

CIVIL ENGINEERING

School of Engineering and Technology

DEPARTMENT OFFICE
Engineering and Technology A211
Phone: (213) 343-4450

The Faculty

Emeriti: King S. Luk, William G. Plumtree, Gunjit Sikand.

Professors: Frank R. Balle, Anjan K. Bhaumik, Raymond I. Jeng (Chair), Irving Kett, Young C. Kim, Narendra B. Taly, Wen L. Wang.

Associate Professors: Hassan Hashemian, Rupa P. Purasinghe.

Bachelor of Science Degree in Engineering with Civil Engineering Option

The *Civil Engineering* option offers instruction in the basic sciences and in planning, designing, constructing, and managing civil engineering systems: water resources, environmental, highways and transportation, structural and geotechnical engineering.

Requirements for the Major (152 units)

Lower Division Required Courses (76 units):

- CE 202 Plane Surveying (4)
- CS 290 Introduction to FORTRAN Programming (2)
- CHEM 101, 102 General Chemistry I, II (5, 5)
- ENGR 100 Introduction to Engineering (1)
- ENGR 103 Design Graphics (3)
- ENGR 201 Statics (4)
- ENGR 204 Circuit Analysis I (4)
- ENGR 205 Strength of Materials (4)
- ENGR 207 Materials of Engineering (4)
- ENGR 209 Engineering Analysis (4)
- MATH 206-209 Calculus I-IV (4 each)
- MATH 215 Differential Equations (4)
- PHYS 201-204 General Physics (4 each)

Upper Division Required Courses (58 units):

- CE 303 Fluid Mechanics I (4)

- CE 312 Strength of Materials Laboratory I (1)
- CE 313 Fluid Mechanics Laboratory I (1)
- CE 320 Dynamics I (4)
- CE 360 Structural Mechanics I (4)
- CE 361 Structural Design I (4)
- CE 364 Concrete Laboratory (1)
- CE 366 Soil Mechanics I (4)
- CE 368 Soil Mechanics Laboratory (1)
- CE 370 Transportation Engineering (4)
- CE 384 Introduction to Environmental Engineering (4)
- CE 387 Hydraulics I (4)
- CE 390 Numerical Methods and Finite Element Analysis (4)
- CE 495 Civil Engineering Design Project (4)
- ENGR 300 Economics for Engineers (4)
- ENGR 301 Ethics and Professionalism in Engineering (1)
- ENGR 311 Electric Circuits Laboratory (1)
- ENGL 306 Technical Writing (4)
- ME 326A Thermodynamics I (4)

Upper Division Electives (18 units):

Select a coherent program of 16 units lecture and design electives, which may include a maximum of 4 units from related fields with departmental approval, plus 2 units of laboratory electives. A minimum of 8 units must be selected from the group designated as *design electives*. A minimum of 12 units in upper division electives must be taken in residence at Cal State L.A.

Design Electives: (8-16 units):

- CE 461, 462, 463, 467, 471, 472, 487

Lecture Electives: (0-8 units):

- CE 365, 402, 460, 474, 475, 483, 484, 485

Laboratory Electives: (2 units):

- CE 372, 413, 473
- ENGR 499
- ME 412

ELECTRICAL AND COMPUTER ENGINEERING

School of Engineering and Technology

DEPARTMENT OFFICE

Engineering and Technology A317

Phone: (213) 343-4470

The Faculty

Emeriti: Leslie Cromwell, Louis W. Eggers, Jr., Vincent A. Giroux, M. Morris Mano, Victor Payse, Jr., Howard Schug, Harold Storch.

Professors: Kodzo O. Abledu, Roy I. Barnett, George B. Bouse, Helen R. Boussalis, Roger D. Brandt, Robert C. Howard, Kamran Karimiou, Jack G. Levine, Raj S. Ramchandani, Martin S. Rodan (*Chair*), Sidney Soclof.

Associate Professors: George B. Killinger, Lili Tabrizi, Philip Tai

Assistant Professors: Fred Daneshgaran, Patricia Nava

Bachelor of Science Degree in Engineering with Electrical Engineering Option

Electrical engineering is the largest major field within engineering. Electrical engineers are involved in all aspects of electrical devices, from conceptual design to manufacturing. They are generally involved in one or more major areas such as solid state electronics, computers, electrical equipment, communications, controls, or power distributing equipment. Each of these major areas includes a number of subdivisions such as aviation systems, microwaves, and integrated circuits. Besides employment in research, development, and design, many electrical engineering graduates are involved in manufacturing, management, sales, and teaching. Careers are readily available in industry, government, research, and education.

The *Electrical Engineering* option offers instruction in the basic sciences and in engineering analysis and design. The upper division offerings provide a flexible, broad curriculum to enable each student to match talents and interests with career objectives. The major areas of course concentrations are circuits, communications, computers, controls, electronics, and power.

Requirements for the Major (155 units)

Lower Division Required Courses (63 units):

- CS 290 Introduction to FORTRAN Programming (2)
- CHEM 101 General Chemistry I (5)
- EE 244 Digital Engineering (4)
- EE 290 Electrical Engineering Computing (3)
- ENGR 100 Introduction to Engineering (1)

- ENGR 204 Circuit Analysis I (4)
- ENGR 207 Materials of Engineering (4)
- ENGR 208 Statistics and Strength of Materials (4)
- MATH 206-209 Calculus I-IV (4 each)
- MATH 215 Differential Equations (4)
- PHYS 201-204 General Physics (4 each)

Upper Division Required Courses (61 units):

- EE 304 Electric Machines (4)
- EE 310 Electrical Measurements Laboratory (1)
- EE 317 Electronics Laboratory I (1)
- EE 332 Systems Analysis (4)
- EE 333 Circuit Analysis II (4)
- EE 334 Probability and Random Processes (4)
- EE 335 Digital Electronic Circuits (4)
- EE 336 Analog Electronic Circuits I (4)
- EE 345 Microcomputer Programming (4)
- EE 346 Digital Logic Laboratory (1)
- EE 431 Analog Communications (4)
- EE 437 Electric and Magnetic Fields (4)
- EE 438A Control Systems I (4)
- EE 496AB Senior Design Project I, II (2,2)
- ENGR 300 Economics for Engineers (4)
- ENGR 301 Ethics and Professionalism in Engineering (1)
- ENGR 311 Electric Circuits Laboratory (1)
- ME 326A Thermodynamics I (4)
- PHYS 333 Applied Modern Physics (4)

Electives (31 units):

Elective Lectures (12 units) (select three from following):

- EE 342, 347, 371, 411, 412, 420, 421, 422, 423, 424, 430, 432, 433, 434, 436, 438B, 439, 445, 449, 461, 472, 473, 483
- ENGR 490

Elective Laboratories (2 units):

- EE 314, 340, 418, 441, 442, 443, 448, ENGR 499

Upper Division Mathematics Elective (4 units):

Select one from following:

- MATH 325, 402A, 403, 474

Upper Division Specialization (13 units):

With adviser approval, select a specialization that includes three lecture courses plus one laboratory course.

MECHANICAL ENGINEERING

School of Engineering and Technology

DEPARTMENT OFFICE
Engineering and Technology A205
Phone: (213) 343-4490

The Faculty

Emeriti: Alfred H. Fritz, George E. Mann, Dan R. Rankin.

Professors: Neda S. Fabris (*Chair*), Stephen Felszeghy, Phillip I. Gold, Charles Haberman, Lih-Min Hsia, Raymond B. Landis, Ramachandra Marvi, Michael J. Maurer, Majdedin Mirmirani, Richard D. Roberto.

Associate Professor: Chivey C. Wu.

Bachelor of Science Degree in Engineering with Mechanical Engineering Option

Mechanical engineering, one of the most general branches of engineering, requires broad knowledge in many fields: mechanics, thermal science, design, machinery, instrumentation, and more. The breadth and flexibility of a mechanical engineer's education provide a wide choice of careers and allow movement into a variety of engineering areas.

Mechanical engineers are concerned with the production, transmission, and use of power. They design and develop machines that produce and/or use power. Many mechanical engineers are employed in manufacturing. The technical versatility and importance of mechanical engineers are demonstrated by the diversity of industries that employ them.

The *Mechanical Engineering* option provides instruction in the basic sciences and in engineering design and analysis. During the junior and senior years, students may choose from a broad spectrum of electives to match individual talents and interests with a career objective. The major areas of course concentration are applied mechanics, machine design, energy, heat, and power.

Requirements for the Major (152 units)

Lower Division Required Courses (76 units)

- CS 290 Introduction to FORTRAN Programming (2)
- CHEM 101, 102 General Chemistry I, II (5, 5)
- ENGR 100 Introduction to Engineering (1)
- ENGR 103 Design Graphics (3)
- ENGR 201 Statics (4)
- ENGR 204 Circuit Analysis I (4)
- ENGR 205 Strength of Materials I (4)
- ENGR 207 Materials of Engineering (4)
- ENGR 209 Engineering Analysis (4)

- MATH 206-209 Calculus I-IV (4 each)
- MATH 215 Differential Equations (4)
- ME 228 Manufacturing Processes (4)
- PHYS 201-204 General Physics (4 each)

Upper Division Required Courses (56 units): (includes area of specialization)

- EE 310 Electrical Measurements Laboratory (1)
- ENGR 300 Economics for Engineers (4)
- ENGR 301 Ethics and Professionalism in Engineering (1)
- ENGL 306 Technical Writing (4)
- ME 303 Fluid Mechanics I (4)
- ME 306 Heat Transfer I (4)
- ME 310 Engineering Measurements Laboratory (1)
- ME 312 Strength of Materials Laboratory (1)
- ME 319 Computer Aided Mechanical Engineering Laboratory (2)
- ME 320 Dynamics I (4)
- ME 323 Machine Design I (4)
- ME 326AB Thermodynamics I, II (4, 4)
- ME 397 Introduction to Project Design in Mechanical Engineering (2)
- ME 410 Control of Mechanical Systems (4)
- ME 497 Mechanical Engineering Senior Project (4)

Area of Specialization (8 units):

Select one of following pairs of courses:

MECHANICAL DESIGN:

ME 321, 421

THERMAL-FLUID SYSTEMS:

ME 408, 426

Electives (20 units):

Select at least 16 units from lecture courses and four units from laboratory courses listed below. Interdisciplinary engineering courses may be included. Select in consultation with permanent adviser to ensure that a total of one-half year of design is included.

Lecture Courses (16 units):

ENGR 490, ME 321, 328, 402-404, 406, 408-411, 414-416, 420-422, 425, 426

Laboratory Courses (4 units):

ENGR 499, ME 313, 315, 329, 412, 413, 417, 427

INTERDISCIPLINARY PROGRAMS IN ENGINEERING

School of Engineering and Technology

Bachelor of Science Degree in Engineering with Special Option

The *Special Option* allows students to select upper division courses that do not fit within the framework of the traditional branches of engineering. In consultation with their permanent adviser, Special Option students can select a combination of courses from all engineering departments to meet a specific professional objective or to provide a broader engineering base than can be obtained in the other options. Greater freedom in selecting professional courses outside the School of Engineering and Technology is also provided by this option.

Requirements for the Major (152 units)

Lower Division Required Courses (72 units):

- CS 290 Introduction to FORTRAN Programming (2)
- CHEM 101, 102 General Chemistry I, II (5, 5)
- ENGR 100 Introduction to Engineering (1)
- ENGR 103 Design Graphics (3)
- ENGR 201 Statics (4)
- ENGR 204 Circuit Analysis I (4)
- ENGR 205 Strength of Materials (4)
- ENGR 207 Materials of Engineering (4)
- ENGR 209 Engineering Analysis (4)
- MATH 206-209 Calculus I-IV (4 each)
- MATH 215 Differential Equations (4)
- PHYS 201-204 General Physics (4 each)

Upper Division Required Courses (28 units)

- CE/ME 312 Strength of Materials Laboratory I (1)
- EE 310 Electrical Measurements Laboratory (1) or ME 310 Engineering Measurements Laboratory (1)
- ENGR 300 Economics for Engineers (4)
- ENGR 301 Ethics and Professionalism in Engineering (1)

- ENGR 311 Electric Circuits Laboratory (1)
- ENGL 306 Technical Writing (4)

Select 16 units from following:

- CE/ME 303 Fluid Mechanics I (4)
- CE/ME 320 Dynamics I (4)
- EE 304 Electric Machines (4)
- EE 336 Analog Electronic Circuits (4)
- ME 306 Heat Transfer I (4)
- ME 326A Thermodynamics I (4)

Electives (52 units):

With prior approval of permanent adviser and department chair, select a grouping of courses and laboratories with a specific objective. These may be chosen from the interdisciplinary lectures and laboratories and from an appropriate combination of approved courses in engineering, technology, mathematics, the natural sciences, business, and economics.

Lecture and Laboratory Courses:

- | | |
|----------|--------------|
| CE 402 | EE 438A, 442 |
| ENGR 490 | ME 408, 412 |

Fire Protection Engineering Emphasis Within Special Option

An emphasis in Fire Protection Engineering within the Special Option has been established. Senior-year electives in this option will be selected from a group of courses in engineering and in technology. Fire protection engineers are concerned with controlling or eliminating the occurrence of fire. They are employed by a wide variety of industries from construction to insurance firms. Students interested in Fire Protection Engineering are advised to consult the associate dean for further information.

TECHNOLOGY

School of Engineering and Technology

DEPARTMENT OFFICE

Engineering and Technology A341

Phone: (213) 343-4550

The Faculty

Emeriti: Cortland C. Doan, Clifford Dobson, Raymond E. Fausel, Keith E. Gummere, John LaMonica, William A. Mays, Kenneth Phillips, Kenneth N. Sweetnam, Norwood Teague.

Professors: Gregory S. Graham, Kenneth F. Hird, Pamela D. Jablonsky, Don M. Maurizio, Le D. Tang.

Associate Professors: Behrooz (Bob) Lahidji, Ethan Lipton (Chair), Maureen Pettitt, Virgil Seaman.

Bachelor of Arts Degree in Industrial Arts

A total of 186 units is required for the Bachelor of Arts degree in Industrial Arts. The program is designed primarily for students who plan to become industrial education teachers. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

The department also offers graduate programs in industrial and technical studies and vocational education to further develop leadership skills for business, industry, and teaching, and to meet credential requirements. Graduate degree programs are described in the *Graduate Programs* section.

Requirements for the Major (84 units)

Required for the major are 84 units of professional and technical courses in technology.

The professional component requires 27 units and the technical program requires 57 units, distributed as follows: foundation courses, 24 units; area of concentration, 21–27 units; and additional specialization, 6–12 units.

PROFESSIONAL COURSES

Required Courses (27 units):

- TECH 101 Industrial Safety for Industrial Education (3)
- TECH 200 History of Technology (3)
- TECH 300AB Foundations of Industrial Education (2, 2)
- TECH 380 Industrial Graphic Communication Technology (3)
- TECH 381 Materials, Process, and Fabrication Technology (3)
- TECH 382 Power Technology (3)
- TECH 400 Written Communications Skill for Industrial Studies (4)
- TECH 481 Practicum in Industrial Studies (4)

TECHNICAL COURSES

A minimum of 57 units is required in technical courses, chosen from the three areas below.

Foundation Program

Required Courses (24 units):

- ART 287 Introduction to Photography (3)
- TECH 100 Introduction to Automotive Mechanisms (3)
- TECH 110 Introduction to Drafting (3)
- TECH 120 DC Electronics (3)
- TECH 130 Introduction to Graphic Arts (3)
- TECH 144 Introduction to Industrial Design (3)

TECH 160 Introduction to Metalworking (3)

TECH 170 Introduction to Wood Technology (3)

Area of Concentration (21–27 units):

Select a total of 21–27 units of intermediate and advanced courses and laboratory work from one of the following areas:

- | | |
|------------------|--------------|
| Automotive | Drafting |
| Electronics | Graphic Arts |
| Metal Technology | Photography |
| Wood Technology | |

When needed, select additional related courses with adviser approval. As a rule, one or two of these courses will be lower division (3 or 6 units) and the remainder upper division (15–24 units).

Additional Specialization (6–12 units):

The remaining units needed to satisfy the technical requirement are used to strengthen the area of concentration or to develop a second area of concentration. Add the following courses to the designated areas of specialization.

