree in education with a concentration in educational technology enables students to prepare for careers as instructional technologists, educational specialists, instructional designers, trainers, and experts in educational computing. State-wide report coursework and internships in companies, agencies, and schools prepare candidates to analyze performance problems and design, develop and evaluate instructional strategies and products. Students graduate with a portfolio including educational computer software, instructional print materials, video, and interactive video programs. For further information, see the coordinator of educational technology. Course requirements follow:

1. Prerequisite: Varies with the career goal of the student. Students see educational technology as settings as diverse as the San Diego Zoo, UCSD Medical Center, and IBM. For most students, Educational Technology 540 and 541 are prerequisites. See adviser.
2. ED 690 Procedures of Investigation and Report (3 units)
3. Core program (15 units): The core is composed of courses in education and related fields, selected with the approval of the adviser on the basis of the student's interests and goals. A minimum of nine units must be taken in courses at the 600 and 700 level.
4. Electives (6-9 units) selected with the approval of the adviser.
5. Research (3-6 units) ED 791A Evaluation Techniques (3) or ED 791B/791C Practices of Investigation (1-3 or 795A-79B) Seminar (3-3 units) or ED 797B Thesis (3 units)
Policy Studies in Language and Cross-Cultural Education (Major Code: 08994)

The Master of Arts degree in education with a concentration in policy studies in language and cross-cultural education is designed to provide special knowledge and training for three diverse career-oriented areas. Plan I is geared for the classroom teacher or resource specialist who will be working directly with language minority students. Plan II, the research and policy study area, is geared for those who may work with school districts or other agencies, focusing on research questions and issues which affect the achievement of language minority students. Plan III has been developed to aid students in criteria areas of the Policy Studies in Language and Cross-Cultural Education Department. The nine unit specializations may be in other College of Education courses for Master's degrees in arts departments across campus with permission of the department advisor and the cooperating department. This allows for career options in a variety of settings with an emphasis in a noneducational discipline, to provide classroom teachers, researchers, and others with a specialization in a different orientation in education. Students in each specialization will take a core of nine units in the Policy Studies in Language and Cross-Cultural Education Department. The core is comprised of a minimum of 12 units of professional coursework in education, including a task course in methods and materials for teaching reading and a course in children's/multicultural literature prior to or concurrent with enrollment in TE 637 Instructional Strategies for Reading/Language Arts.

1. Prerequisites: Completion of a minimum of 12 units of professional coursework in education, including a task course in methods and materials for teaching reading and a course in children's/multicultural literature prior to or concurrent with enrollment in TE 637 Instructional Strategies for Reading/Language Arts.

2. TE 634 Seminar in Research Investigations in Reading and Language Arts (4 units)

3. Core program (18 units)
   - TE 535 Assessment of Reading/Language Arts (3 units)
   - TE 631 Development of Language Arts (3 units)
   - TE 636 Leadership in Literacy Education (3 units)
   - TE 637 Instructional Strategies for Reading/Language Arts (3 units)
   - TE 638 Topics in Reading Education (minimum of 3 units)
   - TE 791A-791B Practicum: Evaluation (1-3 units)
   - TE 795A-795B Seminar (3-3 units)
   - TE 799A Thesis (3 units)

3. Electives (6 units)

4. Secondary Curriculum and Instruction (Major Code: 08031)

**Secondary Curriculum and Instruction**

The Master of Arts degree in education with a concentration in secondary curriculum and instruction is designed as the base for applicants to increase professional competence in any of the fields typically taught in secondary schools, and for obtaining those competencies and technical skills in curriculum and instruction either generally, or in selected areas of specialization.

1. Prerequisite: A basic background in education (12 units).
   - ED 690 Practicum: Evalution (3 units)

2. Core program (6 units): To include TE 600, Curriculum Development in Education (3 units) and three units from TE 605, Advanced Problems in Instruction; or TE 607, Seminar in Research in Curriculum Problems.

3. Electives (12 units): To include approval of the graduate advisor on the basis of the student's interests, goals and needs. A minimum of three units must be in 600- or 700-numbered courses. A maximum of six units may be selected from cognate fields outside of the College of Education.

4. ED 791A Evaluation Techniques (3 units)
   - ED 791B-791C Practicum: Evaluation (1-3 units)
   - ED 795A-795B Seminar (3-3 units)
   - ED 799A Thesis (3 units)

A Master of Arts degree in education with a concentration in curriculum and instruction is designed as the base for occupational or adult education is also offered. Each student is urged to consult with the program advisor as to the specific course content of the program. With the advisor's approval in this 30-unit program, up to 12 units of electives may be selected in the appropriate fields related to the major occupational field.

**Special Education (Major Code: 08081)**

The Master of Arts degree in education with a concentration in special education is designed for professional education with advanced knowledge and skills in special education. This degree has the following requirements: Special Education 644, 649; "Education 690; 6-9 units selected from Special Education 634, 635.

2. TE 634 Seminar in Research Investigations in Reading and Language Arts (4 units)

3. Core program (18 units)
   - TE 535 Assessment of Reading/Language Arts (3 units)
   - TE 631 Development of Language Arts (3 units)
   - TE 636 Leadership in Literacy Education (3 units)
   - TE 637 Instructional Strategies for Reading/Language Arts (3 units)
   - TE 638 Topics in Reading Education (minimum of 3 units)
   - TE 791A-791B Practicum: Evaluation (1-3 units)
   - TE 795A-795B Seminar (3-3 units)
   - TE 799A Thesis (3 units)

3. Electives (6 units)

4. Secondary Curriculum and Instruction (Major Code: 08031)

**Secondary Curriculum and Instruction**

The Master of Arts degree in education with a concentration in secondary curriculum and instruction is designed as the base for applicants to increase professional competence in any of the fields typically taught in secondary schools, and for obtaining those competencies and technical skills in curriculum and instruction either generally, or in selected areas of specialization.

1. Prerequisite: A basic background in education (12 units).
   - ED 690 Practicum: Evaluation (3 units)

2. Core program (6 units): To include TE 600, Curriculum Development in Education (3 units) and three units from TE 605, Advanced Problems in Instruction; or TE 607, Seminar in Research in Curriculum Problems.

3. Electives (12 units): To include approval of the graduate advisor on the basis of the student's interests, goals and needs. A minimum of three units must be in 600- or 700-numbered courses. A maximum of six units may be selected from cognate fields outside of the College of Education.

4. ED 791A Evaluation Techniques (3 units)
   - ED 791B-791C Practicum: Evaluation (1-3 units)
   - ED 795A-795B Seminar (3-3 units)
   - ED 799A Thesis (3 units)

A Master of Arts degree in education with a concentration in curriculum and instruction is designed as the base for occupational or adult education is also offered. Each student is urged to consult with the program advisor as to the specific course content of the program. With the advisor's approval in this 30-unit program, up to 12 units of electives may be selected in the appropriate fields related to the major occupational field.

**Special Education (Major Code: 08081)**

The Master of Arts degree in education with a concentration in special education is designed for professional education with advanced knowledge and skills in special education. This degree has the following requirements: Special Education 644, 649; "Education 690; 6-9 units selected from Special Education 634, 635.
The rehabilitation counseling program has the primary objective of preparing rehabilitation students to enter the field of vocational rehabilitation, and provide rehabilitation counseling services to individuals with physical, emotional, and/or cognitive disabilities. Exposed curriculum in assistive technologies, rehabilitation counseling, and provide rehabilitation counseling services to individuals with physical, emotional, and/or cognitive disabilities. Expanded curriculum in assistive technologies, rehabilitation counseling, and provide rehabilitation counseling services to individuals with physical, emotional, and/or cognitive disabilities. General Information

Admission to Graduate Study

All students must satisfy the general requirements for admission. The Department of Counseling and School Psychology offers graduate study leading to either the 30-unit Master of Arts degree in education with a concentration in counseling or the 60-unit

Admission to Graduate Study

All students must satisfy the general requirements for admission. The Department of Counseling and School Psychology offers graduate study leading to either the 30-unit Master of Arts degree in education with a concentration in counseling or the 60-unit Master of Science degree in counseling. The Master of Science degree in counseling provides an integrated sequence of study in the theories, research, and practice of counseling in a variety of settings with specialized study and experiences provided, including internship in an appropriate fieldwork setting. Defined specializations are offered in Marriage, Family, and Child Counseling; School Counseling; and School Psychology. Within these specializations, individual needs are met through opportunities for student-initiated seminars and independent study.

Specific Requirements for the Master of Science Degree in Counseling

(Major Code: 12221)

In addition to meeting the requirements for classified graduate standing, and the basic requirements for the master’s degree as described in Part Two of this bulletin, the student must complete a minimum of 60 graduate units of 500-, 600- and 700-numbered courses, to include:

40 units of required courses:

ARP 594 Introduction to Rehabilitation Process (3)
ARP 605 Advanced Rehabilitation Counseling (3)
ARP 610 Group Dynamics in Rehabilitation (3)
ARP 680 Seminar in the Masters of Science in Rehabilitation and Postsecondary Education (3)
ARP 685A-685B Medical and Psychological Aspects of Disability (3-3)
ARP 687 Placement of Individuals with Disabilities (3)
ARP 710 Seminar in Rehabilitation (3)
CSP 610C Supervisorship of Community Counseling Laboratory (1 C/NC)
ED 680 Procedures in Investigation and Report (3)

12-15 units selected from the following:

ARP 743 Fieldwork in Rehabilitation (3-6 C/NC)
ARP 745 Practicum in Rehabilitation (3-9 C/NC)
ARP 747 Internship in Rehabilitation (3-9 C/NC)
CSP 660L Counseling Prepracticum Laboratory (5-8 units)

Comprehensive Examination

A written comprehensive examination is required. The student must demonstrate satisfactory performance on a written comprehensive examination, typically given as a final written comprehensive examination. The examination is scheduled for the last session of the academic year. The examination is given on a competency basis, and covers all of the material presented in the courses taken in the program.

Program Structure

The rehabilitation counseling program offers a two-year, full-time format for those students who are entering the program immediately following graduation. Students are accepted on a full-time and part-time basis.
units listed on the official program. A minimum of 18 units listed on the official program must be completed after advancement; coursework in progress at time of advancement can count as part of these 18 units.

Specific Requirements for the Master of Science Degree in Counseling

(Major Code: 08261)

In addition to meeting the requirements for admission to the University with classified graduate standing, the student must satisfy the basic requirements for the master's degree described in Part Two of this bulletin. In addition, the student must meet the requirements specified below.

Selection of Plan A or Plan B

The selection of Plan A, the thesis or project or Plan B, the comprehensive examination plan, is made in consultation with the adviser at the time the official program of study is filed. Plan A thesis is designed for students who have a particular research problem they wish to investigate in some detail. The Plan A project is expected to be a rigorous application of research and theory in a professional endeavor, e.g., designing an elementary school counseling program. The comprehensive examination option for Plan B requires demonstration of the integration and application of theory, research, and techniques. It is expected that the student will take the comprehensive examination concurrently with or following Counseling and School Psychology 710B. The examination is offered near the end of each semester. Information is available from the Counseling and School Psychology office.

Course Requirements

Students are expected to consult with their adviser prior to taking any coursework leading to the master's degree. Selections of courses have been designated for the specializations and must be reviewed with the adviser. Students are urged to take Education 629 Counseling and School Psychology 660L and 660L as early as possible in their first graduate year.

The student must complete a minimum of 60 units (62 units for the Specialization in Counseling Psychology of 500-, 600-, 700-numbered courses, including:

1. Common Core (6 units): ED 690 Procedures of Investigation and Report (3) CSP 600 Counseling Communication Skills (2) CSP 610A Determinants of Human Behavior: Social (3)
2. Foundations (a minimum of 9 units): CSP 610A Determinants of Human Behavior: Personality (3)
3. Theory, Research, and Techniques (a minimum of 12 units): CSP 640 Theory and Process of Appraisal (3) CSP 650 Theories of Career Development (3) CSP 651 Counseling for Sex Roles in Transition (3)
4. Integration and Application of Theory, Research, and Techniques (minimum of 9 units): Six units selected from:
   - CSP 740 Practicum: MFCF (3) Cr/NC and/or
   - CSP 750 Advanced Seminar and Practicum: MFCF (3) Cr/NC
   - CSP 770 Internship: MFCF (3) Cr/NC
5. Additional requirements for specialization (minimum of 3 units): CSP 710A Professional Seminar (3) or CSP 799A Thesis (3) Cr/NC/SP
6. Electives: 24 units selected with adviser's approval.

Specialization in Marriage, Family, and Child Counseling

The Master of Science in counseling with a specialization in marriage, family, and child counseling, is designed to satisfy the coursework requirements for the California License for Marriage, Family, and Child Counselors. The student must design the sequencing of the degree program in consultation with the adviser, and must complete a minimum of 60 units of 500-, 600-, and 700-numbered courses, including:

1. Prerequisites: Admission to the University and the Department of Counseling and School Psychology for specialized study in marriage, family, and child counseling.
2. Common Core (6 units): ED 690 Procedures of Investigation and Report (3) CSP 600 Counseling Communication Skills (2) CSP 600L Counseling Prepracticum (1) Cr/NC
3. Foundations (12 units): CSP 610A Determinants of Human Behavior: Personality (3)
4. Theory, Research, and Techniques (minimum of 12 units): CSP 640 Theory and Process of Appraisal (3) CSP 650 Theories of Career Development (3) CSP 651 Counseling for Sex Roles in Transition (3)
5. Integration and Application of Theory, Research, and Techniques (minimum of 9 units): Six units selected from:
   - CSP 740 Practicum: MFCF (3) Cr/NC and/or
   - CSP 750 Advanced Seminar and Practicum: MFCF (3) Cr/NC
   - CSP 770 Internship: MFCF (3) Cr/NC
6. Additional requirements for the specialization (9 units): CSP 605 Seminar in Ethical and Legal Issues for Professionals (3)
7. Research (3 units): CSP 710A Professional Seminar (3) or CSP 799A Thesis (3) Cr/NC/SP
8. Electives (9 units): Selected with approval of adviser.

For additional information related to the marriage, family, and child counseling specialization, contact the Department of Counseling and School Psychology or the director of the specialization.

Specialization in School Counseling

The Master of Science in counseling with a specialization in school counseling includes coursework and experiences designed to meet the competencies required for the California Pupil Personnel Services Credential (Credential Code: 00800). This credential authorizes the holder to function as a counselor or school personnel specialist in grades K through 12. Additional information may be obtained from the Department of Counseling and School Psychology or the director of the school counseling specialization. The student must design the sequencing of the degree program in consultation with the program director, and must complete a minimum of 60 units of 500-, 600-, and 700-numbered courses, including:

1. Prerequisites: Admission to the University and the Department of Counseling and School Psychology for specialized study in school counseling.
2. Common Core (6 units): ED 690 Procedures of Investigation and Report (3) CSP 600 Counseling Communication Skills (2) CSP 600L Counseling Prepracticum (1) Cr/NC
3. Foundations (12 units): CSP 610A Determinants of Human Behavior: Personality (3)
4. Theory, Research, and Techniques (minimum of 12 units): CSP 640 Theory and Process of Appraisal (3) CSP 650 Theories of Career Development (3) CSP 651 Counseling for Sex Roles in Transition (3)
5. Theory, Research, and Techniques (minimum of 12 units): CSP 640 Theory and Process of Appraisal (3) CSP 650 Theories of Career Development (3) CSP 662 Counseling Interventions with Children and Adolescents (3) CSP 665 Seminar in Multicultural Dimensions in Counseling (3)
6. Electives (9 units): Selected with approval of adviser. Students must receive a grade of B or better (Cr for credit/no credit for credit courses) in every course to document attainment of the competencies required for the Pupil Personnel Services Credential. Students not meeting this requirement must immediately contact the department chair or the director of the school counseling specialization.

In addition to the required courses and experiences, the student must pass all components of the CBEST to be eligible for the credential. Students must have Certificate of Clearance prior to starting fieldwork (CSP 730), practicum (CSP 740), and internship (CSP 780). Students should contact the Center for Careers in Education (ED 100) regarding the CBEST and Certificate of Clearance.

Students already holding a master's degree in counseling or in a related area may apply for non-degree credential preparation in school counseling. These students must follow the regular application procedures and requirements. An individualized program of study may be designed on approval of the school counseling committee. To pursue the non-degree credential preparation, contact the school counseling program director.

Specialization in School Psychology

The Master of Science in counseling with a specialization in school psychology includes coursework and experiences designed to meet the competencies leading to the California credential in school psychology (Credential Code: 00950). The credential authorizes the holder to function as a school psychologist in grades K through 12. Additional information may be obtained from the office of the Department of Counseling and School Psychology or the director of the school psychology specialization. The student must design the sequencing of the degree program in consultation with the adviser, and must complete a minimum of 62 units of 500-, 600-, 700-numbered courses, including:

1. Prerequisites: Admission to the University and the Department of Counseling and School Psychology for specialized study in school psychology.
2. California Basic Educational Skills Test (CBEST) scores must be reported to the department prior to beginning the sequence of this program. These courses may be taken concurrently.
3. The student should apply for a Certificate of Clearance prior to beginning the sequence of study. Consult the Center for Careers in Education (ED 100).
Education

2. Common Core (6 units):
   ED 690 Research in Inquiry and Research (3)
   CSP 600 Counseling Communication Skills (2)
   CSP 600L Counseling Practicum (1) Cr/NC

3. Core Competencies (12 units):
   CSP 611B Determinants of Human Behavior: Social and Cultural (3)
   CSP 610C Determinants of Human Behavior: Development (3)
   CSP 610D Determinants of Human Behavior: School Learning (3)

4. Theory, Research, and Techniques (a minimum of 15 units):
   Required courses:
   CSP 640 Theory and Process of Appraisal (3)
   CSP 660 Theory and Process of Counseling (3)
   CSP 680 Theory and Process of Consultation (3)
   Six units from the following:
   CSP 630 Practicum in Public Education (3)
   CSP 650 Theory and Process of Career Development (3)
   CSP 662 Counseling Interventions with Children and Adolescents (3)
   CSP 670 Theory and Process of Group Counseling (3)
   CSP 685 Theories of Marriage and Family Therapy (3)

5. Integration and Application of Theory, Research, and Techniques (a minimum of 14 units):
   642A and 642B Individualized Appraisal of Learning Characteristics (4-4)
   CSP 752 Seminar and Practicum: School Psychology (3) Cr/NC

6. Additional requirements for specialization (a minimum of 14 units):
   CSP 710A Professional Seminar (3)
   CSP 760 Advanced Seminar in School Psychology (3)
   CSP 770A Internship (2-12) Cr/NC

7. Research (a minimum of 9 units):
   CSP 640 Theory and Process of Appraisal (3)
   CSP 660 Theory and Process of Counseling (3)
   CSP 680 Theory and Process of Consultation (3)

In addition to the courses required for the Master of Science in Counseling Psychology, the following courses or equivalents are required for the California School Psychology Credential:

- CSP 600 Counseling Practicum (1) Cr/NC

Students must receive a grade of B or better (Cr for credit/no credit) in every course to document attainment of the requirements for the school psychology credential. Students not meeting this requirement must immediately consult with the advisor or director of the school psychology credential.

Section III. Other Programs Teaching/Service Credentials and Certificates

The College of Education offers programs which lead to teaching, special, and administrative credentials. Students who desire to seek a credential should consult with departmental advisor in order to determine their status and needed requirements. Information on these credentials is available in the offices of the several departments of the College of Education and in the Center for Careers in Education, ED-100.

The College of Education has obtained approval for programs leading to the following credentials:

Approved Credential Programs

School Service Authorized

1. Multiple subject

2. Multiple subject bilingual cross-cultural language and academic development

3. Multiple subject with a major in special education

4. Single subject

5. Bilingual/Cross-Cultural

6. Language Arts

7. Social Science

8. Physical Education

9. Science

Multiple Subject Credential

(Any Subject)

Special Education

Reading/Language Arts Specialist

Special Education: Communication Handicapped

Physically Handicapped Learning Handicapped Severely Handicapped

Certification:

Admission Requirements and Qualifications for the Multiple Subject Credential Program

 Candidates may be recommended for Preliminary Multiple Subject teaching credentials when they have satisfied requirements 1, 2, 3, 4, and 5 listed above. Applicants whose academic programs allow them to meet these requirements concurrently with their baccalaureate degrees will be eligible for preliminary certification. The Preliminary credentials have the same teaching authorizations as the Professional Clear credentials and are valid for five-year periods. Holders of these preliminary credentials must complete items 6, 7, 8, and 9 within five years after obtaining the Preliminary Multiple Subject credential. If a person does not complete the requirements for the Professional Multiple Subject credential within the five-year period, the Preliminary Multiple Subject credential will expire.

NOTE: Undergraduate students in the Multiple Subject Credential program may register for concurrent postbaccalaureate credit in their final semester prior to obtaining a baccalaureate degree as explained in the section of this catalog on "General Regulations."
Completed application packets will include items verifying
3. California Basic Educational Skills Test (CBEST) prior to
Education, ED-100. Candidates are required to submit
this examination individually or through the Test Office, SS-2549.
gram. This may be done through successful completion of
prior to admission to the Multiple Subject Credential Pro-
gram. This may be done through successful completion of the
Liberal Studies major, Emphasis in Education or its equivalent.
attending institutions or passing scores on the NTE Multiple Subjects
for SDSU coursework or for SDSU coursework. In lieu of the actual
Washington, and Montana. Students who have academic majors oth-
er than liberal arts, psychology, or related fields may substitute for the
students with fewer than 30 units at the graduating campus, the GPA is calculated
most recent transcript from all colleges and
elements through Instrumental and General Education Department (PLC), ED-152.
ration in English promoting both language development and academic success in all content areas.
Candidates recommended for the Multiple Subject Teaching Credential with a Cross-Cultural, Language and Academic Development Emphasis (CLAD) must meet all the requirements for the Multiple Subject Preliminary Credential and satisfy the admission standards and qualifications for the Multiple Subject Credential program listed above. In addition, they must complete the following prerequisites:
1. Experience Learning a Second Language
Six semester units of college coursework in a second language or equivalent experience such as three years of high school foreign language, Peace Corps training and service, residence in a non-English speaking country.
2. Prerequisite Courses
Languages 420* 3 units
Linguistics 550* 3 units
Center for Liberal Studies 300 "Introduction to Liberal Studies" 3 units
Policy Studies in Language and Cross-Cultural Education 515 3 units
- Already required for Liberal Studies major and some single subject majors.
- Languages 420 and 450 are requirements for the Liberal Studies major.

Bilingual Cross-Cultural Language and Academic Development (BCLAD)
(Credential Code: 00200)
The Bilingual Cross-Cultural Language and Academic Development (BCLAD) credential is available to students interested in teaching students from non-dominant language and multicultural backgrounds. This credential authorizes the holder to teach in any self-contained bilingual classroom in which one teacher is responsible for all subjects and instructional activities taught in the elementary school. Candidates who pursue this credential need to specify "Multiple Subject with a Cross-Cultural, Language and Academic Development Emphasis" in the application for admission to the University.

Standards for Admission
1. CBEST: Students must pass the California Basic Educational Skills Test (CBEST) prior to admission to the BCLAD credential program. This examination is required by the Commission on Teacher Credentialing. Booklets containing registration forms and test information are available from the Test Office in SS-2549 (594-5216).

2. Major, The Liberal Studies major, Emphasis in Education must be selected in addition to the teaching credential.
3. Students who have academic majors other than liberal arts, psychology, or related fields may substitute for the prerequisite academic ability. At least one letter should be from an elementary school teacher the student has worked with or from a school administrator.
4. U.S. Constitution, Knowledge of the U.S. Constitution, as demonstrated by successful completion of an approved course in U.S. Government. For this course see "Graduation Requirements."
10. Character or Identification Clearance. The State of California requires that credential candidates possess a valid certificate of clearance before admission to the program. Forms and fingerprint cards are available in the department’s application package.

11. Application/Advising Appointment. Each applicant must meet with a faculty adviser to plan an appropriate program, which includes a minimum of 31 units as defined by the Commission on Teacher Credentialing. Make appointment in ED-152, telephone 594-5155.

12. Language and Cultural Evaluation. Students must complete a minimum of 6 units of foreign language proficiency and Cultural Awareness Examination prior to entering the credential program. Please call 594-5155 for test dates.

13. Application. Applicants should complete application procedures the semester prior to beginning the credential program.

New Students Who Seek to Complete a Credential

Teachers who hold an initial or provisional credential who are working toward clear credentials may have programs designed to fit their individual backgrounds. Evaluations of college credit and arrangements for programming should be made through the Center for Careers in Education, ED-100, telephone 594-5964.

Advanced Standing in Policy Studies and Cross-Cultural Education

A student transferring into San Diego State University with advanced standing must complete a minimum of six units of professional work in residence at this university in order to obtain a recommendation for a credential, regardless of the extent of education obtained at the institution.

Evaluation of Credits

After an interval of five years, prerequisites and courses in education are reevaluated and subject to reduction in credit in light of new requirements and changes in educational procedures. All courses taken either at this university or elsewhere must be approved by an official advisor in order to be credited toward meeting credential requirements or pattern requirements for a degree.

Program

1. Bachelor's degree, or higher, in the major field of study.
2. Completion of an approved program of professional education, (See Department of Policy Studies in Language and Cross-Cultural Education for further information.)
3. Passage of National Teacher Examination (NTEx) Multiple Subjects Assessment for Teachers (MSAT) or approved alternate program (Liberal Studies major: Emphasis in Education)
4. Passage of the Spanish Language Proficiency and Cultural Awareness Examination prior to entering the credential program.
5. Knowledge of U.S. Constitution, as demonstrated by successful completion of an approved course. (See the section of this catalog on "Graduation Requirements.")
6. Knowledge of health education in California, including substance abuse and nutrition.
7. Passage of California Basic Educational Skills Test (CBEST).

Clear Credential Requirements

1. Completion of an approved fifth year program is minimum of 30 upper division or graduate level postbaccalaureate units.
2. Coursework/fieldwork to satisfy PL 94-142. Needs of students having a similar major. For CSU graduates completing 30 units or more at graduate comparable, the GPA is calculated on units completed at that institution only. For CSU graduates fewer than 30 units at the graduating campus, the GPA is calculated on the cumulative units completed at all schools attended. The GPA for non-CSU graduates is computed on overall college units completed. CSU graduates' minimum GPA must be at or above the median GPA as posted by major and by campus. Non-CSU graduates' minimum GPA must be calculated on the cumulative units completed at all schools attended. The GPA for non-CSU graduates is computed on overall college units completed. CSU graduates' minimum GPA must be at or above the median GPA as posted by major. A "B" (3.0) GPA must be maintained throughout the credential program once a student is admitted.

5. Letters of Recommendation. Three letters of recommendation must be submitted attesting to the applicant’s following characteristics: (a) attitude, aptitude and ability to teach children; (b) personality and character; (c) academic ability. At least one of these letters should be from a school teacher with whom the student has worked and others may be from faculty and administrators.

6. U.S. Constitution. The holder to teach in any self-contained bilingual or regular classroom in which the teacher is responsible for teaching the given subject.

7. Tuberculosis Clearance. Provided through SDSU Health Services or family physician.

8. Early Field Experience. Applicants must provide evidence of a minimum of 45 hours of experience with students in the single subject teaching credential program. The experience is required by the Commission on Teacher Credentialing. Records containing registration forms of such information are available from the Test Office in SS-2549 (594-5216).

9. Oral English and Written Statement. Interview with the admissions committee of the PLC Department and writing under supervision on professional goals and philosophy.

10. Character and Identification Clearance. The State of California requires that credential candidates possess a valid certificate of clearance before admission to the program. Forms and fingerprint cards are available in the department’s application package.

11. Credential Advising Appointment. Each applicant must meet with a faculty adviser to plan an appropriate program, which includes a minimum of 31 units as defined by the Commission on Teacher Credentialing.

12. Language and Cultural Examination. Applicants must pass the Spanish Language Proficiency and Cultural Awareness Examination.

13. Application. Applicants should complete application procedures the semester prior to beginning the credential program.

New Students Who Seek to Complete a Credential

Teachers with preliminary credentials who are working toward clear credentials may have programs designed to fit their individual backgrounds. Evaluations of college credit and arrangements for programming should be made through the Center for Careers in Education, ED-100, telephone 594-5964.

Evaluation of Credits

After an interval of five years, prerequisites and courses in education are reevaluated and subject to reduction in credit in light of new requirements and changes in educational procedures. All courses taken either at this university or elsewhere must be approved by an official advisor in order to be credited toward meeting credential requirements or pattern requirements for a degree.

Program

Prerequisites

ED 451: Introduction to Multicultural Education 3 units
PLC 603: The Secondary School and Bilingual Education 3 units
PLC 515: Bilingual Teaching Strategies 3 units

First Semester

PLC 914: TF 914 with consent of advisor Teaching and Learning in the Content Area Major 3 units
PLC 954: Behavioral and Psychological Aspects of Teaching in the Bilingual Classroom 4 units
PLC 954: Humanistic and Social Aspects of Teaching in the Bilingual Classroom 4 units
PLC 963: Student Teaching for Bilingual Secondary Students I 3 units
PLC 963: Student Teaching for Bilingual Secondary Students II 3 units

Second Semester

PLC 903: Bilingual Student Teaching Seminar 2 units
PLC 933: Skills in Teaching Reading to Bilingual Elementary Students 3 units
PLC 964: Student Teaching for Bilingual Secondary Students II 3 units

Preliminary Credential Requirements

1. A bachelor's degree with one of the approved single subject majors listed in the School of Teacher Education in single subject teaching credential catalog section. Credentials can be granted only in the designated single subject credential areas.
2. Completion of an approved program of professional education. (See Department of Policy Studies in Language and Cross-Cultural Education for further information about the approved programs.)
3. A major advisor's recommendation. Passage of subject matter examinations (NTEx CAPA Test) or waiver thereof through completion of one of the approved single subject credential exams listed below with a written recommendation from the Ryan major advisor.

Schedule

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ments would be eligible for a preliminary credential at the same finish time they may in one of the following subject fields: Education explained may be verified as part of a class or through specialized training through a health agency (i.e. American Heart Association, American Red Cross, effective July 1, 1988.)

Mathematics: Mathematics

Life Sciences: Biology

Physical Education: Physical Education

Social Science: Social Science

4. Passage of the Spanish Language Proficiency and Cultural Awareness Examinations.

5. Knowledge of U.S. Constitution, as demonstrated by successful completion of an approved course. (See the section of this catalog on "Graduation Requirements.")

6. Passage of California Basic Educational Skills Test (CBEST).

Personas programs allow them to meet these requirements concurrently with their baccalaureate degree. Students must pass the California Basic Educational Skills Test (CBEST) prior to admission to the Single Subject Credential Program. Information may be obtained from the Test Office, SS-2549. Candidates are required to submit both an official CBEST transcript and a photocopy of the individual scores report.

2. Subject Matter Competency. Students must verify competency in a specified single subject area through a university assessment process which consists of reviewing coursework for completion of an approved teaching major or its equivalent at San Diego State University or another approved California teacher training institution, passing scores on an NTE Specialty Area Examination including CAPA where necessary), or a combination of coursework and competency exams administered by the subject matter department. GPA requirements are available in the Center for Academic Advising and Retention. GPA requirements are available in the Center for Academic Advising and Retention.

3. Single Subject-Preliminary Credential

Candidates may be recommended for Preliminary Single Subject teacher credentials when they have satisfied requirements 1, 2, 3, 4, and 5 listed above. Applicants who achieve this program allow them to meet these requirements concurrently with their baccalaureate degree. Conditions for Preliminary single subject certification include:

1. A baccalaureate or higher degree.
2. Completion of an approved program of professional education, including student teaching with a grade point average of 3.0 or higher and coursework in reading methods. The required courses at SDSU are Teacher Education Mathematics, Reading, Math, English, Language Arts, Science, Social Science, and English. (Courses are listed in the section of this catalog on "Graduation Requirements.")

4. Demonstrated subject matter competency through completion of an approved waiver program in one of the California Single Subject areas, through a combination of coursework and competency examinations, or through NTE. Competency must be verified and assessed by a designated professional advisor regardless of the manner in which it has been established.

5. Demonstrated knowledge of core principles and principles of the United States Constitution through successful completion of a three-semester lower-division course in American Government and a course in the Constitution (Listed on the catalog on "Graduation Requirements.")

6. Knowledge of health education in California, including substance abuse and nutrition, HS 321.

7. Demonstrated knowledge of PL 94-142, Needs of, and methods of providing educational opportunities to individuals with exceptional needs (mainstreaming) (TE 453, 526, 547).

8. Successful completion of an approved professional growth activities and 90 days of teaching in five-year periods. Holders of the Preliminary credentials must complete items 6, 7, 8, and 9 within that five-year time period in order to be renewed. Five-year Preliminary credentials may not be extended without completion of the additional requirements within the original five years of issuance.

9. Completion of approved professional growth activities and 90 days of teaching in five-year periods. Holders of the Preliminary credentials must complete items 6, 7, 8, and 9 within that five-year time period in order to be renewed. Five-year Preliminary credentials may not be extended without completion of the additional requirements within the original five years of issuance.

Admission Standards and Qualifications for the Single Subject Credential Program

Candidates for the Single Subject Credential Program must satisfy the standards and qualifications listed below and submit complete application packets to the Center for Careers in Education within the specified deadlines. Applications for program admission for the 1993 academic terms are available through the Test Office, SS-2549. Candidates are required to submit both official copies of transcripts from all colleges and universities attended and unofficial copies of transcripts for SDSU coursework for GPA calculations.

5. TB Clearance. Evidence of a negative tuberculosis test must be submitted with the application packets. In lieu of the actual test results, candidates may submit their clearance application packets and fees concurrently with program applications.

6. California Certificate of Clearance. This certificate represents a background clearance and check conducted by the State Department of Justice and Federal Bureau of Investigation. GPA requirements are available in the Center for Careers in Education, ED-100. Candidates are required to submit official copies of transcripts from all colleges and universities attended and unofficial copies of transcripts for SDSU coursework for GPA calculations.

7. Appeals Process. Candidates who do not meet all the admission requirements may petition the Single Subject Admissions and Retention Committee for individual consideration; petition forms must be submitted concurrently with the application packets.

In addition to the minimum standards identified above, the Single Subject Admissions and Retention Committee may also require additional qualifications such as previous teaching experience, relevant work experience with children, and second language ability. Due to the number of applicants, application to the program does not ensure admission.
Early Intervention Specialist Certificate

The purpose of this certificate is to prepare early intervention specialists to assume the roles as an infant specialist, parent/family educator, program developer and advocate, and team collaborator. For application or further information, see the program director of the Interdisciplinary Program on Early Intervention in the Interdisciplinary Center for Health and Human Services.

Admission Requirements

Applicant must have a bachelor's degree from an accredited institution with a major in a related field of study.
Applicant should be a graduate student in good standing in one of the participating schools or departments or have completed a master's degree in one of the disciplines participating in the certificate program.
Applicant must have a grade point average of at least 3.0 (when A equals 4) in the last 60 semester (90 quarter) units attempted.
Applicant must have a satisfactory score on the verbal and quantitative sections of the Graduate Record Examination (General Aptitude Test).
Applicant's prior educational experience cannot duplicate in content and level the coursework for the certificate program.

Course Requirements: (15 units)

FSCS 570 Infant/Toddler Development (3 units)
FSCS 580 Special Education: Multiple Subject/Single Subject (2 units)
SPED 528 Early Intervention for Infants and Young Children with Handicaps and Their Families (3 units)
SW 781 Seminar on Selecting Populations at Risk (3 units)
Gen S 650 Interdisciplinary Field Education (2 units)
Gen S 650 Interdisciplinary Field Practice Seminar (1 unit)
Gen S 650 Interdisciplinary Field Practice (2 units)
Gen S 650 Interdisciplinary Field Practice Seminar (1 unit)

Students may enroll in the certificate program as a non-matriculated, non-degree, non-specialist student. No more than three units of the coursework for the certificate program can be applied toward a master's degree with the approval of the respective departmental graduate adviser. In special cases, three units of General Studies 650 can be taken in lieu of the above certificate course selected from the program coordinator. A grade point average of 3.0 is required for coursework.

Resource Specialist Certificate of Competence

The Department of Special Education offers coursework leading to the Resource Specialist Certificate of Competence. This certificate is designed to prepare the holder to function as a Resource Specialist in special education settings. To be awarded the certificate, the candidate must hold a valid special education credential, have completed three years of teaching in regular and special education settings, and have satisfied the competencies specified in the three areas of knowledge. The candidate must also have submitted to the program director of the Interdisciplinary Program on Early Intervention in the Interdisciplinary Center for Health and Human Services for evaluation.

Rehabilitation Administration Certificate

The purpose of this certificate is to prepare rehabilitation counselors for the student with administrative knowledge and skills needed to develop, implement, and supervise rehabilitation programs and services for a variety of client settings. This academic program is designed for individuals who currently function as or aspire to function as program administrators.
Coordinators and administrators in state rehabilitation agencies or similar agencies who have experience in rehabilitation or a related field and relevant work experience in a rehabilitation agency or program. This is intended to include a variety of specific client populations representative of the student's area of career interest. Examples are: Deaf and hard of hearing adults and children; students or employees with multiple hand, arm, and leg injuries or disabilities; clients injured in the work site. A master's degree in rehabilitation counseling, as well as leadership experience in rehabilitation programs, is strongly encouraged. Relevant work or academic training experience may be substituted in lieu of the above admission criteria at the discretion of the program director, except that a bachelor's degree is required. Students who do not have a master's degree are expected to achieve a score of 500 on the verbal section and 460 on the quantitative section of the Graduate Record Examination (GRE) and must have a GPA of at least 2.5 in the last 60 semester units attempted.

This is a 21-credit unit program to include the following courses:

**Certificate Program Requirements**

<table>
<thead>
<tr>
<th>Program Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARP 710A</td>
<td>Seminar in Rehabilitation</td>
<td>3</td>
</tr>
<tr>
<td>ARP 745</td>
<td>Internship in Rehabilitation</td>
<td>6</td>
</tr>
</tbody>
</table>

With the approval of the Program Advisor, 12 units selected from:

**Required Courses (18 units)**

- ARP 610 Educational Leadership (3)
- ARP 680 Seminar in Administrative Rehabilitation and Postsecondary Education (3)
- ARP 700B Seminar in Rehabilitation (3)
- ARP 720 Educational Personnel Management and Practices (3)
- ARP 747 Instructional Leadership in a Multicultural Society (3)
- ARP 750 Educational Organizational Behavior and Development (3)
- ARP 755 Educational Governance and Policy Development (3)
- ARP 798 Special Study (3) Cr/NC/SP

Coursework with the Departments of Dislocated Rehabilitation programs at 619-594-6406 (619-347-3677 for further information). Students must maintain a minimum grade point average of 3.0 in all completed courses with no grade of C or lower in any course. Only three units of coursework with a grade of C will count towards a certificate. Maximum of three units of coursework repeatable.

**Bilingual (Spanish) Special Education Certificate**

This program provides specialized preparation for teachers of learning handicapped students whose primary language is Spanish.

1. Completion of, or admission to, the departmental program for the Specialist Credential in Special Education (Learning Handicapped).

2. Spanish language proficiency at the S-3 (575) level.

3. Knowledge of the target culture and bilingual teaching strategies appropriate to the student population.

Certificate program includes Linguistics 520, 550, 551, 552, and Policy 546. Language and Cross-Cultural Education (Cross-Cultural Education 553, 602, 655, 656). A grade point average of 3.0 must be obtained in the eight courses.

**Supporting Employment and Transition Specialist Certificate**

The purpose of this certificate is to prepare specialists who can develop and implement programs in supported employment and adult community living for young and youth adults with handicaps or other significant disabilities. A grade point average of 3.0 must be obtained in the core courses.