Automotive

TECH 361 Welding Technology (3)

TECH 463 Metal Machining I (3)

Drafting

TECH 271 Wood Construction Technology (3)

TECH 464 Metal Machining II (3)

Electronics

TECH 415 Electromechanical Drafting and Design (3)

Metal Technology

TECH 411 Tool Design (3)

Photography

TECH 312 Technical Illustration (3)

TECH 431 Lithography I (3)

Wood Technology

TECH 311 Architectural Drafting (3)

Bachelor of Science Degree in Fire Protection Administration and Technology

The Bachelor of Science degree in Fire Protection Administration and Technology was designed to meet the needs of various fire services for educational experiences that provide both technical and administrative skills. The curriculum was developed through close consultation with representatives of all levels of the fire services from local groups to state committees and boards.

Requirements for the Major (100–108 units)

Required for the degree are 186 quarter units, including applicable lower division preparation at a community college. The major requires a total of 100–108 quarter units.

A minimum of 15 semester units (23 quarter units) of community college courses is required, as follows:

- Building Construction for Fire Protection (3)
- Fire Company Organization and Management (3)

- Fire Fighting Tactics and Strategy (3)
- Fire Protection Equipment and Systems (3)
- Fundamentals of Fire Prevention (3)

A maximum of 6 semester units (9 quarter units) of community college course work may be used as lower division electives. Select from the following:

- Fire Apparatus and Equipment (3)
- Fire Hydraulics (3)
- Fire Investigation I (3)
- Fire Service Communications Systems (3)
- Fire Service Records and Reports (3)
- Hazardous Materials I and II (3 each)
- Related Codes and Ordinances (3)
- Rescue Practices (3)
- Wildland Fire Control (3)

A total of 15–21 semester units (22–32 quarter units) of community college courses may be included in the major program.

The remainder of the major is primarily upper division work, with 68–86 quarter units required. Of these units, a maximum of 12 may be taken in lower division courses.

Required Courses (52 units):

- OSBE 301 Business Communications (4)
 POLS 403 State and Local Government (4)
 POLS 415 Political Sociology (4)
 POLS 460 Foundations of Public Administration (4)
 POLS 463 Public Personnel Administration (4)
 POLS 466 Public Financial Administration (4)
 TECH 350 Fire Protection and the Community (4)
 TECH 351AB Fire Defense Planning (4, 4)
 TECH 352AB Fire Protection Aspects of Building Design (4, 4)
 TECH 353 Fire Disaster Administration (4)
 TECH 452 Fire Prevention Administration (4)

Electives (16–34 units):

Select from following with adviser approval and attention to prerequisites.

Select 8–10 units from following:

- ECON/ENGR 300 POLS 461, 470, 472, 473, 496
 POLS 281 or SOC 210AB

Select 8 units from following:

- POLS 404 SOC 201, 202, 420
 TECH 355

Select 0–16 units from following:

- ENGR 352 TECH 451, 453AB

Bachelor of Science Degree in Industrial Technology

The Bachelor of Science degree in Industrial Technology is available with a choice among three options: *Aviation Administration*, *Printing Management*, and *Production Technology*. The total unit requirements for the major and for the degree vary with the individual options, as indicated below.

Options

• Aviation Administration Option

The Aviation Administration option, which provides appropriate training for middle management positions in aviation, was

developed in response to needs identified by airlines, the aviation industry, and community colleges with two-year aviation programs.

Requirements for the Major (104 units)

The Bachelor of Science degree in Industrial Technology with the Aviation Administration option requires a total of 186 units. The major requires 104 units, including 21 semester units (32 quarter units) of community college work for students who have completed a two-year community college program in flight attendant training, maintenance, air transportation, or a similar aviation-oriented program.

The lower division program is completed at the community college. Students who have not completed lower division general education requirements at the time of entrance to Cal State L.A. must fulfill these remaining requirements in addition to upper division general education and major requirements. Transfer students must also complete prerequisites to required upper division courses in accounting, economics, finance, and marketing.

Lower Division Required Courses (32 units):

Must be completed at a community college as indicated above.

Upper Division Required Courses (8 units):

- TECH 400 Written Communication Skills for Industrial Studies (4)
 TECH 447 Senior Seminar: Aviation Problems (4)

Elective Courses (32 units):

Select one from following:

- TECH 340, 341

Select one from following:

- TECH 342, 343

Select two from following:

- TECH 344–346

Select four from following:

- TECH 440–445

Required in Related Fields (12 units):

- ACCT 300 Managerial Accounting (4)
 FIN 305 Commercial Law (4)
 MKT 304 Principles of Marketing (4)

Electives in Related Fields (20 units):

Required (4 units):

- CIS 294 Business Computer Systems (4)

Select one from following (4 units):

- ECON 303, 310, 402

Select two from following (8 units):

- MKT 350, 351, 450, 451

Select one from following (4 units):

- MKT 340, 342, 346, 450, 451

• Printing Management Option

The option in Printing Management has been designed to give students extensive training in the graphic arts industry as well as a grasp of the principles and techniques of business management. The curriculum has been developed through close consultation with the graphic arts industry.

Requirements for the Major (91-94 units)

The Bachelor of Science degree in Industrial Technology with the Printing Management option requires a total of 192 units. Required for the major are 91-94 units, of which 43-46 are in graphic arts and 48 are courses from the School of Business and Economics.

The lower division program is concerned primarily with acquisition of skills and techniques of the printing industry; the upper division portion is concerned primarily with business management. Students who have not had work experience with a printing firm will be advised to complete at least two units of UNIV (TECH) 398 (Cooperative Education).

Lower Division Required Courses (26 units)

- TECH 130 Introduction to Graphic Arts (3)
- TECH 231 Graphic Arts Paste-up (3)
- ACCT 200AB Principles of Accounting (4, 4)
- ECON 200, 201 Principles of Economics I, II (4, 4)
- FIN 205 Foundations of Business Law (4)

Upper Division Required Courses (65 units)

- TECH 331 Typography I (3)
- TECH 332 Typography II (3)
- TECH 333 Presswork Procedures (3)
- TECH 400 Written Communication Skills for Industrial Studies (4)
- TECH 431 Lithography I (3)
- TECH 432AB Typographical Layout and Design I, II (4-5)
- TECH 433 Printing Estimating (5)
- TECH 434 Printing Plant Management (4)
- TECH 435 Lithography II (3)
- ACCT 300 Managerial Accounting (4)
- ECON 303 Money, Banking, and the Economy (4)
- ECON 310 Economics of the Business Firm (4) or
- ECON 402 Labor Economics (4)
- FIN 303 Business Finance (4) or
- MGMT 306 Production and Operations Management (4)
- FIN 305 Commercial Law (4)
- FIN 330 Credits and Collections (4) or
- MKT 304 Principles of Marketing (4) or
- MKT 341 Salesmanship (4)
- OSBE 313 Office Organization and Management (4) or
- MGMT 460 Case Studies in Production and Operations Management (4) or
- MGMT 468 Small Business Management (4)

Elective (0-3 units):

- UNIV (TECH) 398 Cooperative Education (1-3)

• Production Technology Option

The Production Technology option was created to provide technical management personnel for industry. The curriculum combines design, manufacturing, and service courses with leadership and business courses. This program was developed in close cooperation with the various local industries that employ large numbers of these professionals.

Requirements for the Major (111-121 units)

The Bachelor of Science degree in Industrial Technology with the Production Technology option requires a total of 192 units, including 111-121 units in the major, with 70-74 in technical courses and 41-47 in related courses in mathematics, natural sciences, and the School of Business and Economics.

REQUIRED PROFESSIONAL CORE (34 units)

- MATH 102 College Algebra (4)
- TECH 101 Industrial Safety for Industrial Education (3)

- TECH 200 History of Technology (3)
- TECH 291 Computers in Technology (3)
- TECH 380 Industrial Graphic Communication Technology (3)
- TECH 381 Materials, Process, and Fabrication Technology (3)
- TECH 382 Power Technology (3)
- TECH 400 Written Communication Skills for Industrial Studies (4)
- TECH 481 Practicum in Industrial Studies (4)
- TECH 489 Industrial Training Methods (4)

OTHER REQUIRED COURSES (27 or 29 units)

- CS 190 BASIC Programming (2)

(or any programming language course of 2-4 units)

- CHEM 151 Fundamentals of Chemistry I (5)
- PHYS 150 Principles of Physics (4)
- TECH 414 Robotics in Industry (2)
- TECH 482 Metrics for Industry (3)
- TECH 484 Automated Manufacturing Systems (4)
- TECH 488 Fluid Power (3)
- UNIV (TECH) 398 Cooperative Education (4)

REQUIRED TECHNICAL CORE

Select 12 units from following:

- TECH 100 Introduction to Automotive Mechanisms (3)
- TECH 110 Introduction to Drafting (3)
- TECH 120 DC Electronics (3)
- TECH 130 Introduction to Graphic Arts (3)
- TECH 144 Introduction to Industrial Design (3)
- TECH 160 Introduction to Metalworking (3)
- TECH 170 Introduction to Wood Technology (3)
- ART 287 Introduction to Photography (3)

ADVANCED TECHNOLOGY COURSES

Select 12-16 units from following with attention to prerequisites

- TECH 301 Fuel and Ignition Systems (3)
- TECH 403 Chassis and Suspension Systems (3)
- TECH 405 Engine Design (3)
- TECH 411 Tool Design (3)
- TECH 412 Manufacturing and Construction Drafting (3)
- TECH 415 Electromechanical Drafting and Design (3)
- TECH 321 Solid State Electronics (3)
- TECH 424 Industrial Controls (3)
- TECH 425 Programmable Controls (3)
- TECH 431 Lithography I (3)
- TECH 434 Printing Plant Management (4)
- TECH 435 Lithography II (3)
- TECH 461 Industrial Casting (3)
- TECH 463 Metal Machining (3)
- TECH 465 Industrial Machining Processes (3)
- TECH 372 Wood Finishing and Preservation (3)
- TECH 472 Wood Manufacturing Technology I (3)
- TECH 473 Wood Manufacturing Technology II (3)
- ART 397 Color Photography (3)
- ART 483 Advertising and Photography (3)
- ART 487 Functional Photography (3)

REQUIRED MANAGEMENT COURSES (22 units)

- ACCT 202 Survey of Accounting (4)
- ECON 209 Applied Business and Economic Statistics I (3)
- ECON 309 Applied Business and Economic Statistics II (3)
- MATH 242 Mathematics for Business and Economics Majors (4)
- MGMT 306 Production and Operations Management (4)
- MGMT 467 Quality Control (4)

MANAGEMENT ELECTIVES

Select 4 or 8 units from following with attention to prerequisites:

- ECON/ENGR 300 Economics for Engineers (4)
 MGMT 460 Case Studies in Production and Operations Management (4)
 MGMT 461 Management Theory and Practice (4)
 MGMT 462 Comparative Management (4)
 MGMT 463 Motion and Time Study (4)
 MGMT 464 Production and Material Control (4)
 MGMT 473 Personnel Management (4)
 PSY 442 Industrial and Organizational Psychology (4)

Bachelor of Vocational Education Degree

The Bachelor of Vocational Education degree in Vocational Arts is offered for vocational teachers recommended by the California State Board of Examiners for Vocational Teachers. Vocational teachers interested in details regarding this program should see the BVE degree adviser in the Department of Technology.

Students on time schedules that require the completion of 500-level courses before completion of the BVE degree may petition to enroll in the following graduate level secondary education courses and apply them toward the degree:

- EDAC 581 The Community College (3)
 EDAC 582 Instruction in Community College (4)
 EDAC 589 Directed Teaching in Community College (6)

The procedure to determine eligibility for enrolling in the above courses is as follows:

1. Students must present evidence of employment as an instructor in a community college. Verification may be presented in the form of a letter from the community college dean of instruction.
2. As evidence of the necessity to complete course work related to teaching at the community college level, students must submit the evaluation sent them by the Credentials Section of the Chancellor's Office of the California Community Colleges.

Evidence of employment and certification of 500-level course requirements described above must be submitted to the Cal State L.A. BVE degree adviser who will then certify to the registrar the student's eligibility to enroll in the 500-level courses for baccalaureate credit.

Requirements for the Major (91-100 units)

A total of 186 units is required for the Bachelor of Vocational Education degree, of which 91-100 units are taken in the following areas:

- The Vocational Teacher Education program has a requirement of 33-42 units. Candidates should contact a university that offers the required teacher education courses in vocational education.
- The major in Vocational Arts has a requirement of 58 units. Credit awarded by the state Board of Examiners for Vocational Teachers fulfills a portion of this major. Applicants for credit should contact the BVE adviser.

Minor in Industrial Studies

A minimum of 36 units is required for a minor in Industrial Studies. Included in a typical program for the minor are 3-9 units in lower division courses. However, the number of units may vary according to the selection of an area of concentration and the selection of electives.

Requirements for the Minor (36 units)

Area of Concentration (24 units):

At least 24 units are selected as a sequence in one of the eight areas of concentration listed for the Industrial Arts major. The normal pattern for an area of concentration consists of the introductory course and seven additional courses in the same area of industrial studies. When needed, select related courses in other areas with approval of adviser.

Required Course (4 units):

TECH 300AB Foundations of Industrial Education (2, 2)

Electives (8 units):

Select additional technology courses, with prior approval of adviser. If a basic college course in drafting has not been taken, TECH 110 is required for 3 of the 8 units.

Certificate Program in Electronics Technology

The Department of Technology offers a credit certificate program in Electronics Technology. This program is designed to prepare individuals for technical careers in electronics manufacturing, electronics field servicing, and electronics design-assisted environments. Possible job titles include electronics technician, electronics technologist, product testing specialist, field service representative, electronics control specialist, electronics design technician, product design specialist, and technical support specialist. The program emphasizes application-oriented knowledge and hands-on experiences in electronics. Every course has a lab component that provides opportunities for knowledge and skills integration.

The program contains a total of 30 units: 15 units of required courses and 15 units of electives. Courses taken to meet requirements of this program may also be applied toward the majors in Industrial Arts and Industrial Technology. Refer to the Undergraduate Study chapter of this catalog for general regulations governing all certificate programs.

Prerequisite (3 units):

TECH 321 Solid State Electronics (3)

Requirements for the Certificate (30 units)

Required Courses (15 units):

- TECH 323 Industrial Electronics (3)
 TECH 324 Linear Electronics (3)
 TECH 325 Industrial Controls (3)
 TECH 326 Digital Electronics (3)
 TECH 327 Microprocessors (3)

Electives (select 15 units from following):

TECH 421, 422, 425, 426, 427, 428, 490E

Certificate Program in Fire Protection Risk Analysis and Reduction

The Department of Technology offers a credit certificate program in Fire Protection Risk Analysis and Reduction. This program is designed to offer students and individuals in the insurance industry or in private sector fire protection positions a series of professionally related courses in fire protection and fire safety. The courses compliment each other and, as a whole, prepare individuals to serve as fire protection and safety specialists, inspectors, evaluators, and managers.

The program contains a total of 32 units of upper division course work. Courses taken to meet requirements of this program may also be applied toward the major in Fire Protection Administration

and Technology. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

An associate level degree (A.A. or A.S.), or its equivalent, in related subjects, or employment in a fire protection-related position is prerequisite to enrollment in the program.

Requirements for the Certificate (32 units)

Required Courses (32 units):

- TECH 352AB Fire Protection Aspects of Building Design (4, 4)
 TECH 451 Fire Prevention and Building Codes:
 Interpretation and Enforcement (4)
 TECH 452 Fire Prevention Administration (4)
 TECH 453AB Fire Protection Systems Design (4, 4)
 TECH 455AB Fire Protection of Structural Members and
 Building Components (4, 4)

A Fire Protection Administration program adviser may approve appropriate substitute courses to suit individual student needs.

Certificate Program in Fire Service Administration

The Departments of Technology and Political Science offer a credit certificate program in Fire Service Administration. This program is designed to offer fire department personnel who hold an associate degree an opportunity to continue their education. Course work covers effective functioning in modern fire departments, planning, prevention and disaster administration, public administration, and personnel and budgeting administration.

The program contains a total of 32 units of upper division course work: 28 units of required courses and 4 units of electives. Courses taken to meet requirements of this program may also be applied toward the major in Fire Protection Administration and Technology. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

An associate degree (A.A. or A.S.), or its equivalent, in a related subject or employment in a fire protection-related position is prerequisite to enrollment in the program.

Requirements for the Certificate (32 units)

Required Courses (28 units):

- TECH 351AB Fire Defense Planning (4, 4)
 TECH 353 Fire Disaster Administration (4)
 TECH 452 Fire Prevention Administration (4)

- POLS 460 Foundations of Public Administration (4, 4)
 POLS 463 Public Personnel Administration (4)
 POLS 466 Public Financial Administration (4)

Electives (select 4 units from following):

- POLS 403, 404, 430, 461, 464, 470, 472, 479

A Fire Protection Administration program adviser may approve appropriate substitute courses to suit individual student needs.

The Credential Program

Ryan Single Subject Credential

The Bachelor of Arts degree in Industrial Arts has been approved by the Commission on Teacher Credentialing for examination waiver for the Single Subject credential in Industrial Arts. Students should consult advisers in both the department and the School of Education.

Ryan Designated Subjects Credential (Vocational)

This teaching credential authorizes the holder to teach vocational classes in the subject(s) listed on the credential at preschool, grades 1-12, and adult levels. This credential requires qualifying industrial and/or professional work experience in the subject(s) listed on it. Interested applicants should contact the Department of Technology undergraduate adviser.

Requirements for Part-Time Credential (10 units)

- EDAC 472 Principles of Adult and Occupational Education (3)
 EDSE 4211 Methods of Teaching Industrial Education (3)
 HS 456 Health Studies on Alcohol, Narcotics, Nutrition,
 and Tobacco (4)

*Requirements for Full-Time Credential (18 units)

- TECH 300AB Foundations of Industrial Education (2, 2)
 TECH 483A Construction of Teaching Aids (2)
 TECH 486 Seminar: Vocational Education (3)
 TECH 487 Seminar: Comprehensive Career Education
 for Industrial Studies and Vocational Education (3)
 EDAC 473X Supervised Field Experiences in Adult and
 Occupational Education (2)
 EDAC 476 Curriculum Development in Adult and
 Occupational Education (4)

*in addition to courses listed above.

COURSES IN ENGINEERING AND TECHNOLOGY

Courses in Engineering (ENGR)

Lower Division Courses

100 Introduction to Engineering (1)

Introduction to profession of engineering; ethical and legal aspects of engineering profession; engineering design process; communication and computer skills in engineering. Laboratory 3 hours. Graded CR/NC.

103 Design Graphics (3)

Prerequisite: MATH 103; one year high school mechanical drawing or TECH 110. Role of engineer, work of engineer, design process; problem identification, analysis of design data, pictorial presentation, design problems; spatial relationships, empirical equations, nomography. Lecture 2 hours, laboratory 3 hours.

154 Special Topics in Engineering (1-4)

Prerequisite: Instructor consent and as needed for specific topic. Current topics of special interest to students in Engineering, as announced in *Schedule of Classes*. May be repeated to maximum of 8 units.

201 Statics (4)

Prerequisites: MATH 207, PHYS 201. Fundamental principles of statics, resolution and composition of forces, algebraic and graphic solutions, friction, center of gravity, moment of inertia.

204 Circuit Analysis I (4)

Prerequisites: MATH 208, PHYS 203. Electric circuit analysis, transient and steady state; and introduction to frequency response.

205 Strength of Materials I (4)

Prerequisite: ENGR 201. Stresses and strains under axial, shearing, and torsional forces; flexural stresses and deflections of simple beams; columns; and combined stresses.

207 Materials of Engineering (4)

Prerequisites: CHEM 101, MATH 206, PHYS 201. Understanding structure and fundamental atomic and molecular mechanisms of engineering materials, atom and electron movement, physical and mechanical properties; overview of engineering materials, semiconductors, metals, ceramics, polymers, and composites.

208 Statics and Strength of Materials (4)

Prerequisites: MATH 207, PHYS 201. Principles of statics, force systems and equilibrium, structures, machines, distributed force, centroid, moment of inertia, stresses, strains, and deformations under axial, torsional, and bending loads. *For Electrical Engineering students only.*

209 Engineering Analysis (4)

Prerequisites: MATH 208, PHYS 201. Introduction to calculations using vectors, matrices, and probability and statistics; applications of these methods to simple engineering problems.

250 Impact of Technology on Society (4)

Role of technology as both solver and creator of technical and social problems. Social implications of technological progress. Intended for all majors.

Upper Division Courses

300 Economics for Engineers (4)

(also listed as ECON 300)

Basic economic concepts, relationships between economic and engineering problems, role of interest and capital in cost minimization, analysis of financial statements, original and alternative investments, capital depreciation and replacement problems.

301 Ethics and Professionalism in Engineering (1)

Prerequisite: Senior standing in engineering. Ethical and professional standards in engineering profession; impact of engineering profession on society; professional registration and liability; government regulations and legal responsibilities.

311 Electric Circuits Laboratory (1)

Prerequisite: ENGR 204. Experimental verification of the laws of electric circuits. Laboratory 3 hours.

352 Technological Aspects of Urban Environment (4)

Prerequisite: Junior standing. Current engineering practice in dealing with urban problems such as public health, pollution, transportation, communications, public utilities, and land planning and use. Not acceptable for engineering technical elective credit. Intended for all majors.

358 Technology and Environment (4)

(also listed as GEOG 358)

Prerequisite: GE natural science requirement. Problems of resource scarcity and environmental impact of technology, past, present, and future; relationships leading to an understanding of an increasingly complex global system.

454 Special Topics in Engineering (1-4)

Prerequisites: Senior standing in engineering; enrollment subject to approval of instructor in charge. Group study of selected topics not currently offered as technical electives; study groups may be organized in advanced engineering subjects upon approval of instructor.

490 Engineering Application of Digital Computers (4)

Prerequisites: CS 290, MATH 215. Use of FORTRAN programming and numerical solution techniques to solve engineering problems of various selected types.

499 Undergraduate Directed Study (1-4)

Prerequisite: Consent of an instructor to act as sponsor. Project selected in conference with the sponsor before registration; progress meetings held regularly, and a final report submitted. May be repeated for credit.

Courses in Civil Engineering (CE)

Lower Division Course

202 Plane Surveying (4)

Prerequisite: MATH 103 or satisfactory score on mathematics placement test. Principles and practices of measurement of distances, directions, and elevations; care and use of level, transit, plane table; mapping practice, and symbols. Lecture 2 hours, laboratory 6 hours.

Upper Division Courses

303 Fluid Mechanics I (4) (also listed as ME 303)

Prerequisites: CE/ME 320, PHYS 202. Fundamental principles and methods of fluid mechanics; thermodynamics of fluid flow; Newtonian fluids; equations of fluid flow; laminar and turbulent flow; applications.

312 Strength of Materials Laboratory I (1)

(also listed as ME 312)

Prerequisites: ME 310, ENGR 103, 205 (may be taken concurrently). Tests of engineering materials in tension, compression, bending, and torsion; verification by experiment; basic theories learned in strength of materials. Laboratory 3 hours.

313 Fluid Mechanics Laboratory I (1)

(also listed as ME 313)

Prerequisites: ENGR 103, CE/ME 303. Experiments on fluid properties, fluid statics; conservation of mass, energy, and momentum, and fluid resistance. Laboratory 3 hours.

320 Dynamics I (4) (also listed as ME 320)

Prerequisite: ENGR 201. Kinematics and kinetics of rigid bodies; work, kinetic energy, impulse, momentum in two and three dimensions; applications to space mechanics.

360 Structural Mechanics I (4)

Prerequisite: Grade of C or higher in ENGR 205. Analysis of determinate structures; beams, frames, and cables. Introduction to influence lines and analysis of indeterminate structures.

361 Structural Design I (4)

Prerequisite: ENGR 205. Basic concepts of design of structures, allowable stresses, codes and design loads. Design of simple determinate members in steel, concrete, and timber.

364 Concrete Laboratory (1)

Prerequisites or corequisites: CE 361, CE/ME 312. Physical tests of cement, concrete aggregates, tensile strength test of cement, proportioning of concrete mixtures, slump test, compressive and flexural strength tests. Laboratory 3 hours.

365 Specifications and Cost Estimating (4)

Prerequisite: Senior standing in engineering. Building specifications and codes, estimating costs, materials handling and transport, excavation, concrete, wood, masonry, and steel construction.

366 Soil Mechanics I (4)

Prerequisite: ENGR 205; prerequisite or corequisite: CE/ME 303. Physical and mechanical properties of soils, classifications, permeability, seepage, capillarity, consolidation, settlement, stresses, pressures, strength theories, and testing methods.

368 Soil Mechanics Laboratory (1)

Prerequisites or corequisites: CE 366, CE/ME 312. Physical properties of soils, soil classification, mechanical analysis, permeability, shearing strength, and consolidation tests. Laboratory 3 hours.

370 Transportation Engineering (4)

Prerequisites: CE 202, ENGR 103, 209. Fundamental principles for analysis, planning, design, and operation of transportation systems.

372 Asphaltic Materials Laboratory (1)

Prerequisite: CE/ME 312. Laboratory tests on asphalt cement and aggregates; design of asphaltic mixtures; proportioning of asphalt cement and aggregates; preparation of test specimens. Laboratory 3 hours.

384 Introduction to Environmental Engineering (4)

Prerequisites: CE/ME 303, CHEM 102. Introduction to environmental engineering; environmental and ecological systems; physical, chemical, and biological processes; water and wastewater treatment; air pollution; solid and hazardous wastes; regulations and impact assessment.

387 Hydraulics I (4)

Prerequisite: Grade of C or higher in CE/ME 303. Study of multiple pipe and reservoir systems; fundamentals of open channel hydraulics, uniform and gradually varied flow; pumps and turbines. Analysis of dams, spillways, and outlet structures.

390 Numerical Methods and Finite Element Analysis (4)

Prerequisites: CE 303, CS 290, ENGR 205, 209, MATH 215. Numerical and computer methods in civil engineering; introduction to method of finite element analysis; use of digital computer to solve civil engineering problems. Lecture 3 hours, laboratory 3 hours.

402 Strength of Materials II (4)

Prerequisites: ENGR 205, MATH 215. Stress-strain relationship in three dimensions, energy principles, theories of failure, curved beams, thick wall cylinders, shear center, unsymmetrical bending, and torsion in noncircular sections.

413 Fluid Mechanics Laboratory II (1)

(also listed as ME 413)

Prerequisite: CE/ME 313; prerequisite or corequisite: CE 387 or ME 408. Experiments on subsonic and supersonic flow, free surface flow, pumps, turbines, fans, and unsteady flow. Laboratory 3 hours.

460 Structural Mechanics II (4)

Prerequisite: CE 360. Analysis of indeterminate structures; moment distribution, slope deflection, and approximation methods three dimensional frames and long span structures.

461 Design of Steel Structures (4)

Prerequisites: CE 360, 361. Design of steel structures: lateral buckling of beams and frames, built-up beams, girders and trusses; moment connections, torsion and unsymmetrical bending; diaphragms and lateral force designs.

462 Reinforced Concrete Design I (4)

Prerequisites: CE 360, 361. Strength design of reinforced concrete structures, beams, slabs, frames, columns, footings, and retaining walls.

463 Timber and Masonry Design (4)

Prerequisites: CE 360, 361. Wood properties and design of wood structural elements, plywood and glulam products; reinforced masonry (brick and concrete) units, material properties, design of reinforced masonry structural elements.

467 Foundations I (4)

Prerequisite: CE 366. Site exploration, bearing capacity, slope stability, lateral earth pressure, types of foundations, footings, caissons, piles, retaining walls, and cofferdams.

471 Highway Engineering I (4)

Prerequisites: CE 202, 370. Introduction to principles of highway design including route location, geometrics of horizontal and vertical curves, earthwork computations, drainage design; computer applications.

472 Highway and Airport Pavement Design (4)

Prerequisites: CE 361, 366. Theory and principles of pavement design for highways and airports; effects of soil characteristics and physical properties of basic materials; testing procedures.

473 Pavement Design Laboratory (1)

Prerequisites: CE 312; 472 (may be taken concurrently). Basic tests performed in evaluation of treated and untreated bases, subbases, and subgrades necessary for pavement thickness design. Laboratory 3 hours.

474 Traffic Engineering (4)

Prerequisite: CE 370. Elements of traffic engineering: vehicle, driver, and road characteristics; capacity and flow determination; signalized intersections; parking and accident studies; street, freeway, and mass transit operations.

475 Advanced Surveying (4)

Prerequisite: CE 202. Advanced surveying, including triangulation, practical astronomy, and land and construction surveying. Lecture 2 hours, laboratory 6 hours.

483 Hydrology I (4)

Prerequisite: CE/ME 303. Precipitation, evaporation, infiltration, transpiration, and runoff; methods of predicting discharge from precipitation, flood routing, and measurement of hydrologic processes.

484 Sewerage and Sewage Treatment (4)

Prerequisite: CE/ME 303. Sanitary and storm sewer systems, sewage treatment and disposal, stream sanitation, and treatment plant design.

485 Water Supply (4)

Prerequisite: CE/ME 303. Sources and collection of surface and ground water, distribution systems, water quality, water treatment plants, sedimentation, filtration, softening, and disinfection.

487 Design of Water Resources Systems (4)

Prerequisites: CE 361, 387. Design of storm drains, sanitary sewers, and water distribution systems, culverts, small dams and diversion structures, spillways and outlet structures.

495 Civil Engineering Design Project (4)

Prerequisite: Required upper division CE courses. Planning and designing typical civil engineering project as encountered in practice; projects require integration and synthesis of acquired knowledge under given constraints. Lecture 2 hours, laboratory 6 hours.

Courses in Electrical Engineering (EE)**Lower Division Courses****244 Digital Engineering (4)**

Prerequisite: PHYS 203. Binary systems, Boolean functions and their simplification; introduction to analysis and design of digital systems.

290 Electrical Engineering Computing (3)

Prerequisites: CS 290 with C grade or higher, MATH 209, PHYS 203. Use of computers in electrical engineering; hardware, software; languages; algorithms; structured design; spreadsheets; graphics; word processing; curve fitting; SPICE and other electrical engineering applications.

Upper Division Courses**304 Electric Machines (4)**

Prerequisites: ENGR 204 with C or higher grade; satisfactory score on EE placement exam, ENGL 190, SPCH 150. Electromechanical principles and applications to electric machines.

310 Electrical Measurements Laboratory (1)

Prerequisite: PHYS 203. Characteristics and limitations of analog and digital electrical and electronic instrumentation, signal sources, and d-c power supplies. Analysis, tabulations, and graphical presentation of measurement data and technical report writing. Laboratory 3 hours.

314 Electromagnetic Energy Conversion Laboratory (1)

Prerequisites: EE 304, ENGR 311. Laboratory investigations of electromechanical machines. Laboratory 3 hours.

317 Electronics Laboratory I (1)

Prerequisites: ENGR 311, EE 310, 336. Laboratory study of semiconductor devices and applications in basic circuits. Laboratory 3 hours.

332 Systems Analysis (4)

Prerequisites: ENGR 204 with C or higher grade; ENGR 209; CS 290; MATH 215; satisfactory score on EE placement examination. Linear systems analysis by Fourier and Laplace transform and state space methods; complete system response and system applications.

333 Circuit Analysis II (4)

Prerequisite: EE 332. Analysis of electric circuits with use of state variables and Laplace and Fourier transforms; two ports and filters.

334 Probability and Random Processes (4)

Prerequisite: EE 332. Random variables, bivariate probability distributions, multiple random variables, random processes, introduction to noise analysis; applications to engineering problems.

335 Digital Electronic Circuits (4)

Prerequisites: EE 244, PHYS 333. Switching mode circuits; diode circuit applications; opto-electronic devices; TTL, CMOS, ECL families; logic gates; SSI, MSI, LSI circuit functions.

336 Analog Electronic Circuits I (4)

Prerequisite: PHYS 333. Analysis and design of small-signal and large-signal electronic amplifiers; frequency response; feedback.

340 Electronics Laboratory II (1)

Prerequisite: EE 317. Laboratory study of electronic amplifier circuits. Laboratory 3 hours.

342 Introduction to Software Engineering (4)

Prerequisite: EE 290. Software engineering concepts and techniques; structured design and modular construction; use of Pascal to demonstrate fundamentals of programming style; high-level language programming for microprocessors.

345 Microcomputer Programming (4)

Prerequisites: EE 244, CS 290. Organization and structure of microcomputer systems; machine and assembly language programming; system software for microcomputers.