**Instructional Microcomputer Software Design Certificate**

The purpose of this certificate is to prepare specialists who can develop or assist in the development of microcomputer software to meet specific instructional, training or management needs. There are two competency areas incorporated in the certificate: instructional design and educational computing. Students must complete a minimum of 18 units with a grade point average of 3.0. (Grade point average of 3.0 may be substituted in lieu of the above admission requirement of a bachelor's degree. A student must be able to emphasize programs for moderately and mildly handicapped youth or programs for severely and multiply handicapped youth. Students must complete a minimum of 21 units with a 3.0 (B grade point average). For application or further information, see the program advisors for the Department of Employment and Transition and Special Education program in the Department of Special Education.

**Prerequisites**: A bachelor's degree from an accredited institution with a grade point average of at least 2.5 (when A equals 4) in the last 60 semester (90 quarter) units attempted. A satisfactory score on the Graduate Record Examination: Special Education 500 and 597.

**Courses Acceptable on Master's and Doctoral Degree Programs in Education**

**GRADUATE COURSES**

Students without classified graduate standing are not admitted to 600- and 700-numbered courses in Education.

Twelve units of professional education are prerequisite for enrollment in all graduate courses.

**Program Requirements**: For the Certificate in Teaching the Emotionally Disturbed/Behaviorally Disordered (including the following: Special Education 529, 634, 647, 648, 677, 771 (3 units, with approval of advisor), and demonstrated competence in teaching emotionally disturbed/behaviorally disordered students. A grade point average of 3.0 is required for certificate coursework. Contact the Department of Special Education for further information.

**Courses Acceptable on Master's and Doctoral Degree Programs in Education**

**GRADUATE COURSES**

Students without classified graduate standing are not admitted to 600- and 700-numbered courses in Education.
Education

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade of at least a B. Registration in any semester or term following assignment of a grade of SP in Course 799A by the graduate coordinator. Students registered in this course must be registered in the final semester of thesis registration and must have completed all components of the thesis prior to registration. Credit is granted final approval. Students may not register for more than four units of credit in any semester or term.

DOCTORAL COURSES

800. Professional Seminar (1)
Prerequisite: Admission to doctoral program. Identification of professional goals and research interests. Includes exposure to major research activities in all areas of program and discussion of current problems and trends in these program areas.

801. Seminar on Social and Cultural Foundations of Multicultural Education (3-4)
Prerequisite: Admission to the doctoral program or consent of the graduate coordinator. Students are required to have a background in the social sciences or humanities relevant to education and to have had exposure to multicultural education in the last two decades. Emphasis is on the impact on multicultural education and human social behavior in pluralistic societies.

804. Bilingual Education: Models and Current Research Trends (3-4)
Prerequisite: Education 801, a background in sociolinguistics or social anthropology and admission to the doctoral program or consent of graduate coordinator. Analysis of existing models of bilingual education based on previously identified needs of linguistic minority students. Demonstration of need for current research in classrooms by ethnographers. Significance of linguistic/cultural competencies for academic performance and validity of existing impact studies.

805. Practicum in Education of Ethnically Diverse Learners (1) Cr/NC
Two hours of activity. Prerequisite: Concurrent registration in Education 806. Culturally defined variables such as styles of communication, interaction, values, cognition and learning. Case studies, simulation and field experience.

806. Ethnically Diverse Learners: Public Policy and Classroom Practice (3-4)
Prerequisites: Education 801 and admission to the doctoral program or consent of the graduate coordinator. Background in psychological foundations of education and educational policy is required. National, state, and school policy directed at providing the minority learner with equal educational opportunity. Discussion of legislation for desegregation, bilingual education, school implementation case and classroom practices as these relate to equal educational opportunity.

810. Seminar in Curriculum Development (3-4)
Prerequisites: Admission, Rehabilitation and Postsecondary Education 630. Policy Studies in Language and Cross-Cultural Education 650, Teacher Education 600, and consent of graduate coordinator.

Examination of curricular issues with emphasis on the processes of decision making, curricular development, implementation and evaluation. Attention given to innovative programs and the role and process of legislation in curricular change.

Prerequisite: Admission to the doctoral program or consent of the graduate coordinator. Issues relating to handicapped individuals in society. Current and historical practices in education and treatment and impact of public policy on service systems. Maximum credit four units.

812. Planning and Supervising Programs for Persons with Special Needs (3)
Prerequisites: Admission to doctoral program or consent of graduate coordinator; Education 811 or extensive background in special education or related field. Program planning and development in settings serving special populations. Policy analysis, systems modeling, normalization, change theory, needs assessment, personnel development, supervision, manpower and resources development. Emphasizing services to the handicapped, adjustment to family living.

820. Advanced Educational Statistics (3-4)
Prerequisites: Education 690, Teacher Education 646, or equivalent graduate level course and consent of graduate coordinator. Theory and practice of statistical inference for research in education. Probability and sampling theory, data collection and organization, computer applications in educational research, statistical significance testing and prediction, use of statistical computer program libraries.

825. Reading Research (3)
Prerequisites: Master of Arts degree in reading or related language area, and two years of teaching experience. Analysis of existing literature in reading research and its application to the field. Exploration of areas of research need.

830. Seminar: Emerging Trends in Educational Systems and Technology (3)
Prerequisites: Admission to doctoral program or consent of graduate coordinator and credit or concurrent registration in Teacher Education 646 and Education 801. Analysis, design, and application of technology for solving problems of learning and human performance in various social, organizational, and technological settings including schools, corporate training, and international environments.

831. Seminar: Educational Technology Research and Development (3)
Prerequisites: Admission to doctoral program or consent of graduate coordinator and credit or concurrent registration in Teacher Education 646 and Education 801. Analysis of existing literature in educational technology research and its application to the field. Examination of current needs for research.

832. Leadership and Educational Technology (3)
Prerequisite: Admission to doctoral program or consent of graduate coordinator and credit or concurrent registration in Teacher Education 646 and Education 801. Leadership and educational technology at personal, team and organizational levels. Analysis of educational systems with emphasis on implementing organizational and cultural change through selected technological innovations.

890. Advanced Seminar: Processes of Reading (3)
Prerequisite: Admission to doctoral program or consent of graduate coordinator and Education 825. Linguistic, cognitive, and affective factors that influence a reader while processing texts. Models of reading process, discourse analysis of written text, and models of reading instruction.

895. Seminar (1-8)
Prerequisite: Admission to the doctoral program or consent of the graduate coordinator. Investigation of a particular topic or issue, emphasis on empirical research in education. See Class Schedule for specific content. Maximum credit eight units applicable to an advanced degree.

899. Doctoral Dissertation (3-6) Cr/NC/SP
Prerequisites: An officially constituted dissertation committee and advancement to candidacy. Preparation of the dissertation for the doctoral program. Enrollment is required during the term in which the dissertation is approved.
GRADUATE COURSES

680. Seminar in Administration, Rehabilitation and Postsecondary Education (2-6)
Prerequisite: Consent of instructor.
Study of educational administration, rehabilitation, or postsecondary education in a specialized field, such as community college, school district, a subject field, or designated service. Field experience when appropriate. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

696. Advanced Topics in Administration, Rehabilitation and Postsecondary Education (1-3)
Prerequisite: Twelve units in Administration, Rehabilitation and Postsecondary Education.
Intensive study in specific areas of administration, rehabilitation and postsecondary education. May be repeated with new content. See Class Schedule for specific content. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

735. Measurement and Evaluation in Administration and Supervision (3)
Prerequisite: Education 690.
Research and evaluation methods to conduct investigations of administrative policies, styles, programs, and impact on public schools and rehabilitation agencies. Use of inferential statistics to evaluate issues and outcomes related to program administration.

740. Advanced Seminar in Administration, Rehabilitation and Postsecondary Education (3)
Prerequisite: Consent of instructor.
Study of a selected area in educational administration, rehabilitation or postsecondary education, such as educational law, finance, supervision, personnel procedures, etc. May be repeated with new content. See Class Schedule for specific content. Maximum credit nine units applicable to a master's degree.

798. Special Study (1-6) Cr/NC/SP
Prerequisite: Consent of staff. May be repeated with new content. See Class Schedule for specific content. Maximum credit three units applicable to a master's degree.

956. Topics in Administration, Rehabilitation and Postsecondary Education (1-3)
Selected topics in administration, rehabilitation and community college education. See Class Schedule for specific courses applicable to a bachelor's degree. Maximum credit six units applicable to a bachelor's degree. Maximum credit six units applicable to a master's degree.

Educational Leadership

UPPER DIVISION COURSE

584. Introduction to Rehabilitation Process (3)
Prerequisite: Consent of instructor.
Background and legislation related to rehabilitation; client's role in the rehabilitation process; client's rights; concepts of rehabilitation; client's role and function of rehabilitation counselor as a professional. Orientation to community rehabilitation agencies. (Formerly numbered Administration, Rehabilitation and Postsecondary Education 694.)

596. Topics in Administration, Rehabilitation and Postsecondary Education (1-3)
Selected topics in administration, rehabilitation and community college education. See Class Schedule for specific courses applicable to a bachelor's degree. Maximum credit six units applicable to a bachelor's degree. Maximum credit six units applicable to a master's degree.

565. Psychological Foundations of Adult and Vocational Education (3) I, II, S
Prerequisite: Administration, Rehabilitation and Postsecondary Education 380 or 381.
Learning processes of adult and vocational students in relation to theories of learning and methods of teaching.
Administration, Rehabilitation and Postsecondary Education

Development of educational policy and impact of politics in governance and administration; control functions of federal, state, and local agencies; influence of lay citizens and special interest groups; roles of judiciary, employee organizations and students.

760. Internship in Educational Administration (2-6) Cr/NC
Prerequisite: Consent of instructor.

Internship for prospective educational administrators. Application to take this course must be made in the preceding semester by registration with the personnel coordinator. Released time may be required. May be repeated. Maximum credit 12 units applicable to the Professional Administrative Services Credential.

Rehabilitation Counseling

GRADUATE COURSES

645. Assessment and Vocational Development (6)
Four lectures and six hours of laboratory.
Prerequisite: Admission to graduate program in rehabilitation counseling.

Rehabilitation assessment, labor market information, and vocational planning implications. Current assessment approaches and vocational theories related to individuals with disabilities.

648. Group Dynamics in Rehabilitation (3)
Prerequisite: Admission to graduate program in rehabilitation counseling.

Theory, dynamics, process and leadership function as applied to group work in rehabilitation. Development and application of group leadership skills/techniques for adjustment counseling. Meetings, group problem solving and team-building.

685A-685B. Medical and Psychological Aspects of Disability (3-3)
Prerequisite: Open to rehabilitation graduate students and practitioners.

Disabling conditions, covering disabilities from perspective of the individual. Each disability is viewed in terms of functional limitations, personal resources and services needed. Administration, Rehabilitation and Postsecondary Education 685A not open to upper-division education 685; Administration, Rehabilitation and Postsecondary Education 685B not open to students with credit in Administration, Rehabilitation and Postsecondary Education 685.

687. Placement of Individuals with Disabilities (3)
Two lectures and three hours of laboratory.
Prerequisite: Admission to rehabilitation counseling program. Determination of employment and community integration; needs of individuals with disabilities. Theories and techniques are presented through case study methods. Continuous survey and readings focus on employment needs and opportunities in the wider community for individuals with disabilities.

710A-710B. Seminar in Rehabilitation (3-3)
Prerequisite: Completion of at least 24 units leading to Master of Science in rehabilitation counseling.

Selected areas with emphasis in research in rehabilitation counseling. See Class Schedule for specific content.

743. Fieldwork in Rehabilitation (3-6) Cr/NC
Prerequisite: Admission to graduate program in rehabilitation counseling.

Orientation to the rehabilitation process including agency goals, operating strategies, responsibilities and ethics, employee role expectations, and nature of rehabilitation client needs. Minimum credit six units applicable to a Master of Science degree in rehabilitation counseling.

744. Practicum in Rehabilitation (3-9) Cr/NC
Prerequisite: Admission to graduate program in rehabilitation counseling.

Clinical supervised of the rehabilitation process as it relates to outreach and referral, job development, placement, counseling, and caseload management. Maximum credit nine units applicable to a Master of Science degree in rehabilitation counseling.

745. Internship in Rehabilitation (3-9) Cr/NC
Prerequisite: Completion of at least 24 units leading to Master of Science in rehabilitation counseling.

Supervised internship in rehabilitation setting which involves application of rehabilitation counseling experiences. Maximum credit of nine units applicable to a Master of Science degree in rehabilitation counseling.

746. Seminar in Rehabilitation of Clients Who Are Deaf and Hard of Hearing (3)
Prerequisite: Consent of instructor.

Characteristics and functioning of deaf and hard of hearing. Procedures for coordinating and providing rehabilitation services including vocational and psychological diagnosis, support, employment, independent living and cross-cultural counseling through American sign language.

Counseling and School Psychology

OFFICE: North Education 179
TELEPHONE: (619) 594-6109

Faculty

Carol A. Robinson-Zafarri, Ph.D., Associate Professor of Counseling and School Psychology (Graduate Advisor), Chair of Department

Marian J. Cook-Morales, Ph.D., Professor of Counseling and School Psychology

Eveyn C. Cammies, Ph.D., Professor of Counseling and School Psychology

Lawrence B. Feinberg, Ph.D., Professor of Counseling and School Psychology, Associate Dean of the Graduate Division and Research

Ralph Lewetlow Miller, Ph.D., Professor of Counseling and School Psychology

Maria Nito Sannor, Ph.D., Professor of Counseling and School Psychology

Girol Amrighi, Ph.D., Associate Professor of Counseling and School Psychology

Linda A. Terry, Ed.D., Associate Professor of Counseling and School Psychology

Gordon T. Thompson, Ph.D., Associate Professor of Counseling and School Psychology

Maria Helen M. Velaquez, Ph.D., Associate Professor of Counseling and School Psychology

Sharon Grant-Herry, Ph.D., Assistant Professor of Counseling and School Psychology

Nedra A. Rock-A-Song, Ph.D., Assistant Professor of Counseling and School Psychology

Courses Acceptable on Master's Degree Programs in Counseling

UPPER DIVISION COURSES

585A. Human Sexuality for Counselors (3)
Prerequisite: Upper division course in human sexuality.

Dimensions of human sexuality that bear directly on the role and function of helping professions. Human sexual development, sexual variations, sexual dysfunctions, intimate life styles, treatment possibilities and sexual ethics. Fulfills MFCC licensure requirement. (Formerly numbered Counselor Education 585A.)

585B. Dynamics of Adjustment Behavior (3)
Prerequisite: Upper division course in abnormal psychology. Philosophies and dynamics of adjustment behavior; patterns and types of abnormal behavior, and treatment modalities. Fulfills MFCC licensure requirement. (Formerly numbered Counselor Education 585B)

596. Selected Studies (1-3)
Prerequisite: Consent of instructor.

A series of lectures and discussion sessions centering on current problems in counseling and guidance. Designed to serve the needs of any person desiring to keep informed of developments in this area. May be repeated with new content. See Class Schedule for specific content. Maximum credit of six units of 596 applicable to a master's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree. (Formerly numbered Master of Science in Counseling Education 596.)

GRADUATE COURSES

600. Counseling Communication Skills (2)
Prerequisite: Concurrent registration in Counseling and School Psychology 600L.

Introduction to the discipline of counseling, fields utilizing this discipline, historical perspective, techniques and interpersonal communication. (Formerly numbered Counselor Education 600).

600L. Counseling Prepracticum (1) Cr/NC
Three hours of practicum.
Prerequisite: Credit or concurrent registration in Counseling and School Psychology 600.

Development of self-understanding. Communication skills needed for becoming an effective counselor. (Formerly numbered Counselor Education 600L.)

605. Seminar in Ethical and Legal Issues for Counselors (3)
Prerequisite: Credit or concurrent registration in Counseling and School Psychology 600.

Ethical and value issues. Code of ethics and professional standards of major professional mental health associations from a case study perspective. Legal obligations, constraints, and privileges of marriage, family, and child counselors, school counselors, and psychologists. (Formerly numbered Counselor Education 605.)

610. Dimensions of Human Behavior (3)
Prerequisite: Consent of instructor.

Applications of theory and research in behavioral sciences for the understanding of human behavior. (Formerly numbered Counselor Education 610A, 610B, 610C, 610D)

A. Personality
B. Social and Cultural
C. Development
D. School Learning

615. Seminar in Multicultural Dimensions in Counseling

Issues, Insights and techniques for improving effectiveness in working with culturally different populations. (Formerly numbered Counselor Education 615.)

620. Guidance Services in Public Education (3)
Prerequisite: Consent of instructor.

Historical, philosophical and legal bases of pupil personnel services: staff roles and relationships in a variety of organizational patterns. (Formerly numbered Counselor Education 620.)

621. Introduction to School Psychology (3)
Prerequisite: Consent of instructor.

Introduction to school psychology: roles (assessing, counseling, consulting), skills (innovative techniques, consultation), and issues (modifying the system, multicultural impact). (Formerly numbered Counselor Education 621.)
640. Theory and Process of Appraisal (3)
Prerequisite: Education 690.
Measurement theory and procedures, including interpretation of results. Not open to students with credit in Counseling and School Psychology 645. (Formerly numbered Counselor Education 640.)

640L. Appraisal Laboratory (1) Cr/NC
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Counseling and School Psychology 640.
Directed laboratory activity focusing on topics presented in Counseling and School Psychology 640. (Formerly numbered Counselor Education 640L.)

642A-642B. Individualized Appraisal of Learning Characteristics (4-4)
Three lectures and three hours of laboratory.
Prerequisite: Counseling and School Psychology 640. Counseling and School Psychology 642A is prerequisite to 642B.
Counseling and interpretation of instruments and techniques for assessing learning characteristics of children from multiple cultural settings. 642A: Individualized evaluative assessment of school-aged children. 642B: Scholastic, social maturity, interpersonal behavior and educational adjustment. (Formerly numbered Counselor Education 642A-642B.)

650. Theory and Process of Career Development (3)
Vocational, theoretical and educational materials used in career planning. Not open to students with credit in Counseling and School Psychology 645. (Formerly numbered Counselor Education 650.)

650L. Career Development Laboratory (1) Cr/NC
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Counseling and School Psychology 650.
Directed laboratory activity focusing on materials and processes used in career planning and other topics presented in Counseling and School Psychology 650. (Formerly numbered Counselor Education 650L.)

651. Counseling for Sex Roles in Transition (3)
Development of counseling skills in career development, educational, psychological and social forces affecting contemporary women and men. Impact of these forces upon relationships between the sexes and personal definitions of femininity and masculinity. (Formerly numbered Counselor Education 651.)

660. Theory and Process of Counseling (3)
Counseling and School Psychology 660, 660L, and 610A or 610C.
Counseling process theories, approaches and techniques for counseling effectiveness. Not open to students with credit in Counseling and School Psychology 660. (Formerly numbered Counselor Education 660.)

660L. Counseling Prepracticum Laboratory (1) Cr/NC
Three hours of laboratory.
Prerequisite: Credit or concurrent registration in Counseling and School Psychology 660.
Supervised prepracticum experience in the critique of counseling and other topics presented in Counseling and School Psychology 660. (Formerly numbered Counselor Education 660L.)

662. Counseling Interventions with Children and Adolescents (3)
Prerequisites: Counseling and School Psychology 610C and 660. Counseling theories, processes and approaches appropriate to children and adolescents in multicultural school and community settings. Application of theories and research for individual, group, and systems interventions. (Formerly numbered Counselor Education 662.)

670. Theory and Process of Group Counseling (3)
Prerequisites: Counseling and School Psychology 600, 600L, and 610B.
Group process, theories of group interaction, and group leadership techniques with children, adolescents, adults, couples, and families. Not open to students with credit in Counseling and School Psychology 667. (Formerly numbered Counselor Education 670.)

670L. Group Counseling Laboratory (1) Cr/NC
Three hours of laboratory.
Prerequisite: Consent of instructor. May be repeated. Application of concepts and procedures of counseling or school psychology services in appropriate school or agency settings. Daily observation and practice. Weekly seminar sessions with university staff. Application to take the course must be made early during the preceding semester. May be repeated with new content. Maximum credit six units applicable to a master's degree in counseling. (Formerly numbered Counselor Education 670L.)

700. Practicum: Individual Counseling (3) Cr/NC
Prerequisite: Credit or concurrent registration in Counseling and School Psychology 660. Supervised experience in individual counseling and career planning. May be repeated with new content. Maximum credit six units applicable to a master's degree in counseling. (Formerly numbered Counselor Education 700.)

741. Practicum: Group Counseling (3) Cr/NC
Prerequisite: Counseling and School Psychology 670. Supervised experience in group counseling and career planning. May be repeated with new content. Maximum credit six units applicable to a master's degree. (Formerly numbered Counselor Education 741.)

745. Program Development for Pupil Services (3)
Prerequisites: Counseling and School Psychology 620, 730, and Education 690.
Development, management, and evaluation of pupil services in schools. Analysis of models and practice in planning. (Formerly numbered School Psychology 745.)

748. Seminar: Gender and Ethnicity in Family Therapy (3)
Prerequisites: Counseling and School Psychology 660 and 670.
Supervision of seminar and practicum in group counseling, group leadership, and other topics presented in Counseling and School Psychology 670. (Formerly numbered Counselor Education 670L.)

750. Advanced Seminar and Practicum: Individual Counseling (3-6) Cr/NC
Prerequisites: Consent of instructor. Ten hours of practice for three units.
Prerequisites: Counseling and School Psychology 730, credit or concurrent registration in Counseling and School Psychology 642A-642B.
School psychology in multicultural school settings. Implications for standard and innovative school psychology practices. (Formerly numbered Counselor Education 750.)

752. Seminar and Practicum: School Psychology (3-6) Cr/NC
Nine hours of practice for three units.
Prerequisites: Counseling and School Psychology 730, credit or concurrent registration in Counseling and School Psychology 642A-642B.
School psychology in multicultural school settings. Implications for standard and innovative school psychology practices. (Formerly numbered Counselor Education 752.)

760. Advanced Seminar in School Psychology (3)
Prerequisites: Counseling and School Psychology 621, 710A, 710B, 752.
Study of selected areas in school psychology which culminate in a written project with emphasis on research, problems and/or issues. See Class Schedule for specific content. (Formerly numbered Counselor Education 760.)

770. Advanced Seminar in Counseling (3)
Prerequisite: Advancement to candidacy or counseling experience.
Selected areas in counseling culminating in a written project with emphasis on research, problems, and issues. See Class Schedule for specific content. (Formerly numbered Counselor Education 770.)

780. Internship (2-12) Cr/NC
Prerequisite: Counseling and School Psychology 730.
Supervised internship experience in counseling or school psychology activities. Application to take the course must be made early during the preceding semester. May be repeated with new content. Maximum credit 12 units applicable to a master's degree. Maximum credit 24 units applicable to the specialization in school psychology. (Formerly numbered Counselor Education 780.)

798. Special Study (1-6) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.
Individual study. Maximum credit six units applicable to a master's degree. May be repeated without credit. (Formerly numbered Counselor Education 798.)

799A. Thesis (3) Cr/NC/SP
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Thesis 799A in which the student expects to use the facilities and resources of the University; also student must be granted final approval. (Formerly numbered Counselor Education 799A.)

799B. Thesis Extension (0) Cr/NC
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a thesis for the Master of Science degree in counseling. (Formerly numbered Counselor Education 799B.)

950. Advanced Seminar in School Counseling (3)
Prerequisites: Counseling and School Psychology 621, 710A, 710B.
Study of selected areas in school psychology which culminate in a written project with emphasis on research, problems and/or issues. See Class Schedule for specific content. (Formerly numbered Counselor Education 760.)

970. Advanced Seminar in Counseling (3)
Prerequisite: Advancement to candidacy or counseling experience.
Selected areas in counseling culminating in a written project with emphasis on research, problems, and issues. See Class Schedule for specific content. (Formerly numbered Counselor Education 770.)

980. Internship (2-12) Cr/NC
Prerequisite: Counseling and School Psychology 730.
Supervised internship experience in counseling or school psychology activities. Application to take the course must be made early during the preceding semester. May be repeated with new content. Maximum credit 12 units applicable to a master's degree. Maximum credit 24 units applicable to the specialization in school psychology. (Formerly numbered Counselor Education 780.)

998. Special Study (1-6) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.
Individual study. Maximum credit six units applicable to a master's degree. May be repeated without credit. (Formerly numbered Counselor Education 798.)

999A. Thesis (3) Cr/NC/SP
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Thesis 799A in which the student expects to use the facilities and resources of the University; also student must be granted final approval. (Formerly numbered Counselor Education 799A.)

999B. Thesis Extension (0) Cr/NC
Prerequisite: An officially appointed thesis committee and advancement to candidacy.
Preparation of a thesis for the Master of Science degree in counseling. (Formerly numbered Counselor Education 799B.)

1010. Fieldwork in Counseling (2-6) Cr/NC
Prerequisites: Counseling and School Psychology 660 or 662 or 670.
Application of concepts and procedures of counseling or school psychology services in appropriate school or agency setting. Daily observation and practice. Weekly seminar sessions with university staff. Application to take the course must be made early during the preceding semester. May be repeated with new content. Maximum credit six units applicable to a master's degree in counseling. (Formerly numbered Counselor Education 730.)

1041. Practicum: Individual Counseling (3) Cr/NC
Prerequisites: Counseling and School Psychology 600, 600L, and 610B.
Supervised experience in individual counseling and career planning. May be repeated with new content. Maximum credit six units applicable to a master's degree in counseling. (Formerly numbered Counselor Education 740.)

1073. Program Development for Pupil Services (3)
Prerequisites: Counseling and School Psychology 620, 730, and Education 690.
Development, management, and evaluation of pupil services in schools. Analysis of models and practice in planning. (Formerly numbered School Psychology 745.)

1075. Seminar and Practicum: School Psychology (3-6) Cr/NC
Nine hours of practice for three units.
Prerequisites: Counseling and School Psychology 730, credit or concurrent registration in Counseling and School Psychology 642A-642B.
School psychology in multicultural school settings. Implications for standard and innovative school psychology practices. (Formerly numbered Counselor Education 752.)
Educational Technology

In the College of Education

OFFICE: North Education 280
TELEPHONE: (619) 594-6718

Faculty
Patrick J. Harrison, Ph.D., Professor of Educational Technology, Chair of Department
Breakenridge S. Allen, Ph.D., Professor of Educational Technology
Allison Rossett, Ed.D., Professor of Educational Technology
Bernard J. Dodge, Ph.D., Associate Professor of Educational Technology
Don C. Ritchie, Ph.D., Assistant Professor of Educational Technology

Courses Acceptable on Master's Degree Program in Education

532. Production of Instructional Materials (3) I, II
Six hours of activity.
Instructional media production for professionals in organizational settings such as hospitals, law offices, accounting firms, publishing companies. Use of videotape, laser disc, multi-image and digital telecommunications for training. Not open to students in educational technology degree and certificate programs or to students with credit in Educational Technology 541.

540. Educational Technology (3) I, II, S
Six hours of activity.
Rationale, theories, careers, trends, and issues in educational technology. Implications of educational technology for instruction and information in schools, government, and corporations.

541. Multimedia Development (3) I, II, S
One lecture and six hours of laboratory.
Prerequisites: Basic computer literacy and elementary knowledge of an authoring system.
Aesthetic, theoretical, and practical approaches to authoring systems. Production, designing and disseminating technology-based instruction with authoring systems composed of integrated text, audio, graphics, and electronic dissemination. Not open to students with credit in Educational Technology 532.

544. Instructional Design (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Educational Technology 540.
Systematic approach to instructional design. Review of research and theory in instructional strategy development. Analysis, design and development of instructional and training products and processes.

561. Advanced Media Production (3)
Six hours of activity.
Prerequisites: Educational Technology 541, 544, and 553.
Experimental, creative, and practical approaches to aesthetics, design and production of multimedia instructional programs. Integration of graphic, dramatic, and music design principles.

572. Technology for Course Delivery (3) I, II
One lecture and six hours of laboratory.
Prerequisites: Educational Technology 541.
Using the computer, especially the microcomputer, as an instructional tool.

596. Topics in Educational Technology (1-3)
Selected problems in educational technology. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a bachelor's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

GRADUATE COURSES

640. Psychology of Technology-Based Learning (3)
Six hours of activity.
Prerequisites: Educational Technology 541 and 544.
Principles of human learning applied to design of educational products and technology-based learning systems. Contemporary issues relating to psychology of product design.

644. Advanced Instructional Design (3)
Two lectures and three hours of laboratory.
Prerequisites: Educational Technology 541 and 544.

650. Distance Education (3)
Two lectures and three hours of laboratory.
Prerequisites: Educational Technology 540, 541, 544, and 553.
Theories and models of distance education at home, place of work and school. Design, development, and evaluation of instructional materials and home-based tele-learning for integrated electronic dissemination systems. Social, economic and organizational contexts of learning at a distance.

653. Multimedia and Hypermedia (3)
One lecture and six hours of laboratory.
Prerequisites: Educational Technology 544, 553, and 572.
Recommended: Educational Technology 670 or 671.
Current trends, recent research, and innovative applications. Designing, developing, and evaluating instruction in multimedia and hypermedia products and systems that integrate computer controlled text, graphics, animation, audio, and video.

670. Exploratory Learning Through Simulation and Games (3)
Prerequisites: Educational Technology 540 and 541.
Design, evaluation and use of simulations and games for education and training. Instructional applications of computer-based simulations, interactive fiction, board games and role play.

671. Software Design for Mastery Learning (3)
Prerequisites: Educational Technology 544.
Prescriptive theories and systems for computer-based instruction. Screen and user interface design. Principles of mastery learning. Frame-based versus other design approaches.

684. Management of Educational Technology (3)
Prerequisites: Educational Technology 544.
Research reviewed and findings related to current practices. Management of instructional design and training projects and programs. Role of educational technology and training in organizations. Recent trends evaluated.

685. Informational and Instructional Technologies for Organizations (3)
Six hours of workshop and activities.
Prerequisites: Educational Technology 540 and 541.

Organizational and informational technologies to support instructional products and services. Individual, team, and organizational analyses. Incentives, feedback, coaching, job aids, selection and other strategies in relation to instructional technologies.

700. Seminar in Educational Technology (1-3)
Prerequisites: Educational Technology 540.
Selected areas, topics in educational technology. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master’s degree.

775. Directed Internship in Educational Technology (2-6) Cr/NC
Supervised internship in an educational setting. Application to take course must be made during preceding semester.

785. Special Study (1-6) Cr/NC/SP
Prerequisites: Consent of staff; to be arranged with department chair and instructor. Individual study. May involve fieldwork. Maximum credit six units applicable to a master's degree.
Policy Studies in Language and Cross-Cultural Education

In the College of Education

OFFICE: Education 152
TELEPHONE: (619) 594-5155

GRADUATE COURSES

602. Cross-Cultural Experience in Classroom Interaction (3)
Prerequisite: Consent of instructor
Analysis of the role of cultural, situational, and interactional variables in the classroom for teaching English-proficient (LEP) students. Interpersonal interaction in classrooms via analysis of linguistic, paralinguistic, kinesic, and prosodic behaviors of teachers and students; levels of communicative competence and teaching learning patterns.

515. Bilingual Teaching Strategies (3)
Prerequisite: Consent of instructor
Legal and historical developments leading to bilingual teaching in the United States. Strategies for interacting with bilingual students. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 401.)

522. Teaching Writing in Multilingual Settings (3)
Methodologies in teaching primarily expository writing to students from various language backgrounds, focusing on skills such as those needed to avoid abstract, semantic, and stylistic language interference.

553. Oral Language Assessment Techniques (3)
Prerequisite: Consent of instructor
Legal and instructional frameworks and procedures for the assessment of English and second languages in the classroom. The role of the bilingual teacher and discipline specific methodologies for implementing in the multicultural classroom.

565. Bilingual/Cross-Cultural Curriculum Development and Teaching Strategies (3)
Prerequisite: Policy Studies in Language and Cross-Cultural Education 602.
Bilingual/cross-cultural teaching strategies and methodologies for implementation in the multicultural classroom. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 403.)

651. Multicultural Methods and Curriculum in Content Areas (1-5)
Prerequisite: Policy Studies in Language and Cross-Cultural Education 650.
Design of appropriate strategies for teaching蒹 multicultural content. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 415.)

652. Language Arts in the Multicultural Education Curriculum (3)
Prerequisite: Policy Studies in Language and Cross-Cultural Education 650.
Research and teacher curricular strategies related to English literacy and oral language development for bilingual and limited English proficient students.

653. Language Policies and Practices (3)
Prerequisite: Policy Studies in Language and Cross-Cultural Education 650.
Leadership skills and change strategies for designing and implementing instructional programs, staff development approaches, and establishing a structural and functional organizational school climate that promotes culturally pluralistic educational services.

655. Psychological Foundations of Education and Cross-Cultural Education (3)
Prerequisite: Policy Studies in Language and Cross-Cultural Education 650.
Historical and current policies on the nature and social roles of bilingual and limited English proficient students. Taught in Spanish. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 421.)

664. Strategies for Educational Change: Development and Implementation of School Site Programs for Multicultural Education (3)
Prerequisite: Policy Studies in Language and Cross-Cultural Education 650.
Strategies for states and districts participating in the implementation of multicultural education. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 410.)

665. Bilingual Secondary Student Teacher Seminar (1-3, I, II Cr/NC)
Prerequisite: Consent of instructor
Fieldwork in classrooms with bilingual student teaching assignments. Focus on the role of the bilingual teacher and discipline specific methodologies for implementation in the multicultural classroom. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 422.)

910. Teaching Mathematics to Bilingual Elementary Students (3)
Two lectures and two hours of activity.
Prerequisite: Admission to BCLAD multiple subject credential program.

911. Teaching Social Studies to Bilingual Elementary Students (2)
One lecture and two hours of activity.
Prerequisite: Admission to BCLAD multiple subject credential program.

912. Teaching Science to Bilingual Elementary Students (2)
One lecture and two hours of activity.
Prerequisite: Natural Science 412A or 412B or 412C.

914. Learning and Teaching in the Content Areas: A Major Focus (3)
Prerequisite: Education 451, Policy Studies in Language and Cross-Cultural Education 400, 515.
Strategies for teaching discipline specific content fields from second language acquisition perspective from content field specific content. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 412.)

923. Psychological Foundations of Education and Bilingual Studies (3)
Two lectures and two hours of activity.
Prerequisite: Admission to BCLAD multiple subject credential program.

934. Behavioral and Psychological Aspects of Teaching in the Bilingual Classroom (3)
Planning and organizing instruction for Spanish/English bilingual and bilingual, cross-cultural assignments. Focus on the role of the bilingual teacher and discipline specific methodologies for implementation in the multicultural classroom. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 436.)
931. Skills in Teaching Reading to Bilingual Elementary Students (3) I, II Cr/NC
Two lectures and two hours of activity.
Prerequisite: Admission to BCLAD multiple subject credential program.
Teaching reading in English, including methods, strategies, assessment, materials, and techniques of instruction for implementing reading programs in the bilingual classroom. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 431.)

932. Teaching Spanish Language Arts to Bilingual Elementary Students (3) II
Two lectures and two hours of activity.
Prerequisite: Admission to BCLAD multiple subject credential program.
Assessing language proficiency, selecting, designing, and evaluating learning experiences to develop Spanish and English language arts. Taught in Spanish. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 432.)

933. Skills in Teaching Reading to Bilingual Secondary Students (3)
Prerequisite: Upper division standing. Admission to single subject bilingual emphasis program.
Methods of teaching and diagnosing reading skills in Spanish and English, including ESL methods and individualized instruction. Transition skills. Taught in Spanish. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 433.)

934. Humanistic and Social Aspects of Teaching in the Bilingual Classroom (3)
Prerequisite: Policy Studies in Language and Cross-Cultural Education 400, concurrent registration in Policy Studies in Language and Cross-Cultural Education 924 and 963, admission to the single subject bilingual emphasis program.
Interaction between school and society, including equity issues, values, sociocultural variables, achievement of Spanish/English bilingual students; models for appropriate curricula. Taught in Spanish and English. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 434.)

960. Student Teaching Seminar for Bilingual Elementary Students (1-4) I, II Cr/NC
Prerequisite: Policy Studies in Language and Cross-Cultural Education 923 and admission to BCLAD multiple subject credential program.
Bilingual instructional practices, classroom management, curricular discipline, micro-teaching in Spanish and English, legal liability, and field experience encountered in the bilingual classroom. Taught in English and Spanish. Maximum credit four units. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 360.)

961. Student Teaching for Bilingual Elementary Students (1-12) I, II Cr/NC
Prerequisite: Admission to BCLAD multiple subject credential program. Student must provide own transportation to student teaching site.
Field experience at two grade levels in a multicultural setting and a bilingual elementary classroom; student teacher assumes responsibility for planning and instruction for specified time to comply with State requirements. Maximum credit twelve units. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 460.)

963. Student Teaching for Bilingual Secondary Students (3-4) I, II Cr/NC
Prerequisite: Policy Studies in Language and Cross-Cultural Education 400, concurrent registration in Policy Studies in Language and Cross-Cultural Education 924 and 963, admission to the single subject bilingual emphasis program. Students must provide own transportation to student teaching site.
On-site, part-time experience to implement bilingual teacher competencies introduced in Policy Studies in Language and Cross-Cultural Education 515, 924, and 954. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 463.)

964. Student Teaching for Bilingual Secondary Students (9-12) I, II Cr/NC
Prerequisite: Policy Studies in Language and Cross-Cultural Education 924 and 963; concurrent registration in Policy Studies in Language and Cross-Cultural Education 903. Students must provide own transportation to student teaching site.
On-site, full-day experience in State approved bilingual and non-bilingual schools to implement teacher competencies developed in the total professional sequence. Maximum credit twelve units. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 464.)

972. Educational Research (3) I, II, S
Prerequisite: Policy Studies in Language and Cross-Cultural Education 922 or 923.
Research design and statistical analysis of data. Current educational research. Taught in English. (Formerly numbered Policy Studies in Language and Cross-Cultural Education 472.)

100. Historical and philosophical perspectives of programs related to students with physical handicaps, including review of research on students' characteristics, educational programs, and curricular approaches.

101. Characteristics and Identification of Students With Exceptionalities (3) I
Prerequisite: Special Education 500.

102. Characteristics and Identification of Students Who Are Gifted and Talented (3) I
Prerequisite: Special Education 500.
Educational applications of current technologies for learners who are accelerated and gifted. Selection, modification, and classroom use of technologies to improve or bypass physical, sensory, communicative, learning and social disabilities and for environment control.

106. Applications of Technology for Exceptional Learners (3) I, II, S
Prerequisite: Special Education 500.
Educational applications of current technologies for learners who are accelerated and gifted. Selection, modification, and classroom use of technologies to improve or bypass physical, sensory, communicative, learning and social disabilities and for environment control.

526. Characteristics and Education of Students with Physical Handicaps (3) I
Prerequisite: Credit or concurrent registration in Special Education 500 and 501.
Historical and philosophical perspectives of programs related to students with physical handicaps, including review of research on students' characteristics, educational programs, and curricular approaches.

527. Ethnolinguistic Diversity and Students with Learning Handicaps (3) II
Prerequisite: Special Education 500 and 501.
Historical and philosophical perspectives of programs related to ethnolinguistically diverse students who also have learning handicaps, including review of research on educational programs, curricular approaches, and instructional needs.

528. Early Intervention for Infants and Young Children with Handicaps and Their Families (3) I
Prerequisite: Special Education 500 and 501 or equivalent coursework in another discipline.
Characteristics and needs of infants, toddlers, and preschoolers with handicaps and their families, focusing on approaches to educational service delivery, review of research, and analysis of best practices in a pluralistic society.

529. Characteristics and Education of Students with Serious Emotional Disturbances (3) I
Prerequisite: Special Education 500 and 501.
Historical and philosophical perspectives of programs for students with emotional disturbances and behavior disorders, including review of research on student characteristics, educational programs, and curricular approaches.

553. Dynamics of Behavior Change of the Exceptional Individual (3) I, II, S
Prerequisite: Special Education 500 and 501.
Management and treatment of individuals with exceptional needs. Current theories and programs in behavioral change studies, analyzed with reference to their applications for the educational environment. Not open to students with credit in Special Education 513A, 513B, or 513C.