346 Digital Logic Laboratory (1)

Prerequisites: EE 244, ENGR 311. Laboratory experiments in logic design of digital systems. Laboratory 3 hours.

347 Computer Logic Design (4)

Prerequisite: EE 244. Integrated circuit digital functions; design of computer system by means of register transfer method; processor unit design; control logic design; design of general purpose computers.

371 Analog Electronics (4)

Prerequisite: EE 336. Multistage amplifiers; frequency and time-domain response; feedback; tuned amplifiers; distortion; power amplifiers; operational amplifiers.

In addition to prerequisites listed for individual courses, ENGL 190 and SPCH 150 are prerequisite to all upper division EE courses.

411 Waveguides and Transmission Lines (4)

Prerequisite: EE 437. Guided waves, waveguides, and transmission lines; design of waveguides and cavity resonators.

412 Antennas (4)

Prerequisite: EE 437. Dipole, loop, aperture, and other antennas; array theory, antenna patterns, and pattern multiplication; radiation resistance, directivity, and gain; antenna synthesis and design.

418 Electromagnetics Laboratory (1)

Prerequisites or corequisites: EE 411, 412. Transmission line parameters, attenuation, reflected waves, characteristics of waveguides and waveguide parameters; antenna patterns.

420 Digital Communication Systems (4)

Prerequisite: EE 431. Analysis and design of digital communication systems; source encoders; PCM; matched filter detectors; timing considerations; baseband systems; ASK, FSK, PSK; error analysis; design considerations.

421 Coding for Communications (4)

Prerequisite: EE 431. Information theory; entropy coding; data compression; forward error detection and correction.

422 Digital Signal Processing I (4)

Prerequisite: EE 431. Sampling, A/D conversion; discrete linear system theory; Z-transform; digital filters, recursive and nonrecursive designs; quantization effects; fast Fourier transform; windowing.

423 Digital Signal Processing II (4)

Prerequisite: EE 422. Discrete random signals; finite word length effects; adaptive filters; high resolution spectral estimation.

424 Fiber Optics (4)

Prerequisites: EE 431, 437. Generation, transmission, and modulation of beams, propagation of optical beams in homogeneous and inhomogeneous media; electro-optic modulation of laser beams.

430 Computer Aided Network Design (4)

Prerequisites: EE 333, 336. A study of computer programs for solution of electronic and passive networks. Analysis and design of circuits using existing computer programs.

431 Analog Communication Systems (4)

Prerequisite: EE 334. Bandwidth requirements of audio, video, and pulse signals; carrier communications systems; types of modulation; communication circuits; transmitters and receivers.

432 Power Transmission Lines (4)

Prerequisite: EE 304. Function and structure of power systems, transmission lines, generalized circuit constants, circle diagrams, system representation.

433 Electric Power System Analysis (4)

Prerequisite: EE 432. Load-flow studies, load-flow control, symmetrical components, short circuits on machines and systems, system protection, elements of system stability, economic operation.

434 Electromagnetic Energy Conversion (4)

Prerequisite: EE 304. Analysis of realistic machine performance; steady state and dynamic response of d-c, synchronous and induction machines; fractional horsepower a-c motors.

436 Analog Integrated Circuits (4)

Prerequisite: EE 371. Analysis, design, and characteristics of operational amplifiers, voltage comparators and regulators, analog-to-digital, and digital-to-analog converters.

437 Electric and Magnetic Fields (4)

Prerequisite: EE 332. Static field theory and applications; Maxwell's equations and applications; electromagnetic waves; introduction to transmission lines.

438A Control Systems Theory I (4)

Prerequisite: EE 334. Analysis and design of feedback control systems by classical methods; introduction to state-variable methods.

438B Control Systems Theory II (4)

Prerequisite: EE 438A. Design of multiple-loop, multiple-signal control systems; nonlinear control systems; computers and optimization.

439 Digital Integrated Circuits (4)

Prerequisites: EE 335, 336. In-depth study of logic families aided by computer analysis; LSI and VLSI, circuit design; regenerative circuits; memories; A-D converters.

441 Communications Laboratory (1)

Prerequisites: EE 317, 431 (may be taken concurrently). Laboratory investigations of characteristics of communication systems and components. Laboratory 3 hours.

442 Control Systems Laboratory (1)

Prerequisite or corequisite: EE 438A. Analysis and design of fundamental control systems by model and full-scale construction in laboratory, and by employing root-locus, frequency response, analog simulation, and other standard techniques. Laboratory 3 hours.

443 Digital and Timing Circuits Laboratory (1)

Prerequisites: EE 317, 439 (may be taken concurrently). Laboratory experiments in design of digital, timing, and pulse forming electronic circuits. Laboratory 3 hours.

445 Microprocessor Interface Design (4)

Prerequisites: EE 335, 345, 347 (may be taken concurrently). Microprocessor architecture and timing; bus structures; memory system design; parallel and serial input/output; interrupts and timers; analog-digital and digital-analog conversion.

448 Digital Design Laboratory (1)

Prerequisites: EE 346; 347 (may be taken concurrently). Hardware design of digital computer functions with MSI and LSI integrated circuits. Laboratory 3 hours.

449 Computer Organization (4)

Prerequisite or corequisite: EE 347. Central processor unit organization; microprocessor architecture; control unit organization; microprogramming; input-output, interface; microcomputer hardware organization.

461 Discrete-Time Control Systems (4)

Prerequisite: EE 438A. Discrete-time signals; difference equations; Z-transform; modified Z-transform; stability analysis techniques; design of digital controllers; state space representations of linear discrete systems; controllability and observability.

462 State Space Control Systems (4)

Prerequisite: EE 438A. State space representation; linear transformation; solution of state equations, model decomposition, equivalent systems; controllability, observability, duality theorem; stability analysis; design by state and output feedback.

472 Optoelectronic Systems Design (4)

Prerequisite: EE 336. Characteristics and applications of optoelectronic devices and systems including photodiodes and phototransistors, image sensors, light-emitting diodes and laser diodes, and fiber optic systems.

473 Television Systems Design (4)

Prerequisites: EE 361, 431. Video and audio circuits and systems; amplitude, frequency, phase and pulse modulation techniques used in television systems.

481 Introduction to Robotics (4) (also listed as ME 481)

Prerequisite: EE 438A or ME 410. General considerations of robotic manipulator; spatial description, homogeneous transformations; manipulator kinematics; inverse manipulator kinematics; motion trajectories; static forces.

483 Power Electronics (4)

Prerequisite: EE 336. Electrical and thermal characteristics of power thyristors, BJTs and FETs, diodes, triacs, diacs, and UJTs; applications in energy conversion and control switching power supplies, converters, and inverters.

496A Senior Design I (2)

Prerequisite: Selection of upper division specialization within EE option. The design process; selection of a design project; preliminary report required.

496B Senior Design II (2)

Prerequisite: EE 496A with C grade or higher. Completion of design project for which proposal was developed in EE 496; final written and oral reports required.

Courses in Mechanical Engineering (ME)**Lower Division Course****228 Manufacturing Processes (4)**

Prerequisite: ENGR 207. Manufacturing properties of metals, alloys, and nonmetallic materials; solidification processes; material forming; material removal; joining processes; unconventional processing; numerical control; and automated processes.

Upper Division Courses**303 Fluid Mechanics I (4) (also listed as CE 303)**

Prerequisites: CE/ME 320, PHYS 202. Fundamental principles and methods of fluid mechanics; thermodynamics of fluid flow; Newtonian fluids; equations of fluid flow; laminar and turbulent flow; applications.

306 Heat Transfer I (4)

Prerequisites: CE/ME 303 or ME 326A; MATH 215. Fundamental principles of heat transfer; conduction, convection, and radiation; applications.

310 Engineering Measurements Laboratory (1)

Prerequisite: PHYS 203. Techniques and procedures used in making typical measurements in engineering laboratories. Laboratory 3 hours.

**312 Strength of Materials Laboratory I (1)
(also listed as CE 312)**

Prerequisites: ME 310, ENGR 103; ENGR 205 (may be taken concurrently). Tests of engineering materials in tension, compression, bending, and torsion; verification by experiment; basic theories learned in strength of materials. Laboratory 3 hours.

**313 Fluid Mechanics Laboratory I (1)
(also listed as CE 313)**

Prerequisites: CE/ME 303, ENGR 103. Experiments on fluid properties, fluid statics, conservation of mass, energy, and momentum, and fluid resistance. Laboratory 3 hours.

315 Thermal Systems Laboratory I (1)

Prerequisites: ME 310, ME 306, 326A. Experiments in heat transfer and thermodynamics; thermophysical properties of fluids;

analysis, operation, and performance testing of thermal energy conversion systems. Laboratory 3 hours.

**319 Computer Aided Mechanical Engineering
Laboratory (2)**

Prerequisites: ENGR 209, CS 290. Use of microcomputers, minicomputers, mainframe computers in mechanical engineering laboratories and projects; programming for interactive computer graphics, engineering design, simulation, word processing; intensive practice in hardware/software usage. Laboratory 6 hours.

320 Dynamics I (4) (also listed as CE 320)

Prerequisite: ENGR 201. Kinematics and kinetics of rigid bodies; work, kinetic energy, impulse, momentum in two and three dimensions; applications to space mechanics.

321 Kinematics of Mechanisms (4)

Prerequisite: CE/ME 320, ME 319. Transmission of motion; theory of mechanisms; linkages; gears; cams; belts and chains.

323 Machine Design I (4)

Prerequisite: ENGR 205. Application of principles of mechanics, properties of materials, and fabrication processes to design of simple machines and structural elements.

326A Thermodynamics I (4)

Prerequisites: MATH 208, PHYS 202. Concepts of equilibrium and temperature; First and Second Laws of Thermodynamics. Properties of pure substances; ideal gases; application of thermodynamic principles to closed and open systems.

326B Thermodynamics II (4)

Prerequisite: ME 326A. Application of thermodynamic principles; steam generators, engines and turbines; combustion, vapor cycles; refrigeration; internal combustion engines.

328 Introduction to Metallurgy (4)

Prerequisites: ENGR 207, ME 326A. Theory, composition, and properties of pure metals and alloys. Alloying, fabrication, and heat treatment of metals, with emphasis on nature of metals and their alloys.

329 Metallography Laboratory (1)

Prerequisite or corequisite: ME 328. Preparation of metallic samples and study of their internal structure by microscopic techniques. Laboratory 3 hours.

**397 Introduction to Project Design in Mechanical
Engineering (2)**

Prerequisites: Lower division ENGR core, ENGR 300, ENGL 306, ME 319. Introduction to the planning and execution of engineering design projects; ethical and economic considerations; communications and reporting.

402 Advanced Mechanics of Materials (4)

Prerequisites: ME 323, MATH 215. Basic concepts; unsymmetrical beam bending, shear flow, curved beams; energy methods; theories of failure; introduction to theory of elasticity, plane elastostatic problems; torsion of prismatic cylinders.

403 Aerodynamics (4)

Prerequisites: CE/ME 303, ME 319, MATH 215. Air-foil characteristics; transonic, supersonic, and viscous effects on lift and drag; power considerations, airplane performances, introduction to airplane and missile stability and control.

404 Turbomachinery (4)

Prerequisites: CE/ME 303, ME 326B. General treatment of all forms of turbomachines; energy transfer, thermodynamics of compressible flow and flow of fluids in passages and over blades of

turbomachines; application to pumps, compressors, hydraulic, gas, and steam turbines.

406 Heat Transfer II (4)

Prerequisites: ME 306, CS 290. Numerical methods in conduction; theory and applications of convection; thermal radiation, condensing and boiling heat transfer; mass transfer special topics.

408 Fluid Mechanics II (4)

Prerequisites: CE/ME 303, ME 319, MATH 215. Compressible and incompressible fluid dynamics; continuity, momentum, and energy equations for viscous fluids; circulation and vorticity, Navier-Stokes equation, boundary layer theory, turbulence, two-dimensional flow, three-dimensional flow.

409 Mechanical Engineering Analysis (4)

Prerequisites: CE/ME 320, ME 306. Setup of vibration, heat transfer, fluid flow, and other mechanical engineering systems as ordinary and partial differential equations; analogies between various physical systems. Classical, transform, numerical, and computer methods of solution.

410 Control of Mechanical Systems (4)

Prerequisites: CE/ME 303, ME 306, CS 290, MATH 215. Mathematical models of dynamic systems, fundamentals of feedback control, basic control actions and devices, applications to mechanical systems.

411 Vibrational Analysis I (4)

Prerequisites: CE/ME 320, MATH 215. Analysis of free and forced vibrations with and without damping, systems with several degrees of freedom, vibration isolation, mechanical transients, torsional vibrations, natural frequency computation techniques, digital and analog computer applications.

412 Strength of Materials Laboratory II (1)

Prerequisite: CE/ME 312; prerequisite or corequisite: CE 360 or ME 323. Fatigue tests of materials and connections, stress concentration, photoelasticity, creep tests, shock and vibration tests, combined stresses, and individual projects. Laboratory 3 hours.

413 Fluid Mechanics Laboratory II (1)

(also listed as CE 413)

Prerequisite: CE/ME 313; prerequisite or corequisite: CE 387 or ME 408. Experiments on subsonic and supersonic flow, free surface flow, pumps, turbines, fans, and unsteady flow.

414 Machine Design II (4)

Prerequisites: ME 319, 323. Design of unit assemblies and machines; materials, safety, lubrication, and construction.

415 Air Conditioning (4)

Prerequisites: ME 306, 326B. Psychrometric properties of air, heat loads, air conditioning and heating equipment, and air distribution.

416 Energy Systems (4)

Prerequisite: ME 326B. Unconventional energy conversion systems, energy storage, thermoelectric power and refrigeration, absorption refrigeration and cryogenics.

417 Machine Analysis Laboratory (1)

Prerequisites: ME 310, 321, 323. Experimental analysis of steady state and transient characteristics of machine components and of complete machines. Laboratory 3 hours.

420 Power Plants (4)

Prerequisite: ME 326B. Survey of power generating systems; theoretical analysis of power cycles; preliminary design calculations for sizing power station equipment.

421 Dynamics of Mechanisms (4)

Prerequisites: ME 321. Application of principles of statics, kinematics, and dynamics to analysis and design of mechanisms with rotating or reciprocating masses.

422 Optimization of Mechanical Engineering Systems (4)

Prerequisites: ME 319, ENGR 209; prerequisite or corequisite: ME 323. Design considerations of mechanical engineering systems; optimization techniques; application of existing computer programs and analytical methods to optimization of mechanical engineering systems.

425 Process Heat Transfer (4)

Prerequisite: ME 306. Computer design of single-phase heat exchangers including surface area, pressure drop, and flow arrangement. Prediction of process conditions for heat transfer systems, including pipe flow and pumping specifications.

426 Thermodynamics III (4)

Prerequisites: ME 319, 326B. Application of thermodynamic principles. Thermodynamic relations, real gases and mixtures, applications of Corresponding States principle, concepts of stability and equilibrium, homogeneous and heterogeneous equilibria, Third Law.

427 Thermal Systems Laboratory II (1)

Prerequisite: ME 315; prerequisite or corequisite: ME 326B. Projects in thermal systems engineering; design and planning experiments and test procedures; instrumentation selection; data analysis and reporting.

428 Automation and Computer-Aided Manufacturing (4)

Prerequisite: ME 228. Automation of manufacturing processes, numerical control, computer-aided manufacturing, group technology, flexible manufacturing, applications of robots in industry.

481 Introduction to Robotics (4) (also listed as EE 481)

Prerequisite: EE 438A or ME 410. General considerations of robotic manipulator; spatial description, homogeneous transformations; manipulator kinematics; inverse manipulator kinematics; motion trajectories; static forces.

497 Mechanical Engineering Senior Project (4)

Prerequisite: Mechanical engineering core. Study of engineering design processes. Selection and completion of a faculty-supervised project focusing on typical problems encountered in engineering practice and resulting in a formal report.

Courses in Technology (TECH)

NOTE: Undergraduate technology courses are arranged alphabetically according to subject matter areas, as follows:

Automotive
Aviation Administration
Drafting
Electronics
Fire Protection Administration
Graphic Arts and Printing Management
Industrial Crafts
Industrial Design
Metal Technology
Professional and Elective
Wood Technology

AUTOMOTIVE

100 Introduction to Automotive Mechanisms (3)

Designed to meet general industrial education needs of Industrial Arts majors. Emphasis on general mechanical concepts and re-

lated physical principles, maintenance procedures, and consumer data. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

201 Automotive Electrical System (3)

Operating principles of battery, starter, and charging and accessory circuits of automobile; skill in diagnosis, testing, and repair procedures. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

301 Fuel and Ignition Systems (3)

Prerequisite: TECH 100. Theories of design and operation of ignition and fuel system components; techniques of engine trouble shooting and tune-up procedures. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

401 Engine Rebuilding (3)

Prerequisite: TECH 404. Theory of engine design, function, and operation, skill in engine rebuilding and engine machine tool operation. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

402 Power Transmission Systems (3)

Prerequisite: TECH 100. Theory of clutch mechanisms, fluid couplings, torque converters, automatic transmission, overdrive and rear axle assemblies; repair and service of the power train. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

403 Chassis and Suspension Systems (3)

Prerequisite: TECH 100. Theory and design of brakes, front ends, wheel alignment and balance; includes testing, trouble diagnosis, and repair procedures. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

404 Small Power Plants (3)

Prerequisite: TECH 100. Design, construction, and service operations of one-cylinder engines, outboard motors, and gas turbines; emphasis on preventive maintenance procedures and testing. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

405 Engine Design and Performance (3)

Prerequisite: TECH 401. Theory of engine design and operation; requirements of modern gasoline power plants studied and performance factors analyzed under varying operating conditions; emphasis on dynamometer testing, engine disassembly, and assembly. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

AVIATION ADMINISTRATION

340 Airline Operations (4)

Prerequisite: Upper division standing. Operational techniques and current problems confronting airlines: control tower operations, airport lighting, radio and meteorological service, reservations, ticketing, passenger trends, feasibility route studies, fire and crash protection, and air route traffic control centers. Field trips included.

341 General Aviation Operations and Administration (4)

Prerequisite: Upper division standing. Airport administration; organization, personnel, maintenance, zoning, facilities adequacy, financing, planning, operations, revenues and expenses, public relations, evaluation and safety; socioeconomic effect of airports on communities served.

342 Airline Administration (4)

Prerequisite: TECH 340 or 341. Airline operation and organization; air carrier familiarization; effect of federal regulations, industrial, financial, and economic decision-making.

343 Airport Administration (4)

Prerequisite: TECH 340 or 341. Airport operations: lighting, fuel systems, field marking, field buildings, hangars, communications, maintenance, protection/security, fire fighting, and surrounding community problems.

344 Aviation Law (4)

Prerequisite: TECH 340 or 341. Local, state, federal, and international aviation laws and regulations, safety and economic regulations, air legal systems.

345 Air Cargo (4)

Prerequisite: TECH 340 or 341. Efficient cargo handling by air mail, air express, and air freight; research and utilization, comparison of scheduled and nonscheduled operations and contract or charter operations; flight equipment, stowage, and tie-down; insurance, tariffs, and operations.

346 National Airspace System and Air Traffic Control (4)

Prerequisites: Upper division standing, TECH 340 or 341. U.S. system of air navigation and air traffic control; communications, facilities, airways, controlled and special use airspace, and authorized flight procedures.

440 Safety Factors in Aviation (4)

Prerequisite: TECH 342 or 343. Safety related to air traffic control, passenger service, maintenance, and ground/air operations; history, accidents, terminology, liability, worker performance, information sources, and safety program organization.

441 Aviation Sales (4)

Prerequisite: TECH 342 or 343. Sales in airline operation and aviation industry; research, demand analysis, advertising and promotion, traffic, and price determination.

442 Airport Planning (4)

Prerequisite: TECH 342 or 343. Concepts of airport planning and construction; community surveys related to social, economic, and physical characteristics; political influences and phases of airport construction.

443 Air Transportation (4)

Prerequisite: TECH 342 or 343. Facilities, state and federal regulations, legal characteristics, problems, and services of U.S. carriers; organizational function of Federal Aviation Agency, Civil Aeronautics Board, and U.S. Bureau of Transportation.

444 Airline Equipment and Personnel (4)

Prerequisite: TECH 342 or 343. Legislation and regulation of airport finance, capital management, operating costs, airport-airline leasing, intergovernmental relations; airport policies and practices.

445 Quality Control and Inspection in Aviation (4)

Prerequisite: TECH 342 or 343. Inspection of aircraft, ground equipment, quality standards, sampling methods, equipment use, materials testing, and processes. Field trips to commercial airline maintenance shops and aircraft industries required.

447 Senior Seminar: Aviation Problems (4)

Prerequisite: TECH 443. Selected topics about current aeronautical administration problems; interaction with aviation executives. Field trips may be required.

DRAFTING

110 Introduction to Drafting (3)

Application of theory and fundamentals of drafting; orthographic projection techniques applied for a basic understanding of architectural, machine, forging, casting, welding, and electronic drafting. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

311 Architectural Drafting I (3)

Prerequisite: TECH 110. Architectural design with reference to building codes, construction details, financing, and planning of residential or light commercial structures; critical analysis and

comparison of various types of architecture and framing systems. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

312 Technical Illustration (3)

Prerequisite: TECH 110. Basic principles of technical illustration with emphasis on industrial techniques; introduction to newest mechanical aids, grids, and templates for production of isometric, dimetric, and perspective drawings. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

411 Tool Design (3)

Prerequisite: TECH 110. Application of principles of precision dimensioning, mechanics, and drafting to design of machines, tools, gears, and cams; selection and design of tools for mass production. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

412 Manufacturing and Construction Drafting (3)

Prerequisite: TECH 110. Introduction to structural, piping, fluid power, and sheet metal drafting, with emphasis on production drafting techniques and practices leading to production release. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

413 Architectural Drafting II (3)

Prerequisites: TECH 311 for Industrial Arts majors; TECH 110 or FSCS 360 and 460 for Home Economics majors. Techniques of architectural rendering, application of color, shades, and shadows; use of grids and other mechanical devices; construction of architectural models. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

415 Electromechanical Drafting and Design (3)

Prerequisites: TECH 110, 120. Application of industrial methods of electromechanical drafting and design documentation through block diagrams, elementary diagrams, conversion drawings, master drawings, detail and assembly drawings, and generation of hardware. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

416 Piping Design Models (3)

Prerequisite: TECH 110. Exploration of concept of designing with models (rather than drawings) using petrochemical process piping as an exemplary learning vehicle. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

ELECTRONICS

120 DC Electronics (3)

DC circuits; hands-on experiences in using VOM and DVM for basic electrical measurement and troubleshooting. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

221 AC Electronics (3)

Prerequisite: TECH 120. AC circuits; hands-on experiences testing inductors and capacitors and using oscilloscope for various voltage, frequency, and phase relationships measurement. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

321 Solid State Electronics (3)

Prerequisite: TECH 221. Behaviors of solid state devices (diode, BJT, MOSFET, IC) and their applications; project experiences in printed circuit board involving solid state devices. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

323 Industrial Electronics (3)

Prerequisite: TECH 321. SCR, TRIAC, DIAC, UJT, SSR; timers; optoelectronics, machine vision, operational amplifiers, and their applications; practical experiences in component testing, circuit operation, and applications. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

324 Linear Electronics (3)

Prerequisite: TECH 321. Linear circuits operations and applications; hands-on circuit testing and trouble-shooting plus applications projects. Lecture 1 1/2 hours; laboratory 4 1/2 hours.

325 Industrial Controls (3)

Prerequisite: TECH 321. Sensors and their control applications; process control and data acquisition; motor controls; practical control applications. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

326 Digital Electronics (3)

Prerequisite: TECH 321. Digital circuits with SSI and MSI chips applications; hands-on experiences in digital circuits and digital applications; trouble-shooting. Lecture 1 1/2 hours; laboratory 4 1/2 hours.

327 Microprocessors (3)

Prerequisite: TECH 326. Architecture, programming, interface, and applications of microprocessors; hands-on programming and interfacing applications. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

421 Electronic Communication I (3)

Prerequisite: TECH 321. Analog electronic communication devices and systems; hands-on experiences in various analog modulation methods. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

422 Electronic Communication II (3)

Prerequisite: TECH 421. Digital electronic communication devices and systems; hands-on experiences in various digital modulations methods. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

425 Programmable Controls (3)

Prerequisite: TECH 325. Applications, programming, and trouble-shooting of programmable logic controllers (PLC) and motion controls with servo and stepper motors; hands-on applications. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

426 Advanced Digital Electronics (3)

Prerequisite: TECH 326. Digital electronics with MSI chips plus programmable logical devices; hands-on projects. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

427 Advanced Microprocessors (3)

Prerequisite: TECH 327. Interfacing microprocessors with various electronic devices; hands-on applications, trouble-shooting skills, and project experiences. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

428 Computer Assisted Design (CAD) in Printed Circuit Board (PCB) Design and Manufacturing (3)

Prerequisite: TECH 326. Principles and uses of CAD software in productivity improvement of printed circuit board design and manufacturing processes; CAD experiences and field trips. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

FIRE PROTECTION ADMINISTRATION

350 Fire Protection and the Community (4)

Relationship of fire service and fire protection needs to critical urban issues, affirmative action, public education, communication with minority groups, interdepartmental and intradepartmental relations.

351AB Fire Defense Planning (4, 4)

Community fire defense needs, facilities, master plan development, federal assistance. Application of ISO Grading Schedule and Guide for Determining Fire Flow Requirements; impact of insurance. Field trips required.

352AB Fire Protection Aspects of Building Design (4, 4)

Building construction including fire resistive materials, protective systems, testing of fire assemblies, heat and smoke detection devices, high-rise structures; plan checking. Field trips required.

353 Fire Disaster Administration (4)

Fire disaster protection organization; disaster laws; establishment of central communications and field control centers; support groups, manpower, and equipment; overhaul and security; disaster and civil defense relationships.

355 Fire Protection Laws (4)

Authority for fire department operations; pertinent federal, state, and local laws; fire department liability, member and citizen liability; fire department trial boards.

451 Fire Prevention and Building Codes: Interpretation and Enforcement (4)

Prerequisite: TECH 352AB. Interpretation of building, fire prevention, and State Fire Marshal codes; review of building plans; enforcement procedures and techniques; case studies and problems in code enforcement.

452 Fire Prevention Administration (4)

Prerequisite: TECH 451. Organization of Fire Prevention Bureau; laws and regulations, building and fire code administration; coordination with governmental and other organizations; functions of Fire Prevention Bureau; planning and training.

453AB Fire Protection Systems Design (4, 4)

Theories, principles, and types of fire protection systems; design and hydraulic calculations for sprinkler systems; review of fire protection systems plans.

455AB Fire Protection of Structural Members and Building Components (4, 4)

Fire protection of structural members, building components, and materials; their reaction under tension, compression, and shear during fire exposure.

GRAPHIC ARTS AND PRINTING MANAGEMENT**130 Introduction to Graphic Arts (3)**

(also listed as JOUR 130)

General industrial education course emphasizing the importance of graphic communications in our culture. History, theory, and laboratory-shop practice of varied printing processes, including letterpress, lithography, silk screen, and bookbinding. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

231 Graphic Arts Paste-up (3)

Prerequisite: TECH 130 or instructor consent based on previous training or occupational experience. Copy preparation, selection of paper and processes for printed material; cold type, paste-up techniques, reproduction proofs, and camera use emphasized. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

331 Typography I (3)

Prerequisite: TECH 130 or instructor consent based upon previous training or occupational experience. Intensive study of typography with emphasis on problems of type composition, make-up, imposition, and lock-up. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

332 Typography II (3)

Prerequisite: TECH 331. Principles of typography involved in machine composition; emphasis on operation and maintenance of slug casting machines. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

333 Presswork Procedures (3)

Prerequisite: TECH 130. Letterpress principles and procedures on platen and cylinder presses, make-ready, inks, automatic feeders. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

431 Lithography I (3)

Prerequisite: TECH 331. Lithographic theory and practice: copy preparation, camera, plate preparation, presswork, chemistry of lithography, photographic principles, color theory, printing inks and paper. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

432A Typographic Layout and Design I (4)

Prerequisite: Course in typography. Basic principles of design applied to products of the printer; thumbnail sketches, rough and finished layouts in solution of copy-fitting problems; selection of type, paper, and processes for reproduction.

432B Typographic Layout and Design II (5)

Prerequisite: TECH 432A. Continuation of 432A with stress upon layout and design of complete projects; use of working dummies to illustrate problems of printing production; elements of book design.

433 Printing Estimating (5)

Prerequisite: TECH 435. Elements of estimating all classes of printing and lithography involving type composition, presswork, binding, paper, photo engravings, and cost-finding problems.

434 Printing Plant Management (4)

Prerequisite: Senior standing in Printing Management option. Organizational and management of all departments in the printing plant; application of industrial management factors to the departments; inspection trips to study production methods and organization of local printing plants.

435 Lithography II (3)

Prerequisite: TECH 431. A continuation of TECH 431, with additional emphasis on camera, plate preparation, and press operation. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

436 Advanced Paste-Up (3)

Prerequisite: TECH 231. Advanced copy preparation techniques for makeup production for commercial, newspaper, and magazine printing; computerized photocomposition equipment operation including markup and programming methods. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

INDUSTRIAL CRAFTS**448 Plastics Technology (3)**

History, materials, processes, and application of plastics technology; principles and procedures of modern application in industry. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

INDUSTRIAL DESIGN**144 Introduction to Industrial Design (3)**

Creative problem-solving and aesthetics, application through two- and three-dimensional exploratory exercises in color, texture, shape, form, structure, and space through simple industrial design problems. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

METAL TECHNOLOGY**160 Introduction to Metalworking (3)**

Basic metal properties, metalworking processes, and hand and machine tool applications. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

261 Sheet Metal Layout and Development (3)

Prerequisite: TECH 160. Sheet metal layout and development, cutting, forming, fastening, finishing; industrial applications of these processes. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

361 Welding Technology (3)

Prerequisite: TECH 160. Inert-gas, oxy-acetylene, and electric arc welding, cutting, brazing, and testing theory and practice. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

362 Heat Treating and Metallurgy (3)

Prerequisite: TECH 160. History, techniques and principles of forging, heat-treating, and metallurgy. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

461 Molding and Casting (3)

Prerequisite: TECH 160. Techniques, principles, practices of metal molding and casting. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

463 Metal Machining I (3)

Prerequisite: TECH 160. Construction, utilization, and laboratory applications of the engine lathe, shaper, and milling machines. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

464 Metal Machining II (3)

Prerequisite: TECH 160. Advanced study of engine lathe, shaper, milling machines, grinding machines, emphasis on special setups and applications. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

465 Automated Metal Machining (3)

Prerequisite: TECH 160. Advanced study of metal machining with emphasis on semi-automatic, automatic tape controlled, and grinding operations. Lecture 1 1/2 hours, laboratory 4 1/2 hours. May be repeated to maximum of 9 units.

PROFESSIONAL AND ELECTIVE**101 Industrial Safety for Industrial Education (3)**

Industrial safety related to industry and school shops; history, accident facts, liability, psychology, worker performance, sources of information, and industrial methods of operation.

200 History of Technology (3)

Human accomplishment in areas of discovery, invention, and industry from prehistoric times to present.

280 Tools for the Artist (3)

Safe, efficient, and appropriate operation, adjustment, and maintenance of power and hand tools used by artist. Not appropriate for Industrial Studies majors or minors. Art majors and minors have enrollment preference.

291 Computers in Technology (3)

Prerequisite: CS 190 or any programming language course. Introduction to computers with applications for the technologist. Designed to assist students in becoming literate in topics applicable to technological areas such as production, manufacturing, and CAD/CAM. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

300AB Foundations of Industrial Education (2, 2)

Philosophy and development of industrial education, its present place and function in elementary and secondary education.

380 Industrial Graphic Communication Technology (3)

Concept of graphic communication technology in industrial education. Emphasis on practices in modern industry; examination of recent and projected technological development.

381 Materials, Process, and Fabrication Technology (3)

Technologies in conversion of raw materials to products; essential concepts and manipulative operations for cutting, forming, fasten-

ing, finishing, and testing wood, ferrous and nonferrous metals, plastics, and ceramic materials.

382 Power Technology (3)

Power technology concept in industrial education; survey of available energy, various forms of power conversion; utilization of power in modern industry and in industrial production processes.