580. Characteristics and Identification of Students Who Are Gifted and Talented (3) I
Prerequisite: Credit or concurrent registration in Special Education 500 and 501.
Characteristics and identification of students who are gifted, including review of research on characteristics, screening and identification procedures.

582. Characteristics and Education of Students with Learning Handicaps (3) I
Prerequisite: Credit or concurrent registration in Special Education 500 and 501.
Historical and philosophical perspectives of programs related to students with learning handicaps, including review of research on educational programs, curricular approaches, and characteristics.

583. Characteristics and Education of Students with Severe Handicaps (3) I
Prerequisite: Credit or concurrent registration in Special Education 500 and 501.
Historical and philosophical perspectives of programs related to students with severe handicaps, including review of research on educational programs, curricular approaches, and characteristics.
GRADUATE COURSES

634. Issues in Assessment of Students with Learning Handicaps (3)
Prerequisite: Special Education 524.
Assessment in special education: decision making including alterna-
tive data collection strategies, models for analysis and synthesis of
assessment data: influences of cultural and linguistic
diversity, and implications for instruction. (Formerly numbered Special
Education 534.)

635. Assessment in Early Intervention and Programs for Individuals with Severe Handicaps (3)
Prerequisite: Special Education 525 or 528.
Models of family and community based assessment of infants
and preschooolers with disabilities and individuals with severe
disabilities. Emphasis on a transdisciplinary approach: decision
making based on performance in home, school, and society with
application in a multicultural context. (Formerly numbered Spec-
ial Education 535.)

643. Educational Interventions for Infants, Toddlers, and Preschoolers with Handicaps (3)
Prerequisite: Special Education 500 and 528.
Developing, implementing, monitoring, and evaluating educa-
tional interventions in center and home based programs with
an emphasis on family-professional collaborations in a pluralistic
society. (Formerly numbered Special Education 571.)

644. The Gifted Student (3)
Prerequisite: Special Education 508.
The abilities and characteristics of the intellectually gifted or
talented: related problems of curriculum, teaching, administra-
tion and guidance.

645. Issues in Curriculum and Instruction for Students with Severe Handicaps (3)
Prerequisite: Special Education 527 and 634.
Design and implementation issues of instructional programs
for students with severe handicaps: approaches which foster
school and community integration and active family involvement
will be analyzed. (Formerly numbered Special Education 545.)

646. Educational Adaptation for Ethnolingually Diverse Students (3)
Prerequisites: Special Education 527 and 634.
Study based on research of teaching and selecting programs
and establishing procedures for monitoring and evaluating
progress of students with learning handicaps from diverse back-
grounds. (Formerly numbered Special Education 546.)

647. Instructional Adaptations for Students Who Are Learning Handicapped or Low Achieving (3)
Prerequisite: Special Education 526.
Analysis and application of research related to meeting the
basic academic skill needs of students who are learning handi-
capped or low achieving. (Formerly numbered Special Education
544.)

648. Interventions for Students Who Are Learning Handicapped or Low Achieving (3)
Prerequisite: Special Education 524.
Strategies for effective behavior interventions. Systematic
vocational skills for students who are learning handicapped or
low achieving. (Formerly numbered Special Education 547.)

649. Curriculum Models for Students Who Are Gifted and Talented (3)
Prerequisite: Special Education 508.
Philosophical, theoretical, and research bases for curriculum
design and program implementation for students who are gifted
and talented. (Formerly numbered Special Education 542.)

650. Special Topics in Special Education (1-4)
Prerequisites: Special Education 500 and 501, 971.
Instructional sequences (mini-courses) focusing on a single
topic or course of study with special education. Topics differ
each semester to adjust to current literature in the field, training
needs, and resource availability. Maximum combined credit of
nine units for Special Education 650A, 650B, 650C, 650D applicable
to a master's degree. Offered in four categories:
A. Creative Skills
B. Multidisciplinary Assessment
C. Specialized Assessment
D. Instructional Programming

651. Legislation and Management of Special Education Services (3)
Prerequisites: Special Education 500 and 501, and 15 addi-
tional units of coursework in special education.
Implementation of laws, regulations and compliance require-
ments in special education. Requirements to and approaches for
managing school and delivery of school and related services
within a multidisciplinary context. Meets competencies for Resource
Specialist Certificate.

652. Parent Education and Staff Development in Special Education (3)
Prerequisites: Special Education 500 and 501, and 15 addi-
tional units of coursework in special education.
Issues relating to and development of skills for working with
parents and school staff to develop skills and competencies
needed to optimize the educational progress of handicapped stu-
dents. Meets competency requirements for Resource Specialist
Certificate.

653. Advanced Programming and Consultation in Special Education (3)
Prerequisite: Special Education 500, 501, 503, and 15 addi-
tional units of coursework in special education.
Issues relating to and development of skills for working
with parents and school staff to develop strategies needed to
optimize the educational progress of handicapped students.
Meets competency requirements for Resource Specialist
Certificate.

656. Collaborative Partnerships in Special Education (3)
Prerequisite: Special Education 528 or 644 or 645 or 647.
Validated collaborative models for working with adults, par-
ents, administrators, other professionals and representatives
from related services: interpersonal processes, communication
skills, conflict resolution, decision-making models, and team
functions. (Formerly numbered Special Education 562.)

677. Educational Management of Severe Behavior Disorders (3)
Prerequisite: Special Education 525 or 525.
Nature and educational needs of students in area of excep-
tionality. Current educational theories and philosophies, research
findings, and issues and trends in the field. Application
of research literature to solution of educational problems.
May be taken in each of the areas of exceptionality:
A. Learning Handicapped
B. Severe Behaviorally Handicapped

696. Advanced Topics in Special Education (3)
Prerequisite: Twelve units in special education.
Nature and educational needs of students in area of excep-
tionality. Current educational theories and philosophies, research
findings, and issues and trends in the field. Application
of research literature to solution of educational problems.
May be repeated in other specialty areas. Not applica-
tble to the M.A. degree. (Formerly numbered Special Education
480.)

711. Directed Internship: Special Education (1-5 CR/NC)
Prerequisite: Permission of graduate adviser. Application to
involve supervised field experience. May be repeated in
other specialty areas. Not applicable to the M.A. degree. (Formerly
classified student; credit or concurrent registration in all core
courses for specific specialist credential (see catalog for listing of
courses by credential); concurrent registration in Special
Education 980.

771. Directed Internship: Special Education (1-5 CR/NC)
Prerequisite: Permission of graduate adviser. Application to
involve supervised field experience. May be repeated in
other specialty areas. Not applicable to the M.A. degree. (Formerly
classified student; credit or concurrent registration in all core
courses for specific specialist credential (see catalog for listing of
courses by credential); concurrent registration in Special
Education 980.

789. Special Study (1-6 CR/NC)
Prerequisite: Consent of staff; to be arranged with department
chair and instructor.

Individual study. May involve fieldwork. Maximum credit six
units applicable to a master's degree.

971. Fieldwork in Special Education (2-3 CR/NC)
Supervised observation and participation in classroom and
related school activities of handicapped students (e.g., mentally
retarded, gifted, learning disabled, and others). Maximum credit
dependent on needs, and resource availability. Maximum combined
credit of six units applicable to a bachelor's degree. (Formerly numbered Special Education 471.)

979. Fieldwork Seminar (1 CR/NC)
Prerequisites: Admission to department as a postbaccalaure-
ate classified student; credit or concurrent registration in all core
specialization coursework. Analysis and critique of teaching per-
formance. May be repeated in other specialty areas. Not applica-
tble to the M.A. degree. (Formerly numbered Special Education
480.)

980. Advanced Practicum for Specialist Credential (4 or 6 CR/NC)
Prerequisites: Admission to department as a postbaccalaure-
ate classified student; credit or concurrent registration in all core
specialization coursework; concurrent registration in Special
Education 980.

Integration and application of skills and knowledge gained in
specialization coursework. Analysis and critique of teaching per-
formance. May be repeated in other specialty areas. Not applica-
tble to the M.A. degree. (Formerly numbered Special Education
480.)

A. Learning Handicapped
B. Severely Handicapped C. Physically Handicapped
D. Gifted
Teacher Education
In the College of Education

Faculty
George L. Nathan, Ph.D., Professor of Teacher Education, Director of School
Lester A. Beckland, Ph.D., Professor of Teacher Education
Clifford P. Benn, Ph.D., Professor of Teacher Education
Mary Lee Berg, Ph.D., Professor of Teacher Education
Richard J. Converse, Ph.D., Professor of Teacher Education
Joan F. Curley, Ed.D., Professor of Teacher Education
Joseph B. Dasingworth, Ed.D., Professor of Teacher Education
Leif E. Engstrom, Ed.D., Professor of Teacher Education
Dane K. Espinoza, Ed.D., Professor of Teacher Education
Robert E. McCabe, Ph.D., Professor of Teacher Education
James Flood, PhD., Professor of Teacher Education
Alan McCormack, Ed.D., Professor of Teacher Education
Steve G. Moreno, Ph.D., Professor of Teacher Education
Lester A. Lapp, Ed.D., Professor of Teacher Education
Frank A. Lasham, Ed.D., Professor of Teacher Education
Joseph B. Duckworth, Ed.D., Professor of Teacher Education
Robert D. Smith, Jr., Ph. D., Professor of Teacher Education
Nadine S. Benck, Ph. D., Associate Professor of Teacher Education
Ronald W. Evans, Ed.D., Associate Professor of Teacher Education
Nancy L. Feld, Ph.D., Associate Professor of Teacher Education
David H. Ford, Ed.D., Associate Professor of Teacher Education
Joel I. Luten, Ph.D., Associate Professor of Teacher Education
Cheryl L. Mason, Ph.D., Associate Professor of Teacher Education
Carla S. Mathison, Ph.D., Associate Professor of Teacher Education
Bruce W. Ogle, Ph.D., Associate Professor of Teacher Education
Valerie Ooka Pang, Ph.D., Associate Professor of Teacher Education
Gumbreche Park, Ph.D., Associate Professor of Teacher Education
Pamela J. Ross, Ph.D., Associate Professor of Teacher Education
Rahella M. Santa Cruz, Ph.D., Associate Professor of Teacher Education
Barbara Armstrong, Ph.D., Assistant Professor of Teacher Education
Rafaela M. Santa Cruz, Ph.D., Assistant Professor of Teacher Education
Nadine S. Bezuk, Ph.D., Associate Professor of Teacher Education
James Flood, PhD., Professor of Teacher Education

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530. Children's/Adolescents' Literature (I, II)
Survey of children's/adolescents' literature and its incorporation into the classroom curriculum.

531. Storytelling (I)
Art of storytelling, including planning the story hour, locating suitable materials, techniques for learning and presenting various story types. Selection of literature appropriate for oral presentation to different groups and age levels.

536. Assessment of Reading/Language Arts (I)
Prerequisites: Valid teaching credential and consent of instructor.
Formal and informal assessment of reading and language arts abilities.

596. Topics in Teacher Education (1-3 or 6)
Prerequisites: Valid teaching credential and consent of instructor.
Designed to meet the needs of individuals or groups of teachers who wish to develop or continue the study of some problem. May be repeated with permission.

600. Curriculum Development in Education (III)
Prerequisite: Consent of instructor.
Advanced study of the research in curriculum development.

604. Advanced Problems in Instruction (III)
Prerequisites: Two years of classroom teaching experience.
Scientific research and philosophic principles which underlie instructional practices.

605. Innovations in Instruction (1-3)
Prerequisite: Teaching experience.
Exploration of instructional innovations in the public school system, with emphasis on innovative teaching strategies.

610A. Seminar in Mathematics Education (I)
Prerequisite: California Teaching Credential.
A variety of instructional sequences (mini-courses), each focusing on a single topic or competency dealing with teaching instruction. See Class Schedule for specific content.

610C. Seminar in Science in Elementary Education (I)
Prerequisite: Consent of instructor.
Advanced study of the problems of teaching science in the elementary school with emphasis on the literature of science education.

613. Seminar in Mathematics Education - Secondary School (I)
Factors affecting the secondary school mathematics curriculum; recent trends and current research in the teaching of secondary school mathematics.

625. Instruction in Mathematical Problem Solving (3)
Prerequisites: Two lectures and three hours of laboratory.
Consent of instructor.
A study of instructional sequences in solving programs in elementary and secondary grades. Use of microcomputers and hand-held calculators to solve mathematical problems. (Formerly numbered Education 625.)

626. Advanced Educational Psychology (3)
Prerequisite: Teacher Education 92A or valid teaching credential.
Advanced study of the research in educational psychology and its application to learning and human growth.

630. Seminar in Reading Education (3)
Prerequisite: Education 690.
Advanced study of trends in reading instruction. Topics include developmental sequences in reading skills and abilities. Reading in the context fields, individual differences and interests. Students will develop individual projects in reading problems.

631. Seminar in Language Arts (3)
Prerequisite: Two years of classroom teaching experience.
Advanced study of problems in teaching language arts. The study of the scientific research and application in the field.

634. Seminar in Research Investigations in Reading and Language Arts (4)
Prerequisite: Consent of instructor.
Emphasis on interpreting, evaluating, conducting, and implementing findings of research and evaluation in reading and language arts.

636. Leadership in Literacy Evaluation (3)
Prerequisite: Teacher Education 530.
Theoretical knowledge and practical skill in assessing reading/ language arts abilities. Emphasis on informal measures in an interdisciplinary center requiring contacts with allied professionals in the community and parents.

637. Instructional Strategies for Reading/Language Arts (3)
Prerequisites: Two lectures and three hours of laboratory.
Emphasis on instructional strategies in individual and small group settings.

638. Topics in Reading Education (1-6)
Prerequisite: California Teaching Credential.
A variety of instructional sequences (mini-courses), each focusing on a specific topic or competency dealing with teaching instruction. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

UPPER DIVISION COURSES

508. Teaching in the Middle School (I, II, S)
Prerequisite: Completion of or admission to a credential program in elementary education.
Developmental characteristics of early adolescents that affect teaching and learning, rationale for organizational features and development.

511. Diagnosis and Remediation of Difficulties in Mathematics (3)

522. Substance Abuse in the Schools (3)
Prerequisite: Health Education.
Development of school policy and school plans to include substance abuse prevention, identification, intervention, referral, and follow-up. Collaborations with parents, school, agencies, and local communities.

525. Discipline and Classroom Management (I, II)
Prerequisite: Six upper division units in education, psychology, or sociology.
Analysis of research and theories of classroom discipline management, and teaching effectiveness, with practical application to the elementary and secondary classroom settings.

526. Teaching the Special Child in the Regular Classroom (3)
Prerequisite: Teaching credential or admission to multiple or single subject credential programs.
Knowledge, skills, and instructional programs for teaching handicapped students in the regular classroom. Meets the minimum requirements for the California Multiple Subject Credential (recent). Open only to students with credit in Special Education 550, Teaching the Special Child in the Regular Classroom.

574. Advanced Educational Psychology (3)
Prerequisites: Any educational psychology course. Consent of instructor.
A variety of instructional sequences (mini-courses). Each focusing on a single topic or competency dealing with teaching instruction. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

576. Seminar in Research in Curriculum Problems (I, II)
Prerequisite: Consent of the Director of the School of Teacher Education and the instructor.
Individual study for students who have demonstrated exceptional ability. Maximum credit three units applicable to a master's degree.

610A. Seminar in Mathematics Education - Elementary School (3)
Prerequisite: Consent of instructor.
Factors affecting the elementary school mathematics curriculum; recent trends and current research in teaching elementary school mathematics.
659. Literacy and Language (3) Prerequisite: Admission to Teacher Education 930A or 933. Theories of literacy and methods for developing literacy in language, reading, and writing. Instructional methods and assessment techniques for children and adults.

646. Seminar in Educational Measurement (3) Prerequisite: Admission to teacher education program. Major themes and issues in educational assessment. Emphasis on construction, administration, and validation of teacher-made tests.

650. Seminar in International Education (3) Prerequisite: Admission to teacher education program. Study of specific areas in international education as they relate to classroom instruction.

652. Change in Education (3) Prerequisite: Valid teaching credential. Examination of the process of change in education, analysis of recent major changes and study of techniques for effecting change.

653. Values in Education (3) Prerequisite: Valid teaching credential or enrollment in a credential program. Study of various strategies that promote clarification of values and moral dilemmas. Development of classroom strategies to measure values and implement value clarification.


656. Comparative Education (3) The contemporary educational ideas and practices of various countries of the world and their impact on our culture and education.

657. Philosophy of Education (3) Advanced study of philosophical backgrounds of educational thought; a study of comparative philosophies, and an analysis of selected current trends and problems.

659. Selected Topics in Community Influences on Learning and Curriculum Planning (1-3) Prerequisite: Teaching experience. Study of current community issues. Credit limited to nine units of specific content.

660. Field Experience as a Reading Specialist (2) Prerequisite: Eight hours of course work. Individually designed practicum for the reading specialist.

901. Skills in Curriculum Organization (2-1, II) Four hours of activity per unit. Prerequisite: Admission to multiple subject credential program. Skills in planning, organizing, and evaluating long-range instruction in the various school subjects. (Formerly numbered Teacher Education 301.)

902. Classroom Management Skills (1, I, II) Two hours of activity per unit. Prerequisite: Provisional or complete admission to multiple subject credential program, or possession of a teaching credential. Skills in interpreting the legal aspects of education, identifying various kinds of school and classroom organization, and using instructional media and verbal stimuli to facilitate learning. (Formerly numbered Teacher Education 302.)

903. Secondary School Student Teaching Seminar (1-3) I, II Cr/NC/SP Prerequisite: Teacher Education 453, 922, 933, 954, 963. To be taken concurrently with Teacher Education 964. Plan and organize instruction in relation to all competencies acquired and to be implemented in an on-site, full-time student teaching assignment. May be repeated with new content. Maximum credit three units. (Formerly numbered Teacher Education 403.)

910A. Teaching Mathematics in the Elementary School (1-3) I, II Prerequisite: Admission to a multiple subject credential program or possession of a teaching credential. Instructional methods for development of children's conceptual understanding, computational, and problem-solving skills in mathematics, including use and development of materials and programs. (Formerly numbered Teacher Education 410A.)

910B. Teaching Social Studies in the Elementary School (1-3) I, II Prerequisite: Admission to a multiple subject credential program or possession of a teaching credential. Developing curriculum, principles and materials of instruction, including instructional media and participation in elementary social studies education. (Formerly numbered Teacher Education 410B.)

910C. Teaching Science in the Elementary School (1-3) I, II Prerequisite: Admission to a multiple subject credential program or possession of a teaching credential. Developing research-based science curriculum, principles and materials of instruction, including instructional media and participation in elementary science education. (Formerly numbered Teacher Education 410C.)

910D. Teaching Art in the Elementary School (1-2) I, II Principles of art education. (Formerly numbered Teacher Education 430A.)

910E. Teaching Music in the Elementary School (1-2) I, II Principles of music education. (Formerly numbered Teacher Education 430B.)

910F. Teaching Science and Social Studies in the Elementary School (1-3) I, II Two hours of activity per unit. Prerequisites to admission to multiple subject credential program or possession of a teaching credential. Developing and using instructional programs to facilitate the acquisition of basic content knowledge and reproductive resources to learn and apply concepts and generalizations from the various sciences and social sciences. (Formerly numbered Teacher Education 410F.)

914. Teaching and Learning in the Content Areas: Major (3) Prerequisite: Admission to teacher education credential program. Designing strategies in content specific fields of study taken concurrently with student teaching. See Class Schedule for specific content field may be repeated with new content. (Formerly numbered Teacher Education 414.)

921. Skills in Applying Instructional Principles (2) I, II Four hours of activity. Prerequisite: Admission to multiple subject credential program. Developing principles of instruction related to readiness, motivation, efficiency of learning and transfer of learning to organize an effective learning environment for children. (Formerly numbered Teacher Education 414.)

922. Behavioral and Psychological Aspects of Teaching (1, I) Prerequisites: Teacher Education 453 and admission to a subject credential program. To be taken concurrently with Teacher Education 954 and 963. Teacher competencies as they relate to learning theories, adolescent growth, self-assessment, measurement and evaluation. (Formerly numbered Teacher Education 422.)

923. Psychological Foundations of Education (3) I, II, S Prerequisites: Psychology 101 and admission to a multiple subject credential program. Developing research-based science curriculum, principles and materials of instruction, including instructional media and participation in elementary social studies education. (Formerly numbered Teacher Education 410C.)

963. Teaching Reading in the Elementary School (1-3) I, II Prerequisite: Admission to multiple subject credential program or possession of a teaching credential. Nature of reading as human behavior, various approaches, materials, and techniques used in teaching reading. (Formerly numbered Teacher Education 430A.)

930B. Teaching Language Arts in the Elementary School (1-3) I, II Prerequisite: Admission to a multiple subject credential program or possession of a teaching credential. Learning and applying appropriate teaching experiences to assure children's growth in language arts. (Formerly numbered Teacher Education 430B.)

933. Teaching of Reading in the Secondary School (1-2) I, II Cr/NC/SP Prerequisite: Admission to Teacher Education 453 and admission to a subject credential program. To be taken concurrently with Teacher Education 922 and 924. Teacher competency areas as they relate to values, awareness, self-concept, rights and responsibilities. (Formerly numbered Teacher Education 454.)

960. Basic Student Teaching Seminar (1-2) I, II Cr/NC/SP Prerequisites: Admission to multiple subject credential program and concurrent registration in Teacher Education 453 and 454. Discussion of immediate problems in student teaching with emphasis on the influence of philosophical, social and cultural factors on learning. (Formerly numbered Teacher Education 361.)

961. Advanced Student Teaching Seminar (1-2) I, II Cr/NC/SP Prerequisites: Satisfactory completion of Teacher Education Seminar 960 and concurrent registration in Teacher Education Seminar 961. Discussion of immediate problems in student teaching with emphasis on the influence of philosophical, social and cultural factors on learning. (Formerly numbered Teacher Education 363.)

962. Fieldwork in Community Service in Education (2) I, II Four hours of activity. Working on a tutorial basis with children and youth. Maximum credit four units. (Formerly numbered Teacher Education 362.)

963. Secondary School Student Teaching I (1-6), II Cr/NC/SP Prerequisites: Teacher Education 453 and admission to a subject credential program. To be taken concurrently with Teacher Education 922 and 954. Teacher Education 933 is highly recommended. Admission to the semester is dependent on student teaching site. Prerequisites to admission to multiple subject credential program or possession of a teaching credential. To be taken concurrently with Teacher Education 922 and 954. Maximum credit six units. (Formerly numbered Teacher Education 463.)

964. Secondary School Student Teaching II (1-12) I, II Cr/NC/SP Prerequisites: Teacher Education 453, 922, 933, 954, 963. To be taken concurrently with Teacher Education 922 and 933. Students must provide own transportation to student teaching site.
On-site, full-day teaching experiences. Two consecutive eight-week assignments at two different broad levels of schooling. Each eight-week assignment will provide typical responsibilities of teachers through a graduated series of experiences, such as class preparation, instruction of students, maintaining accurate student records, attending faculty meetings and parent conferences. Not open to students with credit in Teacher Education 460 and 461.

968. Secondary School Student Teaching (15)
(Offered at IVC only)
Prerequisites: Admission to multiple subject credential program and concurrent registration in Teacher Education 903.
On-site, full-day teaching experiences. Two consecutive eight-week assignments in single subject content areas: one in junior high school and one in senior high school. Each eight-week assignment will provide typical responsibilities of teachers through a graduated series of experiences, such as class preparation, instruction of students, maintaining accurate student records, attending faculty meetings and parent conferences. Not open to students with credit in Teacher Education 463 and 464.

### Assistantships
Graduate teaching assistantships and graduate non-teaching assistantships are available to a limited number of qualified students. Application blanks and additional information may be secured from the chair of the appropriate department.

### General Information
The College of Engineering offers graduate study leading to the Ph.D. degree in engineering science/applied mechanics and Master of Science degrees in aerospace, civil, electrical, and mechanical engineering. The Ph.D. degree is offered jointly with the University of California, San Diego. These curricula are designed to augment the student’s undergraduate training by advanced study in one of the various fields of engineering. Recognizing the increasing importance in modern technology of the engineer-scientist team, San Diego State University has developed an academic pattern which offers to one holding a first degree in engineering, an opportunity to pursue advanced study in a specialized area of knowledge.

### Section I. Master’s Degree Programs

#### Admission to Graduate Study
All students must satisfy the general requirements for admission to the Graduate Division with classified graduate standing as described in Part Two of this bulletin. Candidates for admission to aerospace engineering and/or engineering mechanics. Students are encouraged to engage in thesis research or specialty study projects. Available areas of research include experimental, theoretical and computational aerodynamics and fluid mechanics, structural mechanics, fracture mechanics, composite structures, random vibrations, fluid-structure interactions, acoustics, and aircraft and spacecraft stability and control.

### Specific requirements for the degree:
The student’s program is prepared in conference with and approved by the graduate adviser.

1. Twenty-one units of 600- and 700-numbered courses in aerospace engineering and/or engineering mechanics. At least one course must be outside the student’s area of specialization.
2. Nine additional units of 500-, 600- and 700-numbered courses approved by the graduate adviser.

### Areas of Specialization in Aerospace Engineering and Engineering Mechanics

1. **Aerodynamics/Astronautics**
   - AE 600: Seminar (1-3)
   - AE 601: Computational Fluid Mechanics (3)
   - AE 612: Compressible Fluid Flow (3)
   - AE 620: Incompressible Aerodynamics (3)
   - AE 643: Laminar Flow (3)
   - AE 644: Turbulent Flow (3)
2. **Structural Mechanics**
   - EM 600: Seminar (1-3)
   - EM 601: Dynamic Analysis (3)
   - EM 611: Vibration of Elastic Solids (3)
   - EM 621: Theory of Elasticity (3)
   - EM 703: Theory of Vibrations (3)
   - EM 711: Structural Acoustics (3)
   - EM 724: Theory of Plates and Shells (3)
   - EM 727: Theory of Elastic Stability (3)

### Civil Engineering

#### General Information
The Department of Civil Engineering offers graduate study leading to the Master of Science degree in civil engineering. Available areas of research include geotechnical engineering, structural engineering, transportation engineering, and water resources and environmental engineering. Programs
of study may also include combinations of the above areas and related courses from other disciplines subject to the approval of the graduate adviser.

Specific Requirements for the Degree: The student's program, prepared in conference with and approved by the graduate adviser, must satisfy the following requirements.

1. Twenty-one units of 600- and 700-numbered courses in civil engineering. A minimum of four courses should be selected from one of the specialty areas listed below; in exceptional cases, this requirement may be waived at the discretion of the graduate committee, provided the substitute course is in the College of Engineering and enhances a coherent program in a specific professional area.

2. At least nine additional units of 500-, 600- or 700-numbered courses, approved by the graduate adviser.

3. The total number of units of 797, 798, and 799 shall not exceed six units on the program.

Areas of Specialization in Civil Engineering

1. Geotechnical Engineering
   - CE 600: Advanced Soil Mechanics (3)
   - CE 601: Advanced Foundation Engineering (3)
   - CE 602: Slope and Earth dams (3)
   - CE 603: Soil and Site Improvement (3)

2. Structural Engineering
   - CE 605: Prestressed Concrete Structures (3)
   - CE 607: Dynamics of Structures (3)
   - CE 608: Earthquake Engineering (3)
   - CE 610: Finite Element Analysis of Structures (3)
   - CE 620: Seminar in Structural Engineering (2 or 3)

3. Transportation Engineering
   - CE 620: Traffic Engineering (3)
   - CE 621: Transportation Demand Analysis (3)
   - CE 622: Mass Transit Engineering (3)
   - CE 781: Seminar in Transportation Engineering (2 or 3)

4. Water Resources and Environmental Engineering
   - CE 632: Computational Hydraulics and Hydrology (3)
   - CE 634: Surface Water Hydrology (3)
   - CE 635: Water Quality Engineering (3)
   - CE 636: Water Quality Processes (3)
   - CE 638: Sedimentation and River Engineering (3)

Electrical Engineering

(Major Code: 09091)

General Information: The Department of Electrical and Computer Engineering offers graduate study leading to a Master of Science degree in Electrical Engineering. The program provides balanced opportunities to study practical engineering design and do research. Research assistships are available in the research areas of computer engineering and digital systems, design, digital signal processing and communications, electro-optic system design and instrumentation, applied electron and molecular spectroscopy, power systems, and biomedical rehabilitation engineering.

Specific Requirements for the Degree: The student's program, prepared in conference with and approved by the graduate adviser, must satisfy the following requirements:

1. Eighteen units of 600- and 700-numbered courses in electrical engineering.
2. At least six additional units of 500-, 600- or 700-numbered courses in the College of Engineering or, with the prior approval of the graduate adviser, in the College of Sciences.
3. Six elective units of 500-, 600- or 700-numbered courses approved by the graduate adviser.
4. Prerequisites for all courses taken for the degree must be completed with a grade of C or better.
5. As a breadth requirement, each classified graduate student is required to complete with approval of the graduate adviser at least one course from four of the following disciplines: Communications, Computer, Electronics/Networks, Physical Electronics, Power/Control Systems. If the course content is appropriate, the graduate adviser may approve certain Electrical Engineering 596 and 600-numbered courses to satisfy part of the breadth requirement.

Disciplines and related courses:

Communications: Electrical Engineering 553, 554,

Electronics/Networks: Electrical Engineering 530,

Electrical Engineering: Electrical Engineering 540,

Power/Control Systems: Electrical Engineering 520,


Students selecting Plan B must pass a written comprehensive examination. The examination tests the student's understanding and mastery of fundamental principles and their ability to apply them to engineering problems. Members of the ECE faculty will grade the comprehensive examination for technical correctness, completeness and clarity of expression. After two unsuccessful attempts, the student may not take the examination again without specific written permission from the department chair. The chair, at this time, may require the student to successfully complete certain courses before taking the comprehensive examination.

Section II: Doctoral Program

Engineering Sciences/Applied Mechanics

(Major Code: 09012)

The cooperating faculties of the Department of Applied Mechanics and Engineering Sciences (AMES) at the University of California, San Diego and the College of Engineering at San Diego State University offer a joint doctoral program in engineering sciences/applied mechanics. The Doctor of Philosophy degree in engineering sciences/applied mechanics will be awarded jointly by the Regents of the University of California and the Trustees of The California State University in the names of both cooperating institutions. The Ph.D. degree in engineering sciences/applied mechanics is a research degree and represents both attainment of advanced knowledge and demonstration of research skills. It is not awarded solely for the fulfillment of technical requirements such as academic residence and coursework. A typical student with an appropriate bachelor of science degree in engineering may complete the joint program in four to five years of full-time study and research. A student with advanced standing may complete the program in a shorter period of time.

The research interests of the participating faculty members cover a wide range of mechanics including: aero- and biomechanics, boundary layer separation, boundary layer stability, computational fluid mechanics, engineering fluid mechanics, finite element methods in structural analysis, flow field acoustic interaction, gas physics, hydrology, hypersonic flow field, low speed aerodynamics, solid mechanics, structural fluid interaction, and two phase flows. At SDSU, the major areas of research at the graduate level and the participating faculty members include:

- Acoustics: M. Piersol
- Aerodynamics: J. Katz, P. Tscho
- Bioengineering: J. Pinto, A. Szeto

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- Acoustics: M. Piersol
- Aerodynamics: J. Katz, P. Tscho
- Bioengineering: J. Pinto, A. Szeto
Financial Support

Students admitted to the program will be eligible for teaching assistantships, associateships, and graduate assistantships. It is a requirement that students be in residence at one of the two institutions.

Program

Preparation for Admission

Applicants must have an acceptable bachelor's degree or master's degree and meet the requirements for admission to the Graduate Division of UCSD and SDSU. Students are expected to have engineering degrees in the classical applied mechanics areas (i.e., aerospace, civil, mechanical, engineering science). Students with degrees in one of the allied fields (i.e., physics, mathematics, electrical engineering, and engineering physics) will be required to remove any academic deficiencies by completing a series of courses normally required of the students who have academic degrees in the applied mechanics areas.

APPLICATION MUST BE RECEIVED NO LATER THAN FEBRUARY 1 for admittance to the Program in ENGINEERING SCIENCES/APPLIED MECHANICS.

Application

Students seeking admission to the joint doctoral program in engineering sciences/applied mechanics should direct their application to the Doctoral Program Adviser, Dr. M. Pierucci, requesting application materials. Prospective candidates are encouraged to seek a letter of recommendation from the current chair of the Department of Applied Mechanics and Engineering Sciences at the University of California, San Diego. When a student is admitted to the joint doctoral program, the chair of the Department of Applied Mechanics and Engineering Sciences at UCSD and the chair of the Department of Applied Mechanics and Engineering Sciences at SDSU will appoint a three-member advising committee consisting of at least one member from each institution. It is the responsibility of this committee to develop a program of study and a plan of preparation for the student. The student will be required to remove any academic deficiencies by completing a series of courses normally required of the students who have academic degrees in the applied mechanics areas. The student must complete at least one academic year in full-time residence at each of the two institutions. The definition of such residence must be in accordance with the regulations of the Graduate Divisions of UCSD and SDSU.

Residency Requirements

The student must complete at least one academic year in full-time residence at each of the two institutions. The definition of such residence must be in accordance with the regulations of the Graduate Divisions of UCSD and SDSU.

Advising Committee

When a student is admitted to the joint doctoral program, the chair of the Department of Applied Mechanics and Engineering Sciences at UCSD and the chair of the Department of Applied Mechanics and Engineering Sciences at SDSU will appoint a three-member advising committee consisting of at least one member from each institution. It is the responsibility of this committee to develop a program of study and an plan of preparation for the student. The student will be required to remove any academic deficiencies by completing a series of courses normally required of the students who have academic degrees in the applied mechanics areas. The student must complete at least one academic year in full-time residence at each of the two institutions. The definition of such residence must be in accordance with the regulations of the Graduate Divisions of UCSD and SDSU.

Joint Qualifying Committee

Application forms will be approved in advance by the chair of the Department of Applied Mechanics and Engineering Sciences at UCSD and the chair of the Department of Applied Mechanics and Engineering Sciences at SDSU. Upon appointment, the advising committee will be responsible for the student's program of study and dissertation research. The joint doctoral committee will consist of three members from each institution; one of the three will be outside the Department of Applied Mechanics and Engineering Sciences and one outside the graduate group in applied mechanics.

Course Requirements

The Doctor of Philosophy degree in engineering sciences/applied mechanics is a research degree and represents both advancement of knowledge and demonstration of research skills. Therefore, no specific course requirements for the joint doctoral program exist; however, the joint doctoral program qualifying examination is based on a certain level of competence in the general area of: (1) fluid mechanics, (2) solid mechanics, and (3) applied mathematics.

Qualifying Examinations

Joint Qualifying Committee

The joint doctoral program qualifying examination is administered by the student's advising committee. The examining committee, at the option of the student's advisor, may interview the committee and seek their advice concerning the student's performance. The examining committee is composed of the student's advisor and two other members of the student's doctoral committee.

Satisfaction of Degree Requirements

The major requirement for the doctorate under the Joint Doctoral Program in Engineering Sciences/Applied Mechanics is the completion of a dissertation based on original research, that contributes new knowledge to the field. An examination of the dissertation must be conducted by the student's doctoral committee. The examination will be conducted at the student's discretion, either by the dissertation committee or by the student's advisor. The examination will be conducted at the student's discretion, either by the dissertation committee or by the student's advisor.

Award of the Degree

The Doctor of Philosophy degree in engineering sciences/applied mechanics will be awarded jointly by the Regents of The University of California and The University of California, San Diego in the names of both cooperating institutions.

Faculty

The following faculty members of the cooperating institutions (i.e., the University of California, San Diego and The University of California, San Diego) are available for research and the preparation of doctoral dissertations:

Joint Dissertation Committee

Upon the recommendation of the student's doctoral committee, a joint dissertation committee shall be appointed by the Deans of the Graduate Divisions of UCSD and SDSU upon the recommendation of the chairs of the Department of Applied Mechanics and Engineering Sciences and the graduate group in applied mechanics. The doctoral committee shall supervise the study and research programs of the student. The chair of the committee may be the chair of the graduate group in applied mechanics from UCSD or the chair of the Department of Applied Mechanics and Engineering Sciences at SDSU.

Senate Qualifying Examination

The Senate Qualifying Examination is open to the public; a concluding portion involves a discussion of findings and areas of future research. The first part of this examination is open to the public, a concluding portion involves a discussion of findings and areas of future research. The first part of this examination is open to the public, a concluding portion involves a discussion of findings and areas of future research.

Dissertation

The joint doctoral committee will administer the final examination, which will consist of the student's presentation of the dissertation and the defense of the dissertation. The joint doctoral committee will determine in consultation with the student the formal findings and areas of future research. The joint doctoral committee will determine in consultation with the student the formal findings and areas of future research.

Satisfactory Progress

The student admitted to the program are expected to complete satisfactory progress and to remain in good standing at both institutions.

Award of the Degree

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Courses Acceptable on Doctoral Degree Program in Engineering

GRADUATE COURSES

University of California, San Diego:

Program Director: D.A. Gough

Committee Members:


Hydrology:

H. Chang, V. Ponce

Soil Mechanics:

J. Noorany, B. Westermo

Structural Mechanics:

Z. Bayasi, C. Lyrintzis, M. Pierucci, N. Sharabi, B. Westermo

Thermal Sciences:

S. Bhatthajarajee, H. G"onen

Courses Acceptable on Master's Degree Programs in Engineering

UNIVERSAL DIVISION COURSES

Courses Acceptable on Doctoral Degree Program in Engineering

GRADUATE COURSES

800. Seminar. (1 Cr/NC)

Requirements: Admission to the doctoral program.

Prerequisite: Admission to the doctoral program.

Program in Engineering Sciences/Applied Mechanics.

985. Digital Solutions of Engineering Problems (3-6 Cr/SP)

Prerequisites: Engineering 120 or Computer Science 107 or Electrical Engineering 160, and Engineering 290.

Course in digital solutions of classes of engineering problems. Application of numerical methods with consideration of limitations imposed by computer and programming language characteristics.

Courses Acceptable on Doctoral Degree Program in Engineering

GRADUATE COURSES

800. Seminar. (1 Cr/NC)

Requirements: Admission to the doctoral program.

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Course in digital solutions of classes of engineering problems. Application of numerical methods with consideration of limitations imposed by computer and programming language characteristics.
Aerospace Engineering and Engineering Mechanics

OFFICE: Engineering 308
TELEPHONE: (619) 594-6674

596. Advanced Aerospace Engineering Topics (3)
Prerequisite: Consent of instructor.
Modern developments in aerospace engineering. See Class Schedule for specific content. Maximum credit of six units for any combination of Aerospace Engineering or Engineering Mechanics 496, 499, and 596 applicable to a bachelor's degree. Maximum combined credit of six units of Aerospace Engineering or Engineering Mechanics 596 and 696 applicable to a 30-unit master's degree.

UPPER DIVISION COURSES
IN AEROSPACE ENGINEERING

520. Intermediate Aerospace Flight Mechanics (3)
Prerequisite: Aerospace Engineering 320. A continuation of Aerospace Engineering 320 to include orbit flight stability, astrodynamics, and orbit transfer maneuvers. One-semester course.

530. Rocket and Space Propulsion (3)
Prerequisite: Aerospace Engineering 430. Equilibrium, combustion, rocket propulsion. Performance of rocket-propelled vehicles. Rocket propulsion fundamentals. Topics in chemical (solid and liquid) and electrical propulsion systems.

540. Aircraft Stability and Control II (3)
Prerequisite: Aerospace Engineering 440. Dynamic stability and control of rigid aircraft; general equations of motion, stability derivatives, perturbed state, and stability of dynamic and static response.

550. Viscous Flow (3)

562. Compressible Fluid Flow (3)
Prerequisite: Aerospace Engineering 302 and credit or concurrent registration in Engineering Mechanics 510. Theory of flow at supersonic speeds. Linearized theory, three-dimensional wings in steady flight, slender-body theory, methods of characteristics.

560. Incompressible Aerodynamics (3)

563. Laminar Flow (3)

644. Turbulent Flow (3)

596. Advanced Topics in Aerospace Engineering (2 or 3)
Prerequisites: Aerospace Engineering 320 and Credit or concurrent registration in Engineering Mechanics 301. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

797. Research (1-3) Cr/NC/SP
Prerequisite: Consent of graduate adviser. Research in engineering. Maximum credit six units applicable to a master's degree.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor. Individual study. Maximum credit three units applicable to a master's degree.

799. Thesis or Project (3) Cr/NC/SP
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Registration of a project or thesis for the master's degree.

898. Thesis or Project Extension (0) Cr/NC
Prerequisite: Permission is required in Thesis or Project 799A with an assigned grade symbol of SP. Registration is required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
In the College of Engineering

Faculty

James H. Banks, Ph.D., Professor of Civil Engineering
Howard H. Chang, Ph.D., P.E., Professor of Civil Engineering
Govindarajalu Krishnamoorthy, Ph.D., Professor of Civil Engineering
Frank E. Stratton, Ph.D., P.E., Professor of Civil Engineering
Robert D. McGhie, Ph.D., P.E., Professor of Civil Engineering

Analysis,
Advanced treatment of slope deflection, moment distribution of influence lines. Introduction to matrix analysis of structures.


Modern developments in civil engineering. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

Advanced topics in specific areas of civil engineering. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

Office: Engineering 421
Telephone: (619) 594-6071

Graduate Courses

605. Prestressed Concrete Structures (3)
Prerequisite: Civil Engineering 421 with minimum grade of C.

607. Dynamics of Structures (3)
Prerequisite: Civil Engineering 521 with minimum grade of C.

608. Earthquake Engineering (3)
Elements of seismology. Methods of analysis for earthquake loads. Procedures and code provisions for the design of earthquake-resistant structures.

610. Finite Element Analysis of Structures (3)
Prerequisites: Engineering 120 and Civil Engineering 521 with minimum grade of C.

620. Traffic Engineering (3)
Prerequisite: Consent of instructor.

621. Transportation Demand Analysis (3)
Prerequisite: Civil Engineering 441 or Geography 559 or City Planning 625.

622. Mass Transit Engineering (3)
Prerequisite: Consent of instructor.

623. Computational Hydrodynamics and Hydrology (3)
Prerequisite: Civil Engineering 444.

634. Surface Water Hydrology (3)
Prerequisite: Civil Engineering 445.

635. Water Quality Engineering (3)
Prerequisite: Civil Engineering 555 with minimum grade of C.

636. Water Quality Processes (3)
Prerequisite: Civil Engineering 555 with minimum grade of C.

638. Sedimentation and River Engineering (3)
Prerequisite: Civil Engineering 444 with a minimum grade of C.

641. Advanced Foundation Engineering (3)
Prerequisites: Civil Engineering 442 and 463 with minimum grade of C.

642. Seepage and Earth Dams (3)
Prerequisites: Civil Engineering 442 and 463.

643. Soil and Site Improvement (3)
Prerequisite: Civil Engineering 640.


655. Water and Wastewater Engineering (3)
Prerequisite: Civil Engineering 255 with minimum grade of C.

659. Advanced Civil Engineering Topics (1-3) I, II
Prerequisite: Minimum grade point average of 3.0 and consent of instructor.

664. Advanced Topics in Civil Engineering (2 or 3)
Intensive study in specific areas of civil engineering. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree. Maximum combined credit of six units of Civil Engineering 596 and 696 applicable to a 30-unit master's degree.

780. Seminar in Structural Engineering (2 or 3)
Prerequisites: Minimum grade point average of 3.0 and consent of instructor.

797. Independent Research (1-3) Cr/NC/SP
Prerequisite: Consent of graduate adviser.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.

799A. Thesis or Project (3) Cr/NC/SP
Prerequisite: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC/SP
Prerequisite: Prior registration in Thesis or Project; 799A with an assigned grade symbol of SP.

799C. Thesis or Project Extension with Spring (0) Cr/NC/SP
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.

799D. Thesis or Project Extension (0) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.

Individual study. Maximum credit three units applicable to a master's degree.

799A. Thesis or Project (3) Cr/NC/SP
Prerequisites: Consent of graduate adviser.

799B. Thesis or Project Extension (0) Cr/NC/SP
Prerequisite: Prior registration in Thesis or Project; 799A with an assigned grade symbol of SP.

799C. Thesis or Project Extension with Spring (0) Cr/NC/SP
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.

799D. Thesis or Project Extension (0) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.

Individual study. Maximum credit three units applicable to a master's degree.

799A. Thesis or Project (3) Cr/NC/SP
Prerequisites: Consent of graduate adviser.

799B. Thesis or Project Extension (0) Cr/NC/SP
Prerequisite: Prior registration in Thesis or Project; 799A with an assigned grade symbol of SP.

799C. Thesis or Project Extension with Spring (0) Cr/NC/SP
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.

799D. Thesis or Project Extension (0) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair and instructor.

Individual study. Maximum credit three units applicable to a master's degree.
521. Advanced Feedback Control Systems (3) II
Prerequisite: Electrical Engineering 520.
A continuation of Electrical Engineering 520 to include feedback compensation, advanced compensation techniques, signal flow theory, state-variable techniques, introduction to nonlinear and sampled-data control systems.

530. Analog Integrated Circuit Design (3) II
Prerequisite: Electrical Engineering 430.
Advanced treatment of transistor pairs, device mismatch, differential amplifiers, current mirrors, active loads, level shifting, and output shaping for integrated circuits. Design of bipolar transistor and FET amplifier stages.

540. Microwave Communications (3) II
Prerequisite: Electrical Engineering 430. Recommended: Engineering 510.
Applications of Maxwell's equations to wave propagation, skin effect, circuit impedance elements, vector potential, and other time-varying electromagnetic phenomena: waveguides and striplines, control of circuits, electromagnetic radiation.

540L. Microwave Measurements Laboratory (1) II
Prerequisite: Credit or concurrent registration in Electrical Engineering 430, and 540.
Experiences in 3, 10, and 29 GHz test equipment, design and construction of microwave circuits, microwave modulation and detection, microwave transistors and tubes.

541. Electro-Optics (3) II
Prerequisite: Electrical Engineering 340.
Optical/electrical devices and systems, wave beams, light-matter interactions, modulation, fiber optics, and laser light sources. Laser modules and detectors. Applications in data transmission, measurement, and communication techniques.

546. Optical Fiber Communications Systems (3)
Prerequisite: Electrical Engineering 434.
Optical fiber transmission and dispersion, light-emitting diodes and laser diodes, pin photodiodes and avalanche photodiodes, receiver designs, digital modulation, and optical fiber systems. Applications in data transmission and communication systems.

553. Stochastic Signals (3) I
Prerequisite: Electrical Engineering 410.
Random signals, linear feedback control system elements, power spectral densities, the Gaussian process, narrow band processes. Applications to communication systems.

554. Communication Principles and Circuits (3) II
Prerequisite: Electrical Engineering 520.
Signal transmission in linear networks, modulators and detectors, wide-band and narrowband amplifiers; oscillators: AM, FM, and phase modulation; transient response of amplifiers.

556. Digital Signal Processing (3)
Prerequisite: Electrical Engineering 410 or Physics 516A.
Digital signal processing. Discrete-time signals, transform techniques, and digital filters. Design of IIR and FIR filters, FFT, and finite-length effects on digital systems.

558. Communications and Digital Signal Processing Laboratory (1)
Prerequisite: Electrical Engineering 558.
Experiments in modulation techniques, effects of noise on system performance, digital filters, and signal processing. (Formerly numbered Electrical Engineering 554L.)

560. Computer and Data Networks (3)
Prerequisites: Electrical Engineering 371 and 410.
Wide area and local area networks. Multi-layered protocol models, telephone systems, modern, and network applications.

570. Advanced Digital Circuits (3)
Prerequisite: Electrical Engineering 520.
Digital applications of linear devices, the digital/analog interface, and ultra high speed logic devices.

571. Pulse Digital Systems (3)
Prerequisite: Electrical Engineering 373 and 470.
Design of high-speed microprogrammable bit-slice digital systems. Case studies of CPU and controller design.

572. VLSI Circuit Design (3) I
Prerequisite: Electrical Engineering 330 and 371.
Design of integrated circuits based on CMOS technology, characteristic properties of MOS transistors, complementary metal-oxide semiconductor design, and logic and computer system designers. ALU architecture. For former number, Electrical Engineering 527.

573. Microprocessor Systems Development (3)
Prerequisite: Electrical Engineering 373.
Design and implementation of software for real-time microprocessor-based systems using modern tools. In-circuit emulation, multi-tasking and interrupt programming. Assembler and C-language.

575. Power Relay Systems (3) I
Prerequisite: Electrical Engineering 520.
Power relay systems including metering and control as used in modern power systems. Characteristics of operations and applications of equipment. Demonstration on individual component relays. Basic relay calculations.

596. Advanced Electrical Engineering Topics (1-3) I, II
Prerequisite: Consent of instructor.
Modern developments in electrical engineering. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

597. Seminar in Communications Systems (1-3)
Prerequisite: Consent of instructor.
An intensive study in communication theory and systems. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

599. Seminar (1-3)
May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

622. Sampled-Data Systems (3)
Prerequisite: Electrical Engineering 520.
Analysis and synthesis of sampled-data and digital control systems. Techniques for the design of time optimal sampled-data control systems. Transformers and differential equation synthesis techniques for determining stability and system response.

631. Integrated Circuit Technologies (3)
Prerequisite: Electrical Engineering 434.
Modern integrated circuit design: MOS, and GaAs technologies: systematic layout rules, scaling, layout topology, fabrication techniques, and circuit performance. Demonstration of VLSI and BFF.

634. Semiconductort BF Circuit Design (3)
Prerequisite: Electrical Engineering 520.
Wide band amplifiers, low level RF amplifiers and mixers, IF amplifiers, AGC, tuning and stability problems, unilateralization and mismatching techniques, harmonic oscillators, VHF power amplifiers, and variable multipliers.

642. Optical Communications (3)
Prerequisite: Electrical Engineering 434.
Advanced topics of interest in electro-optical communications, including lasers, optical fibers, light emitting devices, modulators, optical fiber and electromagnetic channels, and adaptive techniques.

644. Optical Data Processing (3)
Prerequisite: Electrical Engineering 340 and 410.
Optical systems for processing electronic data or images. Spatial frequency analysis, filtering, correlation, and correlation based on light detection. Film as a recording medium. Acousto-optic and electro-optic processing devices and their applications.

582. Power Relay Systems (3) I
Prerequisite: Electrical Engineering 380.
Power relays including metering and control as used in modern power systems. Characteristics of operations and applications of equipment. Demonstration on individual component relays. Basic relay calculations.

596. Advanced Electrical Engineering Topics (1-3) I, II
Prerequisite: Consent of instructor.
Modern developments in electrical engineering. See Class Schedule for specific content. Maximum credit six units applicable to a bachelor's degree. Maximum combined credit of six units of Electrical Engineering 596 and 597 applicable to a 30 unit master's degree.
Electrical and Computer Engineering

645. Antennas and Propagation (3)
Prerequisites: Electrical Engineering 540. Impedance characteristics and radiation patterns of thin linear antenna elements; field intensity calculations. Tropospheric and ionospheric propagation; propagation anomalies.

647. Radar Systems (3)
Prerequisites: Electrical Engineering 540. Radar range equation, range and Doppler resolution, design principles, signal processing, waveforms, synthetic aperture radar and target imaging.

650. Modern Communication Theory I (3)
Prerequisites: Electrical Engineering 553 or Mathematics 550. Probability theory, random variables, random processes, Gaussian process, random signals through linear systems, noise considerations, optimum receiver design, applications to digital and wave forms communication.

652. Principles and Applications of Information Theory (3)
Prerequisites: Electrical Engineering 553 or 558. Measure of information; digital communication systems. Shannon theorems, channel coding for applications in interference, noise, combating and jamming, source encoding for data compression. Multichannel and multi-use information theory with applications to diversity, multipath and other environments.

653. Coding Theory (3)
Prerequisite: Electrical Engineering 553. The theory of coding to combat noise over communication channels. Redundancy added to messages to assure arbitrarily small error rates at a given information rate. Discussion of channel capacity. Block codes, cyclic codes, BCH codes, convolutional codes.

657. Digital Image Processing (3)
Prerequisites: Electrical Engineering 556 or 557. Theory of two-dimensional signals and systems, image transforms, image enhancement, restoration and compression, image analysis and computer vision. (Formerly numbered Electrical Engineering 557.)

658. Advanced Applications of Digital Signal Processing (3)
Prerequisites: Electrical Engineering 556 or 567. Concepts of spectral analysis. Applications of DSP to speech encoding, image coding, fast algorithms applied to speech, image, radar, sonar and geophysical signal processing.

675. Advanced Microprocessors (3)
Prerequisites: Electrical Engineering 475. Program development, circuit design, direct memory access, multiprocessing, co-processing, and standardized bus design for a 32-bit microprocessor.

676. Fault Tolerant Computing (3)

677. Topics in Logic Design (3) II
Prerequisite: Electrical Engineering 571. Review of current technical literature in logic design and digital systems. Stress on specialized synthesis techniques and recent theoretical developments.

678. Advanced Computer Design (3)
Prerequisite: Electrical Engineering 473. Design principles for high performance computers. State-of-the-art in parallel computer systems, including pipeline processors and multiprocessor systems.

679. Real-Time Software Engineering (3)

Prerequisite: Electrical Engineering 580. Computer modeling and analysis techniques applied to large power systems.

797. Research (1-3) Cr/NC/SP
Prerequisite: Consent of department chair. Research in electrical engineering. Maximum credit six units applicable to a master's degree.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of department chair. Individual study. Maximum credit three units applicable to a master's degree.

799A. Thesis or Project (3) Cr/NC/SP
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a thesis or project for the master's degree.

799B. Thesis or Project Extension (6) Cr/NC
Prerequisite: Prior registration in Thesis or Project 799A with a passing grade symbol of SP. Registration in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university, also must be registered in the course when the completed thesis or project is granted final approval.

Mechanical Engineering

OFFICE: Engineering 323M
TELEPHONE: (619) 594-6067

Faculty

John G. Pisto, Ph.D., Professor of Mechanical Engineering, Chair of Department of Mechanical Engineering

George T. Creal, Ph.D., Professor of Mechanical Engineering, Dean of the College of Engineering

Nidal A. Hauser, Ph.D., Professor of Mechanical Engineering, Associate Dean of the College of Engineering

George A. Manfredd Jr., M.S.E., P.E., Professor of Mechanical Engineering

Robert J. Murphy, Ph.D., P.E., Professor of Mechanical Engineering

Ben Oyati, M.S., P.E., Professor of Mechanical Engineering

Michael W. Gidley, Ph.D., Associate Professor of Mechanical Engineering

D. Preston Lowery III, Ph.D., Associate Professor of Mechanical Engineering

Larry D. Thompson, Ph.D., Associate Professor of Mechanical Engineering

Subhas Bhattacharyee, Ph.D., Assistant Professor of Mechanical Engineering

UPPER DIVISION COURSES

NOTE: Proof of completion of prerequisites required for all Mechanical Engineering 300-, 400-, and 500-level courses. Grade report or copy of transcript. In addition, Mechanical Engineering 390, 450, 490A, and 530 require evidence of centrum presentation in appropriate courses.

510. Advanced Machine Design (3) I, II
Prerequisites: Mechanical Engineering 314 and 340. Application of advanced topics in strength of materials to the design of mechanical elements. Energy methods; stress concentrations, curved beams, and thick-walled cylinders. Practical application of principles through case studies or design projects.

521. Vibration, Shock and Noise Measurements (3)
Prerequisites: Mechanical Engineering 512 and Civil Engineering 301. Experimental problems utilizing vibration excitation equipment, recording systems, transducers, sound analyzers and analog computers.

522. Introduction to Control Systems (3)
Prerequisites: Engineering 280 with a grade of C or better, and credit or concurrent registration in Mechanical Engineering 512. Analysis of the dynamic characteristics of control components and systems. Stability and response of closed loop systems. Design of control systems.

540. Nonmetallic Materials (3)

543. Production Engineering (3)
Prerequisites: Mechanical Engineering 340 and Engineering 280 with a grade of C or better. Quantitative techniques including regression analysis, linear programming, network and simulation methods as applied to planning, forecasting, scheduling and manufacturing of modern production and manufacturing systems.

544. Advanced Manufacturing Processes (3)
Prerequisites: Mechanical Engineering 195, 314, 340, 350, and Engineering 280 with a grade of C or better. Theory and technology of metal cutting, forming, non-cutting and metal removal, computer controlled machining.

546. Computer Aided Manufacturing (3)

570. Thermal Systems Analysis and Design (3)
Prerequisites: Mechanical Engineering 470. Analysis, design and optimization of thermal systems using microcomputers. Modeling of thermal systems and components. Thermal system component characteristics and their effect on overall system performance. Relationship among thermal sciences to design process. Introduction to thermoeconomic optimization.

580. Elements of Energy Conversion (3)
Prerequisites: Mechanical Engineering 350. Principles of physics and chemistry applied to the analysis of a broad spectrum of energy conversion devices from an engineer's point of view.

582. Thermal Environmental Engineering (3)
586. Solar Energy Conversion (3)
Application of thermodynamics, fluid mechanics and heat transfer to thermal design of solar energy conversion systems. Computer simulations utilized.

590. Biomechanics (3)
Prerequisites: Civil Engineering 301 and Engineering Mechanics 340.

596. Advanced Mechanical Engineering Topics (1-3) I, II
Prerequisite: Consent of instructor.
Modern developments in mechanical engineering. See Class Schedule for specific content. Maximum credit of six units for any combination of Mechanical Engineering 496, 499 and 596 applicable to a bachelor's degree. Maximum combined credit of six units of Mechanical Engineering 596 and 696 applicable to a 30-unit master's degree.

GRADUATE COURSES

610. Finite Element Methods in Mechanical Engineering (3)
Prerequisites: Engineering 280 with a grade of C or better and Mechanical Engineering 510.
Introduction to finite element programs such as NASTRAN. Application of optimization, design decision theory, reliability in design.

614. Engineering Design: Analytical Methods (3)
Prerequisites: Mechanical Engineering 512 and Engineering 510.
Classical optimization techniques, digital computer methods of optimization, design decision theory, reliability in design.

615. Vibration and Stress Measurement Systems (3)
Two lectures and three hours of guided measurement activities.
Prerequisites: Mechanical Engineering 390, 510, and 520.
Experiment planning, accelerometer and strain gage theory, data acquisition techniques, data reduction techniques, data analysis techniques.

621. Mechanical Vibrations (3)
Prerequisites: Mechanical Engineering 512, 520 and Engineering 510.
Topics in vibration relating to mechanical design such as non-linear vibrations, distributed mass systems, random vibrations, mobility analysis, isolator design. (Formerly numbered Mechanical Engineering 521A.)

632. Advanced Topics in Automatic Controls (3)
Prerequisite: Mechanical Engineering 530.
Analysis and synthesis of control systems. State space analysis of multivariable systems, optimal control systems.
Prerequisite: Mechanical Engineering 510.
Behavior in control mechanical design. Analysis, prediction and prevention of failure.

642. Corrosion (3)
Prerequisite: Mechanical Engineering 340.
The destructive attack of a metal by chemical or electrochemical reaction with its environment. Thermodynamics of adsorption, E-pH diagrams, and electrode kinetics, corrosion resistant metals, polymers and composites.

645. Mechanical Metallurgy for Engineers (3)
Prerequisites: Mechanical Engineering 340 and 350.
Fundamentals of plastic deformation of crystalline solids, elementary theory of statics and dynamics of dislocations, deformation, fracture and metallurgical variables on mechanical properties; environment-failure interactions.

651. Analytical Thermodynamics (3)
Prerequisite: Engineering 280 with a grade of C or better:
Advanced concepts of macroscopic thermodynamics. Application of thermodynamics to special systems.

661. Gas Dynamics (3)
Prerequisites: Mechanical Engineering 450 and Engineering 510.
Thermodynamics of high velocity compressible fluid flow. Adiabatic and diabatic flow; shock phenomena, imperfect gas multidimensional flow. Applications to the propulsive duct into turbomachinery.

663. Boundary Layers in Internal Flows (3)
Prerequisites: Mechanical Engineering 470 and Engineering 510.
Conservation laws applied to boundary layers in viscous, heat conducting fluids; analysis of the boundary layer equations; applications to internal flows.

671. Conduction Heat Transfer (3)
Prerequisites: Mechanical Engineering 470 and Engineering 510.
Conduction heat transfer, multidimensional and transient processes; analytical and numerical models of conduction phenomena.

673. Convection Heat Transfer (3)
Prerequisites: Mechanical Engineering 470, Engineering 510, Concurrent registration in Mechanical Engineering 662.
Convection heat transfer processes under laminar and turbulent flow conditions. Analytical and numerical modeling of processes.

675. Radiation Heat Transfer (3)
Prerequisites: Mechanical Engineering 470 and Engineering 510.

696. Advanced Topics in Mechanical Engineering (2 or 3)
Intensive study in specific areas of mechanical engineering. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree. Maximum combined credit of six units of Mechanical Engineering 596 and 696 applicable to a 30-unit master's degree.

700. Seminar (1-3)
Prerequisite: Consent of the graduate adviser and instructor.
An intensive study in advanced mechanical engineering. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

701. Research (1-3) Cr/NC/SP
Prerequisites: Consent of graduate adviser and advancement to candidacy.
Research in engineering. Maximum credit six units applicable to a master's degree.

702. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff to be arranged with department chair and instructor.
Independent study. Maximum credit three units applicable to a master's degree.

703. Thesis or Project (3) Cr/NC/SP
Prerequisites: Prior registration in Thesis or Project 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis or project is granted final approval.
Admission to Graduate Study

Students will be admitted in both the fall and spring semesters. Submit applications by October 1 for the spring and by April 15 for the fall.

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin. Students may be admitted to the graduate program in literature in one of two categories:

1. Classified Graduate Standing

To be considered for classification, students must meet the following minimal requirements:

a. 24 units of upper division work in English. (Students choosing the comparative literature specialization may substitute foreign language literature or comparative literature courses.)

b. 2.75 overall on a 4.0 Grade Point Scale.

c. 3.0 grade point average in the English major.

2. Conditional Classified Graduate Standing

a. Conditional acceptance will be considered for a candidate who is below requirements in one of the above. A student may be granted conditional acceptance if there is a deficiency in any of the above requirements. A student accepted conditionally must achieve an average of 3.25 in nine units of English or comparative literature courses with a grade of B or better. Each candidate will be considered for conditional standing if they meet the requirements of 2.75 overall and 1000 on the GRE General Test (combined verbal and quantitative score, minimum 500 verbal).

b. Conditional candidates will be considered for classified graduate standing if they meet the other requirements. Students choosing a comparative literature specialization may substitute 24 units of upper division coursework with no grade less than B- before proceeding to further study and is limited to 12 units. Any units taken that are not current toward the 30 units for the master's degree in English.

Admission to the graduate program in literature in one of two categories:

1. Classified Graduate Standing

b. 2.75 overall on a 4.0 Grade Point Scale.

c. 3.0 grade point average in the English major.

2. Conditional Classified Graduate Standing

a. Conditional acceptance will be considered for a candidate who is below requirements in one of the above. A student may be granted conditional acceptance if there is a deficiency in any of the above requirements. A student accepted conditionally must achieve an average of 3.25 in nine units of English or comparative literature courses with a grade of B or better. Each candidate will be considered for conditional standing if they meet the requirements of 2.75 overall and 1000 on the GRE General Test (combined verbal and quantitative score, minimum 500 verbal).

b. Conditional candidates will be considered for classified graduate standing if they meet the other requirements. Students choosing a comparative literature specialization may substitute 24 units of upper division coursework with no grade less than B- before proceeding to further study and is limited to 12 units. Any units taken that are not current toward the 30 units for the master's degree in English.

Applicants who lack 24 units of upper division coursework in English or in foreign language literature or comparative literature courses will be considered for conditional standing if they meet the requirements of 2.75 overall and 1000 on the GRE General Test (combined verbal and quantitative). After the completion of 24 units for the undergraduate major, students will be considered for classified graduate standing if they meet the other requirements. Students choosing a comparative literature specialization may substitute 24 units of upper division coursework in foreign language or comparative literature courses for part of this requirement.

Applicants are asked to submit a 750-1000 word statement of purpose with their applications.

Advance to Candidacy

All students must satisfy the general requirements for advancement to candidacy, including the foreign language requirement, as stated in Part Two of this bulletin. Each candidate, with the approval of the graduate coordinator, may fulfill the foreign language requirement in one of several ways:

1. By passing an oral or written examination administered by the campus for readings and residencies. The Department of English and Comparative Literature offers a wide range of courses for admission to the graduate program in literature in one of two categories:

2. In addition to meeting the requirements for candidacy, students must meet the following minimal requirements:

a. 24 units of upper division work in English. (Students choosing the comparative literature specialization may substitute foreign language literature or comparative literature courses.)

b. 2.75 overall on a 4.0 Grade Point Scale.

c. 3.0 grade point average in the English major.

2. Conditional Classified Graduate Standing

a. Conditional acceptance will be considered for a candidate who is below requirements in one of the above. A student may be granted conditional acceptance if there is a deficiency in any of the above requirements. A student accepted conditionally must achieve an average of 3.25 in nine units of English or comparative literature courses with a grade of B or better. Each candidate will be considered for conditional standing if they meet the requirements of 2.75 overall and 1000 on the GRE General Test (combined verbal and quantitative score, minimum 500 verbal).

b. Conditional candidates will be considered for classified graduate standing if they meet the other requirements. Students choosing a comparative literature specialization may substitute 24 units of upper division coursework with no grade less than B- before proceeding to further study and is limited to 12 units. Any units taken that are not current toward the 30 units for the master's degree in English.

Admission to the graduate program in literature in one of two categories:

1. Classified Graduate Standing

b. 2.75 overall on a 4.0 Grade Point Scale.

c. 3.0 grade point average in the English major.

2. Conditional Classified Graduate Standing

a. Conditional acceptance will be considered for a candidate who is below requirements in one of the above. A student may be granted conditional acceptance if there is a deficiency in any of the above requirements. A student accepted conditionally must achieve an average of 3.25 in nine units of English or comparative literature courses with a grade of B or better. Each candidate will be considered for conditional standing if they meet the requirements of 2.75 overall and 1000 on the GRE General Test (combined verbal and quantitative). After the completion of 24 units for the undergraduate major, students will be considered for classified graduate standing if they meet the other requirements. Students choosing a comparative literature specialization may substitute 24 units of upper division coursework in foreign language or comparative literature courses for part of this requirement.

Applicants are asked to submit a 750-1000 word statement of purpose with their applications.

Advance to Candidacy

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1. By passing an oral or written examination administered by the campus for readings and residencies. The Department of English and Comparative Literature offers a wide range of courses for admission to the graduate program in literature in one of two categories:

2. In addition to meeting the requirements for candidacy, students must meet the following minimal requirements:

a. 24 units of upper division work in English. (Students choosing the comparative literature specialization may substitute foreign language literature or comparative literature courses.)

b. 2.75 overall on a 4.0 Grade Point Scale.

c. 3.0 grade point average in the English major.

English and Comparative Literature
English and Comparative Literature

Core Courses (9 units):

English 600 Introduction to Graduate Study (3)
English 601 Literary Study in a Multicultural World (3)
English 602 Literary Theory and Critical Practice (3)

Comparative Literature Research Focus. With prior approval by the graduate adviser, a student may choose from the following:

Three units acceptable for graduate credit in a foreign language literature other than the original language.

Six units from the following:

English 640C: Comparative Literature Period or Periods
English 660C: Comparative Literature Literary Type (3)
English 662 Comparative Literature (3)
English 700 Seminar: A Major Author or Authors (2)
English 726 Seminar: Issues in Comparative Literature (3)

(Congress of the graduate adviser, nine units selected from other English and comparative literature departments or approved courses acceptable for graduate credit in other departments when appropriate) may be used toward satisfying this requirement.

Electives: Diversification in Literary and Writing Research. With the approval of the graduate adviser, nine units selected from other English and comparative literature departments or approved courses acceptable for graduate credit in other departments when appropriate) may be used toward satisfying this requirement.

Electives: Diversification in Literary and Writing Research. With the approval of the graduate adviser, nine units selected from other English and comparative literature departments or approved courses acceptable for graduate credit in other departments when appropriate) may be used toward satisfying this requirement.

Culminating Experience:

Plan A: (Thesis or Project) — 799A (3 units)

Master of Fine Arts Degree in Creative Writing

Admission to Graduate Study

STUDENTS WILL BE ADMITTED TO THE M.F.A. IN CREATIVE WRITING ONLY IN THE FALL SEMESTER AND COMPLETE APPLICATIONS MUST BE RECEIVED NOT LATER THAN MARCH 1.

In addition to meeting the general requirements for admission to San Diego State University with classified graduate standing, as described in Part Two of this bulletin, a student must satisfy the following requirements before being recommended for classified graduate standing:

1. The applicant must submit a sample of creative work (15 poems or 30 pages of prose) and three letters of recommendation, to be evaluated in the creative writing faculty of the M.F.A. in creative writing. The sample of creative writing and the letters of recommendation are to be sent directly to the director of the creative writing program, Department of English and Comparative Literature, San Diego State University.

2. The applicant must fulfill a baccalaureate degree in creative writing, or in English with a focus in creative writing, or an approved affiliated field, with a grade point average of not less than 3.0 overall in the last 60 units of study attempted, with a 3.25 undergraduate grade point average in the major, and a 3.5 overall in those courses considered prerequisite for the M.F.A. focus area. The sample should be sent directly to the Office of Admissions and Records, San Diego State University.

3. If deemed necessary, the applicant must complete undergraduate requirements commensurate with the proposed focus in the M.F.A. program.

4. The candidate must achieve a minimum score of 950 on the Graduate Record Examination, with a minimum score of 500 on each section. The results of the exam should be sent directly to the Office of Admissions and Records, San Diego State University.

Students who submit especially compelling samples of creative work, but who do not meet certain criteria or who demonstrate deficiencies in undergraduate preparation, may complete prerequisite courses. After admission, the student may enroll in and complete any prerequisite coursework.

Culminating Experience:

Plan A: (Thesis or Project) — 799A (3 units)

Specific Requirements for the Master of Fine Arts Degree in Creative Writing

(Major Code: 15071)

In addition to meeting the requirements for classified graduate standing, candidates for the M.F.A. in creative writing must complete a 54-unit graduate program, 39 of which must be in English 789, 797, and 799A.

Specified Requirements for the Master of Fine Arts Degree in Creative Writing

1. Course Requirements:

- Six units of English 689 Advanced Tutorial in Creative Writing (3)
- Six units of English 797 Directed Writing for M.F.A. Students (3)
- Six units of English 799A Thesis (3)

2. Creative Writing Research Focus. Students will select one area of research focus as follows:

A. Poetry

- English 680 Poetry Writing (6)
- English 789 Directed Poetry Writing
- Six units of electives in another creative writing research focus with the approval of the M.F.A. adviser.

B. Fiction

- English 681 Fiction Writing (6) and six units to be selected from the following:
  - English 781, M.F.A. Seminar: Fiction (3-6)
  - English 783, M.F.A. Seminar: Novel (3-6)
  - Six units of electives in another creative writing research focus with the approval of the M.F.A. adviser.

C. Creative Writing Research Focus. Students select three units from the following:

- English 630 Form and Theory of Fiction
- English 631 Form and Theory of Fiction
- English 797 Directed Writing for M.F.A. Students

D. Literature Research, An 18-unit literature research component divided as follows:

- Three units selected from the following:
  - English 630 Form and Theory of Poetry (3)
  - English 631 Form and Theory of Fiction (3)
- Six units in American, British, or comparative literature, or an appropriate modern language literature selected with the approval of the M.F.A. adviser.
- Six units selected from the following:
  - English 700 Seminar: A Major Author or Authors (3)
  - English 709 Seminar in Teaching of Creative Writing (3)
  - English 724 Seminar: Issues in English with a focus in American Literature (3)
  - English 726 Seminar: Issues in Comparative Literature (3)
  - English 730 Seminar: Perspectives in Critical Analysis (3)
  - English 741 Seminar in Classical Rhetoric and Composition (3)
  - English 742 Seminar: Issues in Rhetorical Theory and Practice (3)
  - English 744 Seminar: Research Methods in Rhetoric and Writing (3)

3. Correlation Study in Another Discipline. Six units in a course of study, the student's interest and the approval of the M.F.A. adviser.

4. Thesis. Six units in preparation of the thesis; a book-length manuscript (option available for students with an M.A. in English and Creative Writing). 

English and Comparative Literature

Courses Acceptable on the Master's Degree Programs in Creative Writing and English

UPPER DIVISION COURSES IN ENGLISH

Prerequisite for all 500-level courses in courses in literature and/or creative writing.

500W. Advanced Composition (3), B

- Prerequisites: Satisfactory performance in English 500W, and the Writing Competency requirement, and a grade of B or better in English 102

500W. Preparation for 500W. Preparation for courses in literature and/or creative writing.

501L. Literature for Children (3).

502. Adolescence in Literature (3)
Prerequisite: Six units in literature.
Works are concerned with an adolescent protagonist. Includes both traditional novels of development (Bildungsromane) and contemporary young adult novels.

503W. Technical Writing (3)
Prerequisites: English 200. Satisfies University Upper Division Writing requirement for students who have completed 60 units, the Writing Competency requirement, and completed the General Education requirement in Written Communication. Proof of completion of prerequisites required: Test scores or verification of exemption; grade report or copy of transcript.

Principles and practices of writing required in technical and scientific fields of professionals, including technical writing style and ethical strategies of designing technical documents. (Formerly numbered English 304W.)

504. Problems in Technical Communication (3)
Prerequisite: English 503W. Recommended: Graphics or drawing course.
Problems in technical writing, including graphics, printing, and presentation of technical documents, including types of technical communication, including reports, manuals, and proposals; manuscript editing and proofreading; audience analysis and readability; writing and recognition of clear technical prose.

506. Writing Internship (3)
Prerequisites: Consent of instructor and successful completion of a 500-level writing course with a grade of B or better.
Intensive experience in writing and editing documents while students submit to the supervision of an academic instructor and a professional coordinator.

507. The History of Literary Criticism (3)
Principles of historical literary criticism from Greek times to the twentieth century.

508W. The Writing of Criticism (3)
Prerequisites: English 200. Writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication. Proof of completion of prerequisites required: Test scores or verification of exemption; grade report or copy of transcript.

Theory and practice of literary criticism. Emphasis on the work of important critics and on development of student's own critical writing.

509. Introduction to the Teaching of Composition (3)
Prerequisite: Consent of instructor based on writing sample and/or test.
Techniques for teaching and evaluation of written composition. Provides a theoretical basis for these techniques.

510. American Ethnic Literatures (3)
Prerequisite: Six units in literature.
Works from African ethnic literatures, with emphasis on forms newly excluded traditions as African American, Hispanic and Chicano, Asian-American, and American Indian.

511. African-American Literature Tradition (3)
Prerequisite: Six units in literature.
African-American literature from its eighteenth century beginnings into the present. Early political and social concerns and common-unifying utilitarian forms; aesthetic concerns and forms in nineteenth and twentieth centuries.

522. American Literature, 1800 until 1860 (3)
Representative works by American writers from 1800 until 1860. Works include works by Emerson, Hawthorne, Melville, Poe, H.D. Stowe, Thoreau, Whitman, others.

523. American Literature, 1860 until 1920 (3)
Representative works by American writers from 1860 until 1920. Works include works by Chopin, Crapsey, Emily Dickinson, Henry James, Carl Sandburg, Mark Twain, Whitman, others.

524. American Literature, 1920 until 1950 (3)
Works include works by Willa Cather, E. Scott Fitzgerald, Ernest Hemingway, Eugene O'Neill, K.A. Porter, Ezra Pound, John Steinbeck, others.

525. American Literature, 1950 until Present (3)

526. Topics in American Literature (3)
Topics in American literature to include the literature of the South, Black writers in America, the frontier and American literature, the history of American literature; the outcast in American literature. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

527. Genre Studies in American Literature (3)
Study of a specific literary genre: overview of the genre's development in American literature (the American novel, the American short story, American poetry) or focus on a narrower period (the modern American novel, the contemporary American novel). May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

528. Individual American Authors (3)
Works of a major American author or, if useful competitors and contemporaries warrant it, the works of two or three authors. Melville, Twain, Twain, Nabokov, or Pound and Eliot, Emerson and Thoreau, Vonnegut and Barth, others. See Class Schedule for specific content. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

529. Chaucer (3)
Chaucer's works, with emphasis on The Canterbury Tales and Troilus and Criseyde.

531. Renaissance Literature (3)
English poetry and prose from 1485 to 1603.

532. Shakespeare (3)
An introduction to the plays of Shakespeare. This course cannot be used in place of English 302 to satisfy General Education requirement requirements.

534. Study of Shakespeare (3)
Prerequisite: English 533.
Advanced study of Shakespeare's achievement as a poet and playwright.

536. Seventeenth Century Literature (3)
English poetry and prose from 1603 to 1660.

537. Milton (3)
Works, with emphasis on Paradise Lost.

538-538B. Restoration and Eighteenth Century Literature (3-3-3, II)

540-540B. English Fiction (3-3, II)
The development of English fiction from its beginnings to the present, Semester I: The eighteenth century. Semester II: The nineteenth century.

541-541B. English Drama (3-3)
English dramatic literature from its beginnings to the nineteenth century. Semester I: The period from the beginning to 1642. Semester II: The period following re-opening of the theatres in 1660.

542. Romantic Literature (3, II)
Representative British works from the 1790s to the 1830s by such writers as Carlyle, Tennyson, Ruskin, Browning, Dickens, Arnold, Eliot, and Peter. (Formerly numbered English 542A.)

543. Victorian Literature (3, II)
Representative British works from 1837 until 1890 by such writers as Hardy, Gissing, Shaw, Conrad, Yeats, Wells, Forster, and Thomas. (Formerly numbered English 543B.)

544. British Literature, 1890-1918 (3, I, II)
Representative British works from 1890 until 1918 by such writers as Hardy, Gissing, Shaw, Conrad, Wells, Forester, and the World War I poets.

547. British Literature, 1918-1950 (3, I, II)
Representative British works from 1918 until 1950 by such writers as Forster, Woolf, T.S. Lawrence, Mansfield, Hardy, Greene, Auden, Orwell, and Thomas.

548. British Literature, 1950 until Present (3, I, II)
Representative British works from 1950 until the present by such writers as Golding, Amis, Murdoch, Lessing, Porter, Hughes, Fowles, Stopford, and DeBesse.

49. Topics in English Literature (3)
Topics in the works of Spanish, the metaphysical school of poetry, the English satirist, major movements in contemporary English fiction, and the like. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

550. Writing Long Narrative (3, II)
Prerequisites: English 280. Satisfies University Upper Division Writing requirement. Proofs of completion of prerequisites required: Test scores or verification of exemption; grade report or copy of transcript.

552. Techniques of Poetry (3, II)
Prerequisite: English 280.
Principles and practices of editing and literary publishing. Workshop on small press publishing. Includes editing and publishing workshop.

556. Techniques of Drama (3)
Prerequisite: English 280.
Techniques of drama; the stage, from writer's point of view. Introduction to the critical and theoretical literature on the stage. Includes a creative writing workshop.

557. Techniques of the Novel (3)
Prerequisite: English 280.
Techniques of the novel from the writer's point of view. Introduction to critical and theoretical literature on the novel. Includes a creative writing workshop.

558. Techniques of Screenwriting (3, I, II)
Prerequisite: English 280 or Telecommunications and Film 110 or 410 for telecommunications and film majors.
Techniques of screenwriting. Introduction to the critical and theoretical literature on screenwriting. Includes a creative writing workshop.