395 Community Service in Technology (1-4)

Prerequisites: Eight units of upper division TECH courses, approval by faculty sponsor in consultation with EPIC Director, acceptance by a community agency. Participation in work of community agency or activity utilizing professional skills in community service. Graded CR/NC. May be repeated to maximum of 8 units.

400 Written Communication Skills for Industrial Studies (4)

Prerequisite: ENGL 190. Written communication skills for the professional needs of Industrial Studies students with emphasis on education, public, industrial, and business requirements.

414 Robotics in Industry (2)

Prerequisite: Upper division or graduate standing. History, terminology, economics, applications, and implications of industrial robots in the work place.

454L,P Special Topics in Industrial Studies (1-4)

Prerequisites: Upper division standing, others as needed for specific topic. Current issues, problems, and interests in technology. May be repeated to maximum of 9 units as subject matter changes.

480 Comprehensive General Shop (3)

Prerequisite: Completion of required foundation program for Industrial Arts major. General shop movement, organization and operation of multiple laboratory programs, design and construction of projects and aids; laboratory organization and management procedures. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

481 Practicum in Industrial Studies (4)

Prerequisites: Completion of an area of concentration and instructor consent. Application of industrial studies concepts and skills to design, production, and/or serving of commercial and industrial products and devices. Lecture 2 1/2 hours, laboratory 4 1/2 hours. May be repeated to maximum of 8 units.

482 Metrics for Industry (3)

Adapting industrial operations to metric system; standards and application; development of instructional materials; special problems for industrial educators.

483AB Construction of Teaching Aids (2, 2)

Development for industrial education of instructional aids such as cutaway models, mock-ups, assignment boards, checking devices for course coverage, blown-up models, electrical identification panels, procedure boards, specimens, and project materials. Activity 4 hours.

484 Automated Manufacturing Systems (4)

Applications and theories of advanced production systems in automated manufacturing environments; emphases include direct and computer numerical control, computer integrated manufacturing CAD/CAM; flexible manufacturing; group technology. Lecture 2 1/2 hours, laboratory 4 1/2 hours.

485 History, Philosophy, and Organization of Industrial Education (3)

Prerequisites: TECH 300AB, upper division standing, Industrial Arts major or minor or Vocational Arts major. History and philosophy of industrial education in Western civilization; compara-

tive study of development and organization of industrial education in the U.S.

486 Seminar: Vocational Education (1-4)

Prerequisite: Upper division standing. Problems in maintaining and modifying vocational education programs. Emphasis on changing philosophies, concepts, practices, legislation, technical content, instruction, organization, and management. May be repeated with instructor consent.

487 Seminar: Comprehensive Career Education for Industrial Studies and Vocational Education (3)

Prerequisite: Upper division standing. Development, organization, and implementation of comprehensive career education for industrial arts and vocational education; emphasis on concepts, techniques, strategies, implementation, levels of instruction, leadership, administration, and organization. May be repeated to maximum of 9 units as subject matter changes.

488 Fluid Power (3)

Prerequisite: PHYS 150. Application of principles of industrial hydraulic and pneumatic circuits; emphasizes on basic laws and operation of pressure, directional control valves, and actuators as they apply to manual and automated circuits. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

489 Industrial Training Methods (4)

Training approaches for industrial/technical management personnel; overview of design and management of the training function in the modern work world, instructional design, and delivery systems.

490 Advanced Problems in Industrial Studies (1-9)

Prerequisites: Completion of an area of concentration and instructor consent. Advanced problems in a specific industrial arts area of concentration. Lecture 1 1/2 hours, laboratory 4 1/2 hours for 3 units; other unit values use same ratio.

499 Undergraduate Directed Study (1-4)

Prerequisite: Consent of an instructor to act as sponsor. Project selected in conference with sponsor before registration, progress meetings held regularly, and final report submitted. May be repeated for credit.

490A Automotive	490D Drafting
490E Electronics	490G Graphic Arts
490M Metal Technology	490W Wood Technology

WOOD TECHNOLOGY

170 Introduction to Wood Technology (3)

Wood working industries, their origins, developments, technical aspects, and influences upon human occupational, social, cultural, recreational, and consumer activities; safety, common properties, characteristics, structure, shaping, finishing processes of wood and its industrial usage. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

271 Wood Construction Technology I (3)

Prerequisite: TECH 170. Physical and mechanical properties of wood and its architectural usage; application of uniform building code to construction of dwellings. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

272 Wood Construction Technology II (3)

Prerequisite: TECH 170. Cabinetmaking and mill work procedures used in industry; design, joinery, hardware, and manufacture of plywood and veneers. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

372 Wood Finishing and Preservation (3)

Prerequisite: TECH 170. Protection of wood against deterioration by fire, moisture, insects, fungus, and weather; surface enrichment emphasized; experiments and application of protective materials including finishes. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

374 Wood Shaping Processes (3)

History, materials, processes, and application of wood carving; principles and procedures of modern application in industry. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

471 Lamination, Forming, Bonding (3)

Prerequisite: TECH 170. Processes of lamination and forming of wood and other materials. Equipment and bonding materials; laminating and forming characteristics of various materials; laboratory includes design and construction. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

472 Wood Manufacturing Technology I (3)

Prerequisite: TECH 170. Structure, identification, defects, curing, grading, joining, and fastening of commercial woods and related materials; design and construction of furniture and accessories. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

473 Wood Manufacturing Technology II (3)

Prerequisite: TECH 472. Mass production of products using wood as a basic material; design and development of jigs, fixtures, and tooling; design and production of items. Lecture 1 1/2 hours, laboratory 4 1/2 hours.

SCHOOL OF HEALTH AND HUMAN SERVICES

Departments and Programs within the School

Child Development Program

Department of Communication Disorders

Department of Criminal Justice

Department of Family Studies and Consumer Sciences

Department of Health Science

Department of Nursing

Department of Physical Education and Recreation/Leisure Studies

Department of Social Work

Youth Agency Administration Program

(American Humanics, Inc.)

SCHOOL OF HEALTH AND HUMAN SERVICES

SCHOOL OFFICE

Fine Arts 134

Phone: (213) 343-4600

The two credit certificate programs listed below are interdisciplinary in nature and are open to interested students in all majors throughout the campus. These programs are administered by the School of Health and Human Services.

Certificate Program in Applied Gerontology

The School of Health and Human Services offers a credit certificate program in *Applied Gerontology* designed to enhance the preparation of individuals interested in health and human service disciplines to increase their knowledge, skills, and effectiveness as practitioners with older populations, particularly the multiethnic and multiracial elderly. The program is designed for a wide range of students including those seeking a career change and those in the field seeking to enhance their promotional opportunities. A total of 28 units is required, including 16 units of core courses, 4 units of field experience, and 8 units of electives.

Admission to the program requires upper division standing (completion of 90 quarter units) and the consent of a faculty adviser in the student's major department or division (or the coordinator of the certificate program for students whose major is undecided).

Requirements for the Certificate (28 units)

Required core courses (16 units):

- BIOL 484N Biology of Human Aging (4)
 PSY 482 Psychology of Human Development: Maturity and Aging (4) or
 SOC 450 Sociology of Aging (4)
 SW 450 Crosscultural Practice with Aging Populations (4)
 SW 465 Programs and Policies Related to the Elderly (4)

Required Field Experience/Internship (4 units):

(Three units field work; one unit seminar)

Placement is arranged for each discipline through the offering department or division. Students in schools other than Health and Human Services will arrange field experience with their major adviser and the certificate program coordinator, as appropriate.

Electives (select 8 units from following with major adviser approval):

- | | |
|-----------------|---------------------------|
| COUN 405AB, 479 | ENGL/FL/PHIL 383 |
| FSCS 445, 451 | FSCS/PE 458 |
| HS 462 | NURS 302, 344 |
| * PSY 462 | SOC 322B, * 450, 452, 453 |

* if not taken in the core

Certificate Program in Child Maltreatment and Family Violence

The School of Health and Human Services offers an interdisciplinary credit certificate program designed to provide individuals in health and human service disciplines or other related fields with expanded knowledge and formalized education, multidisciplinary training, and field experience in child abuse and domestic violence. Course work includes theoretical, conceptual, and practical experiences leading to a multidisciplinary view of the relevant issues,

processes, and systems involved. The goal of the program is to prepare individuals to better serve the needs of abused children and violent families and to qualify for career positions for which multidisciplinary training is essential.

Admission to the program requires upper division standing, formal application to the school, a screening interview with the program director covering the applicant's prior academic work, and approval of the individual student program. The program requires 24 units of upper division course work including 16 units of required core courses, 4 units of electives, and 4 units of field experience. Students must earn a minimum C- grade point average to qualify for the certificate. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (24 units)

Required Courses (16 units):

- EDSP 412 Issues in Child Abuse, Neglect, and Family Violence (4)
 COMD 457 Communicating with Abused Children and Violent Families (4)
 COUN/PSY 403 Psychosocial Dynamics of Child Maltreatment and Family Violence (4)
 SW 456 Multidisciplinary Teams, Child Maltreatment, and Family Violence (4)

Field Experience (minimum 4 units): Select from following:

- | | |
|------------------|-----------------|
| ** COMD 578 | COUN 495 |
| EDSP 499, ** 503 | FSCS 495 |
| NURS 443 | PSY 485, ** 595 |
| SW 495 | |

** open to graduate students only

Electives (select at least 4 units from following with adviser approval):

- | | |
|------------------------|---------------------|
| COUN 406, 460, 480 | CRIM 439 |
| FSCS 421, 423 | NURS 470 |
| NURS/SW 455 | PSY 412AB, 426, 464 |
| SOC 421, 440, 482, 483 | SW 476 |

Courses in Health and Human Services (HHS)

Upper Division Course

395 Community Service in Health and Human Services (1-4)

Volunteer work with the Visitation Alliance Program, working in conjunction with the Superior (probate) Court, dealing with adult conservatees utilizing professional skills in a learning environment. May be repeated to maximum of six units. Graded CR/NC.

495 Field Work in Health and Human Services (1-4)

Prerequisite: Admission to a Health and Human Services credit certificate program. Work with community service organizations; placement arranged by appropriate certificate program coordinator. May be repeated to maximum of 8 units. Graded CR/NC.

CHILD DEVELOPMENT

School of Health and Human Services

PROGRAM OFFICE

Engineering and Technology A535

Phone: (213) 343-4590

Child Development, the empirical study of the growth and development of the individual from birth through adolescence, provides an interdisciplinary foundation of understanding and skill for students interested in professional careers providing various services to children and families, such as day care centers, community agencies, special education programs, and recreational activities. It prepares students for advanced study in child development as well as for professional education courses leading to the Multiple Subject teaching credential and Special Education credentials.

Students with a background in child development are able to pursue professional opportunities in many fields other than teaching, including production of children's films, books, and magazines; educational television; children's toys and educational software; and child advocacy at local, state, and national levels.

The Faculty

The faculty for this interdisciplinary program is provided by cooperating departments within the schools of Arts and Letters, Education, Health and Human Services, and Natural and Social Sciences. Ann Bingham-Newman, Professor of Family Studies and Consumer Sciences, serves as coordinator. Principal advisers are appointed from the schools of Arts and Letters, Education, and Natural and Social Sciences.

Bachelor of Arts Degree

The interdisciplinary Bachelor of Arts degree in Child Development includes a choice between two options: Option I, which prepares students to work as administrators in preschools, day care centers, or youth agencies or to gain entry into professional areas other than teaching; and Option II, a diversified undergraduate program approved for examination waiver for the Multiple Subject credential.

Students entering the program should plan their course work with a Child Development adviser. Students seeking the credential should consult the School of Education. Current information is available in the Child Development office. Students who fulfill the requirements for the Multiple Subject credential by completing Option II are also eligible for the Bilingual/Crosscultural Emphasis credential in Spanish if they fulfill additional requirements listed under *The Credential Program* later in this chapter.

Departmental Honors Program

The Child Development major includes an honors program for students who have completed at least 16 upper division units in the Child Development core, maintained a minimum 3.5 grade point average, passed the Writing Proficiency Exam, and are approved by the Child Development Program Committee. Applications are available in the Child Development office.

The honors program is designed to introduce superior students to intensive and thorough study of theory, research and current issues in the field of child development. Honors students are advised by an honors adviser and may depart from the approved major program in various ways to enrich their program. During their last year, honors students enroll in CHDV 497, Senior Honors Thesis, and complete a written thesis. Diplomas and transcripts of honors

program graduates are designated "Graduated with Honors in Child Development."

Requirements for the Major (108-144 units)

Option I, the *General* option, requires a core of 70-72 units of lower and upper division courses plus an area of specialization. The *Child and Family Development* specialization requires an additional 42 units of upper division course work; the *Preschool/Day care Administration* specialization, an additional 37 units; and the *Youth Agency Administration* specialization, an additional 36-38 units. Option II, the *Multiple Subject Credential* option, which is intended for students pursuing the Multiple Subject credential, requires 71-73 units in addition to the 70-71 unit core.

Students should plan their programs with careful attention to prerequisites for upper division courses. Some courses that meet general education requirements in the natural science and social science blocks are included in the core. Students should complete these requirements and other general education requirements before proceeding with the major.

Grades of C or higher are required in all courses used to meet major requirements.

Core Requirements (70-72 units)

CHDV 200 (4), 201 (4)
 CHDV 497* or ENGL 308 or 406
 CHDV/FSCS 320 (4) or 426 (5)
 CHDV/FSCS 420 or PSY 412B or SOC 322A (4)
 CHDV/FSCS 425 (4)
 CHDV 496 (4)
 COMD 456 (4)
 COUN 460 or SW 476 (4)
 CS 160 (3)
 EDEL 462 (4)
 EDIT 447 (2) (*required for Option II only*)
 EDSP 412 (4) (*required for Option I only*)
 ENGL 430 or SPCH 490 (4)
 FSCS 416 (4)
 PSY 150, 170, 433 (4 each)
 FSCS/SOC 120 or SOC 202 (4)

* open to Honors Program participants only

Options

• **Option I: General Option (36-42 units)**

Specializations (Select one)

A. Child and Family Development (42 units)

EDSP 400 Education and Psychology of Exceptional Individuals (4)
 FSCS 321 Urban Family: Contemporary Trends (4) or
 CHS 410 Chicano Psychology (4) or
 PAS 404 The Black Family (4)
 FSCS 341 Personal and Family Management Dynamics (4)
 FSCS 421 Marriage and Family Dynamics (4) or
 PSY 426 Family Therapy Dynamics and Perspectives (4) or
 SOC 440 Marriage and the Family (4)
 FSCS 423 Parenting (4)
 FSCS 424 The Formerly Married (4) or
 SOC 443 Alternative Family Life Styles (4)
 NURS 460 Problems of Parenting (2) or

- NURS 464 Family Interaction Problems (2)
 PSY 410A Abnormal Psychology (4) or
 SOC 482 Juvenile Delinquency (4)
 PSY 419 Psychology of Sex Roles (4) or
 PSY 488 Gender Differences (4) or
 SOC 441 Sociology of Sex Roles (4) or
 SPCH 479 Sex Roles in Communication (4)
 SPCH 478 Group Communication: Dynamics of Leadership
 and Participation (4)
 SPCH 489 Intercultural Communication (4)

B. Preschool/Day Care Administration (37 units)

- ART 435 Exploring the Arts in Early Childhood (4)
 CHDV/FSCS 422 Administration of Preschool and Day
 Care Programs (5)
 EDEL 461 Curriculum Procedures and Materials for Early
 Childhood Education (4)
 EDEL 465 Directed Teaching: Preschool (12)
 EDEL 466 Cultural Diversity in Early Childhood Classroom:
 Needs and Opportunities (4)
 EDSP 415 Educational Techniques for Young Handicapped
 Children (4) or
 EDSP 416 Working With Families of Young Handicapped
 Children (4)
 MUS 400 Development of Perception in Musical Arts (4) or
 MUS 490 Music for Early Childhood (4)

C. Youth Agency Administration (36-38 units)

With careful planning, students can earn the credit certificate in Voluntary Youth Agency Administration concurrently with this specialization. Interested students should contact the American Humanics program director, Library North Lobby, (213) 343-4580. The certificate program is described in the section entitled *Youth Agency Administration* at the end of this chapter.