560. Writing Workshop (3)
Prerequisite: English 280.
Techniques of drama; the stage, from writer's point of view. Introduction to the critical and theoretical literature on drama. Includes a creative writing workshop.

569. Topics in Creative Writing (3)
Prerequisite: English 280.
Techniques of creative writing focusing on a specialized genre such as comedy, science fiction, and biography. Study of the critical and theoretical literature on the genre. Includes a creative writing workshop. See Class Schedule for specific content. Maximum credit six units.

570. Writing of Poetry (3, I, II)
Prerequisite: English 570.
A creative writing workshop in poetry. Continuation of English 570. Maximum credit six units.

571. Creative Writing Fiction (3, I, II)
Prerequisites: English 280. Satisfies University Upper Division Writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication. Proof of completion of prerequisites required. Test scores or verification of exemption; grade report or copy of transcript.

A creative writing workshop in fiction. Continuation of English 571. Maximum credit six units.

573. Techniques of the Short Story (3, I, II)
Prerequisite: English 280.
Techniques of the short story, from the writer's point of view. Introduction to critical and theoretical literature on the short story. Includes a creative writing workshop.

575. Techniques of Film (3, I, II)
Prerequisites: English 280.
Techniques of film from the writer's point of view. Introduction to critical and theoretical literature on film. Includes a creative writing workshop.

576. Literary Editing and Publishing (3)
Prerequisite: English 280.
Principles and practices of editing and literary publishing. Workshop on small press publishing. Includes editing and publishing workshop.

577. Techniques of Screenwriting (3, I, II)
Prerequisite: English 280 or Telecommunications and Film 110 or 410 for telecommunications and film majors.
Techniques of screenwriting. Introduction to the critical and theoretical literature on screenwriting. Includes a creative writing workshop.

580. Writing Workshop (3, I, II)
Prerequisite: English 570.
A creative writing workshop in poetry. Continuation of English 570. Maximum credit six units.

581. Creative Writing Fiction (3, I, II)
Prerequisites: English 280. Satisfies University Upper Division Writing requirement for students who have completed 60 units, fulfilled the Writing Competency requirement, and completed the General Education requirement in Written Communication. Proof of completion of prerequisites required. Test scores or verification of exemption; grade report or copy of transcript.

A creative writing workshop in fiction. Continuation of English 571. Maximum credit six units.

583. Writing Long Narrative (3, I, II)
Prerequisite: English 573.
A creative writing workshop in long narrative, especially the novel and/or novel. Continuation of English 573. Maximum six units.
584W. Writing Informal Essays (3) I, II
Prerequisite: English 280. Satisfies University Upper Division Writing Competency requirement for students who have completed 60 units. Fulfills the Writing Competency requirement, and compt. as General Education Requirement in Written Communication. Proof of completion of prerequisites required: Test scores or verification of exemption: grade report or copy of transcript.
A creative writing workshop in nonfiction, especially the essay as an art form. Maximum credit six units.

587. Writing the Screenplay (3) I, II
Prerequisite: English 527 or Telecommunications and Film 110 or 410 for telecommunications and film majors.
A creative writing workshop in screenwriting with emphasis on the feature film. Continuation of English 577. Includes playwriting and revising a television script or short film. Maximum credit six units.

588. Playwriting: The One-Act Play (3)
Prerequisite: English 578 or Drama 325.
A creative writing workshop in planning, writing, and revising a one-act play. Selected plays will be submitted to the Drama Department for competition. May be repeated with new content. Maximum credit six units.

589. Senior Workshop in Creative Writing (3)
Prerequisite: Three units from English 570, 571, 573, 578, or 579; six units from English 580, 581W, 583, 584W, 587, or 588.
Advanced workshop for students who have an extensive background in creative writing, and who wish to prepare a senior project in professional action writing, or other special topics. See Class Schedule for specific content. Maximum credit six units. Not applicable to a master's degree.

596. Selected Topics in English (1-3)
Selected topics in English. May be repeated with new content and approval of instructor. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum credit six units applicable to a bachelor's or a master's degree. Maximum combination of 296, 496, 596 six units applicable to a 30-unit master's degree.

UPPER DIVISION COURSES IN COMPARATIVE LITERATURE
Prerequisite for all 500-level courses: Six units in literature or three units in literature and three units in a related area appropriate to the course in question.

510. Medieval Literature (3)
Representative selections from authors of the Middle Ages.

511. Continental Renaissance (3)
Representative selections from authors of the Renaissance period in continental Europe.

512. Seventeenth and Eighteenth Century European Literature (3)
Selected works by European writers prior to 1800.

513. Nineteenth Century European Literature (3)
Selected works by European writers between 1810 and 1900.

514. Modern European Literature (3)
Selected works by European writers of the twentieth century.

526. Modern Jewish Literature (3)
Prerequisite: Upper division standing.
Selected works by Jewish authors from the last half of the nineteenth century to the present, with emphasis on the Jewish literary tradition in Europe.

530. Topics in Asian Literature (3)
Specialized study of a selected topic in Asian Literature. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

561. Fiction (3)
A comparative approach to themes and forms in fiction and short story..Focus of course to be set by instructor. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

562. Drama (3)
Forms and themes in drama. Focus of course to be set by instructor. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

563. Poetry (3)
A comparative approach to themes and forms in poetry. Focus of course to be set by instructor. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

571. Literary Use of Legend (3)
Literary treatment of such legendary figures as Don Juan, Faust, and Ulysses, in a wide range of literature and genres. See Class Schedule for specific content.

577. Major Individual Authors (3)
In depth study of the works of a major author, such as Sophocles, Dante, Cervantes, Goethe, Dostoevsky or Proust. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

580. Concepts in Comparative Studies (3)
Basic concepts in comparative studies in literature (e.g., influence, modernity, genre, etc.); their validity, usefulness, and limitations. May be repeated with new title and content. See Class Schedule for specific content. Maximum credit six units.

582. Contemporary Literary Theory (3)
Prerequisite: Six upper division units in literature.

594. Topics in Literature and the Arts (3) I, II
Prerequisite: Six upper division units in literature or any of the other arts.
Comparative study of literature and other arts such as painting, sculpture, architecture, music, dance, and film. See Class Schedule for specific content. Maximum credit six units applicable to the M.F.A. in creative writing.

595. Literature and Aesthetics (3) I, II
Prerequisite: Six upper division units in literature or any of the other arts.
Theoretical and experiential investigation of relationships between literature and the other arts. Literary works in context of an inquiry into aesthetics.

596. Topics in Comparative Literature (3)
An intensive study of a topic to be selected by the instructor. May be repeated with new content and context. See Class Schedule for specific content. Maximum credit six units.

600. Introduction to Graduate Study (3)
Prerequisite: Twelve upper division units in English. Introduction to research methods and critical approaches common in the graduate study of literature and expository writing, with attention to basic reference works, bibliographical techniques, analytical strategies, scholarly frames of reference, and pedagogy. Recommended for first semester graduate students.

601. Literary Study in a Multicultural World (3)
Prerequisite: Credit or concurrent registration in English 600. Relationship of literature to gender, race, class, and nationalities. Changing conceptions of literary canons. Exploration, through literary texts, of values in literature and the constituents of literary value.

602. Literary Theory and Critical Practice (3)
Prerequisite: Credit or concurrent registration in English 600. Major issues in the history of literary criticism as well as contemporary approaches. Study of criticism and theory accompanied by writing practice. Students will write in several critical modes and build graduate level proficiency in analyzing literary texts. Prerequisite: 700-level seminars.

604. A Literary Period or Movement (3)
Prerequisites: An appropriate upper division or graduate level background course; credit or concurrent registration in English 600. Advanced study, through its literature, of a literary period such as the Renaissance, or a movement such as American modernism. May be repeated with new content. Maximum credit six units. Formerly numbered English 710.
A. American Literary Period or Movement
B. British Literary Period or Movement
C. Comparative Literature Literary Period or Movement

606. A Literary Type (3)
Prerequisite: Credit or concurrent registration in English 600. Advanced study of a specific literary genre, such as the novel, tragic drama, lyric poetry, the personal essay, autobiography. May be repeated with new content. Maximum credit six units. Formerly numbered English 730.
A. American Literary Type
B. British Literary Type
C. Comparative Literary Type

624. British Literature (3)
Prerequisite: Twelve upper division units in English. Selected works of an author, period, or subject in English literature. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

625. American Literature (3)
Prerequisite: Twelve upper division units in English. American literature, or a foreign language literature. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to an M.F.A. degree.

626. Comparative Literature (3)
Prerequisite: Twelve upper division units in English, comparative literature, or a foreign language literature.
Comparative approaches to literature: study of a theme, geographical region, external relationship, or of selected authors. May be repeated with new content. Maximum credit six units.

630. Form and Theory of Poetry (3)
Prerequisite: Twelve upper division units in English. Poetry as a literary form. May be repeated with new content. Maximum credit six units applicable to an M.F.A. degree in creative writing.

631. Form and Theory of Fiction (3)
Prerequisite: Twelve upper division units in English. Fiction as a literary form. May be repeated with new content. Maximum credit six units applicable to an M.F.A. degree in creative writing.

680. Poetry Writing (3)
Prerequisites: English 580 and at least 12 units in upper division and graduate English literature. Strongly recommended: English 570 and/or 630.
Writing original poetry; guided practice in various forms and techniques. May be repeated with new content. Maximum credit six units applicable to a master's degree.

681. Fiction Writing (3)
Prerequisites: English 383 and at least 12 units in upper division and graduate English literature. Strongly recommended: English 571, 578, and/or 631.
Writing original fiction. Students may emphasize short story, novel, or screenwriting. Guided practice in narrative techniques. May be repeated with new content. Maximum credit six units applicable to a master's degree.

689. Advanced Tutorial in Creative Writing (3)
Prerequisite: English 680 or 681. Class sessions and individual consultations in creative writing. May be repeated with new content. Maximum credit six units applicable to a master's degree.

696. Special Topics (3)
Prerequisite: Twelve upper division units in English. Intensive study in specific areas of English literature. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

700. Seminar: A Major Author or Authors (3)
Prerequisite: English 680 and/or 709. Critical study of one or more authors such as Shakespeare, Emily Dickinson, Charles Dickens, Virginia Woolf, Edith Wharton, Mark Twain, F. Scott Fitzgerald, etc. May be repeated with new content. Maximum credit six units.

709. Seminar in Teaching of Creative Writing (3)
Prerequisite: English 509. Techniques for teaching and evaluation of written work in creative writing, fiction and poetry. Theories of creativity and major genres.
Family Studies and Consumer Sciences

In the College of Professional Studies and Fine Arts

Program of study may include coursework in life-span development, early intervention, administration and program evaluation for human development, child care services, and family violence with research directed toward one of those areas. The school provides opportunities to conduct research under the supervision of the graduate faculty who work with programs that affect multicultural populations such as African-American, American Indian, Asian, and Hispanic families, children in foster care, special needs and gifted children, victims of child abuse, abusive parents, and the homeless. In addition, the Interdisciplinary Training Program on Early Intervention offers students field practice with interdisciplinary teams in hospitals, schools, and agency settings. Other field experience programs offer supervised work in community agencies, children's programs, and the Associated Students Child Development Children's Center, Mark Whitney, Director, focuses on undergraduate and graduate training and research by providing programs to children between eighteen months to five years of age from culturally diverse families. Special programs such as Art and Music Experiences for Children, often extend service through the summer and allow for creative collaboration across disciplines. All children's programs are mainstreamed and a wide range of special needs and at-risk populations are served by collaborative efforts with San Diego City and La Mesa Spring Valley School Districts.

Graduates with the M.S. degree in child development can continue their education for the doctoral degree in human development or a related field or be employed as administrators or service providers of diverse community programs that include child care, employer sponsored day care, health care, disability, housing, hospital centers, administrative program evaluators, children's social workers, case managers, early childhood education, family life specialists, and community college instructors.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the University with a classified graduate standing as described in Part Two of this Bulletin. In addition, students must have bachelor's degrees in the major or related fields. Undergraduate preparation is deemed insufficient, students will be required to complete specific assignments, in addition to the minimum of units required for the master's degree. Students must have a grade point average of 3.0 in the professional degree. Applicants must submit letters of recommendation from a minimum of three of their previous instructors or employers.

All students must be recommended for admission to graduate study at San Diego State University, professional goal, special interest, and personal qualities of the candidate, as approved by the graduate faculty. Students are recommended for admission to graduate study by thegraduate faculty of the College of Professional Studies and Fine Arts and approved by the Dean of the Graduate Division and Research.

M.A. Seminar: Fiction (3)
Prerequisite: English 681, open only to students admitted to the M.A. in creative writing.

780. M.A. Seminar: Poetry (3)
Prerequisite: English 680, open only to students admitted to the M.A. in creative writing.

781. M.A. Seminar: Fiction (3)
Prerequisite: English 681, open only to students admitted to the M.A. in creative writing.

782. Seminar in British Literature (3)
Prerequisites: English 600 and 602.

783. M.A. Seminar in American Literature (3)
Prerequisites: English 600 and 602.

784. Seminar in Comparative Literature (3)
Prerequisites: At least two courses selected from English 600, 601, and 602.

785. Seminar in Modern Rhetoric and Composition (3)
Prerequisites: English 600 and 602.

786. Seminar in Rhetorical Theory and Practice (3)
Prerequisites: English 600 and 602.

787. Thesis Research (3)
Prerequisite: Advance to candidacy in the M.A. degree in English, creative writing, or English and Comparative Literature.

788. Directed Writing for M.A. Students (3)
Prerequisites: English 780, 781, or 783 and advancement to candidacy for the M.A. in creative writing.

789. Directed Writing for MFA Students (3)
Prerequisite: English 780, 781, or 783 and advancement to candidacy for the M.F.A. in creative writing.

790. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of advisor and supervising professor.

791. M.F.A. Seminar: Fiction (3)
Prerequisite: English 681, open only to students admitted to the M.F.A. in creative writing.

792. M.F.A. Seminar: Poetry (3)
Prerequisite: English 680, open only to students admitted to the M.F.A. in creative writing.
Advancement to Candidacy

All students must satisfy the general requirements for admission to candidacy, as described in Part Two of this bulletin, have identified a thesis research advisor, taken FSCS 790 with a grade of B or better, and have had their research proposals approved by their committees.

Specific Requirements for the Master of Science Degree in Child Development (Major Code: 08231)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, students must complete a graduate program of at least 30 units including at least 21 units from courses listed as acceptable to master's degree programs in child development. At least 18 units must be in 600- and 700-numbered courses.

Students must complete a core sequence of four courses: Family Studies and Consumer Sciences 670, 671, 790 and Psychology 570. A set of electives may be approved by the program advisor include Family Studies and Consumer Sciences 335, 579, 590, 596, 631, 637, 667. All students will be expected to include Family Studies and Consumer Sciences 799A, Thesis.

Master of Science Degree in Nutritional Sciences

General Information

For information regarding graduate coursework and research experience leading to a Master of Science degree in nutritional sciences, contact the adviser, Dr. Ronald V. Josephson, or the Department of Physical Education. The general program of study may include coursework in nutrition or food science. Thesis research experience may be conducted using human subjects or animal experiments. Research activity of the faculty currently includes: nutritional status of children, elders, and ethnic groups; metabolic studies of children; Vitamin and trace element metabolism; factors affecting human lactation, body composition and food choice; human milk and composition and stability of foods. Laboratories, including animal facilities and equipment, at SDSU support research conducted under the direct supervision of the nutritional sciences graduate faculty. In addition, students may conduct research at other facilities in collaboration with researchers at other institutions in San Diego.

Graduates with the M.S. degree in nutritional sciences are employed as clinical and administrative dietitians, administrators or supervisors of hospital diets, school meals, child nutrition programs, food service directors, dietetic consultants to food service supervisors, and community college instructors. Students may qualify for positions within industry and government.

Admission to Graduate Study

All students must satisfy the general requirements for admission to the university with classified graduate standing as have bachelor's degrees in foods and nutrition or related fields and satisfy the prerequisites of the courses selected. A course in computer and data processing, e.g., FSCS 207 or equivalent, taken as a part of the student's undergraduate work or demonstrated proof of competency in computer arts, or proficiency in nutrition graduate adviser, is required as a prerequisite to taking program coursework. If students' undergraduate preparation is deemed insufficient, students will be required to complete specified courses in addition to the minimum of 30 units required for the master's degree in nutritional sciences. Students must have a combined GPA of 3.0 in the last 60 semester units attempted, and a minimum score of 950 and not less than 450 on either verbal or quantitative on the GRE General Test. Applicants must submit letters stating reasons for choosing graduate school at San Diego State University, professional goals, special interests in the discipline, and background preparation. Students must be recommended for admittance by faculty of Family Studies and Consumer Sciences and approved by the Dean of the Graduate Division and Research.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin. Additionally, have identified a thesis research advisor, taken FSCS 790 with a grade of B or better, and have had their research proposals approved by their committees.

Specific Requirements for the Master of Science Degree in Nutritional Sciences (Major Code: 13061)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, students must complete a graduate program of at least 30 units including at least 21 units from courses listed as acceptable to master's degree programs in nutritional sciences. At least 18 units must be in 600- and 700-numbered courses.

Required courses include six units selected from Family Studies and Consumer Sciences 606, 607, 608, 609, 610; three units selected from Family Studies and Consumer Sciences 570 and 700; Family Studies and Consumer Sciences 577, 578, Family Studies and Consumer Sciences 437 and 791 and a graduate course in statistics with the approval of the graduate student. All course selections for the graduate program must be approved by the nutritional sciences graduate adviser.

In Plan B, students may take a comprehensive exam or (b) complete Family Studies and Consumer Sciences 797, Research. Reservations must be made six weeks in advance of the exam, which is given mid-semester. The APA, a post-baccalaureate certificate program, administers or supervised by the program adviser in conjunction with the School of Family Studies and Consumer Sciences. The exam is administered by the American Dietetic Association (ADA) and provides for the testing of knowledge and skills, including the laboratory examination, the final examination and the comprehensive examinations. Students must be approved by the program adviser in conjunction with the School of Family Studies and Consumer Sciences. All completed course work is appropriate for credit toward the master's degree. The GPA required is a minimum of 3.0 in the last 60 semester units attempted, and a minimum score of 950 and not less than 450 on either verbal or quantitative on the GRE General Test. Applicants must submit letters stating reasons for choosing graduate school at San Diego State University, professional goals, special interests in the discipline, and background preparation. Students must be recommended for admittance by faculty of Family Studies and Consumer Sciences and approved by the Dean of the Graduate Division and Research.
Family Studies and Consumer Sciences

791. Research Colloquium (1)
Prerequisite: Consent of graduate faculty.
Discussion of current research by students, faculty and visiting
scientists. Each student will participate and present research
work based on current literature and research projects. Maximum
credit three units applicable to a master's degree.

797. Research (3) Cr/NC/SP
Prerequisites: Family Studies and Consumer Sciences 790 and
approval of graduate program advisor. Research in one of the
areas of family studies and consumer sciences. Completion of Plan B project.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff, to be arranged with the director
and instructor and approval of graduate program advisor.
Individual study. Maximum credit six units applicable to a master's degree.

799A. Thesis (3) Cr/NC/SP
Prerequisites: An officially appointed thesis committee and
advisement to candidacy. Preparation of a thesis for the master’s degree.

799B. Thesis Extension (0) Cr/NC/SP
Prerequisite: Prior registration in Thesis 799A with an
assigned grade symbol of SP. Registration is required in any semester or term following
assignment of SP in Course 799A in which the student expects
to use the facilities and resources of the University, also student
must be registered in the course when the completed thesis is
graded final approval.

CHILD DEVELOPMENT

631. Family Life and Sex Education (3)
Prerequisite: Six upper division units in child development and
family studies.
Content, resources and alternative methods of presentation of
family life and sex education for schools, colleges, churches and
social agencies.

637. Child Sexual Abuse (3)
Prerequisite: Family Studies and Consumer Sciences 537.
Theory and methods of child sexual abuse from ecological,
societal, familial, developmental, and intrapersonal perspectives.
Study of social policy and prevention.

670. Seminar: Child Development and Guidance (3)
Prerequisite: Six upper division units in family studies and
consumer sciences.
Emphasis on personality theories and on research and clinical
findings relevant to systematic study of human development and
the guidance of children.

671. Seminar in Advanced Readings in Human Development (3)
Prerequisite: Six upper division units in family studies and
consumer sciences.
Analysis of selected research in human development.

NUTRITIONAL SCIENCES

600. Seminar: Foods and Nutrition (3)
Prerequisites: Family Studies and Consumer Sciences 301 and
302.
Introductory seminar of research and research publications in
foods and nutrition.

606. Physiological Bases of Diet Therapy (3)
Prerequisite: Family Studies and Consumer Sciences 406
Recommended. Chemistry 361B or 560B
Dietary modifications, adjunct to medical treatment, used to
prevent and alleviate the biochemical and physiological
symptoms of disease.

607. Child Nutrition (3)
Prerequisite: Family Studies and Consumer Sciences 302.
Nutrition, health, and biochemical growth in children. Con-
trols leading to malnutrition, prevention, and correction.

608. Geriatric Nutrition (3)
Prerequisite: Family Studies and Consumer Sciences 302.
Biomedical and psychosocial aspects of aging that affect food
habits, nutritional status, and nutrient needs of elders.

609. Advanced Studies: Food Proteins (3)
Prerequisites: Family Studies and Consumer Sciences 301 and
405.
Availability, composition, structure, and physical chemical
properties of conventional and new food proteins and protein-
based products; methods of analysis; nutrition evaluation; pro-
cessing-induced changes; and food product functionality.

610. Nutrition and Energy (3)
Prerequisites: Family Studies and Consumer Sciences 302 and
309.
Methods for measurement of energy intake and expenditure
assessment, factors which control food intake and energy ex-
pense, and examination of normal and specialized needs of energy
requirements.

700. Seminar in Nutrition (3)
Prerequisite: Family Studies and Consumer Sciences 302.
Reading and analyses of basic and applied research in
nutrition.

OFFICE: Business Administration 304
TELEPHONE: (619) 594-6491

French

In the College of the Arts and Letters

Specific Requirements for the Master of Arts Degree

(Major Code: 11021)

In addition to meeting the requirements for classified graduate
standing and the basic requirements for the master's degree as
described in Part Two of this bulletin, the student must complete
a graduate program of at least 30 units which includes a major
consisting of at least 24 units in French, of which at least 18 units
must be in 600 and 700 numbered courses in French, including
French 799A, Thesis, for those following Plan A.

Students, with the consent of the graduate adviser, may elect
Plan B, which includes French 799A, Thesis (minimum GPA
3.6), or Plan B, which includes written and oral examinations in
 lieu of the thesis.

Courses Acceptable on Master's Degree

For admission to the University with classified standing, as described in Part
Two of this bulletin. In addition, the student must satisfy the fol-
lowing requirements: (1) a graduate major in French, or an
equivalent, including 24 upper division units, at least six units
of which must be in a survey course in French literature; (2) a
GPA of 3.0 on a 4-point scale in all upper division French
courses; (3) three letters of recommendation from professors,
at least two of which should be from professors of French at
the institution where the degree was granted; (4) a score of 500 on
the verbal section and 450 on the quantitative section of the
Graduate Record Examination (GRE) General Test.

Admission to Graduate Study

All students must satisfy the general requirements for admission
to the University, with classified standing, as described in Part
Two of this bulletin. In addition, the student must satisfy the fol-
lowing requirements: (1) an undergraduate major in French, or an
equivalent, including 24 upper division units, at least six units
of which must be in a survey course in French literature; (2) a
GPA of 3.0 on a 4-point scale in all upper division French
courses; (3) three letters of recommendation from professors,
at least two of which should be from professors of French at
the institution where the degree was granted; (4) a score of 500 on
the verbal section and 450 on the quantitative section of the
Graduate Record Examination (GRE) General Test.

Adancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as stated in Part Two of this bulletin,
and students will be required to pass a qualifying examination in
French, given by the Department of French and Italian.
**French**

561. Methods in Teaching French as a Second Language (3)
Prerequisite: French 560.
Teaching of French as a second language: contemporary theory and methods. Not open to students with credit or concurrent enrollment in Spanish 561. Taught in English.

596. Topics in French Studies (1-4)
Prerequisite: French 302.
Topics in French language, literature, and linguistics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 596, 496, 596 courses applicable to a bachelor's degree. Maximum credit of nine units of 596. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

**GRADUATE COURSES**

621. Critical Methods (3)
Prerequisite: Eighteen upper division units in French. Methods and theories of critical analysis and their application to the works of a major French author or literary genre.

696. Topics in French Studies (3)
Prerequisite: Eighteen upper division units in French. Intensive study in specific areas of French. May be repeated with new content. See Class Schedule for specific content. Maximum credit of six units applicable to a 30-unit master's degree.

701. Seminar in Medieval French (3)
Prerequisite: Eighteen upper division units in French. Directed research in the works of a representative author, genre or movement. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

711. Seminar in Literature of the French Renaissance (3)
Prerequisite: Eighteen upper division units in French. Directed research in the works of a representative author, genre or movement. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

741. Seminar in Nineteenth Century French Literature (3)
Prerequisite: Eighteen upper division units in French. Directed research in the works of a representative author, genre or movement. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

751. Seminar in Twentieth Century French Literature (3)
Prerequisite: Eighteen upper division units in French. Directed research in the works of a representative author, genre or movement. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

761. Seminar in Francophone Literatures (3)
Prerequisite: Eighteen units of upper division French. Works by noncontinental French authors. Connections among literature, politics, and cultural identity. Critical responses examined in terms of their cultural relativity and relationship to French literary tradition. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

799A. Directed Research (0-6)
Prerequisites: Advancement to candidacy and approval of graduate adviser. Individual study. Maximum credit six units applicable to a master's degree.

**Geography**

The Master of Arts degree is designed to provide advanced training for students who plan to terminate their graduate studies at the master's level, and (b) those who anticipate additional work leading to the doctoral degree in geography or related fields.

The Doctor of Philosophy degree, offered jointly with the University of California, Santa Barbara, provides advanced training for research and teaching at the highest academic level.

Research and instructional facilities provided by the Department of Geography include an excellent map library, the Stephen and Mary Birch Center for Earth Systems Analysis Research (CESAR), a state-of-the-art image processing/GIS center, laboratories for physical geography, soils, cartography, meteorology, and remote sensing and aerial interpretation, and equipment for field studies. The Social Science Research Laboratory provides specialized data collections in the social sciences and a well-equipped data processing center.

**Section I. Master's Degree Program**

**Admission to Graduate Study**

All students must satisfy the general requirements for admission to the University as described in Part Two of this bulletin. Normally to be considered for admission to graduate study, the department recommends that students have an undergraduate average of 3.0 in the last sixty units taken as an undergraduate and a minimum combined score of 1000 on the verbal and quantitative sections of the Graduate Record Examination (GRE) or a General Graduate Record Examination (GRE) with writing component, with a minimum combined score of 1000 and a minimum score of 20 in the verbal and quantitative sections of the Graduate Record Examination (GRE) or a General Graduate Record Examination (GRE) with writing component. Students whose preparation is deemed insufficient by the master's program committee are granted provisional admission. In addition to the minimum of 30 units required for the degree.

**Advancement to Candidacy**

All students must satisfy the general requirements for candidacy as stated in Part Two of this bulletin. In addition, the candidate must submit a written thesis or produce an oral defense of the approved proposal to the Graduate Studies Committee. The candidate must pass all examinations and make an oral defense of the approved proposal to the Graduate Studies Committee.

**Specific Requirements for the Master of Arts Degree**

(Major Code: 22061)

In addition to meeting the requirements for classification standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete the following requirements described in Part Three of this bulletin, and a program of an additional 30 units selected with the approval of the Graduate Studies Committee. The student may choose the following options from the General Graduate Program, the Concentration in Resources and Environmental Quality, or the Concentration in Transportation.

**General Information**

The Department of Geography, in the College of Arts and Letters, offers graduate study leading to the Master of Arts and Doctor of Philosophy degrees in geography. In addition to the formal graduate courses, students are encouraged to participate in either resources and environmental quality or transportation.
The requirements for students electing the general program are as follows:

1. A minimum of 30 units of courses numbered 500 or above as approved by the geography department graduate advising committee.
2. A minimum of 18 units of courses numbered 700 and 701, normally taken during the first two semesters.
3. Completion of Geography 799A (Thesis) under Plan A.

**Concentration in Resources and Environmental Quality**

The requirements for students electing a concentration in resources and environmental quality are as follows:

1. A minimum of 30 units of which not more than six may be taken from 400-level courses.
2. A minimum of 18 units of 600- and 700-numbered courses, to include Geography 670, 700, 701, 770, and 799A, and three units from courses numbered Geography 581-589 or 682-689.

**Transportation**

The requirements for students electing a concentration in transportation are as follows:

1. A minimum of 30 units including 15 units of 600- and 700-numbered courses.
2. Geography 700, 701, and at least nine additional units to be taken from 500- and 600-level geography courses, as approved by the graduate advising committee.
3. At least six units selected from:
   - Civil Engineering 210 Traffic Engineering (3)
   - Civil Engineering 622 Mass Transit Engineering (3)
   - Civil Engineering 781 Seminar in Transportation
   - Geographical Information Systems and Computer Cartography
   - Urban Planning 730 Seminar in Urban Transportation
   - Geography 798 Special Study (3/CR/NC/SP)
4. Graduate or 500-level courses in other departments that are approved above may be taken if approved by the graduate advising committee.

**Systematic Areas – Group A**

| (Group A) | with supporting development of skills in spatial technical
<table>
<thead>
<tr>
<th>Systematic Areas</th>
<th>Group A</th>
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<tbody>
<tr>
<td>Human Geography</td>
<td>Spatial behavior</td>
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<td>Urban and regional modeling</td>
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<td>Urban structure and transportation</td>
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<tr>
<td>Environmental Geography</td>
<td>Natural resource management and policy</td>
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<tr>
<td>Physical Geography</td>
<td>Biological systems</td>
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<td>Physical climatology and hydroclimatology</td>
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<tr>
<td>Coastal processes</td>
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**Spatial Techniques - Group B**

- Remote Sensing and Image Processing
- Geographic Information Systems and Computer
- Cartography
- Spatial Analysis

Each student's program is designed around one of the areas selected from Group A and at least one of the technical emphases selected from Group B. The main regional focus is on Latin America, Western Europe, Australia-New Zealand, USSR, the Pacific Rim, Mexico-U.S. Borderlands, and land. Students must attain the requisite skills in programming, statistics, mathematics, and foreign language necessary to successfully pursue their research goals.

**Admission to Doctoral Study.**

Applicants for admission to the doctoral program in geography offered jointly by SDSU and UCSB must meet the general requirements for admission to both universities with classified graduate standing as outlined in the respective current catalogs. There are no insurmountable requirements for entrance to graduate study in this program, but a strong background in geography or a closely related field is essential. Admission to the program requires acceptance by both universities and by the participating departments at UCSB and SDSU. Applications from outside students and from those in other majors are encouraged, but such students should expect to take additional courses during their first year to improve their background. All students entering the program should have completed a lower and upper division lecture course and the appropriate mathematics and computer science courses for the specialty chosen.

**Qualifying Examinations**

Joint Doctoral Committee.

When a doctoral student makes a definitive selection of the systematic area and technique emphasis as well as an initial topic of their dissertation research, she/he will select a dissertation supervisor (major professor) from either department but who normally will be a member of both departments. The names of her/his joint doctoral committee will be selected from the names of both cooperating institutions. The joint doctoral committee will consist of four members, and the student's doctoral committee may conditionally approve the completed dissertation by the joint doctoral committee.

The doctoral committee will conduct an oral qualifying examination, judging the dissertation proposal. The doctoral committee will assign a pass or fail grade for each examination. Passing the written examination allows the student to proceed to the preparation of a dissertation proposal. The doctoral committee must conditionally approve the dissertation proposal before the student takes the oral qualifying examination. Passing the oral examination signifies that the student's doctoral dissertation proposal is approved. A student may repeat each examination once.

Upon satisfactory completion of the oral examination and prescribed coursework, the student must make application to the Graduate Dean at UCSB for advancement to candidacy. Upon approval of the candidacy fee to UCSB and after approval by the graduate advisory committee of both campuses, students are formally advanced to candidacy by the UCSB Graduate Dean.

**Final Examination.**

The final examination, organized and administered by the student's doctoral committee, will consist of a dissertation defense, before the joint doctoral committee. Normally, a public hearing will be convened for the purpose of judging the dissertation research. The Doctoral Degree, in Geography, will be awarded jointly by the Graduate Divisions of the University of California and the Trustees of the California State University. The names of both cooperating institutions.

**Financial Support.**

The Department of Geography at SDSU has a number of research and teaching assistantships available for approved students. These assistantships are available to support students admitted to and enrolled in the joint doctoral program. All students must apply to the SDSU Department of Geography for consideration for financial support.

**Courses Available on Master's and Doctoral Degree Programs in Geography.**

**UPPER DIVISION COURSE.**

- 504. Coastal and Submarine Physiology (3)
- 537, 337r or 401. Analytical methods of marine waters, of coastal waters, and of surf areas. The applications of chemical principles to the chemistry of marine systems, with emphasis on the relation to environmental processes and their modification by man. Field trips may be arranged.
670. Environmental and Resource Conservation Theory (3)
Prerequisite: Graduate standing.
Theories and principles involved in natural and environmental resource management.

672. Advanced Land Use Analysis (3)
Prerequisite: Geography 572.
Processes of land conversion from rural to urban uses. Methods of assessing capability and suitability of land for urban purposes.

674. Advanced Water Resources (3)
Prerequisite: Geography 574.
Water resource development, organization and utilization.

676. Marine Resources (3)
Prerequisite: Geography 576.
Theories and models of marine bionic and mineral resource availability and utilization.

682. Advanced Automated Cartography (3)
Prerequisite: Geography 582.
Automated cartography in geographic problem solving. Contouring algorithms, trend surface fitting, digital elevation modeling, residual mapping.

682L. Advanced Automated Cartography Laboratory
(1 or 2)
Three to six hours of laboratory.
Prerequisite: Concurrent registration in Geography 682.
Data processing and analysis in automated cartography. Applications of digitizing systems, line graphers, contouring algorithms and network analysis in cartographic modeling.

683. Advanced Geographic Information Systems (3) II
Prerequisite: Geography 484.
Geographic information systems in geographic problem solving involving data structures, project designs, and vector graphics.

683L. Geographic Information Systems Laboratory
(1 or 2)
Three to six hours of laboratory.
Prerequisite: Concurrent registration in Geography 683.
Data processing and analysis in geographic information systems. Applications of overlay functions in spatial analysis.

685. Advanced Quantitative Methods in Geography (3)
Prerequisite: Geography 585.
Statistical techniques and quantitative models applied to spatial problems. Multiple regression, discriminant analysis, factor analysis and spatial modeling.

688. Advanced Remote Sensing (3) II
Prerequisite: Geography 588.
Sensor systems, image interpretation and geographic applications in thermal infrared and microwave remote sensing. Principles of digital image processing.

688L. Advanced Remote Sensing Laboratory
(1 or 2)
Two to four hours of laboratory.
Prerequisite: Concurrent registration in Geography 688.
Processing and analysis of remotely sensed data. Laboratory training in sensor systems and digital image processing methods including thermal infrared and microwave data analysis.

689. Advanced Field Research
(1-3) Cr/NC I, II
Prerequisite: Graduate standing.
Advanced techniques in field research and reporting. May be repeated with new content. Maximum credit three units applicable to a master's degree.

690. Teaching of Geography (1) I, II
Two hours of activity.
Prerequisite: Graduate standing. Required of all graduate teaching assistants. Teaching methods in geography. Use of specialized equipment and facilities.

696. Advanced Special Topics in Geography (3)
Prerequisite: Consent of instructor.
Advanced special topics in geography. See Class Schedule for specific content. May be repeated with new content. Maximum combined credit of six units of 596 and 696 applicable to a master's degree.

700. Seminar in Geographic Research Design (3)
Prerequisite: Graduate standing.
Definition of spatial problems, hypothesis formulation and testing, selection of appropriate methodology. Development of research proposals, conduct of research, written and oral presentations. (Formerly numbered Geography 660.)

701. Seminar in Development of Geographic Thought (3)
Prerequisite: Graduate standing.
Evolution of concepts concerning the nature, scope, theories and methodologies of geography. (Formerly numbered Geography 610.)

710. Seminar in Physical Geography (3) I, II
Prerequisite: Six units of upper division or graduate level courses in physical geography.
Intensive study of an aspect of physical geography. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

720. Seminar in Regional Geography (3)
Prerequisite: Six units of upper division or graduate level courses in the topical area under consideration.
Intensive study of a spatial aspect of regional geography. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

730. Seminar in Human Geography (3)
Prerequisite: Six units of upper division or graduate level courses in human geography.
Intensive study of a spatial aspect of human geography. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

750. Seminar in Urban Geography (3)
Prerequisite: Six units of upper division or graduate level courses in urban geography.
Intensive study of a spatial aspect of urban geography. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree. (Formerly numbered Geography 654.)

760. Seminar in Behavioral and Social Geography (3) II
Prerequisite: Six units of upper division or graduate level courses in behavioral or social geography.
Intensive study of a spatial aspect of behavioral or social geography. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

765. Seminar in Environmental and Resource Conservation (3)
Prerequisites: Geography 670 and six units of upper division or graduate level courses in environmental or resource conservation. Natural and environmental resource conservation. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree. (Formerly numbered Geography 671.)

780. Seminar in Techniques of Spatial Analysis (3) II
Prerequisite: Six units of upper division or graduate level courses in spatial analytic techniques. A specific spatial analytical technique, such as image processing, remote sensing, geographic information systems, or quantitative methods. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

796. Research (1-3) Cr/NC/SP
Research in one of the fields of geography. Maximum credit six units applicable to a master's degree.

797. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff, to be arranged with department head and instructor. Individual study. Maximum credit six units applicable to a master's degree.

799A. Thesis (3) Cr/NC/SP
Prerequisites: An officially appointed thesis committee and advancement to candidacy. Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university, also student must be registered in the course when the completed thesis is granted final approval.

890. Independent Study for Doctoral Examination
(1-9) I, II, S
Prerequisite: Consent of instructor or graduate advisor. Tutoring with student's major professor in preparation for qualifying examinations. No unit credit allowed toward advanced degree. Maximum credit nine units.

897. Doctoral Research (1-6) I, II, S
Prerequisite: Admission to the doctoral program. Independent investigation in the general field of the dissertation. A written proposal must be approved by the joint doctoral advisory committee. Maximum credit six units applicable to a doctoral degree.

899. Doctoral Dissertation (1-6) I, II, S
Prerequisites: Advancement to candidacy and an officially constituted dissertation committee. Preparation of the dissertation for the doctoral degree. Enrollment is required during the term in which the dissertation is approved. No unit credit allowed toward advanced degree.
In the College of Sciences

Steven M. Day, PhD., Professor of Geological Sciences, Chair of Department
J. Philip Kern, Ph.D., Professor of Geological Sciences, Graduate Adviser
Gary H. Girty, PhD., Professor of Geological Sciences
Monte Marshall, Ph.D., Professor of Geological Sciences
Victor C. Camp, PhD., Geological Sciences (Graduate Adviser)
Kathryn Glenn, Geology (Adjunct Faculty)
Kathryn W. Thorbjornsen, Ph.D., Assistant Professor of Geological Sciences
Peterson, Ph.D., Professor of Geological Sciences
Roquemore, Ph.D., Geological Sciences
Kimbrough, PhD., Associate Professor of Geological Sciences
Abbott, PhD., Professor of Geological Sciences

The Rollin and Caroline Eckis Chair in Seismology

A gift from Rollin and Caroline Eckis, combined with matching funds from the Atlantic Richfield Company, and contributions from SDSU faculty and staff, established The Rollin and Caroline Eckis endowment to support the Rollin and Caroline Eckis Chair in Richfield Seismology. The Rollin and Caroline Eckis Chair in Seismology, held by Dr. Steven M. Day, supports research on the mechanics of earthquakes and earthquake hazards.

Graduate teaching assistantships in geology are available to a limited number of qualified students. Application blanks and additional information may be secured from the graduate adviser of the department.

General Information

The Department of Geological Sciences, in the College of Sciences, offers graduate study leading to the Master of Science degree in geological sciences. The program emphasizes research and an advanced set of courses. Faculty research activities comprise a broad spectrum of expertise, including both theoretical and applied interests. Opportunities exist for integrated field and laboratory research. The department is equipped to support research in geophysics, geochemical, petrological and geological oceanography and geochemistry as well as the classic areas of mineralogy, petrology, structural geology, stratigraphy and palynology. Laboratories devoted to seismology, isotopes, geo time analysis, soils, paleomagnetism, and whole rock analyses, are just a few additional resources that support the graduate research program. Cooperation with Mexican scientists and institutions facilitates research at an international level.

The San Diego area enjoys a mild climate which permits year-round field activity. An interesting and diverse geologic environment provides many opportunities for research in the local area. Many graduate students are supported in their work by grants and contracts from government and industry.

Admission to Graduate Study

All students must satisfy the general requirements for admission to classified graduate standing as described in Part Two of this bulletin. In addition, the following requirements in order to achieve classified standing and enroll in graduate courses:

1. Have preparation in geological sciences, mathematics, chemistry, and physics at least equivalent to the minimum required for the bachelor's degree in geological sciences at San Diego State University. Undergraduate geology courses should be at a level equal to 2.5, with a 2.75 in the lower 60 units. Students with degrees in majors other than geological sciences may be admitted with postbaccalaureate standing while deficiencies are being remedied.

2. Have successfully completed all courses listed at above.

3. Have a minimum GRE General Test combined verbal and quantitative score of 1000, with no less than 450 in each area.

4. Have a minimum grade point average of 3.0 in any courses taken as a postbaccalaureate student at San Diego State University.

5. Have two letters of reference submitted by individuals familiar with applicants' professional background. Letters should be sent to the graduate adviser, Department of Geological Sciences.

All student applications are evaluated competitively and in fixed numerical standards automatically qualify or disqualify student for graduate study in the Department of Geological Sciences.

Specific Requirements for the Master of Science Degree

Advanced to Candidacy

All students must satisfy the general requirements for advancement to candidacy as stated in Part Two of this bulletin.

Upper Division Courses

Endowment classes and earn at least a 3.0 grade point average and complete any remaining qualifications for graduate study (e.g. GRE scores).

502. Geography of South America (3 I, Prerequisite: Geology 300. A regional analysis of North American geology, its structural, stratigraphic, and tectonic patterns and hypotheses concerning their origin and evolution.

503. Photogeology (3 II, Prerequisites: Geology 300 and 314. Geologic interpretation of aerial photographs, elementary principles of photogeology and stereomaps. Laboratory exercises with aeronautical photographs.

516. Micropaleontology (3 II, Prerequisites: Geology 300 and 515.מיתר Hàng discriminate invertebrate microfossils, and biologic significance of fossil testaceans.

520. Ore Deposits (3 I, Prerequisites: Geology 300 and 515. Geologic occurrence of mineral deposits and the application of geologic principles in exploration and production.

524. Optical Mineralogy (3 II, Prerequisites: Geology 300 and 515. Theory and use of the polarizing microscope for determining optical properties of minerals as an aid in their identification.

525. Petrography (3 II, Prerequisites: Geology 300 and 515. Petrography of the rocks of the San Diego area and their classification.

526. Sedimentology (3 II, Prerequisites: Geology 300 and 515. Origin, description, and identification of sedimentary rocks and structures.


530. Geochemistry (2 II, Prerequisites: Geology 300 and 515. Equations and principles of geochemistry.

Geological Sciences


508. Advanced Field Geology (4 I, Prerequisites: Geology 105 and 224. The first and last five hours of field or laboratory work. Either spring or summer session can be enrolled in during the spring semester.

509. Petroleum Geology (3 I, Prerequisites: Geology 300 and 515. Geologic occurrence of petroleum and the application of geologic principles in exploration and production.

Additional Information

NOTE: Some students with bachelor's degrees in geological sciences may be admitted with postbaccalaureate standing for one semester only during which time they must take senior-level courses and earn at least a 3.0 grade point average and complete any remaining qualifications for graduate study (e.g. GRE scores).


508. Advanced Field Geology (4 I, Prerequisites: Geology 105 and 224. The first and last five hours of field or laboratory work. Either spring or summer session can be enrolled in during the spring semester.

509. Petroleum Geology (3 I, Prerequisites: Geology 300 and 515. Geologic occurrence of petroleum and the application of geologic principles in exploration and production.

Additional Information

NOTE: Some students with bachelor's degrees in geological sciences may be admitted with postbaccalaureate standing for one semester only during which time they must take senior-level courses and earn at least a 3.0 grade point average and complete any remaining qualifications for graduate study (e.g. GRE scores).
530L. Geochemistry Laboratory (1) L, II
Prerequisite: Consent or concurrent registration in Geological Sciences 530.
Laboratory methods of analysis for determination of elemental concentrations in waters, sediments and rocks, as well as x-ray diffraction methods for mineralogy.

533. Geochemical Analysis (3)
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 330, Mathematics 252, Physics 197 A, B, or 180B, and Chemistry 116 A, B.
Analytical and digital data collection, processing, modeling and error computation.

540. Marine Geology (3) I
Prerequisites: Geological Sciences 105, and either Geological Sciences 224, 314, 502, or 506.
Plate tectonic origin and history of the ocean basins. Formation and distribution of sediments in response to biological, chemical, and geologic processes.

545. Descriptive Physical Oceanography (3) I
Prerequisites: Mathematics 121 and 122, or 150, or 156; Physics 180A or 195.
Physical environment of oceans including heat, water, and salt budgets, physical properties of sea water, sea ice, air-sea relationships, effects of light and sound, distribution of temperature, salinity, density and temperature, and deep circulation, warming formation, instruments and methods of study.

548. Coastal and Estuarine Physical Oceanography (3) II
Prerequisites: Mathematics 121 and 122, or 150, or 156; Physics 180A or 195.
Physical processes of marine coastal areas and estuaries. Includes longshore currents, rip currents, real waves in shallow water, wave refractions, sediment transport, forces and dynamics of estuarine circulations and tides.

550. Engineering Geology (3) II
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 305.
Relationships between geologic processes and works of human activity. Themes include soil mechanics, ground water flow, slope stability, sediment, and groundwater, and evaluation of geologic materials with respect to dam sites, tunnel alignment, and building foundations.

551. Hydrogeology (3) I
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 105 and Mathematics 150 or 156.
The theory of ground water flow. Exploration for and development of the ground water resource. Aquifer tests, water levels, and water resource management. Occurrence of water in alluvium, sedimentary, volcanic, and hydrothermal terranes.

560. Earthquake Seismology (3)
Two lectures and three hours of laboratory.
Prerequisites: Mathematics 252, Physics 197. Recommended: Mathematics 342A.
Theoretical aspects of wave excitation, propagation, and recording. This course includes both laboratory and field methods. Application to tectonics and earthquake hazard analysis.

596. Advanced Topics in Geology (1-4)
Prerequisite: Consent of instructor.
Advanced special topics in the geological sciences. See Class Schedule for specific content. Limit of nine units of any combination of 296, 496, 596 courses applicable to a bachelor's degree. Maximum combined credit six units of 596 and 696 applicable to a master's degree.

600. Seminar (1-3)
Refer to Class Schedule for lecture/laboratory format.
Prerequisite: Consent of instructor.
An intensive study in advanced geology. May be repeated with new content. Topic to be announced in the Class Schedule. Maximum combined credit six units of 596 and 696 applicable to a 30-unit master's degree.

601. Investigations in Earth Science (3)
Prerequisite: Junior or senior standing with B.S. or B.A. in geology or equivalent.
Review of major geologic concepts and processes. Relationship of research to advances in the understanding of modern earth processes and the geologic history of the earth.

609. Igneous Petrology (3)
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 525.
Investigation of problems in igneous petrology, using petrographic, geochemical, and experimental methods.

611. Metamorphic Petrology (3)
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 525.
Investigation of problems in metamorphic petrology using petrographic, geochemical, and experimental methods.

612. Carbonate Depositional Systems (3)
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 507 and 524.
Nature of carbonate deposition in marine environments. Examination of thin sections, hand samples, and outcrops. Literature examples of modern and ancient carbonate deposition. Mandatory field trip.

615. Geology of Clays (3)
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 526 or 530.
Systematic mineralogy and clay types and routine methods of identification. Interpretation of the clay mineralogy of modern and ancient depositional environments.

620. Biostatigraphy (3)
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 507.
Development of concepts and practices in stratigraphic and paleontologic interpretation. Emphasis on the interpretation of fossil assemblages and biostratigraphic and geochronologic implications.

625. Paleoecology (3)
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 506 and Biology 354.
Problems and methods in the study of relationships between fossil organisms and their environment. Emphasis on paleoenvironment, paleoclimate, and biologic relationships among fossil organisms.

629. Seminar: Advanced Studies in Stratigraphy (3)
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 501.
Recent stratigraphic patterns in North America and their tectonic implications.

630. Selected Topics in Geophysics (3)
Prerequisite: Consent of instructor.
Research topics in seismic, gravity, magnetic, electrical, and electromagnetic methods. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

633. Quaternary Geology (3)
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 314.
Quaternary climate, geochronometric dating and soil stratigraphy.

635. Petrology of Terrigenous Rocks (3)
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 350.
This section and hand specimen description and classification of sandstones, conglomerates, and mudrocks. Emphasis on mineralogy, provenance, diagenesis, and paleogeographic reconstructions.

640. Geotectonics (3)
Prerequisite: Geological Sciences 305 and 526.
A consideration of topics on continental genesis and evolution, orogeny, plateau tectonics, and a survey of classic geologic groupings or plate tectonics.

645. Advanced Structural Geology (3)
Prerequisite: Geological Sciences 305.
Research topics in advanced structural geology.

651. Numerical Modeling of Ground-Water Flow (3)
Prerequisite: Consent of instructor.
Finite difference approximations of ground water and mass transport equations and the relationships to contaminant delineation, modeling and characterization of aquifer heterogeneities. Computer-aided examples and field tests from numerical models to analyze ground water hydrologic problems.

653. Ground Water Aquifer Testing (3)
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 501.
Theory and practice of conducting and analyzing constant rate aquifer tests, step-drawdown tests, and slug injection tests. Analysis of results for confined, unconfined, leaky-confined, and fractured aquifers.

655. Paleomagnetism and Plate Tectonics (3)
Prerequisites: Geological Sciences 100 and Physics 158B or 196.
Application of paleomagnetism to origin and current models of plate tectonics, estimating paleolatitude, magnetostratigraphy, and structural deformation. Review of rock magnetism, magnetic mineralogy, and the geomagnetic field.

660. Isotope Geology (3)
Two lectures and three hours of laboratory.
A survey of isotopic and geochronologic topics with individual projects in isotopic analysis.

669. Terrigenous Depositional Systems (3)
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 506 and 507 or 526.
Analysis of sedimentary structures, facies relationships, and geometries of sedimentary rock bodies to achieve recognition and understanding of ancient depositional environments and geologic history.

675. Groundwater Geochemistry (3)
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 520, 530, and 551.
Processes affecting organic solute solubility and deposition in groundwater. Applications to radioactive and metal contamination.

676. Solute Transport in Groundwater (3)
Prerequisite: Geological Sciences 551.
Theory of solute transport in groundwater. Applications to contaminant delineation, modeling and characterization of aquifer heterogeneities. Case studies of tracer tests and contaminant plumes. (Formerly numbered Geological Sciences 675B.)

677. Environmental Fate of Organic Contaminants (3)
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 530 and 530L, or chemistry background.
Physical and chemical properties and processes affecting distribution of organic contaminants in the environment. Focus on subsurface sites with applications to surface waters.

680. Sedimentary Geochemistry (3)
Two lectures and three hours of laboratory.
Prerequisite: Geological Sciences 530.
Topics in low temperature geochemistry, in particular carbonates.

685. Genesis of Ore Deposits (3)
Two lectures and three hours of laboratory.
Prerequisites: Geological Sciences 520, 525, and Geological Sciences 530 or four units of physical chemistry.
Application of mineralogy, isotopic geochemistry, and chemistry to an understanding of the origin of ore deposits.

797. Research (1-3) Cr/NC/SP
Prerequisite: Consent of the department.
Supervised research in an area of geology. Maximum credit six units applicable to a master's degree.
Prerequisites: An officially appointed thesis committee and advancement to candidacy.

Preparation of a thesis for the master’s degree.

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.

Faculty

Edith J. Borkov, Ph.D., Associate Professor of French, Acting Chair of Department
Erich W. Skwara, Ph.D., Professor of German
Julian H. Wulbern, Ph.D., Professor of German
Mary M. Wauchope, Ph.D., Assistant Professor of German

General Information

The Department of German and Russian Languages and Literatures, in the College of Arts and Letters, offers advanced coursework in German. Graduate courses in German may be used to fulfill requirements for advanced degrees in other departments with the approval of the student’s graduate adviser.

UPPER DIVISION COURSES

501. Translation Workshop (3) Prerequisites: German 301, 302, and 310. Workshop in translation of literary texts from German to English and English to German.

505. Applied German Linguistics (3) Prerequisites: German 301 and 302. Linguistic study of modern German; integration of modern linguistic theory with the language classroom.

510. German Phonetics (3) Prerequisites: German 200A; 200B or 200C; 211. Sounds and intonation of German.

545. German Literature of the Eighteenth Century (3) Prerequisite: German 310. Reading and discussion of representative works of significant authors and movements of the eighteenth century.

555. German Literature of the Nineteenth Century (3) Prerequisite: German 310. Reading and discussion of representative works of significant authors and movements of the nineteenth century.

561. German Literature of the Twentieth Century (3) Prerequisite: German 310. Reading and discussion of representative works of significant authors and movements of the twentieth century.

GRADUATE COURSES

596. Topics in German Studies (3) Prerequisite: German 310 (for literary topics) or 505 (for linguistic topics). Proof of completion of prerequisites required: Grade report or copy of transcript. Topics in German language, literature, or linguistics. May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of 596, 696, 596 courses applicable to a bachelor’s degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master’s degree.

696. Topics in German Studies (1-3) Prerequisite: Eighteen upper division units in German. Intensive study in specific areas of German. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master’s degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master’s degree.

794. Thesis (3) Cr/NC/SP Prerequisite: Eighteen upper division units in German and consent of staff; to be arranged with department chair and instructor. Individual study. Maximum credit six units applicable to a master’s degree.

799A. Thesis (3) Cr/NC/SP Prerequisite: An officially appointed thesis committee and advancement to candidacy. Preparation of a thesis for the master’s degree.

799B. Thesis Extension (0) Cr/NC Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP. Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
Health Science
In the College of Health and Human Services

Faculty
Karen L. Soren, Ed.D., M.P.H., Professor of Health Science, Chair of Department
Stephen J. Bender, H.S.D., M.P.H., Professor of Health Science
Catherine J. Adams-Kaplun, Ph.D., Associate Professor of Health Science
Warren D. Bosla, Ed.D., Associate Professor of Health Science

Assistantships
Graduate teaching assistantships and graduate non-teaching assistantships in health science are available to a limited number of qualified students. Application blanks and additional information may be secured from the chair of the department.

General Information
The Department of Health Science, in the College of Health and Human Services, offers advanced coursework in health science. Graduate courses in health science may be used to fulfill requirements for advanced degrees in other departments with the approval of the student's graduate adviser.

GRADUATE COURSE
798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department special study adviser and instructor. Individual study. Maximum credit six units applicable to a master's degree.

History
In the College of Arts and Letters

Office: Adams Humanities 4210
Telephone: (619) 594-5262

Faculty
David V. DuFau, Ph.D., Associate Professor of History, Chair of Department
Lawrence Baron, Ph.D., The Nasatir Professor of Modern Jewish History
William F. Chenk, Ph.D., Professor of History
Ruch Chiu, Ph.D., Professor of History
Alan D. Hock, Ph.D., Professor of History
Thomas R. Cox, Ph.D., Professor of History
Roger L. Currell, Ph.D., Professor of History
Thomas M. Davis, Jr., Ph.D., Professor of History
Rose E. Dunn, Ph.D., Professor of History (Graduate Adviser)
Charles D. Hamms, Ph.D., Professor of History and Classics
Walter Heinrichs, Ph.D., Dean of European and American Foreign Relations
Lorn M. Haman, Ph.D., Professor of History
Oskar Hofstadter, Ph.D., Professor of History
Howard I. Kaufer, Ph.D., Professor of History
Harry C. Mordan, Ph.D., Professor of History
Albert C. O'Briam, Ph.D., Professor of History
Richard H. Peterson, Ph.D., Professor of History
Roy T. Shinn, Jr., Ph.D., Professor of History
Raymond G. Stahl, Ph.D., Professor of History
Richard W. Sapper, Ph.D., Professor of History
Francis N. Stites, Ph.D., Professor of History
James E. Stoddard, Ph.D., Professor of History
Paul J. Vanderwood, Ph.D., Professor of History
Peter W. Vartanian, Ph.D., Professor of History
Kirsten P. Vrettos, Ph.D., Professor of History
Frederick W. Vanport, Ph.D., Associate Professor of History
Francis M. Bartholomew Jr., Ph.D., Associate Professor of History
Stephen A. Colston, Ph.D., Associate Professor of History
Barbara L. L. Fass, Ph.D., Associate Professor of History
Philip F. Flecken, Ph.D., Associate Professor of History
Joe Kemp, Ph.D., Associate Professor of History
Rinaldo A. Osler, Ph.D., Associate Professor of History
Leslie Roberts, Ph.D., Associate Professor of History
Elizabeth A. Coyle, Ph.D., Assistant Professor of History
Ben Kist, Ph.D., Assistant Professor of History
The Nasatir Professor of Modern Jewish History
The Nasatir Professorship was established in honor of the late Professor Abraham Nasatir, a specialist in European colonial history. The professorship is open to a university, toward a higher degree or credential. The selection is made by the Department of History with the approval of the committee on scholarships.

Master of Arts Degree in History
The Department of History, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in history. The Master of Arts degree is designed to provide advanced training for (1) students who plan to terminate their graduate studies at the master's level, and (2) those who anticipate further study leading to a doctoral degree in history or related fields. The San Diego Historical Society and the San Diego Public Library contain many manuscript collections pertinent to local history. Located north of San Diego is the National Archives and Records Administration at Laguna Niguel.

Admission to Graduate Study
All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin. As an additional requirement, the student must have completed a bachelor's degree with an undergraduate major in history or have taken enough units in history and related fields to demonstrate sufficient preparation for the program. The graduate average required for admission to the M.A. program in history is 2.75 for the last 60 units of the student's undergraduate work and 3.0 in the major (not necessarily the same). A satisfactory score on the GRE General Test (verbal), plus a satisfactory score on the GRE General Test (quantitative), is required for admission. Candidates must also submit with their applications a statement of purpose of approximately 400 words.

Office: Adams Humanities 4210
Telephone: (619) 594-5262
History

Conditional admission is possible pending the taking of the GRE General Test during the first semester of enrollment and the attainment of a satisfactory score.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy, as stated in Part Two of this bulletin, and the special requirements of the department. All students should consult the graduate adviser. Students may not be advanced to candidacy until they have met the foreign language requirement or an acceptable substitute.

Specific Requirements for the Master of Arts Degree in History

(Major Code: 22051)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete a graduate program of 30 units which includes a major consisting of at least 24 units in history. Courses listed below are acceptable on the master's degree programs, at least 18 units of which must be in 600- and 700-numbered courses. Students may elect either Plan A, the normal option, requiring a thesis, or, in special circumstances and with the prior approval of the graduate adviser and the student's major professor, Plan B, requiring a comprehensive examination in two or more major and minor fields of history chosen in consultation with the graduate adviser. Required courses are History 601, six units selected from History 620, 630, 640, 650, or 680, three units selected from History 625, 635, 655, History 797, and History 799A for those students electing Plan A. Students approved for Plan B shall meet the same course requirements as those enrolling in Plan A, except that they must enroll in History 796 three units and one additional unit history course numbered from 620 to 690 in lieu of History 797 and 799A.

Candidates for this degree must demonstrate knowledge of either a relevant foreign language or an approved substitute in computer language or statistical methods. Other substitutions may be made when the skills involved are directly related to the student's research interests. Course selection and programs must be approved by the graduate adviser prior to the student's registration.

Courses Acceptable on Master's Degree Programs in History

Field (a). Ancient, Medieval and Early Modern Europe

UPPER DIVISION COURSES


503A-503B. Europe in the Middle Ages (3-3) European social, cultural, and political developments from the fall of Rome to the Renaissance.

506. The Renaissance (3) The intellectual, artistic, and social transformation of Europe from the fourteenth through the early sixteenth century.

507. The Reformation (3) Continental Europe in the sixteenth century, split of Christendom, the religious wars, national rivalries, the expansion of Europe and the beginnings of the scientific revolution.

513A. Early Scandinavia (3) The formation and development of the Scandinavian kingdoms from the Viking Age to the early Iron Age. Semester (b). Modern Europe

UPPER DIVISION COURSES

509. Europe in the Seventeenth Century (3) Continental Europe from 1600 to the death of Louis XIV. Shift of power from southern and central Europe to northern and Atlantic countries, the growth of the state, and the expansion of commerce.

510. Europe's Age of Enlightenment (3) Prerequisite: Upper division standing. Selected problems in the social, cultural, and intellectual history of the eighteenth century. Enrollment limited. (Formerly numbered History 510A-510B)

511A. The Age of European Revolution (3) Major economic, social, intellectual, and political changes in Europe from 1789 to 1848. Effects of French Revolution, Industrial Revolution, and Romanticism on European history.

511B. The Age of European Revolution in Europe (3) Economic, social, and intellectual developments in Europe from 1848 to 1890 that contributed to the age of nation building

512A. The Great War: A Turning Point in European History (3) Causes and forces that shaped Europe in period prior to and during World War I.

512B. The Age of Dictators and Contemporary Europe (3) Europe in the age of dictatorship, world war, decline, and recovery.

513B. Modern Scandinavia (3) Major political, social, and economic developments in Scandinavia from 1814 to the present, with emphasis on contemporary society.

514A. The French Revolution and Napoleon I (3) Prerequisites: History 105 and 106. France on the eve of the Revolution; the Great Revolution; 1789-1799, the Napoleonic Era.

514B. Modern France (3) Prerequisites: History 105 and 106. The development of France since 1815.

517A-517B. Modern Germany (3-3) Political, social, and economic history of Germany. Semester I: From the Reformation to the outbreak of World War I. Semester II: 1914 to the end of World War II.

518A-518B. Russia and the Soviet Union (3-3) Semester I: Political, social, and economic development of Russia in Europe and Asia to no more than the close of the nineteenth century. Semester II: Emphasis on the twentieth century.

519. Modern Italy (3) The development of Italy from 1815 to the present.


523A-523B. Modern Britain (3-3) Semester I: The development of constitutional and social patterns from the Glorious Revolution to the French Revolution, emphasizing the immediate background to the American Revolution. Semester II: A history of the nineteenth century to the present, including the rise of Parliamentary democracy, imperialism and the Victorian age, and political thought from the Utilitarians to the Fabians.

524. History of Ireland (3) I, II Social and cultural history of Ireland from earliest historical times to the present, including formation of a national character, literature from the Saga Cycles to the modern literary renaissance, and various movements to achieve independence from Cromwell through World War I.

525. Idees et Attitudes of Modern Europe (3) Selected problems in European intellectual history beginning with the seventeenth century, with attention to social and political thought. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

527. Diplomatic History of Modern Europe (3) Diplomatic relations of the various European states with European and non-European powers. The diplomatic backgrounds and results of World Wars I and II. (Formerly numbered History 527A-527B)

528. Social History of Modern Europe (3) Historical survey of European society emphasizing changes in the family, housing, diet, the standard of living, urbanism, crime, migration, and literature from the end of the Industrial Revolution.

Field (c). United States

UPPER DIVISION COURSES

530. Colonial America (3) Settlement and development of the English colonies in North America through 1763. Contact of cultures, social structure, labor systems, religion, popular values, internecine conflict, and political control.

531. The American Revolution (3) Explores how "revolutionary" the American Revolution was. Causes, dynamics, and results of the American Revolution, from imperial reform and colonial resistance after 1760, through referendum of the Federal Constitution of 1787. This course satisfies the graduation requirement in United States Constitution.

533A. The Jacksonian Era (3) Territorial expansion, democratic politics, revolution, and the dynamic times.

533B. Civil War and Reconstruction (3) The Civil War and Reconstruction, emphasizing political parties and the role of Lincoln.

534. The Rise of Modern America, 1868-1900 (3) Economic, social, political, and intellectual developments from the end of the Civil War to the close of the nineteenth century.

535. The Age of Reform (3) The United States from the 1890s to the Crash of 1929.

535B. The Age of Roosevelt (3) The United States in Depression, War, and Cold War.

536. The United States Since World War II (3) I, II, S Major foreign and domestic issues confronting the United States, and the government policies and popular movements generated in response.

537A-537B. The Westward Movement (3-3) The American frontier: Expansion, exploration, settlement and the shaping of the new states. Emphasis on American problems of defense, communications, finance, development of cultural institutions. Causes, effects and results of frontier expansion from the American perspective. 537A: Frontier movement from Atlantic to Mississippi River. 537B: The trans-Mississippi west. This year course satisfies the graduation requirement in American History.

538. The American Southeast (3) Development of the Southeast from the Spanish colonial period to the present. Emphasis on social, economic, and cultural forces which have shaped the character of the border states. (Formerly numbered History 538A-538B)

540. Environmental History of the United States (3) The relationship of American Indians to their environment from colonial times to the present with emphasis on how attitudes and values have affected personal behavior and public policy toward the land.

541A-541B. California (3-3) Political institutions, social, cultural, economic and intellectual development: international background. Semester I: To 1850. Spanish and Mexican heritage. Semester II: 1850 to the present. History 541A satisfies the graduation requirement in California State and Local Government.

543. American Involvement in Vietnam 1941-75 (3) Political, social, cultural, economic development: Upper division standing and six units credit. Causes and costs of America's longest war: the war's beginning, United States' involvement, role of media and antwwar movement. United States withdrawal, impact of war on Southeast Asia and the United States.

544-544B. American Foreign Policy (3-3) Development of American foreign policy from Colonial Period to the First War World. 544B: Developments from First to Second World War. This year course satisfies the graduation requirement in American History.

545A-545B. Constitutional History of the United States

States

Development of American constitutional ideals and institutions. 545A: Seventeenth century to 1861. 545B: Since 1861. This year course satisfies the graduation requirement in American History or California State and Local Government.

546A-546B. Development of American Capitalism

The changes in agriculture, industry, labor, banking, transportation and communication, and the impact on economic and social life, and the prominent personalities who made the changes possible.

547A-547B. Intellectual History of the American People

American thought since colonial times, focusing on ideas of individuals, groups and movements in politics, religion, and society. 547A: To 1865. 547B: Since 1865. This year course satisfies the graduation requirement in American Institutions.
548A-548B. Social History of the United States (3-3) Historical survey of American society emphasizing demographic trends, the changing role of the family, social structure, immigration patterns, religious movements, developments in education, the economy, and entertainment.

549. History of San Diego (3) Prerequisites: Upper division standing and six units in history. Development of San Diego from European contact to the present.

550. History of Latin America (3) UPPER DIVISION COURSES


552. Brazil (3) Survey of history of Brazil from Portuguese backgrounds to present. Brazil as a tropical society. Recommended for students minoring in Portuguese.

553. Caribbean Island Nations (3) History of island nations of Caribbean with emphasis on Cuba, Haiti, and Dominican Republic in the nineteenth and twentieth centuries.

554. The Andean Republics of South America (3) Historical development of Chile, Bolivia, Peru and Ecuador with emphasis on race relations and social revolutions in the twentieth century.

555. Modernization and Urbanization in Latin America (3) Historical treatment of the phenomenon of urbanization and modernization in Latin America with attention to pre-Columbian and Iberian traditions and influence of education, church, military, and foreign investment.

556. Guerrilla Movements in Latin America (3) History of sociopolitical conditions which culminated in guerrilla movements in twentieth century Latin America. Use of guerrilla writings and films as well as recent Latin American films and U.S. Defense Department counterinsurgency training films.

557. History of Latin American Popular Culture and Social Thought (3) Examination of the ways Latin Americans have historically viewed their cultures and societies from the dual perspective of elites and the masses. Popular culture - the Latin American self-image reflected in family relations, folklore, myth, legend, popular music and art and mass expression.

558. Latin America in World Affairs (3) History of Latin America's political and economic relations with Europe, the Soviet Union, the United States, and the Third World.

559. Central America (3) Prerequisites: Upper division standing and six units in history. Historical development of the republics of Central America with emphasis on the twentieth century. Contemporary revolution, movements and role of United States in Central American affairs.

Field (d). Latin America UPPER DIVISION COURSES

561A-561B. Asia and the West (3-3) History of Asian-Western relations with emphasis on China and Japan. Semester I: Through the nineteenth century. Semester II: The twentieth century.

562. Civilization of India: The Great Traditions (3) From earliest times to the eighteenth century including Hindu, Buddhist, and Muslim contribution to Indian society, changing political ideas and institutions, and historic trends in art and literature.

563. Modern India and its Neighbors (3) British conquest and colonial policy, Hindu and Muslim nationalism, Gandhi's significance, and the emergence of independent India, Pakistan, and Bangladesh.

564A-564B. Southeast Asia (3-3) Semester I: Colonial cultures of Southeast Asian peoples and the influence of China, India, and Islam. Semester II: Southeast Asia in the modern world. Patterns of foreign stimulus and local response among the peoples of the area.

565. Revolution and Social Change in Asia (3) Comparative study of contemporary problems in Asia emphasizing how indigenous peoples responded to the challenges of nationalism, reform, revolution, modernization, and neo-colonialism. Topics include social structure, education, peasant movements, urbanization, search for cultural identity, and national integration.


569. Japanese Civilization (3) Japanese internal history and institutions during the period of indigenous development and Chinese influence including religions, philosophy, literature, and the arts.

570. Modern Japan (3) Japan's development as a modern state, particularly in the nineteenth and twentieth centuries.

Field (f). Africa and Middle East UPPER DIVISION COURSES

574. The Arab-Israeli Question, Past and Present (3) Arab-Israeli conflict through Palestine in perspective of Zionism. Arab nationalism, and Great Power relations from nineeenth century to present.

575. Race and Social Change in Africa (3) Emphasis on the development of African countries from colonialism to independence. Models of social change in Africa, including political and economic development.

576. Special Topics in African History (3) Special topics in African history. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

577. Africa: Themes and Issues (3) Past and present African issues: population, ethnicity, urbanization, social change, etc. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

578. History of Social Movements in Africa (3) Prerequisites: Six upper division units in African history. Major social movements in Africa: slavery, nationalism, and independence. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

Field (g). Topical Subjects UPPER DIVISION COURSES

580. Great Historians and Historical Literature (3) Prerequisites: History 100, 105, or 120. History of historical writing and works of major historians. Recommended for history and social science majors.

596. Selected Studies in History (1-4) Topics in various fields of history, such as biography, war, science, technology, urbanization, minority groups, immigration, and capitalism. See Class Schedule for specific content. Limit of six units of any combination of 496, 596, 598, 698 courses applicable to a bachelor's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit major.

GRADUATE COURSES

All graduate courses in the Department of History have a prerequisite of 12 units of upper division courses in history, or consent of the instructor.


620. Directed Reading in European History (3) Prerequisites: Six upper division units in European history. Selected readings in source materials and historical literature. In a designated area of European history. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

625. Seminar in European History (3) Prerequisites: Six upper division units in European history and History 601. Directed research on topics selected from a designated area of European history. Maximum credit six units applicable to a master's degree.

630. Directed Reading in United States History (3) Prerequisites: Six upper division units in United States history. Selected readings in source materials and historical literature. In a designated area of United States history. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

635. Seminar in United States History (3) Prerequisites: Six upper division units in United States history. Directed research on topics selected from a designated area of United States history. Maximum credit six units applicable to a master's degree.

640. Directed Reading in Latin American History (3) Prerequisites: Six upper division units in Latin American history. Selected readings in source materials and historical literature in a designated area of Latin American history. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

650. Directed Reading in Asian History (3) Prerequisites: Six upper division units in Asian history. Selected readings in source materials and historical literature in a designated area of Asian history. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

655. Seminar in Asian History (3) Prerequisites: Six upper division units in Asian history and History 601. Directed research on topics selected from a designated area of Asian history. Maximum credit six units applicable to a master's degree.

680. Directed Reading in Selected Topics (3) Prerequisite: Consent of the instructor.

- Selected readings in source materials and historical literature in various fields of history such as war, science, technology, urbanization, minority groups, immigration, and capitalism. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

795. Area Studies in History (1-3) Cr/NC Prerequisites: Advancement to candidacy. Preparation for the comprehensive examinations in the major and minor fields of history for those students taking the M.A. under Plan B. Maximum credit three units applicable to a master's degree.

797. Research (3) Cr/NC/SP Prerequisites: Advancement to candidacy and written approval of the History Department graduate adviser. Independent research in a specialized subject in history.

798. Special Study (1-3) Cr/NC/SP Prerequisites: Consent of staff; to be arranged with department chair and instructor. Individual study. Maximum credit six units applicable to a master's degree.

799A. Thesis (3) Cr/NC/SP Prerequisites: An officially appointed thesis committee and advancement to candidacy.

- Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC Prerequisites: Prior registration in Thesis 799A with an assigned grade symbol of SP. Preparation of a project or thesis for the master's degree.

- Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval.
Industrial Technology

In the College of Professional Studies and Fine Arts

OFFICE: Engineering 208
TELEPHONE: (619) 594-5813

Faculty
G. W. Bailey, Ed.D., Associate Professor of Industrial Technology, Coordinator of Department.
William D. Guenther, Ph.D., Professor of Industrial Technology.

General Information
The Department offers advanced coursework in industrial technology which may be used toward fulfilling advanced degree requirements in other departments with the approval of the student's graduate adviser.

Master of Arts Degree in Industrial and Technical Studies

No new students are being admitted to this program. For a listing of degree requirements refer to the 1991-92 Graduate Bulletin.

UPPER DIVISION COURSES

505. Facilities Planning (3) II
Prerequisites: Industrial Technology 121, 200, and 320.
Space considerations, flow of materials, materials handling, specifying process equipment, and overall planning of industrial facilities with regard to theoretical principles of CIM, FMA, and JIT.

517. Thermosetting Polymers and Composites (3) II
Prerequisites: Industrial Technology 115 and Chemistry 100 or higher.
Composition and selection of materials; evaluation of physical and mechanical properties; and product development and manufacturing. (Formerly numbered Industrial Arts 517.)

523. Technical Presentations in Computer-Assisted Drafting (3) II
Six hours of laboratory.
Prerequisite: Industrial Technology 320.
Advanced computer-assisted drafting applications in projection theory and analysis of presentation drawings for engineering and illustrations. Axonometric and perspective projection, rendering, and shading techniques in product design. (Formerly numbered Industrial Arts 523.)

533. Applied Metal Forming Operations (3) I
Six hours of laboratory.
Prerequisite: Industrial Technology 131.
Theory of conventional and high energy industrial forming processes augmented with laboratory forming experiences. (Formerly numbered Industrial Arts 533.)

542. Commercial/Industrial Photography (3) I
Six hours of laboratory.
Prerequisites: Industrial Technology 140 and upper-division standing.

Theory and laboratory techniques, composition and lighting with emphasis on large-format photography. Industrial applications, architecture, illustrative, advertising, portraiture, and commercial photography. (Formerly numbered Industrial Arts 542.)

553. Residential Building Construction (3)
Six hours of laboratory.
Prerequisite: Industrial Technology 351.
Residential building construction principles accompanying study of state and national building codes, foundation systems, framing techniques, and waterproofing applications. Estimating labor and material costs. (Formerly numbered Industrial Arts 553.)

563. Industrial Control Circuits (3) II
Six hours of laboratory.
Prerequisites: Industrial Technology 464 and Information and Decision Systems 180.
Analysis, theory, and application of electronic circuits used to interface digital computers to automated manufacturing equipment. Includes methods of feedback, ADAC, DAC, and sampling techniques. (Formerly numbered Industrial Arts 563.)

573. Power Systems Technology (3) II
Six hours of laboratory.
Prerequisite: Credit or concurrent registration in Industrial Technology 371.
Power systems and technological innovations in education and power-related industries. Emphasis on product development, testing, and reporting. (Formerly numbered Industrial Arts 573.)

583. Graphics Management and Marketing (3)
Six hours of laboratory.
Prerequisite recommended: Industrial Technology 381.
Printing business practices, publication, and brokerage guidelines, graphic management and organizational theory, computer-based bidding and estimating, and introduction to consumer packaging and development. (Formerly numbered Industrial Arts 583.)

596. Experimental Topics in Industrial Technology

(1 or 2)
Prerequisite: Consent of instructor.
Individual laboratory work on complex projects on an experimental basis. See Class Schedule for specific content. Limit of nine units of any combination of 596, 696 courses applicable to a bachelor's degree. Maximum credit of six units of 596 applicable to a bachelor's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree. (Formerly numbered Industrial Arts 596.)

GRADUATE COURSES

601. Research (3)
Prerequisite: Consent of instructor.
Research in specific industrial and technical areas, such as manufacturing processes, processes and quality assurance of industrial education curricula and programs. May be repeated with new content. Maximum credit six units applicable to a master's degree. (Formerly numbered Industrial Arts 601.)

602. Field Work in Industrial Technology (3)
Prerequisite: Consent of instructor.
Study of the principles of facilities requirements with emphasis on facilities planning processes and alternative plans in industrial and technical settings. (Formerly numbered Industrial Arts 790.)

722. Techniques of Technical Communication and Presentation (3)
Development, organization, application, and evaluation of appropriate instructional materials and technological innovations in education and industry. (Formerly numbered Industrial Arts 722.)

723. Evaluation Methods for Industrial and Technical Studies (3)
Principles, methods, and criteria of evaluation for measuring growth, achievement, performance, and quality systems in education and industry. Emphasis on accountability. (Formerly numbered Industrial Arts 723.)

724. Managing Industrial and Technical Studies Programs (3)
Principles, objectives, methods, and techniques employed in the administration and supervision of educational and industrial personnel. (Formerly numbered Industrial Arts 724.)

790. Research Methods in Industrial Technology (3)
Location, selection, and documentation of professional, scientific, and technical literature. Procedures of investigation, treatment, and analysis of data. Methods of reporting technical research. (Formerly numbered Industrial Arts 790.)

796. Field Work in Industrial Technology (3)
Prerequisite: Consent of instructor.
Study of the principles of facilities requirements with emphasis on facilities planning processes and alternative plans in industrial and technical settings. (Formerly numbered Industrial Arts 790.)

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of instructor and graduate adviser.
Individual study. Maximum credit six units applicable to a master's degree. (Formerly numbered Industrial Arts 798.)

799A. Thesis (3) Cr/NC/SP
Prerequisites. An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis in industrial and technical studies for the master's degree. (Formerly numbered Industrial Arts 799A.)

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university; also student must be registered in the course when the completed thesis is granted final approval. (Formerly numbered Industrial Arts 799B.)
Interdisciplinary Studies

General Information

When special needs and interests cannot be met adequately by any of the existing advanced degree programs, a student may propose a Master of Arts or Master of Science degree in Interdisciplinary Studies. This degree provides the unusually well qualified student an opportunity for highly individualized graduate study in colleges. The degree is administered by the Graduate Division and consists of coursework in two or more departments or programs.

The proposed program must be approved by the department chairs and deans concerned. It must not be substantially available in a current graduate program offered at this University, and it must have adequate focus and coherence in cognate disciplines. Prerequisite courses will be required to support the courses in the student's program of study.