Required Core (12 units):

- **SW 476 Child Welfare (4)
 YAA 290 Introduction to Youth Agency Administration (4)
 YAA 490 Volunteer Management and Fund Raising (4)

** if not taken in the core

Accounting and Budgeting (4 units)

- ACCT 202 or POLS 466

Community Organization (4 units)

- CRIM 439 or PSY 445 or SW 472

Counseling and Group Work (4 units)

Select one from following:

- COUN 406, PSY 405, SOC 420, SW 461 or 475

Personnel Management (4 units)

Select one from following:

- MGMT 473, POLS 463, POLS 472, PSY 446

Public Relations and Communication (4 units)

Select one from following:

- JOUR 496 POLS 470
 PSY 420 SOC 424
 SPCH 430, 489

Internship (4-6 units)

- YAA 495 (must be arranged through American Humanics, Inc.
 executive director)

• Option II: Multiple Subject Credential (71-73 units)

Students seeking the Multiple Subject credential must complete the core, the Option II requirements listed below, plus EDCI 300, HS 456, and three courses within a general education upper division theme to satisfy degree and credential requirements. Some courses that meet general education requirements are included in the core. The prescribed courses fulfill lower division general education as well as major requirements. Students should review general education requirements to select courses from the four blocks that also meet lower division GE requirements. In this way, it is possible to meet all lower division GE requirements.

BLOCK I: ENGLISH, COMMUNICATION (20 units)

- ENGL 190 and 250 (4 each)
 ENGL 401 or SPCH 489 or 494 (4 each)
 PHIL 160 or POLS 155 or SPCH 176 (4 each)
 SPCH 150 (4)

BLOCK II: MATHEMATICS AND SCIENCE (16-18 units)

- MATH 100 (4)

Select at least 12 units from GE natural sciences block B, taking one course each in areas B1, B2, and B3.

BLOCK III: SOCIAL SCIENCES (12 units)

- HIST 202A or 202B, POLS 150 (4 each)

Select one course from GE social science block D (4).

BLOCK IV: HUMANITIES (23 units)

- ART 400 or 435 (4)
 ART 475 or MUS 491 or 492 (4)
 MUS 400 or 490 (4)
 PE 420 (3)

Select 4 units from GE humanities block, area C2.

Select 4 units from GE humanities block, area C3 or C4.

ADDITIONAL CREDENTIAL REQUIREMENTS (7 units)

- EDCI 300 (3), HS 456 (4)

GENERAL EDUCATION UPPER DIVISION THEME (12 units)

Select one general education upper division theme and complete one course in each of the three areas within that theme. GE theme courses and credential courses listed above are not part of the major but are included in credential requirements.

Minor in Child Development

The minor in Child Development provides a foundation for students majoring in other fields who wish to prepare for child-oriented careers in community development, recreational services, business, management, early childhood law, family studies, speech or media studies or to fulfill requirements for a children's center permit. A total of 36-37 units is required for this minor. Prerequisites are required for some courses; students should consult with an adviser.

Requirements for the Minor (36-37 units)

Required courses (12 units):

- CHDV 200 Introduction to the Study of Children (4)
 CHDV 201 Infant Development (4)
 CHDV/FSCS 320 The Young Child (4)

Select one from following (4 units):

- FSCS 321, 421 PSY 326
 SOC 440

Select three from following (12 units):

ART 435	COMD 456
EDEL 462	ENGL 430
MUS 490	SPCH 490
TA 301 or 306	

Select one from following (4-5 units):

CHDV/FSCS 425 (4) or 426 (5)

Select one from following (4 units):

CHDV/FSCS 420	PSY 412B
SOC 322A	

Certificate Program

The Child Development program offers course work acceptable toward fulfillment of requirements for the interdisciplinary credit certificate program *Child Maltreatment and Family Violence*, offered by the School of Health and Human Services.

The Credential Program

Option II in the B.A. degree in Child Development has been approved by the Commission on Teacher Credentialing for examination waiver for the Multiple Subject credential. This approval as a diversified waiver status program waives the necessity of students having to pass the National Teachers' Examination (NTE) prior to entering the credential program.

Students who fulfill the requirements for the Multiple Subject credential by completing the Child Development major are also eligible for the Bilingual/Crosscultural Emphasis credential in Spanish if they meet the following additional requirements:

- Demonstrate spoken and written fluency in the Spanish language.
- Demonstrate knowledge of and sensitivity to the culture of the Spanish-speaking child.

Students should consult advisers in both the Child Development office and the School of Education. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

Courses in Child Development (CHDV)

Lower Division Courses

200 Introduction to the Study of Children (4)

Overview of the field of child development and career opportunities; theory, research, and ethical issues; observational techniques and use of observational data.

201 Infant Development (4)

Prerequisite: CHDV 200. Theory and dynamics of physical, cognitive, and affective development from conception to 2 1/2 years.

Upper Division Courses

320 The Young Child (4) (also listed as FSCS 320)

Prerequisite: CHDV 200. Theoretical and empirical bases for understanding the child from 2 1/2 to 7 years. Lecture 3 hours, participation with children in supervised setting 3 hours.

412 Issues in Child Abuse, Neglect, and Family Violence (4) (also listed as EDSP 412)

Overview of legal, health, social, psychological, educational, and cultural meaning of child maltreatment and family violence; field observations at appropriate agencies and sites.

420 Middle Childhood and Adolescence (4) (also listed as FSCS 420)

Prerequisite: CHDV 200. Theoretical and empirical bases for understanding children from six to 18 years.

422 Administration of Preschool and Day Care Programs (5) (also listed as FSCS 422)

Prerequisite: CHDV/FSCS 320 or 426. Organization and management of finances, staff, equipment, physical space, and programs. Meets State Health Department requirements for licensing as a director. Lecture 4 hours, activity 2 hours.

425 Ethnic Identity and Awareness in Children and Families (4) (also listed as FSCS 425)

Prerequisite: CHDV/FSCS 420 or PSY 412B. Children's development of ethnic identity and awareness; transmission of differing cultural patterns within family systems and social institutions; working with issues of prejudice, stereotyping, and ethnic pride.

426 Hospitalized Child/Child Life Program (5) (also listed as FSCS 426)

Prerequisites: CHDV 200; extensive experience in nursery school setting or CHDV/FSCS 320. Working with hospitalized children from a nonmedical perspective; interaction and activity planning; play therapy. Activity six hours in hospital setting.

496 Senior Seminar (4)

Prerequisites: Completion of 135 units; passing WPE score. Integration of theory, research, and practice through readings about current topics in child development and preparation of research paper in selected area.

497 Senior Honors Thesis (4)

Prerequisites: completion of 135 quarter units; passing WPE score; admission to Child Development honors program. Integration of theory, research, and practice through reading of current topics in child development and writing of honors thesis under supervision of honors adviser; approval and regular consultation with adviser required.

499 Undergraduate Directed Study (1-4)

Prerequisite: Instructor consent to act as sponsor. Project selected in conference with sponsor before registration; progress meetings held regularly. May be repeated for credit.

COMMUNICATION DISORDERS

School of Health and Human Services

DEPARTMENT OFFICE

King Hall B106
Phone: (213) 343-4690

The Department of Communication Disorders offers an undergraduate, preprofessional program leading to a Bachelor of Arts degree in Communicative Disorders. Entry into the profession requires completion of organized programs of study at the graduate level. Graduate programs leading to the Master of Arts degree in Communicative Disorders, with an option in either Audiology or in Speech-Language Pathology, as well as credentials in audiology and speech-language pathology are described in the *Graduate Programs* section.

The Faculty

Emeriti: Robert L. Douglass, Elise S. Hahn, Mary W. Huber, Donald B. Kinstler.

Professors: Masako M. Matsuda, Lorraine Monnin, Patricia Savich, Teris K. Schery.

Associate Professor: May E. Chin.

Assistant Professor: Miles Peterson.

Adjunct Assistant Professor: Margaret H. Briggs.

Bachelor of Arts Degree in Communicative Disorders

The Bachelor of Arts degree in Communicative Disorders (or its equivalency in course work and clinical practicum) must be completed by all students planning to concentrate at the graduate level in either audiology or speech-language pathology. The options offered after completion of all requirements include:

- M.A. with options in audiology and/or speech-language pathology (or equivalency) required for California state licensure and the *Certificate of Clinical Competence* issued by the American Speech-Language-Hearing Association (ASHA).
- Clinical Rehabilitative Services credential in Audiology and/or Speech-Language-Hearing (including Special Class Authorization) required for service in the public schools.
- Certificate in Rehabilitative Audiology.

Students who have started the major at another campus or completed majors in other fields must consult with a department adviser before beginning the program.

Majors in Communicative Disorders must meet personal and professional standards established by the department which include, but are not limited, to the following: acceptable speech, language and hearing; the capacity to accept instruction; willingness to assume professional responsibility for the welfare of clients; and the ability to relate well to clients, peers and faculty. Students must also possess qualities of personal integrity, maturity, and sound professional judgment.

A total of 73 units is required in communication disorders and related behavioral science courses. The following courses provide the basic core in the undergraduate major:

COMD 400, 401, 402, 450, 460AB, 461, 462AB

Students must earn a grade of *C* or better in each of the core courses. Repetition of core courses is limited to a maximum of two

attempts in the entire core. Students who receive more than two *D* or *F* grades in the core courses in the undergraduate major will be terminated from the major.

Students who have earned a degree in another major must complete the following undergraduate courses (or equivalents) and meet all standards established by the department:

COMD 400, 401, 402, 403 or 407, 420, 425, 429, 450, 460AB, 461, 462AB, 470, 471, 472, 476, 478A, 478B

Requirements for the Communicative Disorders Major with Planned Option in Speech-Language Pathology at the Graduate Level

Students planning to meet requirements for the Clinical Rehabilitative Services credential should include the following courses as electives in their undergraduate program: EDCI 300, EDFN 413, EDSP 400 and 403.

Requirements for the Communicative Disorders Major with Planned Option in Audiology at the Graduate Level

Undergraduate students planning to concentrate in Audiology at the graduate level must complete a bachelor's degree in Communicative Disorders.

In COMD 478A and 478B, students should complete at least 35 supervised clock hours of clinical practicum which is required for California licensure and ASHA *Certificate of Clinical Competence* in Audiology.

Some requirements for the public school credential for audiologists may be completed at the undergraduate level, including EDCI 300 and EDSP 400, 420, 430, and 431AB. The remaining requirements must be met at the graduate level.

To increase students' knowledge in areas basic to audiology, the following undergraduate electives are recommended:

BIOL 200AB	CHEM 101
PHYS 101, 102	PSY 150, 170, 202
TECH 120	

For assistance in planning the graduate program, students seeking an M.A. degree or certification in audiology should meet with an audiology adviser at least two quarters before beginning the graduate program.

Course work in audiology is required in other degree/certification programs as follows:

- Certificate as a School Audiometrist (granted by the California State Department of Health)
- Health Services Credential: School Nurse Services

Requirements for the Major (73 units)

Lower Division Required Course (3 units):

COMD 160 Voice and Diction (3)

Upper Division Required Courses (70 units):

COMD 300 Writing Skills in Communication Disorders (4)
COMD 400 Peripheral Hearing Mechanism (3)
COMD 401 Audiological Acoustics (2)
COMD 402 Pure-Tone Audiometry (3)
COMD 403 Speech Audiometry (3) or

- COMD 407 Pediatric Audiology (3)
 COMD 420 Rehabilitative Audiology (3)
 COMD 425 Management of the Hearing Impaired Child (3)
 COMD 429 Clinical Practice in Aural Rehabilitation (1)
 COMD 450 Introduction to Communication Disorders (4)
 COMD 460AB Speech and Language Acquisition in Children (3, 3)
 COMD 461 Descriptive Phonetics (4)
 COMD 462AB Speech-Language Science (3, 3)
 COMD 469 Role of the Speech-Language Pathologist in Professional Settings (1)
 COMD 470 Clinical Processes in Communication Disorders (4)
 COMD 471 Language Disorders in Children (4)
 COMD 472 Voice and Articulation Disorders (4)
 COMD 476 Diagnostic Procedures in Speech and Language Disorders (3)
 COMD 478AB Clinical Procedures in Communication Disorders (2, 2)
 COUN 405AB Theoretical and Developmental Aspects of Behavior (4, 4) or
 PSY 412AB Psychology of Human Development: Childhood and Adolescence (4, 4)

Certificate Program

The department offers course work acceptable toward fulfillment of requirements for the interdisciplinary credit certificate in *Child Maltreatment and Family Violence*, offered by the School of Health and Human Services.

Courses in Communication Disorders (COMD)

Lower Division Course

160 Voice and Diction (3)

Essentials of normal speech with training in voice production, articulation, pronunciation, projection, and related oral skills.

Upper Division Courses

300 Writing Skills in Communication Disorders (4)

Prerequisite: Passing WPE score; corequisite: COMD 470, 471, or 472. Technical writing for the audiologist and speech-language pathologist.

400 Peripheral Hearing Mechanism (3)

Anatomy, physiology, and pathology of peripheral hearing mechanism, including theories of hearing and introduction to central auditory nervous system.

401 Audiological Acoustics (2)

Acoustical characteristics of sound, decibel notation as the unit of measurement for signal intensity, characteristics and calibration of portable pure-tone audiometers, measurement of ambient noise in test rooms.

402 Pure-tone Audiometry (3)

Pure-tone threshold measurements, interpretation of audiograms, introduction to basic diagnostic audiological battery of tests, screening audiometry, functional hearing losses.

403 Speech Audiometry (3)

Prerequisites: COMD 400, 401, 402, 461. Information concerning speech perception by hearing impaired, auditory perceptual skills, and assessment of hearing with speech as the test signal; applications of diagnostic data.

406 Audiology for Teachers (4)

Prerequisite: Admission to special education program. Anatomy, physiology, and pathology of peripheral hearing mechanism; acoustic characteristics of sound; pure-tone and speech

audiometry; application of audiologic data to programs for profoundly deaf, deaf-blind, or multihandicapped children.

407 Pediatric Audiology (3)

Prerequisites: COMD 400, 401, 402, 460AB, 461. Theories, principles, and methods of assessing hearing of preschool children; hearing disorders unique to children; differential diagnosis; case management.

409 Industrial Audiology (3)

Prerequisites: COMD 402, instructor consent. Protection of industrial workers from noise; noise-induced hearing losses, noise analyses, reduction of noise by engineering and administrative control; personal ear protection.

420 Rehabilitative Audiology (3)

Prerequisites: COMD 403 or 407, 461. Issues in rehabilitative audiology and effective strategies to assist the hearing impaired adjust to their hearing losses; rehabilitative techniques include speech reading, communication training, counseling, hearing aid use, and psychological aspects.

425 Management of the Hearing Impaired Child (3)

Prerequisites: COMD 400, 401, 402, 460AB, 461. Issues concerning the habilitative management of hearing impaired children, including assessment and remediation of expressive and receptive speech and language skills, auditory training, and educational management.

429 Clinical Practice in Aural Rehabilitation (1, 2)

Prerequisites: COMD 403 or 407, 420, 425, 476; grade of C or better in all COMD courses taken prior to enrollment. Supervised clinical practice in rehabilitation techniques for people with hearing losses. Laboratory 3 hours per week per unit. May be repeated to maximum of 4 units.

450 Introduction to Communication Disorders (4)

Introduction to causes, characteristics, and remediation of common communication disorders, focusing primarily on children. Designed for majors in related fields and as a beginning course for Communicative Disorders majors.

452 Communication Disorders of the Neurologically Handicapped and Nonverbal Child (3)

Prerequisite: COMD 450. Sensorimotor, cognitive, symbolic dysfunctions affecting speech-language of neurologically handicapped child, including cerebral palsy; habilitation in educational and clinical settings; alternate means of communication for the nonverbal child.

454L,P Selected Topics in Communication Disorders (1-4)

Prerequisite: Varies with topic. Current issues and interests of students in communication disorders and related disciplines as announced in *Schedule of Classes*. May be repeated for credit as subject matter changes.

455 Natural Processes of First Language Acquisition (4)

Theories and principles of first language acquisition from infancy through adolescence including structures and role of language; social, cognitive, and cultural factors related to language development; and language evaluation procedures.

456 Development of Verbal Behavior in Childhood (4)

Acquisition of language forms and speech behavior; sequence of language/speech functions and cognitive/social development in preschool years; multiethnic and multicultural considerations.