A graduate supervisory committee and a field of study shall be chosen, subject to the approval of the Dean of the Graduate Division and Research, in consultation with the Student Affairs Committee of the Graduate Council. The supervisory committee shall consist of not less than three full-time faculty representative of the areas in which the student intends to pursue the degree. The graduate dean, or his designee, shall serve on the committee as an ex officio member.

Since the inception of this program in 1977, individual students have undertaken graduate programs in such subjects as paleobiology, folklore and mythology, molecular biology, museum studies, infant development, animal behavior, sports psychology, environmental resource management, environmental economics, primitive Christianity, gerontology, and learning interface design.

Admission to Graduate Study

In addition to satisfying the requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin, the student must (1) possess an appropriate academic background for the proposed program and have achieved an undergraduate grade point average of 3.0; and (2) complete the GRE General Test with a satisfactory score on the verbal and quantitative sections. Normally, students applying to the University for the first time are not admitted directly into the Interdisciplinary Studies program. Contact the Graduate Division and Research for further information.

Advancement to Candidacy

In addition to satisfying the general requirements of the University for advancement to candidacy, as stated in Part Two of this bulletin, the student must satisfy the special requirements for advancement defined by the supervisory committee in the official program of study. These requirements will include demonstrated proficiency in at least one appropriate research tool, ordinarily the reading knowledge of a foreign language.

Specific Requirements for the Master's Degree

(Major Code: 49993)

1. In addition to satisfying the requirements for classified graduate standing and the basic requirements for the master's degree, as described in Part Two of this bulletin, the student must complete a graduate program of at least 30 units of courses acceptable for advanced degree credit.

2. The official program of study must reflect careful and deliberate planning. The selection and level of courses will be based on the best standards and practices of the disciplines involved. Normally, no more than six units which have been taken prior to approval of the official program of study may apply on the degree.

3. In consultation with the supervisory committee, the student will determine the subject of the research for a thesis that will be completed as the culminating experience in partial fulfillment of the requirements for the degree. Satisfactory completion of the thesis will be determined by the supervisory committee.

General Procedures for the Program

1. A prospective applicant interested in being considered for the Interdisciplinary Studies program should complete and follow the instructions on the form, "Request for Permission to Pursue an Interdisciplinary Studies Master's Degree," which is available in the Graduate Division. The applicant must initially seek out a potential faculty adviser and two additional faculty members who have the expertise and interest in advising and supporting the applicant in the proposed program of study.

2. When the student's portion of the form has been completed, the major adviser selected, and other potential supervisory committee members contacted, an appointment with the assistant dean of the Graduate Division and Research should be arranged. Both the applicant and the proposed major adviser should be present at this meeting. Other proposed committee members are welcome to participate in these discussions.

3. Following this meeting and after making any modifications to the proposed program envisaging from it, the student must present for approval the "Request for Permission to Pursue an Interdisciplinary Studies Master's Degree" to the chairs of departments in which courses are being proposed and to the deans of colleges responsible for these academic units.

4. The student will then present the "Request," endorsed with appropriate departmental and college approvals, to the Graduate Division and Research, where it will be reviewed by the Student Affairs Committee of the Graduate Council. Upon the recommendation of that committee, the "Request" will be forwarded to the graduate dean, whose final endorsement will certify that the "Request" has been approved as an official program of study, that the supervisory committee has been formally appointed, and that the student has been granted classified graduate standing for the purpose of pursuing the special major.

5. Virtually all other requirements for this major are the same as those for other master's degree programs, as specified in this bulletin. Special questions should be directed to the appropriate graduate major adviser or the Graduate Division and Research.

GRADUATE COURSES

General Studies Courses

797. Research (1-3) Cr/NC/SP

Prerequisite: Advancement to candidacy.

Independent research in a specialized subject. Maximum six units applicable to a master's degree.

798. Special Study (1-3) Cr/NC/SP

Prerequisite: Consent of instructor.

Independent study. Maximum credit six units applicable to a master's degree.

799A. Thesis or Project (3) Cr/NC/SP

Prerequisite: An officially appointed thesis committee and advancement to candidacy.

Preparation of a project or thesis for the master's degree.

799B. Thesis or Project Extension (0) Cr/NC

Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.

Registration in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university, also student must be registered in the course when the completed thesis or project is granted final approval.

Graduate Courses in Interdisciplinary Studies

(Continued)
Latin American Studies
In the College of Arts and Letters

Faculty Committee for Latin American Studies

Thomas M. Davies Jr., Ph.D., Professor of History, Chair of Committee, Graduate Coordinator
Joseph W. Ball, Ph.D., Professor of Anthropology
Ernest M. Barreto, Ph.D., Professor of Spanish
Thomas E. Case, Ph.D., Professor of Spanish
Susana Castro (Castillo), Ph.D., Professor of Spanish
C. Ben Christensen, Ph.D., Professor of Spanish
Kathie M. Christensen, Ph.D., Professor of Communicative Disorders
Norris C. Clement, Ph.D., Professor of Economics
John M. Casper, Ph.D., Professor of History
Michael L. Davies, Ph.D., Professor of Spanish
Olivia M. Espin, Ph.D., Professor of Women’s Studies
Jenifer E. Ennis, Ph.D., Professor of Art
Barbara E. Fredrich, Ph.D., Professor of Geography
Gerald W. Grant, Ph.D., Professor of Journalism, Executive Assistant to the President
Brian E. Loveman, Ph.D., Professor of Political Science
Chocolate
designated a National Resource Center for Latin American Studies (one of only eleven in the nation) by the United States Department of Education. Emphasis in the program is placed on the central issue of “The Americas through warfare, Spanish American prose poetry in the United States, American relations, and the U.S.-Mexico border.”

Specific Requirements for the Master of Arts Degree

(Major Code: 03081)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the Master of Arts degree as described in Part Two of this bulletin, the student must complete at least 30 units of upper division and graduate coursework, including Latin American Studies 601, with not less than 24 units in courses of Latin American content selected from the following list below and distributed as follows:

<table>
<thead>
<tr>
<th>Units</th>
<th>Courses</th>
</tr>
</thead>
<tbody>
<tr>
<td>600- and 700-numbered</td>
<td>6 units</td>
</tr>
<tr>
<td>500- and 600-numbered</td>
<td>6 units</td>
</tr>
<tr>
<td>Department A</td>
<td>3 units</td>
</tr>
<tr>
<td>Department B</td>
<td>3 units</td>
</tr>
<tr>
<td>Department C</td>
<td>3 units</td>
</tr>
</tbody>
</table>

The total program shall include a minimum of 18 units in 600 and 700-numbered courses. Students may select either Plan A or Plan B in consultation with the graduate advisor. In addition to meeting the distribution requirements given above, students electing Plan A must complete the 799A (Thesis) course offered by the department for the 12-unit concentration (Department A). Students electing Plan B must pass a comprehensive written and oral examination in lieu of the thesis.

All programs will be approved by the Latin American Studies committee.

Master of Business Administration and Master of Latin American Studies Degrees

General Information

The College of Business Administration and the Center for Latin American Studies offer a three-year concurrent graduate program leading to a Master of Business Administration and a Master of Latin American Studies. The primary objective of the concurrent program is to offer preparation in the fields of business administration and Latin American studies for the purpose of providing the knowledge and skills necessary to promote and engage in business relationships within a Latin American historical, cultural, and linguistic milieu, in Latin America or in the United States.

For information, contact the Chair of the Latin American Studies Committee or the Associate Dean in the College of Business Administration.

Specific Requirements for the MBA/MA Degree

(Major Code: 49061)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master’s degree as described in Part Two of this bulletin, the student must complete an officially approved course of study of not less than 60 units as outlined below:

1. Complete each of the following core eleven courses for which an equivalent has not been satisfactorily completed.
   - SOW 310 Business Administration and Latin American Studies
   - SOW 210 Comparative Literature
   - HIST 640 Directed Reading in Latin American Studies
   - MGT 601 Management of Organizations
   - MKT 605 Marketing
   - MKT 671 Seminar in International Business Finance
   - MKT 723 Seminar in International Strategic Management
   - POL S 661 Seminar in the Political Systems of the Californias
   - RB 401 Research Methods
   - MG 401 Management of Organizations
   - RN 615 Financial Management I (3)

Since this program combines disparate disciplines, applicants are required to submit GMAT scores and should have substantial academic backgrounds in the humanities and social sciences. Applicants should also have a background in Spanish or Portuguese language and literature. It is expected that all students in the concurrent degree program will be full time, so that all requirements will be satisfied in an acceptable time period.

The remaining nine units will be selected from the following list of courses, with at least one from each of the following courses:

- 210 Spanish
- 211 American Studies
Courses Acceptable on Master's Degree Programs in Latin American Studies

**UPPER DIVISION COURSES**

**Latin American Studies Courses**

560. Latin America After World War II (3) (II)

Pre-requisites: Latin American Studies 101, History 115A, 115B, and either Political Science 566 or consent of the instructor.

Major socio-economic and political changes in Latin America since World War II and inter-American relations during the same period. Includes guest lecturers.

580. Special Topics (1-4)

Pre-requisite: Six upper division units in Latin American content courses.

Interdisciplinary study of selected Latin American topics. Credit will vary depending on the scope and nature of the topic. Whenever appropriate, the course will be taught by a team of instructors representing two or more disciplines. May be repeated with different content. See Class Schedule for specific content. Maximum credit eight units.

**Anthropology Courses**

526. Cultural Change and Processes (3)*

522. Urban Anthropology (3)*

582. Regional Anthropology (3)*

**Art Courses**

561. Art of Pre-Hispanic America (3)

596. Advanced Arts in Art and Art History (1-4)*

**Economics Courses**

565. U.S.-Mexico Economic Relations (3)

592. International Monetary Theory and Policy (3)

596. Experimental Topics (3)*

**Geography Courses**

596. Topics in Comparative Literature (3)

**Geography Course**

Advanced Topics in Geography (1-3)*

**History Courses**

541A. California (3)

551A-551B. Mexico (3-3)

552. Brazil (3)

553. Caribbean Island Nations (3)

554. The Andean Republics of South America (3)

555. Modernization and Urbanization in Latin America (3)

556. Guerra Movimientos in Latin America (3)

558. Latin America in World Affairs (3)

559. Central America (3)

640. Directed Reading in Latin American History (3)

795. Area Studies in History (3) Cr/NC***

**Political Science Courses**

566. Political Change in Latin America (3)

567. Political Systems of Latin America (3)

568. The Mexican Political System (3)

569. Seminar in Comparative Political Systems (3)*

675. Seminar in International Relations (3)*

795. Problem Analysis (3)*

**California Western School of Law Courses***

498. Mexican Law

610. Immigration Law

625. International Business Transactions

636. International Organizations

643. Private International Law

644. Public International Law

703. Latin American Law

In addition, the student must complete MGMT 797 (Research) and BA 799A (Thesis). This is a thesis in Business Administration which will treat a Latin American related topic and will be supervised by a thesis committee whose chair is a member of the College of Business faculty with international business expertise and at least one faculty member from the Latin American studies program.

Transfer units will not be accepted toward the concurrent MBA/MA degree program. Graduate study or degrees obtained previously will not be accepted toward meeting the unit requirements of the concurrent MBA/MA degree program. If a student accepting the concurrent MBA/MA program returns to a single degree program, all the requirements for the single degree program must be met.

**Advancement to Candidacy**

All students must meet the general requirements for advancement to candidacy as described in Part Two of this bulletin. In addition, 1) the student will be required to complete 30 units; in the former requirement, or Portuguese 302 (or its equivalent), and pass an oral and written examination administered by the Department of Spanish and Portuguese Languages and Literatures; 2) all core courses in business and Latin American studies must be completed prior to advancement with a minimum grade point average of 3.0 and a grade of B- or better in any core course; 3) have been recommended for advancement by the combined faculty advisory committee; 4) have a thesis proposal approved by the combined faculty advisory committee.

Upon advancement to candidacy, the student will enroll in Management 797 (Research) and BA 799A (Thesis). A thesis (Plan A) incorporating theory, method, and analytic techniques from both disciplines is the culminating experience for the concurrent program leading to the MBA and MA degrees.

- Acceptable when of relevant content.

- These courses are not required. Students must apply to enroll under the provisions of the affiliation agreement with the California Western School of Law.

**Political Science Courses**

566. Political Change in Latin America (3)

567. Political Systems of Latin America (3)

568. The Mexican Political System (3)

571. Principles of International Law (3)

**Portuguese Course**

535. Brazilian Studies

**Public Administration Course**

580. Comparative Public Administration (3)

**Sociology Courses**

555. Immigrants and Refugees in Contemporary American Society

556. Topics in Comparative Societies (3)

596. Current Topics in Sociology (1-3)*

**Spanish Courses**

515A-515B. Mexican Literature (3-3)

521. Caribbean Area Countries Literature (3)

524. Andean Countries Literature (3)

530. Spanish American Poetry (3)

537. Spanish American Short Story (3)

538. Spanish American Theater (3)

596. Selected Studies in Spanish (3)*

**Telecommunications and Film Courses**

562. Documentary and Propaganda Film/Television (3)

590. International Telecommunications (3)

596. Selected Topics in Telecommunications and Film (1-3)

**Women's Studies**

596. Women Writers (3)*

598. Women and International Development (3)

**Latin American Studies Courses**

601. Seminar on Methodology of Latin American Study

Pre-requisite: Graduate standing.

Theories and methodologies of Latin American Studies.

**Experimental Topics**

596. Experimental Topics (3)

Graduate standing. Intensive study in specific areas of Latin American studies. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units of 596 applicable to a master's degree. Maximum combined credit of six units of 596 and 598 applicable to a 30-unit master's degree.

**Latin American Culture and Politics**

566. Political Change in Latin America (3)

567. Political Systems of Latin America (3)

568. The Mexican Political System (3)

571. Principles of International Law (3)

580. Comparative Public Administration (3)

590. International Telecommunications (3)

596. Selected Topics in Telecommunications and Film (1-3)

598. Special Study (1-3) Cr/NC/SP

798. Thesis (3) Cr/NC/SP

799B. Thesis Extension (0) Cr/NC

**Comparative Literature (English Course)**

564. Topics in Comparative Urbanization (3)*

720. Seminar in Regional Geography (3)*

750. Seminar in Urban Geography (3)*

797. Research (3) Cr/NC/SP

798. Special Study (1-3) Cr/NC/SP

799A. Thesis (3) Cr/NC/SP

799B. Thesis Extension (0) Cr/NC

**Geography Courses**

565. Topics in Comparative Urbanization (3)*

720. Seminar in Regional Geography (3)*

750. Seminar in Urban Geography (3)*

797. Research (3) Cr/NC/SP

798. Special Study (1-3) Cr/NC/SP

799A. Thesis (3) Cr/NC/SP

799B. Thesis Extension (0) Cr/NC

**History Courses**

640. Directed Reading in Latin American History (3)

795. Area Studies in History (1-3) Cr/NC/SP

797. Research (3) Cr/NC/SP

798. Special Study (1-3) Cr/NC/SP

799A. Thesis (3) Cr/NC/SP

799B. Thesis Extension (0) Cr/NC

**Political Science Courses**

655. General Comparative Politics (3)

661. Seminar in Comparative Political Systems (3)

667. Seminar in Latin American Political Systems (3)

675. Seminar in International Relations (3)

795. Problem Analysis (3)*

797. Research in Political Science (3) Cr/NC/SP

798. Special Study (1-3) Cr/NC/SP

799A. Thesis (3) Cr/NC/SP

799B. Thesis Extension (0) Cr/NC

...
Liberal Arts

In the College of Arts and Letters

Admission to Graduate Study

Applicants seeking admission to the program leading to the Master of Arts degree in Liberal Arts should contact the director of Graduate Liberal Arts Committee requesting appropriate application forms. Detailed information concerning application procedures will be sent to the applicant along with the appropriate application forms.

In addition to satisfying the requirements for admission to the University with classified graduate standing as described in Part Two of this bulletin, the student seeking admission must (1) have a grade point average of 3.0 or better on work completed during the last 60 units for the baccalaureate degree, (2) have a score of 950 or better on the GRE General Test (combined verbal and quantitative) or an equivalent score on the Miller Analogies Test, and (3) complete a statement of purpose essay. A personal interview with a member of the Graduate Liberal Arts Committee is recommended.

Students who do not meet all of the above requirements for admission with classified graduate standing may be admitted as conditional graduate standing upon the recommendation of the MLA director and committee. Students so admitted will be advised as to the nature of their deficiency and the time to be allowed to achieve full classified graduate standing.

Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin. In addition, the students must (1) satisfactorily complete 12 units, with a minimum grade point average of 3.0, including 9 units of core seminars as stipulated in Part Two of this bulletin, (2) select Plan A, have a thesis or project proposal which has received the approval of the Graduate Liberal Arts Committee and its director.

Specific Requirements for the Master of Arts Degree in Liberal Arts

(Major Code: 49017)

In addition to meeting the basic requirements for the Master of Arts degree in Liberal Arts as described in Part Two of this bulletin, the student must complete a graduate program of at least 15 units in residence at San Diego State University in the MLA 300- and 600-numbered courses in a theme selected from the following areas: social sciences, humanities, natural sciences, fine arts, with a minimum of six units in any given department. Some 500 level courses may be used in partial fulfillment of this requirement, if approved by the MLA director. All 500 level courses must be used in partial fulfillment of this requirement and may be included as satisfying at least 3 of the 15 units for the thematic component.

Committee on Graduate Liberal Arts

The Master of Arts degree in Liberal Arts is administered through the Graduate Liberal Arts Committee. Faculty assigned to teach courses in the program are drawn from departments throughout the University.

General Information

The College of Arts and Letters offers a Graduate Liberal Arts program that is one of two in the western United States. The Master of Arts degree in Liberal Arts is an interdisciplinary program administered by the Graduate Liberal Arts Committee. Even though this approach to graduate education is as old as the three-year-old in the United States, its interdisciplinary nature has kept it vital and flexible. Students are encouraged to customize their degree by selecting coursework relevant to their interests.

The Master of Liberal Arts degree is an interdisciplinary program intended to provide an alternative approach to continued adult learning by offering a program that crosses departmental boundaries and aims for breadth and scope. It provides the unique combination of a highly individualized program of study centered around personal interests combined with a strong grounding in interdisciplinary methods for problem solving.

The student body is drawn from diverse backgrounds, thus adding to the unique character of the program.

Public Administration and Urban Studies Course

786. Special Study (1-3) Cr/NC/SP

Sociology Courses

696. Experimental Topics (3)*
770. Seminar on Theory and Methodology in Sociology (3)
798. Special Study (1-3) Cr/NC/SP

Spanish Courses

601. Seminar in Hispanic Literary Theory (3)
605. The Gaucho Epic (3)
660. Modernism (3)
695. Contemporary Spanish American Prose Fiction (3)
750. Seminar in Spanish American Literature (3)
696. Selected Topics (3)*
710. Images of Women in Spanish American Literature (3)
750. Seminar in Spanish American Literature (3)
755. Seminar in Spanish American Culture and Thought (3)
798. Special Study (1-3) Cr/NC/SP

Women's Studies Courses

696. Selected Topics in Women's Studies (3)*
798. Special Study (1-3) Cr/NC/SP

Telecommunications and Film Course

798. Special Study (1-3) Cr/NC/SP

Latin American Studies

755. Seminar in Latin American Culture and Thought (3)
798. Special Study (1-3) Cr/NC/SP
799A. Thesis (3) Cr
799B. Thesis Extension (0) Cr/NC
755. Seminar in Latin American Culture and Thought (3)
695. Contemporary Spanish American Prose Fiction (3)
705. Seminar in Latin American Literature (3)
660. Modernism (3)
695. Contemporary Spanish American Prose Fiction (3)
750. Seminar in Latin American Literature (3)
696. Selected Topics (3)*
710. Images of Women in Latin American Literature (3)
750. Seminar in Latin American Literature (3)
755. Seminar in Latin American Culture and Thought (3)
798. Special Study (1-3) Cr/NC/SP

Women's Studies Courses

696. Selected Topics in Women's Studies (3)*
798. Special Study (1-3) Cr/NC/SP

Telecommunications and Film Course

798. Special Study (1-3) Cr/NC/SP

English Courses

600. Modernism (3)
695. Contemporary Spanish American Prose Fiction (3)
750. Seminar in Spanish American Literature (3)
696. Selected Topics (3)*
710. Images of Women in Spanish American Literature (3)
750. Seminar in Spanish American Literature (3)
755. Seminar in Latin American Culture and Thought (3)
798. Special Study (1-3) Cr/NC/SP

Women's Studies Courses

696. Selected Topics in Women's Studies (3)*
798. Special Study (1-3) Cr/NC/SP

Telecommunications and Film Course

798. Special Study (1-3) Cr/NC/SP

Women's Studies Courses

696. Selected Topics in Women's Studies (3)*
798. Special Study (1-3) Cr/NC/SP

Telecommunications and Film Course

798. Special Study (1-3) Cr/NC/SP

Women's Studies Courses

696. Selected Topics in Women's Studies (3)*
798. Special Study (1-3) Cr/NC/SP

Telecommunications and Film Course

798. Special Study (1-3) Cr/NC/SP
Linguistics and Oriental Languages

In the College of Arts and Letters

OFFICE: Business Administration 327
TELEPHONE: (619) 594-5266

Faculty
Charlotte Webb, Ph.D., Associate Professor of Linguistics, Chair of Department
Jen Bar-Lev, Ph.D., Professor of Linguistics
Thomas S. Donahue, Ph.D., Professor of Linguistics
Ann M. Johns, Ph.D., Professor of Linguistics
Robert Underhill, Ph.D., Professor of Linguistics
Sooje Choi, Ph.D., Associate Professor of Linguistics (Graduate Adviser)
Jeffrey P. Kaplan, Ph.D., Associate Professor of Linguistics
Orin D. Seright, Ph.D., Associate Professor of Linguistics

Assistantships
Graduate teaching assistantships in linguistics are offered each semester to a limited number of qualified students to teach composition courses for International Students. Those interested should send a letter of application to the graduate adviser.

General Information
The Department of Linguistics and Oriental Languages, in the College of Arts and Letters, offers graduate study leading to the Master of Arts degree in linguistics. The interdisciplinary program provides broad educational opportunities through two specializations: 1) General Linguistics, for those planning to pursue a doctorate in theoretical areas (e.g., syntax or phonology) or for those who plan to work in a language-related field in industry or education (e.g., computer programming), and 2) ESL/ Applied, for students planning to pursue a doctorate in applied linguistics, or intending to teach or design curricula for ESL/ELT classrooms. In addition to completing coursework for one of the specializations and demonstrating proficiency in a foreign language, students are required to submit a thesis (Plan A) or pass a comprehensive examination (Plan B).

All students who complete the required program will receive a Master of Arts degree in linguistics. If requested, the department will provide a letter certifying a student's specialization for purposes of employment or application for further study. The specializations and language research interests of faculty members in this program are:

Zev Bar-Lev - ESL, discourse analysis, linguistics and computer science; Hebrew, Arabic, and Russian.
Sooje Choi - Psycholinguistics, first and second language acquisition, cognition and language, ESL, materials development; Korean, French.
Thomas S. Donahue - American dialectology, sociolinguistics, historical linguistics, Old English, Middle English.
Ann M. Johns - ESL methodology, materials development, discourse analysis, psycholinguistics, Arabic, and Chinese.
Jeffrey P. Kaplan - Syntax, semantics, ESL, bilingualism.
Orin D. Seright - Comparative morphology, historical linguistics, Latin, Romance languages, German.

Admission to Graduate Study
In addition to meeting the requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin, the student must have a Bachelor of Arts degree, or its equivalent with a grade point average of 3.0 in the last 60 semester units attempted. A student whose preparation is deemed insufficient by his/her graduate adviser will be required to complete specified courses in addition to the minimum of 30 units required for the degree.

Advancement to Candidacy
All candidates must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin. In addition to the requirements listed, students must demonstrate reading or speaking knowledge of at least one foreign language prior to advancement to candidacy.

Specific Requirements for the Master of Arts Degree

(Major Code: 15051)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the Master of Arts degree, as described in Part Two of this bulletin, the student must complete a graduate program of at least 30 units of 500-, 600-, and 700-level courses including Linguistics 622 and 795. A minimum of 15 of the units taken must be from 600- or 700-level courses.

Students selecting the Specialization in General Linguistics must complete Linguistics 625 and six units from the following: Linguistics 610, 611, 640, 651, 654, and 660.

Students selecting the ESL/Applied Specialization must complete either Linguistics 521 or 621, and at least six units from the following: Linguistics 625, 650, 652, 653, 654. An internship, Linguistics 740, is required of all students selecting this specialization who have not taught ESL previously.

Students selecting one specialization may enroll in courses from the other specialization as electives.

Plan A or Plan B
With approval of the graduate adviser, a student may choose either Plan A, the normal option, which requires a thesis, or in some cases and with the prior approval of the graduate specializations and with the prior approval of the graduate specializations, Plan B, which requires a written comprehensive examination. Plan A students must select a committee of three faculty members, of whom two are from the department, to superintend the thesis. In either case, students select one of two options upon completion of an official program and advancement to candidacy.

Liberal Arts

Under special circumstances, and with permission of the MALA director, a student may compose a thesis that deviates in structure from the criteria stipulated above. This thesis may include a maximum of 12 units of 600A, 600B, 600C, and 600D in any combination.

Students may select either Plan A or Plan B in consultation with the MALA director. In addition to meeting the distribution requirements given above, students electing Plan A must complete MALA 799A (Thesis or Project). Students electing Plan B must complete MALA 795 (Thesis in the Liberal Arts) and pass a written comprehensive examination in lieu of the thesis. All programs will be approved by the MALA director in consultation with the Graduate Liberal Arts Committee.

GRADUATE COURSES

600A-600B-600C-600D. Interdisciplinary Study in the Liberal Arts (1-3-3-3)
Prerequisites: Admission to the Master of Arts degree in Liberal Arts program and consent of MALA director.
Interdisciplinary seminars to explore issues that require integration of the perspective of various areas of the liberal arts. Each course may be repeated with new content. See Class Schedule for specific content.
A. Social Sciences and Humanities
B. Social Sciences and Natural Sciences
C. Humanities and Natural Sciences
D. Fine Arts and Social Sciences, Humanities, or Natural Sciences

601. Liberal Arts Colloquium (1)
Prerequisite: Admission to the Master of Arts degree in Liberal Arts program or graduate standing.
Issues in interdisciplinary studies. May be repeated with new content. See Class Schedule for specific content. Maximum credit three units applicable to a master's degree.
Applied Linguistics and English as a Second Language (ESL) Certificate

The Department of Linguistics and Oriental Languages offers a Basic and an Advanced Certificate in Applied Linguistics and English as a Second Language (ESL). The Advanced Certificate requires 15 units to include Linguistics 525, 621, 622, and 650. The prerequisite to the Advanced Certificate is the Basic Certificate or its equivalent. Under certain circumstances comparable courses taken at other institutions may count towards the Certificate. Such courses must be evaluated and approved by the certificate advisor. For information on the Basic Certificate, please see the General Catalog.

Courses Acceptable on Master's Degree Programs in Linguistics

UPPER DIVISION COURSES

520. Fundamentals of Linguistics (3) I, II, S
Prerequisite: Upper division standing.
Principles of modern linguistics, with attention to English grammar (syntax, morphology, phonology). Language change, dialects, sociolinguistics, general linguistics, language acquisition.

521. Phonology (3) I, II
Prerequisite: Linguistics 420 or 520.
Introduction to the theoretical principles of transformational-generative phonology.

522. Syntax (3) I, II
Prerequisite: Linguistics 420 or 520.
Introduction to the theoretical principles of transformational-generative syntax.

523. Phonemics and Morphemics (3)
The study of procedures for arriving at the phonetic inventory of languages and the structuring of sound units (both linear and intonational) into phonemic systems; the study of morphemic hierarchies and their arrangements in forming words.

524. American Dialectology (3) I, II
Prerequisite: Upper division standing.
Development of American English. Regional, social, and ethnic differences in pronunciation, grammar, and vocabulary; differences in men's and women's language. Block English.

525. Semantics and Pragmatics (3)
Prerequisite: Linguistics 420 or 520.
Introduction to the theoretical principles of transformational-generative semantics.

526. Historical Linguistics (3)
Prerequisites: Linguistics 410 and 521.
Methods and principles used in historical study of language; processes of language change in phonology, morphology, syntax, and semantics; linguistic reconstruction; origin of language; language families; development of writing; examples from various language families.

596. Selected Topics in Linguistics (1-3)
Prerequisite: Upper division standing.
Advanced study of selected topics. See Class Schedule for specific content. May be repeated with new content. Limit of nine units of any combination of 596, 597, 598 courses applicable to a bachelor's degree. Maximum combined credit of six units of 596 and 696 applicable to a 30-unit master's degree.

597. Selected Topics in Linguistics (1-3)
Prerequisites: Linguistics 551 or 552.
Study of selected topics in transformational-generative linguistics. May be repeated with different content. Limit of 596 and 696 applicable to a 30-unit master's degree.

598. Special Topics in Linguistics (1-3)
Prerequisites: Linguistics 521 and credit or concurrent registration in linguistics 551 or 552.
Application of discourse and reading theory to the teaching and testing of ESL, reading and writing. Issues of coherence, process-product, genre studies.

599. Directed Language Study (1-3)
Prerequisites: Three units of 500-level or 600-level courses in the master's program for linguistics.
Introduction to private study of a language not offered at UCSD. Applications must be submitted to the chair or instructor. May be repeated with new content. Maximum credit six units applicable to a master's degree.

610. Indo-European (3)
Prerequisite: Anthropology 304 or Linguistics 622.
Phonology, morphology, syntax of the Indo-European language community, with special attention to "Celtic" and "Semitic" relationships.

611. Early English (3)
Phonology, morphology and syntax of Old and/or Middle English. Reading and analysis of selected texts. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

620. Advanced English Phonology (3)
Prerequisite: Linguistics 521.

622. Advanced Syntax (3)
Prerequisites: Linguistics 522.
Advanced study of linguistic theory and its application to the analysis of English.

623. Immigrant Languages (3)
Prerequisite: Linguistics 420 or 520.
Contrastive structure of selected languages representing significant immigrant populations in San Diego; emphasis on phonological, orthographic, morphological, lexical and syntactic features.

640. Field Methods in Linguistics (3)
Prerequisite: Linguistics 521 and credit or concurrent registration in Linguistics 622.
Principles and techniques of linguistic analysis working directly with native informants, including phonemic, grammatical, and syntactic analysis and field collection and interpretation.

650. Materials Development in Applied Linguistics (3)
Prerequisite: Linguistics 550.
Materials development and adaptation for teaching English as a second language and foreign language.

651. Sociology of Language (3)
Prerequisite: Linguistics 551.
Public and private reasons for planned language behavior. Cues, personal speech interaction patterns, bilingualism, cultural diversity in language use, social-theoretical background, language planning, and social uses of sex in language.

652. Second Language Acquisition (3)
Prerequisites: Linguistics 552 or 452, and 550.
Analysis of theories of second language acquisition; theoretical and empirical bases of current second language teaching methodologies.

663. ESL Reading and Writing (3)
Prerequisite: Linguistics 550.
Application of discourse and reading theory to the teaching and testing of ESL, reading and writing, issues of coherence, process-product, genre studies.

670. Internship in English as a Second Language and Foreign Language Teaching (3) Cr/NC
Prerequisite: Linguistics 550.
Internship in teaching English as a second language and English as a foreign language, offering work experience with teaching professionals.

740. Seminar in Second Language Teaching (3)
Prerequisite: Consent of instructor.
Directed independent study of a foreign language not offered within the course structure at San Diego State University with the aim of applying the techniques of intensive linguistic analysis to the syntactic, phonological, and/or semantic structure of that language. No instruction in speaking or understanding the spoken language is included in this course. Maximum credit six units applicable to a master's degree.

745. Directed Language Study (3)
Prerequisite: Consent of instructor.
Directed independent study of a foreign language not offered within the course structure at San Diego State University with the aim of applying the techniques of intensive linguistic analysis to the syntax, phonology, and/or semantic structure of that language. No instruction in speaking or understanding the spoken language is included in this course. Maximum credit six units applicable to a master's degree.

795. Seminar in Linguistics (3)
Prerequisite: Completion of three units of 600 and 700 numbered courses in the master's program for linguistics.
Research in linguistics, course content varying according to instructor. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

799. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff; to be arranged with department chair or instructor.
Individual study. Maximum credit six units applicable to a master's degree.

799A. Thesis (3) Cr/NC/SP
Prerequisites: An officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for the master's degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the University; also student must be registered in the course when the completed thesis is granted final approval.

Anthropology Course

604. Seminar in Linguistics (3)

Russian Courses

610. History of the Russian Language (3)
650A/650B. Old Church Slavic: 1-3
680. Seminar in Slavic Linguistics (3)

Spanish Courses

610. Seminar in Medieval Spanish (3)
770. Applied Spanish Linguistics for Teachers (3)
Mass Communication

In the Department of Journalism
In the College of Professional Studies and Fine Arts

OFFICE: Professional Studies and Fine Arts 325
TELEPHONE: (619) 594-6635

2. A grade point average of not less than 2.75 overall, and 3.0 in the last undergraduate program and the graduate program.

3. A minimum score of 940 on the GRE General Test with no less than a score of 450 on the verbal section and no less than a score of 450 on the quantitative section.

Candidates may elect to follow Plan A, requiring a thesis, or Plan B, which requires a written comprehensive examination agreed upon by the Mass Communication Committee in lieu of a thesis. All programs must be approved by both the A and B departments, and the Mass Communication Committee.

Courses Acceptable on Master's Degree Programs in Mass Communication

UPPER DIVISION COURSES

Mass Communication

Journa Is Courses

500. Current Problems in Mass Communication (3)
Prerequisites: Journalism 200 or Economics 100 or Political Science 101, or Sociology 101, or Telecommunications and Film 100, and upper division standing.

501. Law of Mass Communication (3)
Prerequisites: Journalism 200 or Political Science 102 or Telecommunications and Film 100, and upper division standing.

502. Research Methods in Mass Communication (3)
Prerequisites: Journalism 300 or History 110A or 110B or Telecommunications and Film 100, and upper division standing.

503. History of Mass Communication (3)
Prerequisites: Journalism 200 or History 110A or 110B or Telecommunications and Film 100, and upper division standing.

504. Mass Media Management (3)
Prerequisites: Journalism 220 or 460 or 470 or 480 or graduate standing and concurrent registration in SPSS class.

505. Government and Telecommunications (3)
Prerequisites: Journalism 481; upper division standing; and concurrent registration in SPSS class.

506. Ethics and Public Relations in Media (3)
Prerequisites: Journalism 481; upper division standing; and concurrent registration in SPSS class.

507. Qualitative Methods in Communication Research (3)
Prerequisites: Journalism 481 or graduate standing.

508. Communication Law and the Media (3)
Prerequisites: Journalism 481 or graduate standing.

509. Research Methods in Communication (3)
Prerequisites: Journalism 200 or History 110A or 110B or Telecommunications and Film 100, and upper division standing.

Specific Requirements for the Master of Science Degree

(Major Code: 06011)

In addition to meeting the requirements for the Master of Science degree as described in Part Two of this bulletin, the student must complete a minimum of 30 units in coursework acceptable to the Master of Science degree program. At least 18 units of the total program must be in courses numbered 600-799. Twenty-four units must be distributed between two of the departments cooperating in the department in which the student's graduate adviser and the student's graduate adviser and the student's graduate student advisor. The remaining six units can be taken in any department (including Department A and Department B). The remaining six units can be taken in any department (including Department A and Department B). The remaining six units can be taken in any department (including Department A and Department B). The remaining six units can be taken in any department (including Department A and Department B).

Admission to Graduate Study

Students will be admitted to the graduate program in mass communication only after careful consideration of their qualifications by the Mass Communication Committee. All applications should be received prior to March 1 for the fall semester, and November 1 for the spring semester, in order to be considered.

All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin. In addition, a student applying for admission to the graduate program in mass communication must meet the following requirements:

1. A bachelor's degree in journalism, radio-television, advertising, public relations, sociology, or psychology or consent of the Mass Communication Committee.
707. Seminar in Mass Communication and Public Opinion (3)
Prerequisites: Journalism 509, and 600A or 600B.
Analysis of media and their opinion-shaping role: methods and effects of pressure groups; propaganda analysis; creation and perpetuation of images and stereotypes.

708. Seminar in Mass Communication and Society (3)
Prerequisite: Journalism 600A or 600B.
Rights, responsibilities and characteristics of mass media and mass communication practitioners: characteristics and responsibilities of audiences and society.

740. Major Projects in Mass Communication (1-6)
Prerequisite: Journalism 600A or 600B.
Design and execution of an in-depth project in one of these areas: advertising campaign, series of detailed expository articles or news stories, or model public relations campaign. May be repeated with new content. Maximum credit six units applicable to a master's degree.

782. Seminar in Public Relations (3)
Prerequisites: Journalism 585, and 600A or 600B.
Analysis and critique of contemporary public relations programs and theory. Development of a comprehensive public relations project involving original research.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff, to be arranged with the department chair and instructor.
Individual study. Maximum credit six units applicable to a master's degree.

799A. Thesis (3) Cr/NC/SP
Prerequisite: An officially appointed thesis committee and registration required in any semester or term following registration in Thesis 799A with an officially appointed thesis committee.
Preparation of a thesis for the master’s degree.

799B. Thesis Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the University, also student must be registered in the course when the completed thesis is granted final approval.

Psychology Courses
621. Seminar in Personal Psychology (3)
622. Seminar in Organizational Psychology (3)
700. Seminar (3)
701. Seminar in Social Psychology (3)
798. Special Study (1-3) Cr/NC/SP
799A. Thesis (3) Cr/NC/SP
799B. Thesis Extension (0) Cr/NC

Sociology Courses
602. Advanced Research Methods: Core Course (3)
603. Advanced Social Psychology (Sociological Approaches: Core Course (3)
700. Seminar in Social Theory (3)
740. Seminar in Social Psychology: Sociological Approaches (3)
760. Seminar in Research Methods (3)
797. Research (3) Cr/NC/SP
798. Special Study (1-3) Cr/NC/SP
799A. Thesis (3) Cr/NC/SP
799B. Thesis Extension (0) Cr/NC

Speech Communication Courses
656. Special Topics in Speech Communication (1-3)
700. Seminar in Research and Bibliography (3)
706. Seminar in Organizational Communication (3)
720. Seminar in the Analysis of Language (3)
735. Seminar in Communication Theory (3)
775. Seminar in Intercultural Communication (3)
790. Seminar in Experimental Procedures in Speech Communication (3)
791. Seminar in Group Communication (3)
792. Seminar in Persuasion (3)
798. Special Study (1-3) Cr/NC/SP
799A. Thesis or Project (3) Cr/NC/SP
799B. Thesis or Project Extension (0) Cr/NC

Telecommunications and Film Courses
600. Seminar in Research and Bibliography (3)
615. Seminar in Film Study and Theories (3)
620. Seminar in the Development of Telecommunication Systems (3)
640. Seminar in Electronic Media Advertising Problems (3)
670. Seminar in Public Telecommunications (3)
675. Seminar in Telecommunication Technology and Policy (3)
696. Advanced Research Topics (3)
700. Seminar in Telecommunications Management (3)
701. Seminar in the Research Process (3)
705. Seminar in Telecommunications Policy and Regulation (3)
750. Seminar in Contemporary Telecommunications Issues and Trends (3)
798. Special Study (1-3) Cr/NC/SP
799A. Thesis or Project (3) Cr/NC/SP
799B. Thesis or Project Extension (0) Cr/NC

Mathematical Sciences

Mathematics Education
Nicholas A. Bianca, Ed.D., Professor of Mathematics Sciences
Douglas B. McLeod, Ph.D., Professor of Mathematics Sciences
Judy T. Souders, Ph.D., Professor of Mathematics Sciences
(A.T.S. Graduate Adviser)
Larry K. Souders, Ph.D., Professor of Mathematics Sciences
Patrick W. Thompson, Ed.D., Professor of Mathematics Sciences
Affrisio Flores, Ph.D., Associate Professor of Mathematics Sciences
Mary S. Koehler, Ph.D., Associate Professor of Mathematics Sciences
Alba G. Thompson, Ed.D., Associate Professor of Mathematical Sciences

Assistantships
Graduate teaching assistantships in mathematics are available to a limited number of qualified students. Application blanks and additional information may be secured from the chair of the department.

General Information
The Department of Mathematical Sciences, in the College of Sciences, offers graduate study leading to the Master of Arts degree in applied mathematics, the Master of Science degree in statistics and the Doctor of Arts degree for teaching service with a concentration in mathematics, the Master of Science degree in applied mathematics, the Master of Science degree in statistics and the Master of Science degree in computer science. (See the Computer Science section of this bulletin for a description of the statistics program and courses), and the Master of Arts degree in computer science. (See the Computer Science section of this bulletin for a description of the statistics program and courses). Faculty active in research direct theses and research projects in most general areas of the mathematical sciences: in pure and applied mathematics, biostatistics, data analysis, infer-
Advancement to Candidacy

All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin. In addition, the student must have passed a qualifying examination in some program.

Specific Requirements for the Master of Arts Degree in Mathematics

(Major Code: 17011)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must meet the following requirements:

1. Complete 30 units of approved 500-, 600-, and 700-level courses, of which at least 21 units must be in mathematics (including computer science). At least 21 units must be at the 600 level or above. Mathematics 600, 601, and 602 may not be part of this degree. No more than six units of Mathematics 797 and 798 will be accepted toward the degree.

2. Among the 30 units of coursework, students must include at least two courses in the area of algebra chosen from courses 621, 622, 623, 624, and at least two courses in analysis chosen from courses 630A, 630B, 631A, 631B.

3. Before entering the program, students should have completed the following courses or their equivalents: Mathematics 521B, 524, 532, 544A. If a student has not had these courses before entering the program, they must be taken during the first year. A maximum of two of these courses may be applicable toward the degree course requirements.

4. With departmental approval, students may select Plan A and complete Mathematics 799A or Plan B (as described in Part Two of this bulletin), the student must complete three units of Mathematics 797, Research, and pass the written Comprehensive Examination in Applied Mathematics.

5. Before entering the program, students should have completed before entering the program, 4. With departmental approval, students may select Plan A and complete Mathematics 799A, Thesis. The student must have an oral defense of their thesis or research, open to the public. If Plan B is elected, the student must complete three units of Mathematics 797, Research, and pass the written Comprehensive Examination in Applied Mathematics.

Courses Acceptable on Master's Degree Programs in Applied Mathematics, Computer Science, Mathematics, and Statistics

General

UPPER DIVISION COURSES

NOTE: Proof of completion of prerequisite requirements for all upper division courses: Grade report or copy of transcript.

509. Computers in Teaching Mathematics

Two lectures and three hours of laboratory.

Prerequisite: Mathematics 252 or 312.


510. Introduction to the Foundations of Geometry

Prerequisite: Mathematics 122, 151 or 157.

Dimensions, incidence, congruence, theory of closure, analytic properties of projective transformations.

511. Projective Geometry

Prerequisite: Mathematics 254.

Conic sections, coordinates, projective points and other properties of figures not altered by projections. Homogeneous coordinates and analytic properties of projective transformations.

512. Non-Euclidean Geometry

Prerequisite: Mathematics 122, 151 or 157.

History of attempts to prove the fifth postulate; emphasis on plane synthetic hyperbolic geometry. Brief treatment of other theories of non-Euclidean geometry.

521A. Abstract Algebra I

Prerequisite: Mathematics 245 or 252. Mathematical structures. Abstract algebra, including elementary number theory, groups, and rings.
GRADUATE COURSES

Mathematics Sciences

541. Introduction to Numerical Analysis and Computing (3) I, II, S
Prerequisites: Mathematics 254 or 342A; and Computer Science 107 or Engineering 120.
Solution of equations of one variable, direct methods in numerical linear algebra, least squares approximation, interpolation and uniform approximation, quadrature.

542. Introduction to Numerical Solutions of Differential Equations (3) II
Prerequisites: Mathematics 337 and 541.

556. Computer Mathematics and Symbolic Programming (3)
Prerequisites: Computer Science 107 and Mathematics 254.
Use of mathematical and symbolic computer packages such as MACSYMA, SMP, MAPLE, REDUCE, and MUMATH to analyze systems in various branches of mathematics and computer science.

561. Applied Graph Theory (3)
Prerequisite: Mathematics 245 or 254.
Undirected and directed graphs, trees, Hamiltonian circuits, classical problems of graph theory including applications to linear systems.

579. Combinatorics (3)
Prerequisite: Mathematics 245.
Permutations, combinations, generating functions, recurrence relations, inclusion-exclusion counting, Polya's theory of counting, other topics and applications.

596. Advanced Topics in Mathematics (1-4) II
Prerequisites, Mathematics 521B and 534B.
Advanced topics in classical and modern mathematical sciences. Emphasis on classes of models and corresponding mathematical structures.

601. Topics in Algebra (3)
Prerequisites, Mathematics 521A and 534A.
Topics in algebra, including the real number system, convergence, continuity, differentiation, the Riemann-Stieljes integral, series, Cauchy's theorem and its consequences, Error function, conformal mappings, Riemann mapping theorem, Harmonic functions.

621. Theory of Groups (3)
Prerequisite: Consent of instructor.
Selected topics in classical and modern mathematical sciences. May be repeated with the approval of the instructor.

622. Theory of Fields (3)
Prerequisites: Mathematics 531 or 537.
Existence, uniqueness, and continuation of solutions from an advanced standpoint.

623. Linear Algebra and Matrix Theory (3)
Prerequisite, Consent of instructor.
Undirected and directed graphs, trees, Hamiltonian circuits, classical problems of graph theory including applications to linear systems.

624. Rings and Ideals (3)
Prerequisite: Mathematics 521B. Recommended: Mathematics 621.
Rings and ideals, unique factorization: modules, chain conditions, Wedderburn's theorem, Jordan radical.

630A-630B. Functions of a Real Variable (3-3)
Prerequisites: Mathematics 524 and 534B. Mathematics 630A is prerequisite to Mathematics 630B.
Lebesgue measure and integration, metric spaces, Banach spaces, Hilbert spaces, spectral theory.

631A-631B. Functions of a Complex Variable (3-3)
Prerequisites: Mathematics 532 and 534B. Mathematics 631A is prerequisite to 631B.

636. Mathematical Modeling (3)
Prerequisites: Mathematics 521B and 551A.
Advanced models from the physical, natural, and social sciences. Emphasis on classes of models and corresponding mathematical structures.

637. Theory of Ordinary Differential Equations (3)
Prerequisites: Mathematics 524, 532, 534B, and other Mathematics 531 or 537.
Existence, uniqueness, and continuation of solutions from an advanced standpoint. Linear systems and their stability and asymptotic behavior, regular and irregular singularities, and regular boundary value problems.

642. Partial Differential Equations (3)
Prerequisites: Mathematics 531 and 565.

660A-660B. Applied Analysis (3)
Prerequisites: Mathematics 534A and 534B.
Mathematics 660A is prerequisite to 660B.
Advanced topics in applied mathematics. Topics include interchange of limit processes, approximation of functions and multidimensional calculus.

662. Advanced Optimization Theory (3)
Prerequisites: Mathematics 362 and 524.
Formulating the optimization problem and constructing proper models. Sequential optimization: linear programming, integer programming, dynamic programming, nonlinear programming. Duality theory and sensitivity analysis. Simple applications and numerical implementation.

663. Methods of Applied Analysis (3)
Prerequisite: Mathematics 630A.
Functional analysis with applications to applied mathematics. Metric and normed linear spaces, bounded and compact operators, inner product and Hilbert spaces, self-adjoint operators and orthogonal expansions.

664. Methods of Applied Algebra (3)
Prerequisites: Mathematics 524 and either Mathematics 254 or 342A.

667. Mathematical Aspects of Systems Theory (3)
Prerequisites: Mathematics 524 and 537.
Linear and nonlinear systems, nonlinear differential equations, equilibrium equations. Linearization, state transition nets, stability theory, feedback control systems.

799A. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis or Project 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the facilities and resources of the university, or student must be registered in the course when the completed thesis or project is granted final approval.

Mathematics Education

GRADUATE COURSES

600. Geometrical Systems (3)
Prerequisites: Mathematics 521A and an upper division course in geometry.
Ordered and affine geometries, decompositions, dilations, Projectivities and projective space. Absolute geometry, isometries, groups generated by involutions.

601. Topics in Algebra (3)
Prerequisites: Mathematics 521A and 534A.
Unique factorization domains, rings and ideals, groups, algebraic extensions. A course designed for secondary school teachers.

602. Topics in Analysis (3)
Prerequisites: Mathematics 521A and 534A.
Topics in analysis, including the real number system, convergence, continuity, differentiation, the Riemann-Stieltjes integral. Complex analysis, designed to give the secondary teacher a broad understanding of the fundamental concepts.

For additional courses useful to mathematicians see the sections under:
Computer Science
Mathematics Education
Statistics
Mathematics and Science Education

In the College of Sciences and
In the College of Education

Mathematics and Science Education
Faculty
Judith T. Sower, Ph.D., Professor of Mathematical Sciences (Coordinator)
Nicholas A. Branca, Ed.D., Professor of Mathematical Sciences
Elsa Feher, Ph.D., Professor of Natural Sciences
Kathleen M. Fisher, Ph.D., Associate Professor of Teacher Education
Larry K. Sowder, Ph.D., Professor of Mathematical Sciences
Patrick W. Thompson, Ed.D., Professor of Mathematical Sciences

Nadine Bezek, Ph.D., Associate Professor of Teacher Education
Cheryl Mason, Ph.D., Associate Professor of Teacher Education
Alfinio Flores, Ph.D., Associate Professor of Mathematical Sciences
Mary S. Koehler, Ph.D., Associate Professor of Mathematical Sciences
Rafaela Santa Cruz, Ph.D., Associate Professor of Teacher Education
Alba G. Thompson, Ed.D., Associate Professor of Mathematical Sciences
Barbara Armstrong, Ph.D., Assistant Professor of Teacher Education
Randall A. Philipp, Ph.D., Assistant Professor of Teacher Education

Faculty Committee for Mathematics Education
Judith T. Sower, Ph.D., Professor of Mathematical Sciences, Committee Co-Chair (M.A.T.S. Graduate Advisor)
Nadine S. Bezek, Ph.D., Associate Professor of Teacher Education, Committee Co-Chair
Nicholas A. Branca, Ed.D., Professor of Mathematical Sciences
Douglas B. McLeod, Ph.D., Professor of Mathematical Sciences
Larry K. Sowder, Ph.D., Professor of Mathematical Sciences
Patrick W. Thompson, Ed.D., Professor of Mathematical Sciences
Ex-Officio: Kathleen Fisher, Ph.D., Associate Professor of Teacher Education

Advisors
Graduate advisors in mathematical sciences are available to qualified students. Support for qualified candidates may also be available through the School of Teacher Education, through the Center for Research in Mathematics and Science Education, or through employment on faculty research grants. Applications are available from the appropriate campus offices.

Admission to Graduate Study
All students must satisfy the general requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin.

Advancement to Candidacy
All students must satisfy the general requirements for advancement to candidacy as described in Part Two of this bulletin. In addition, students seeking the Master of Arts degree in teaching service in the Department of Mathematical Sciences must pass a qualifying examination in either mathematics education or in mathematics.

Specific Requirements for the Master of Arts Degree for Teaching Service in the Department of Mathematical Sciences

MSE803
MSE801

For further information regarding programs, consult the following:

Ph. D. Program… CBSE 6475 Alvarado Rd., #206 (619) 594-5099
MA. Program… Mathematical Sciences (619) 594-8191
Teacher Education (619) 594-5777

The two specializations leading to the Master of Arts for teaching service require completion of a specific pattern of graduate units described below.

Specialization in Mathematics for Community College Teaching
This specialization is designed to satisfy the requirements for teaching mathematics at the community college level. Students shall have completed a bachelor's degree in mathematics (or equivalent) before entering the program and must have completed two courses selected from Mathematics 521A, 524, and 534A. The third course can be taken prior to entrance to the program or as part of the 30-unit degree requirements. The 30-unit program includes Mathematics 600, 601, 602, 799A, Thesis or Project, Mathematics Education 643, and at least one more course selected from Mathematics Education 404, 605, 606.

Specialization in Mathematics for Secondary Teaching
This specialization is designed to strengthen the mathematical background of secondary teachers, while providing coursework to better understand the learning and teaching of mathematics in grades 7-12. Students should have the equivalent of a bachelor's degree in mathematics before entering the program. The 30-unit program includes Mathematics 521A, 524, 534A (or their equivalents), 799A, Thesis or Project, Mathematics Education 643, and at least two courses selected from Mathematics Education 404, 605, 606.

Section II. Doctoral Program

The Ph.D. in Mathematics and Science Education has been approved by both institutions and is awaiting final approval from the Board of Regents of the University of California. It is anticipated that approvals will be obtained in time to admit students beginning with the fall 1993 semester.

General Information
San Diego State University and the University of California, San Diego, offer jointly a doctoral program in mathematics and science education. The program faculty at SDSU are members of the College of Sciences or the College of Education and are affiliated with the Center for Research in Mathematics and Science Education. They represent a number of different disciplines, including educational psychology, anthropology, sociology, science, and mathematics. The program is administered under the College of Sciences at SDSU and the Division of Natural Sciences at UCSD.

Mathematics and Science Education
Mathematics and Science Education

B. Four core courses at UCSD:
- UCSD 296A
- UCSD 296B
- UCSD 296C
- UCSD 500 level course in student's discipline

C. One of the following statistics courses at SDSU:
- PSY 570
- PSY 670

D. Two courses in cognitive psychology, taken either at
- UCSD
- SDSU
- PSY 587 and 800
- UCSD, PSYCH 218 A and 218B

E. One of the following seminars in mathematics or science education at SDSU:
- MTH/ED 603
- NSCI 600

F. At least one of the following courses at UCSD:
- PHIL 113
- PHIL 180
- PHIL 181
- PHIL 182
- HISC 163
- HISC 164
- SOC 165

G. One of the following practicum courses:
- SDSU MSE 805
- SDSU MSE 806
- SDSU MSE 807
- UCSD TEP 290

Beyond these requirements, no specified number of courses is required for the doctoral degree. It is expected that all the doctoral students will supplement the requirements with electives that contribute to individual career objectives.

Qualifying Examinations. Students in the doctoral program will be evaluated at the following levels:

1. Preliminary Evaluation. The student's ability to master graduate level course material will be assessed after completion of no more than 24 semester units of coursework. This evaluation will take place no later than the third semester of the student's enrollment in the program. The evaluation will be based on the student's performance in coursework and on indicated research competence, and it will be undertaken by the student's Advisory Committee together with instructors from the student's first year courses.

2. Qualifying Examinations. At the end of the second year, the student will be required to take qualifying examinations. One in general cognition and the other on issues of learning pertinent to the student's area of specialization. The examinations will be given in written form.

3. Oral Examination. During the third year in the program, the student will make an oral presentation to the Dissertation Committee to accompany a written proposal for the doctoral thesis. The student will be questioned on both the topic of the investigation and on the proposed research methodology. Upon successful completion of this presentation, the student will be recommended for advancement to candidacy for the doctoral degree.

4. Dissertation Defense. After completion of the dissertation, the candidate will present a public defense of the doctoral dissertation. A copy of the dissertation must be made available to the doctoral faculty at both institutions four weeks prior to the defense. Copies of the abstract of the dissertation, along with the announcement of the defense, must be publicly available at least one week before the defense. The student's Dissertation Committee will make a recommendation to the Graduate Dean to pass or fail the student.

Faculty Adviser. Upon admission to the doctoral program, the program directors will assign each student a faculty adviser. The faculty adviser will serve as an adviser until the student has completed the first year of coursework and has been favorably evaluated as described above in (1).

Advisory Committee. Following the first year evaluation, a second meeting of the students' advisory committee will serve as primary source for determining the program of study for the student and for the dissertation study. The student and the members of the doctoral adviser in consultation with the program directors, will select one additional member from the cooperating faculty at each campus to serve on the Advisory Committee. In consultation with the student, the Advisory Committee will develop a course of study for the student. The Advisory Committee will be the official advising group for the student until a Dissertation Committee has been chosen and recommended to the appropriate Degree Boards of the two institutions by the Advisory Committee.

Dissertation Committee. The Dissertation Committee will be composed of at least two faculty members from each campus. The student and the Advisory Committee will select members of the Dissertation Committee in consultation with program faculty and the campus directors. Members of the student's Advisory Committee may serve on the Dissertation Committee or new members may be selected by the student or the program directors.

Dissertation. Following the successful completion of all prescribed coursework and qualifying examinations, the major remaining requirement for the Ph.D. degree will be the satisfaction of the formal enrollment. The dissertation consisting of original research carried out under the guidance of the major professor, approval of the completed dissertation attests that an organized investigation that extends the boundaries of knowledge and understanding in mathematics and science education has been carried out.

Award of the Degree. The Doctor of Philosophy degree in Mathematics and Science Education will be awarded jointly by the Regents of the University of California and the Trustees of The California State University in the names of both cooperating institutions.

Financial Support

The Center for Research in Mathematics and Science Education at SDSU has a number of research and teaching assistantships available to support students admitted to the Joint Doctoral Program. All students applying to the program will be considered for financial support.

Courses Acceptable on the Master's and Doctoral Degree Programs in Mathematics and Science Education

GRADUATE COURSES IN MATHEMATICS EDUCATION

603. Seminar on Research in Mathematics Learning and Instruction (3)
- Preliminary Course: Consent of instructor or graduate adviser.
- The learning and teaching of mathematics, with emphasis on applications of current psychological theories to mathematics learning and research on mathematics teaching.

For additional courses applicable to the Master of Arts degree for Teaching Service see:
- Mathematics 600: Geometric Systems
- Mathematics 601: Topics in Algebra
- Mathematics 602: Topics in Analysis

For additional courses relevant to mathematics education see:
- Teacher Education 513: Diagnosis and Remediation of Learning Disabilities in Mathematics
- Teachers Education 620: Seminar in Mathematics
- Teacher Education 620: Seminar in Mathematics for Elementary Teachers
- Teacher Education 621: Mathematics-Secondary Education
- Teacher Education 622: Instruction in Mathematical Problem Solving

810. Seminar in Research Design (3)
- Preliminary Course: Admission to doctoral program in Mathematics and Science Education; Psychology 570 or 670, and consent of instructor.
- Issues such as analysis of protocols, problems of measurement in evaluation of learning, development, and assessment of cognitive models in learning in mathematics and science.

820. Research Project (3-6) Cr/NC/SP
- Preliminary Course: Admission to doctoral program in Mathematics and Science Education.
- Participation in an ongoing research project and development of a related study.

830. Research Seminar (3)
- Preliminary Course: Successful completion of qualifying examination.
- Students and faculty present ongoing research for discussion and critique.
Music
In the College of Professional Studies and Fine Arts

Faculty
Martin J. Chambers, M.M., Professor of Music, Chair of
Frank W. Almond, Ph.D., Professor of Music
Donald P. Barra, Ed.D., Professor of Music
Brenton P. Dutton, M.M., Professor of Music
Jane M. Kolar, Ph.D., Professor of Music
Jack D. Logan, Ph.D., Professor of Music
Eddie S. Meadows, Ph.D., Professor of Music
Daniel G. Mitchell, M.S., Professor of Music
Terry L. O'Donnell, D.M.A., Professor of Music
Levis E. Peterman, Jr., Ph.D., Professor of Music
David Ward-Steele, D.M.A., Professor of Music
Bill Yeager, M.M., Professor of Music
Karen J. Follingstad, M.M., Associate Professor of Music
Howard Hill, M.A., Associate Professor of Music
Marian Liebowitz, D.M.A., Associate Professor of Music
Thomas D. Stauffer, M.A., M.M., Associate Professor of Music
(Graduate Adviser)

Applied Music Instruction
Piano: Bruderer, Darby, Follingstad, Katz, Kolar
Voice: Allman, Chambers, Chase, MacKenzie, Westbrook
Clarinet: Uebel
Early Instruments: Peterman
Bassoon: Michel
Tuba: Dutton
Trumpet: Price
Viola: Elaine
Classical Guitar: Benedetti, Kilmer, Romero
Harp: Hays
Contrabass: Meadows
Non-Western Instruments: Specialists from specific

General Information
The Department of Music, in the College of Professional Studies and Fine Arts, offers a graduate study leading to a major in Master of Arts degree in music and the Master of Music degree. The department is a member of the National Association of Schools of Music.

With approval of the department, students electing to pursue the Master of Arts degree may specialize in one of the following fields: composition; ethnomusicology, music history and literature; musicology; piano; voice and Suzuki string pedagogy and theory. Major of Music students may specialize in performance, composition, jazz and choral or instrumental conducting.

Specializations of the music faculty include:

Composition and theory: Aesthetics, comprehensive musicology, contemporary music, electronic music, relationships among the arts.

Conducting: Literature and score analysis, hand techniques, rehearsal techniques, general preparation and performance in both the choral and instrumental areas.

Ethnomusicology: African, African-American, American folk, East Asian, European, South Asian, and Southeast Asian musics. Students may elect research in other areas with approval of the faculty adviser.

Music history/literature, and musicology: Students may elect field of study in medieval, renaissance, baroque, classical, romantic, twentieth century music, or American music.

Performance: Performance studies are offered on all instruments.

Piano pedagogy: Techniques in training the piano teacher for the church, school, and community, and approximately 20 pianists are trained each year in performance.

Voice pedagogy: Training the singing teacher through physiological and empirical methods.

Suzuki string pedagogy: This field is under the direction of a Suzuki Association of America and includes instruction in violin, viola, cello, and violoncello.

The 78,000-square-foot music building, completed 1970, includes a 200-seat recital hall, rehearsal rooms for instrumental and choral organizations, an electronic music studio, three clarinet studios, a piano studio, a recording room with a collection of over 15,000 titles available for faculty/student study and 21 listening rooms. 71 individual practice rooms are available including 160 pianos and 800 other musical instruments. The University library contains an extensive collection of over 75,000 music books and scores.

The Department of Music has established a new 12-station computer lab located in the music building. This lab will provide facilities for computer assisted instruction in music theory and ear training, word processing programs, essays and term papers, programs for graphics and composing music, a program for MIDI sequence from an electric keyboard, and programs for computer music. The electronic music studio has been completely renovated and includes the latest electronic music equipment available.

Admission to Graduate Study in Music
1. As part of the application for admission to the University, applicants will submit a one-page statement to set forth aims and goals in their graduate studies.

2. Applicants admitted to the department will be accepted with conditional graduate standing. Placement examination will be administered in Western music history, Western music theory, and performance studies. Normally one semester will be allowed to remove deficiencies indicated by the examinations through no-credit remedial work in the form of undergraduate courses or other projects and instruction.

In addition to the general requirements for admission to the University with classified graduate standing, as described in Part Two of this bulletin, students must satisfy the following requirements before they will be recommended for classified graduate standing.

1. Complete a bachelor's degree with a major in music including full preparation in performance, theory, music history and literature, or hold a bachelor's degree from an accredited institution and present sufficient evidence of study and experience in music to demonstrate the equivalency of one year of undergraduate courses in music in each of these areas.

2. Satisfactorily complete placement examinations in Western music theory, Western music history and literature, and performance. Details may be obtained from the Department of Music.

Advance to Candidacy
All students must satisfy the general requirements for advance to candidacy, as described in Part Two of this bulletin, with no remaining deficiencies assigned to the basis of the placement examinations.

Admission to Master of Arts Degree in Music
In addition to meeting the admission requirements listed above, students who seek a specialization in music history and literature, or Suzuki string or vocal pedagogy must pass an audition on an instrument or voice. The Master of Music degree is available with the following specializations: composition, ethnomusicology, music history and literature, musicology, music theory, piano pedagogy, Suzuki string pedagogy, and vocal pedagogy.

The Department of Music houses numerous instruments, scores, and books owned by the Center for World Music. This collection includes ten Balinese and Javanese Gamelan and numerous other musical instruments of the world. The department is also available to the students of musicology, music history and literature, musicology, music theory, piano pedagogy, Suzuki string pedagogy, and vocal pedagogy.

Specific Requirements for the Master of Arts Degree
(Major Code: 10051)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete a 30-unit graduate program of which at least 18 must be in 600 and 700-numbered courses and which includes the following core courses:

Core: Music 613, 652, 690.

All students in the Master of Arts in Music must complete Music 799A, Thesis in Project. A thesis will be required in theory and musicology. A final project in the form of a lecture-recital with accompanying documentation will be required in music history and literature. In the composition specialization, students will submit an original composition with a thesis or project in musicology, and voice/piano/Suzuki string pedagogy.

Master of Arts candidates in ethnomusicology, music history, and literature, and students in vocal pedagogy must satisfactorily pass department requirements in French, German, and Latin.

In addition to the requirements stated above, students must complete requirements in the selected specialization.

Composition
Core: Music 613, 652, 690.
Program: Music 607 (3 units). Six additional units of 613B or 613D, 651 (4 units). Electives: Two units.

Ethnomusicology
Core: Music 613, 652, 690.
Program: Music 554, 651 (4 units). Nine units from 652, 655, 665, 660, 665, 670, 799A.

Electives: Three units.

Music History and Literature
Core: Music 613, 652, 690.
Program: Music 554, 651 (4 units). Nine units from 652, 655, 665, 660, 665, 670, 799A.

Electives: Three units.

Musicology
Core: Music 613, 652, 690.
Program: Music 554, 651 (4 units). Nine units from 652, 655, 660, 665, 670, 799A.

Electives: Three units.

Music Theory
Core: Music 613, 652, 690.

Suzuki String Pedagogy
Core: Music 541B, 542B, 544H, 600, 605, 641 (4 units). Electives: Four units.
Admission to Master of Music

In addition to meeting the admission requirements listed above, students seeking a performance specialization must pass an audition. Students seeking a composition specialization must submit evidence (programs, videotape) of their conducting expertise. The Master of Music is available with the following specializations: composition, instrumental and choral conducting, instrumental and vocal performance, jazz studies, and early music. Please consult the Department of Music for further information concerning admission.

Specific Requirements for the Master of Music Degree

(Major Code: 10041)

In addition to meeting the requirements for classified graduate standing and the basic requirements for the master's degree as described in Part Two of this bulletin, the student must complete a 30-unit graduate program, of which at least 18 must be in 600- and 700-numbered courses.

Vocal students to be advanced to candidacy must satisfy either a departmental foreign language examination, or attain a satisfactory grade in an introductory course in an appropriate foreign language selected with approval of the graduate adviser. A final comprehensive examination is required for all Master of Music candidates.

In addition to the requirements stated above, students must complete requirements in the specific program selected:

**Composition**

Core:
Program: Music 613, 652, 690.
Program: Music 667, three additional units from Music 613, 651 (9 units), 676.
Electives: Three units.

**Conducting (Choral)**

Core: Music 613, 652, 690.
Program: Music 554, 569-589 (2 units), 591, 649, 651 (6 units), 767.
Electives: Three units.

**Conducting (Instrumental)**

Core: Music 613, 652, 690.
Program: Music 554, 569-589 (2 units), 591, 649, 651 (6 units), 767.
Electives: Three units.

**Jazz Studies**

Core: Music 613, 652, 690.
Program: Music 651 (9 units), 767, six units from Music 561, 562, 510, 511, 565A-565B, 570-589 (1-3 units), 607, 688.
Electives: Four units.

**Performance (Instrumental)**

Core: Music 613, 652, 690.
Program: Music 554, 569-589 (3 units), 651 (9 units), 767.
Electives: Four units.

**Performance (Vocal)**

Core: Music 613, 652, 690.
Program: Music 554, 569-589 (3 units), 651 (9 units), 767.
Electives: Four units.

Refer to Department of Music Student Handbook for further details.

**Courses Acceptable on Master's Degree Program in Music**

**UPPER DIVISION COURSES**

507. Composition Laboratory (1)  Three hours of laboratory.

Prerequisites: A grade of C (2.0) in Music 207 and consent of instructor.

Continuation of Music 207. Maximum credit two units.

510. Advanced Electronic Music (3)  Two lectures and three hours of laboratory.

Prerequisite: A grade of C (2.0) in Music 510.

Compositional techniques, waveform generation, software in digital audio production, and historical aspects of electronic music.

511. Advanced Electronic Music Composition Laboratory (1) I, II  Three hours of laboratory.

Prerequisites: Music 510 and consent of instructor.

Discussion and presentation of independent electronic music works in progress. Maximum credit four units.

541. Performance Studies Pedagogy (3)  Two lectures and two hours of laboratory.

Prerequisite: Consent of instructor.

Teaching of beginning and intermediate applied music. Survey and evaluation of teaching materials. Observation of individual or group lessons.

A. Piano
B. Strings
C. Voice

542. Performance Studies Laboratory (2)  One lecture and two hours of laboratory.

Prerequisite: A grade of C (2.0) in Music 541A, 541B, 541C.

Music 541A is prerequisite to 542A and 541B is prerequisite to 542C.

Practical experience in the teaching of individual or group lessons.

A. Piano
B. Strings
C. Voice

543. Diction (1)  Principles of pronunciation and enunciation.

Application to song and opera in English, Italian, German, and French.

553. Opera Theatre (2)  Six or more hours per week.

Prerequisite: By audition.

Interpretation and characterization of light and grand opera. Specific work in coordination of opera ensemble. Maximum credit eight units of which six units are applicable to a master's degree.

554. Music Literature (2) I, II  Prerequisite: Music 255A.

A concentrated study of the literature in the several areas listed. Analysis of scores and recordings. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

- A. Chamber Music Literature
- B. Symphonic Literature
- C. Sonatas
- D. Choral Literature
- E. Oratorio
- F. Opera Literature
- G. Keyboard Literature (Schubert to the Present)

555. Prosomology in Ethnomusicology (3)  Prerequisite: Music 255A.

Ethnomusicological theory and methodology, including history of the field and its relation to such disciplines as anthropology and linguistics.

556. Area Studies: Ethnomusicology (3)  Prerequisites: Music 351E and 351F.

Seminars in ethnomusicology. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

562. World Music in Context (2)  One lecture and two hours of activity.

Prerequisites: Music 351E or 351F and consent of instructor.

Practical experience in the performance of specialized traditional and contemporary works in world music, social and environmental context in which they exist. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

564-566. Jazz Arranging and Composition (2-3)  Prerequisites: Music 255B and 255C.

Jazz arranging and composition for large and small jazz ensembles. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units.

576. Lyric and Non-Lyric Poetry in Context (3)  Prerequisites: Consent of instructor.

Seminars in the music and lyrics of representative literature for the ensemble. May be repeated with new content. Maximum credit four units.

585. Concert Choir (1) I, II  Three hours.

Prerequisite: Consent of instructor.

Study and public performance of representative literature for the ensemble. Practical experience in rehearsal techniques. Maximum credit four units.

589. Jazz Ensemble (1) I, II  Three hours.

Prerequisite: Consent of instructor.

Study and public performance of representative literature for the ensemble. Practical experience in rehearsal techniques. Maximum credit four units.

591. Theory and Practice of Musical Expression and Interpretation (2)  Prerequisite: Music 255B.

Musical perception as it pertains to expressive aspects of performance. Theories of interpretation and ways in which performers can create the impulse to shape its inherent architectural structure.

592. Anorganik in Music, Art and Literature (3)  Prerequisite: At least one survey course in music history or appreciation, and another in music history or comparative literature.

Study of the influences and correspondence in the arts from the standpoint of style, texture, rhythm, and form. (Formerly numbered 558).

596. Special Topics in Music (1-3)  Prerequisite: May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of Music 596 courses applicable to a bachelor's degree. Maximum combination of units of 596 and 598 applicable to a 30-unit master's degree.

596V. Advanced Chamber Music (1) I, II  Three hours.

Prerequisite: Consent of instructor.

Study and public performance of established repertory as well as new compositions. Sections for string, woodwind, brass, piano and mixed ensemble groups. May be repeated with new content. See Class Schedule for specific content. Maximum credit four units.

576. Symphonic Band (1) I, II  Five hours.

Prerequisite: Consent of instructor.

Study and public performance of representative literature for the ensemble. Practical experience in rehearsal techniques. Maximum credit four units.

581. Symphony Orchestra (1) I, II  Five hours.

Prerequisite: Consent of instructor.

Study and public performance of representative literature for the ensemble. Practical experience in rehearsal techniques. Maximum credit four units.

585. Concert Choir (1) I, II  Five hours.

Prerequisite: Consent of instructor.

Study and public performance of representative literature for the ensemble. Practical experience in rehearsal techniques. Maximum credit four units.

589. Jazz Ensemble (1) I, II  Three hours.

Prerequisite: Consent of instructor.

Study and public performance of representative literature for the ensemble. Practical experience in rehearsal techniques. Maximum credit four units.

591. Theory and Practice of Musical Expression and Interpretation (2)  Prerequisite: Music 255B.

Musical perception as it pertains to expressive aspects of performance. Theories of interpretation and ways in which performers can create the impulse to shape its inherent architectural structure.

592. Analogy in Music, Art and Literature (3)  Prerequisite: At least one survey course in music history or appreciation, and another in music history or comparative literature.

Study of the influences and correspondence in the arts from the standpoint of style, texture, rhythm, and form. (Formerly numbered 558).

596. Special Topics in Music (1-3)  Prerequisite: May be repeated with new content. See Class Schedule for specific content. Limit of nine units of any combination of Music 596 courses applicable to a bachelor's degree. Maximum combination of units of 596 and 598 applicable to a 30-unit master's degree.

GRADUATE COURSES

600. Seminar in Music Education (3)  Prerequisite: Consent of instructor.

Seminars in music education are offered to provide an opportunity for concentrated study to the several areas listed.

A. Development and Teaching of Strings
B. Choral and Vocal Techniques

Music

607. Seminar in Composition (3)
Three hours of laboratory and public performance of an extended original work as a project.
Prerequisite: Music 507.
Advanced composition for various media, development of original idiom, intensive study of modern music.

613. Seminar in Music Theory (3)
Prerequisite: Music 556 is prerequisite to 613F.
Current advanced analytic techniques in various areas of music.
A. History and Development of Music Theory
B. Problems in Analysis
C. Functional Harmony and Schenkerian Analysis
D. Ethnomusicology: Notation and Transcription
E. Conceptual Analysis of the Jazz Idiom

614. Field Research Methods in Ethnomusicology (3)
Prerequisites: Music 556 and 613F.
Field recording, interviews, operation of audiovisual equipment. Analysis of collected materials.

641. Piano Pedagogy: The Adult (3)
Two lectures and three hours of laboratory.
Prerequisite: Music 542A.
Study of music through the piano for the adult student or adult student. Analysis of solo and ensemble literature. Learning theories. Analysis of literature with corresponding techniques. Supervised teaching.

642. Piano Pedagogy: The Adult (3)
Two lectures and three hours of laboratory.
Prerequisites: Music 541A and 542A.
Study of music for teaching the advanced teenager, college student or adult student. Analysis of solo and ensemble literature. Problem solving and practice. Supervised fieldwork.

643. Seminar: History of Vocal Pedagogy (3)
Prerequisite: Music 541C.
Techniques and practices used to train the human voice in music from the seventeenth century to the present.

648. Seminar in Advanced Choral Conducting (2)
Prerequisite: Music 346.
Course designed to develop skills at professional level; study of different styles of choral literature and their relationship to conductor's art; score analysis and experience in conducting. (Formerly numbered Music 648A)

649. Seminar in Advanced Instrumental Conducting (2)
Prerequisite: Music 346.
Course designed to develop skills at professional level; study of conducting style as related to band and orchestra literature; score analysis and experience in conducting. (Formerly numbered Music 648B)

651. Advanced Performance Studies (1-3)
Fifteen one-half hour private lessons (1 unit); fifteen one-hour private lessons (2 units); twenty-two hours private lessons (3 units).
Prerequisite: Audition before music faculty. Music 651B for one unit includes M.F.A. in drama students. Advanced studies in technical, stylistic, and aesthetic elements of artistic performance culminating in a graduate recital. Maximum credit nine units, four of which are applicable to a master of arts degree. Music 651M will include regular ensemble conducting experience. (Formerly numbered Music 660J)
A. Keyboard
B. Voice
C. Woodwind
D. Brass
E. Percussion
F. String
G. Classical Guitar

652. Seminar in Music History (3)
Prerequisites: Music 452B and consent of instructor. Music 315F is prerequisite to 652F. Music 364A-364B and 452C are prerequisite to 652G.
Prerequisites: Consent of instructor. Seminar in music history are offered for intensive study in each of the historical eras as listed below.
A. Music of the Middle Ages and Renaissance
B. Music of the Baroque Era
C. Music of the Eighteenth and Nineteenth Centuries
D. Twentieth Century Music
E. American Music
F. History of Asian Music
G. History of Jazz

655. Seminar in Musicology (3)
Prerequisite: Music 542B.
Problems and research in musicology. Projects in bibliography, source materials, music history, criticism, aesthetics and related fields. Writing and presentation of a scholarly paper.

656. Seminar in Ethnomusicology (3)
Prerequisite: Music 556.
Variable topics. Maximum credit nine units applicable to a master's degree.

658. Advanced Practicum in Music (3)
One lecture and six hours of activity.
Prerequisites: Completion of undergraduate requirements in an area related to one of the specializations in the M.A. or M.M. degrees, and consent of instructor in the area.
Students will be assigned to appropriate class sections within selected undergraduate areas as instructional assistants under staff supervision. Maximum credit six units applicable to a master's degree.

660. Seminar: A Major Composer (3)
Prerequisite: Music 452B.
Completion of a seminar in Music 652A is recommended.
The life, milieu, and works of a major composer, such as Bach, Mozart or Schubert will be studied. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

665. Seminar: Notation of Polyphonic Music (3)
Prerequisite: Music 452B. Completion of Music 652A is recommended.
Selected problems related to the notation of Medieval, Renaissance, and Baroque music; notation for chant, chant notation, lute notation, keyboard notation, lute notation, and French, Italian, mixed and engraved notation. Examples will be transcribed into modern notation. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree.

670. Seminar: Interpretation of Early Music (3)
Prerequisites: Completion of Music 652A and 652B is recommended.
Performance practice in Medieval, Renaissance and Baroque music; project in music editing; reports, performance on historical instruments. Participation in the Collegium Musicum required.

690. Seminar in Research Procedures in Music (3)
Reference materials, bibliography, investigation of current research in music; processes of thesis topic selection and techniques of scholarly writing.

696. Special Topics in Music (1-3)
Prerequisite: Graduate standing.
Variable study in specific areas of music. May be repeated with new content. See Class Schedule for specific content. Maximum credit six units applicable to a master's degree. Maximum credit of six units of 696 applicable to a 30-unit master's degree.

767. Graduate Recital (3)
Prerequisites: Advancement to candidacy. Consent of department chair and instructor.
Selection of literature for recital program of at least one hour in length, theoretical analysis and historical study of scores chosen; preparation and public performance; and examination before a graduate committee of music department faculty. Conductors must conduct a public performance.

798. Special Study (1-3) Cr/NC/SP
Prerequisite: Consent of staff. To be arranged with department chair and instructor.

799A. Thesis or Project (3) Cr/NC/SP
Prerequisites: Officially appointed thesis committee and advancement to candidacy.
Preparation of a project or thesis for a master's degree.

799B. Thesis or Project Extension (0) Cr/NC
Prerequisite: Prior registration in Thesis or Project 799A with an assigned grade symbol of SP.
Registration required in any semester or term following assignment of SP in Course 799A in which the student expects to use the library and teaching resources of the University; also, the student must be registered in the course when the completed thesis or project is granted final approval.