457 Communicating with Abused Children and Violent Families (4)

Maltreatment and children's communication development/dysfunction relative to social-emotional and cognitive development; com-

munication demands in judicial, legal, and intervention processes; principles for interacting with and interviewing maltreated children.

458 Research Methods in Communication Disorders (4)

Prerequisites: Upper division standing, COMD 300, 450. Methods of scientific inquiry in communication disorders including an overview of statistical procedures, basic research design, evaluating clinical data, and critiquing published clinical research.

460A Speech and Language Acquisition in Children (3)

Acquisition of language in children from birth to two years, including syntax, phonology, semantics, and pragmatics; genetic and environmental variables; multiethnic, multicultural considerations.

460B Speech and Language Acquisition in Children (3)

Prerequisite: COMD 460A. Continuing study of language acquisition in children from two years to school age, including syntax, phonology, semantics, and pragmatics; genetic and environmental variables, multiethnic, multicultural considerations.

461 Descriptive Phonetics (4) (also listed as SPCH 461)

Phonetic-phonemic analysis of language; study of physical and physiological bases of speech.

462A Speech-Language Science: The Speech Mechanism (3)

Anatomy and physiology of body structures employed in speech production with emphasis on respiration, phonation, resonance, and articulation.

462B Speech-Language Science: The Nervous System (3)

Anatomy and physiology of the human nervous system related to speech and language.

469 Role of Speech-Language Pathologist in Professional Settings (1)

Recommended corequisite: COMD 478A or 478B. Professional performance requirements in various settings; legal and ethical considerations; requirements for credential, license, and certification.

470 Clinical Processes in Communication Disorders (4)

Prerequisites: COMD 450, 460A. Examination of therapy as a logical process of problem-solving. Includes collection and structuring of information, development of hypotheses, designing appropriate individual goals. Lecture 3 hours, laboratory 3 hours.

471 Language Disorders in Children (4)

Prerequisites: COMD 450, 460AB, 461, 462AB. Etiology and differential characteristics of language disorders in children, assessment considerations and strategies for intervention with mildly handicapped and severely handicapped populations. Lecture 3 hours, laboratory 3 hours.

472 Voice and Articulation Disorders (4)

Prerequisites: COMD 450, 460A, 461, 462A. Voice and articulation disorders, both functional and organic, including speech disorders associated with orofacial anomalies; assessment and therapeutic approaches. Lecture 3 hours, laboratory 3 hours.

476 Diagnostic Procedures in Speech and Language Disorders (3)

Prerequisites (may not be taken concurrently): All following COMD core courses, each with a minimum C grade: COMD 402, 470, 471, 472; passing WPE score; COMD 300; approved application submitted quarter preceding enrollment in course. Procedures for studying and evaluating characteristics of communication handicapped persons; multiethnic, multicultural considerations. Lecture 2 hours, laboratory 3 hours. May be repeated once for credit.

478AB Clinical Procedures in Communication Disorders (2, 2)

Prerequisites: COMD 476 (may not be taken concurrently); approved application submitted quarter preceding enrollment in course; grade of C or better in all COMD courses taken prior to admission to clinic; satisfaction of departmental standards. Supervised clinical experience with communicatively handicapped children and adults. Satisfactory completion of two consecutive quarters is required.

480 Directed Teaching in Communication Disorders (6)

Prerequisites: EDCI 300, directed teaching requirements, approval of COMD faculty. Supervised practicum in diagnosis and treatment of speech, language, and hearing disorders in public school itinerant sites and public school severe language disorders classes. Graded CR/NC only.

490AB Language, Speech, and Hearing Service in Public Schools (1, 1)

Corequisite: One unit must be taken concurrently with each quarter of EDSP 407. Role of language, speech, and hearing specialist; implementation of appropriate techniques and procedures for the public school setting.

499 Undergraduate Directed Study (1-4)

Prerequisite: Consent of an instructor to act as sponsor. Project selected in conference with sponsor before registration; progress meetings held regularly and final report submitted. May be repeated for credit.

CRIMINAL JUSTICE

School of Health and Human Services

DEPARTMENT OFFICE

King Hall D1045
Phone: (213) 343-4610

The Department of Criminal Justice offers programs leading to the Bachelor of Science degree in Criminal Justice, to serve career development in such areas as justice systems administration, investigative sciences, legal procedures, and security systems. Also offered is an undergraduate minor for students majoring in other fields. Students interested in a Master of Science degree in Criminal Justice or a Master of Science degree in Criminalistics are referred to the Graduate Programs section. The Criminalistics degree builds upon undergraduate preparation in chemistry.

The Faculty

Emeriti: Allen P. Bristow, Harry Diamond, G. Douglas Gourley, Ernest R. Kamm, Robert H. Morneau, Jr.

Professors: David L. Chapman, William M. Cole, Howard H. Earle (Chair), Thell E. Glascock, Richard C. Grace, Nathaniel Trives.

Associate Professor: Anthony Longhetti.

Bachelor of Science Degree in Criminal Justice

The Bachelor of Science degree in Criminal Justice is designed for either preservice or inservice students who wish to prepare for or advance in careers in criminal justice.

Limitations on Transfer Credit

Students intending to transfer to Cal State L.A. from a community college to continue work toward a Bachelor of Science degree in Criminal Justice are advised to complete general education requirements and the six lower division core courses equivalent to those in the Cal State L.A. curriculum prior to transferring.

Requirements for the Major (88 units)

A total of 192 units is required for the Bachelor of Science degree in Criminal Justice, including a minimum of 88 units within the major. All students must complete a required core of 24 quarter units in lower division courses. The total upper division requirement includes 64 units, distributed among courses in criminal justice and related fields. A student's major program may contain no more than 24 units of credit for any combination of prior experience, work experience, community service, or directed study.

Lower Division Required Courses (24 units):

- CRIM 101 Introduction to Administration of Justice (4)
- CRIM 126 Concepts of Criminal Law (4)
- CRIM 221 Legal Aspects of Evidence (4)
- CRIM 222 Principles and Procedures of Justice System (4)
- CRIM 223 Community Relations (4)
- CRIM 235 Elements of Investigation (4)

Upper Division Required Courses (32 units):

- CRIM 301A Administration of Criminal Justice Systems (4)
- CRIM 405 Ethics and Professional Responsibility (4)
- CRIM 406 Comparative Justice Systems (4)
- CRIM 408 Methods of Supervision (4)
- CRIM 428 Contemporary Criminal Procedures (4)
- CRIM 439 Juvenile Law and Procedure (4)
- CRIM 447 Drug Control Systems (4)

CRIM 461 Physical Evidence (4)

Electives in Criminal Justice (12 units):

With major adviser approval, students plan 12 units of electives in criminal justice which may be chosen to further diversify their program or grouped in a career-interest selection as listed below.

- A. Justice Systems Administration
- B. Investigative Sciences
- C. Legal Procedures
- D. Security Systems

Electives in Related Fields (20 units):

With major adviser approval, students select 20 units of electives in related fields, or a certificate program (minimum 20 units) in a related field, or a minor in a related field (minimum 20 units), from the following disciplines:

- | | |
|--|-------------------------|
| Anthropology (ANTH) | Chicano Studies (CHS) |
| Computer Information Systems (CIS) | |
| Computer Science (CS) | Economics (ECON) |
| Educational Foundations (EDFN) | |
| English (ENGL) | Finance (FIN) |
| Health Science (HS) | History (HIST) |
| Latin American Studies (LAS) | Management (MGMT) |
| Mathematics (MATH) | Nursing (NURS) |
| Office Systems and Business Education (OSBE) | |
| Pan-African Studies (PAS) | Physical Education (PE) |
| Political Science (POLS) | Recreation (RECR) |
| Sociology (SOC) | Technology (TECH) |

Minor in Criminal Justice

The minor in Criminal Justice is designed for students majoring in other fields who wish to prepare for careers relating to the administration of criminal justice. A total of 32 units is required.

Requirements for the Minor (32 units)

Lower Division Required Courses (16 units):

CRIM 101, 126, 222, 223

Upper Division Required Courses (16 units):

CRIM 301A, 428, 436, 439

Certificate Program in International Criminal Justice Administration

The Department of Criminal Justice offers a credit certificate program designed to prepare criminal justice practitioners from foreign nations for management and supervisory positions within criminal justice agencies in their own countries. Course work includes theoretical, technical, and conceptual experiences leading to a balanced view of contemporary thinking in the field. The program is applicable toward the bachelor's degree in criminal justice. A total of 24 upper division units in criminal justice is required; students must earn a minimum C average to qualify for the certificate.

Admission to the program requires upper division standing (completion of 90 quarter units). Individual courses within the program

have prerequisite criminal justice courses; therefore, students are advised to plan their program carefully with the assistance of a department adviser. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (24 units)

Required courses (minimum 24 units):

Select from following:

- CRIM 361 Criminal Investigation Management (4)
- CRIM 401 Innovative Management Systems (4)
- CRIM 404 Unusual Occurrence Management (4)
- CRIM 408 Methods of Supervision (4)
- CRIM 423 Community Relations Program Management (4)
- CRIM 436 Correctional Institution Management (4)
- CRIM 437 Traffic Management Systems (4)
- *CRIM 454 Special Topics in Criminal Justice (4)

* when appropriate

In addition, the department offers course work acceptable toward fulfillment of requirements for the interdisciplinary credit certificate in *Child Maltreatment and Family Violence*, offered by the School of Health and Human Services.

The Credential Program

The Commission for Teacher Credentialing has authorized approval for the Designated Special Subjects credential which includes the areas of Driver Education and Driver Training. Students interested in this credential should consult advisers in the Department of Criminal Justice and the School of Education.

Courses in Criminal Justice (CRIM)

Lower Division Courses

101 Introduction to Administration of Justice (4)

History and philosophy of law enforcement and administration of justice in America; examination of various agencies, systems, and subsystems; role expectations and their interrelationships; theories of crime, punishment, and rehabilitation; ethics, education, and training for professionalism in the system. *CAN AJ 2*

126 Concepts of Criminal Law (4)

General provisions of criminal law; history and development; elements of a crime; parties to a crime; defenses to criminal culpability; elements of specific crimes; crimes against person, property, public place, and safety. *CAN AJ 4*

221 Legal Aspects of Evidence (4)

Leading rules and principles of exclusion and selection; nature of evidentiary matter; burden of proof, discovery; nature and effect of presumptions; examination, competence, and privilege of witnesses; proof of authenticity and contents of writings and other documentary evidence; constitutional provisions. *CAN AJ 6*

222 Principles and Procedures of Justice System (4)

Prerequisite: CRIM 101. Role and responsibilities of each segment within administration of justice system; law enforcement, judicial, corrections; subsystem procedures from initial entry to final disposition; interrelationships of segments within system.

223 Community Relations (4)

Development of positive and professional relationships between criminal justice agencies and the public, with emphasis on role expectations.

235 Elements of Investigation (4)

Basic investigative methodology; function of detective for justice system objectives; modus operandi; sources of information, public

and private sectors; surveillance; personal identification; interviewing and interrogation techniques; preliminary and follow-up investigations. *CAN AJ 8*

Upper Division Courses

301A Administration of Criminal Justice Systems (4)

Prerequisite: Lower division Criminal Justice required core or agency experience and instructor consent; corequisite: writing competency evaluation and remedial courses if required. Administrative theory and practice in criminal justice systems, with emphasis on organization and functions of specialized subunits; analysis and improvement of writing skills.

301B Written Communication in Criminal Justice (4)

Prerequisites: ENGL 190, CRIM 301A. Fundamentals of report writing and data processing (gathering, analyzing, producing, and evaluating). Graded *CR/NC*.

361 Criminal Investigation Management (4)

Prerequisite: CRIM 235. Case management, assignment of personnel, decisions about commitment of resources, and strategies for handling citizen and patrol-detective-technician interfaces.

362 Investigative Photography (4)

Prerequisite: ART 287. Use of photography in investigative processes; courtroom presentation of evidential photographs.

363 Interviewing Techniques (4)

Prerequisites: CRIM 235, PSY 150, upper division standing. Interviewing philosophy and concepts; effective techniques in handling witnesses, victims, informants, children, the mentally disturbed, inmates, criminal suspects; scientific equipment, legal aspects, psychological and physiological considerations, judicial process.

365 Personal Identification Systems (4)

Prerequisites: CRIM 235, 301A. Types of personal identification systems that serve investigative function in public agencies; existing and potential resources; analysis of modus operandi, fingerprints, voiceprints, psychological profile; visual identification.

395 Community Service in Criminal Justice (1-3)

Prerequisites: Approval by faculty sponsor in consultation with EPIC Director, acceptance by community agency. Participation in community service work. May be repeated to maximum of 6 units. Graded *CR/NC*.

401 Innovative Management Systems (4)

Prerequisites: CRIM 301A, upper division standing, instructor consent. Contemporary management concepts; management system adaptation for implementation in criminal justice agencies.

404 Unusual Occurrence Management (4)

Prerequisite or corequisite: CRIM 301A. Control techniques for management of unusual occurrences disruptive to community, including civil disturbance, confrontations, insurrection, disasters; planning for special events.

405 Ethics and Professional Responsibility (4)

Nature and scope of misconduct, special risks and responsibilities, legal and institutional controls, concepts of professionalism, codes of ethics, conflict of interest, and problems in exercise of discretion.

406 Comparative Justice Systems (4)

Exploration and comparison of foreign criminal justice systems, foreign innovations in crime prevention, corrections, investigation, administration, and training.

408 Methods of Supervision (4)

Prerequisite: CRIM 301A. Responsibility of first-level supervisors in management: motivation, leadership, morale, discipline, communication, counseling, interviewing. Resolution of complaints

and grievances; performance appraisal, decision making, planning, and training.

409 Forensic Science (4)

Prerequisite: Upper division standing. History, concepts, and services of the forensic sciences to the criminal justice system, including criminalistics, forensic pathology, forensic dentistry, forensic anthropology, and forensic psychiatry.

410 Sex Crimes Investigation (4)

Prerequisite: Upper division standing. Steps in sex crime investigation; recognition of offenders, procedures used to identify and apprehend them; motivating influences in sex crimes; investigators' responsibilities; community resources for victims; and victims' rights.

423 Community Relations Program Management (4)

Prerequisites: CRIM 223, 301A. Managerial aspects of planning, programming, and operation for effective community relations by agencies in criminal justice system.

428 Contemporary Criminal Procedures (4)

Prerequisites: CRIM 126, 221. Bill of Rights and federal criminal procedure; application of due process clause of Fourteenth Amendment; exclusionary rule; case law reconciling civil rights and security of community.

429 Administrative Law (4)

Areas of civil law of particular significance to administrators in criminal justice systems, including administrative law, municipal corporation, torts, sovereign immunity, labor law, and agency relations.

435 Contemporary Vice Problems (4)

Philosophy and theory of vice control; community standards; organized crime; statutory and case law; suppression, investigation, and prosecution; special consideration of laws concerning gambling, prostitution, and sex crimes.

436 Correctional Institution Management (4)

Objectives of correctional administration; laws, records, public relations, personnel, and relationships to programs, including custodial and noncustodial interrelationships and divisions; physical plant and security, employment, and care and treatment program.

437 Traffic Management Systems (4)

Theory and functions of highway traffic administration activities, coordination among agencies. Supervision of traffic, accident control, including reconstruction and cause analysis.

439 Juvenile Law and Procedure (4)

California Juvenile Court Act, Youth Authority, other legislation governing juvenile delinquency; juveniles' rights; California law developments including probation procedures and institutional care.

447 Drug Control Systems (4)

Prerequisites: CRIM 221, upper division standing. Drugs and drug abuse; investigation methods, including undercover informants; field identification, surveillance, statutory and case law, presentation of cases in court.

454 Special Topics in Criminal Justice (4)

Current topics of special interest in Criminal Justice as announced in *Schedule of Classes*. May be repeated to maximum of 8 units for major and 24 for degree as topic changes.

460 Law Enforcement, Public Schools, and the Community (4)

Prerequisite: Upper division standing. Criminal justice majors must have adviser approval to enroll for credit. Interrelationships

between law enforcement, school, and the community; juvenile delinquency, crime prevention and control, vice offenses, narcotic addiction, and other behavior problems.

461 Physical Evidence (4)

Prerequisite: CRIM 235. Collection, preservation, and utilization of physical evidence by investigator. Use of physical evidence in judicial processes.

475 Contemporary Security Administration (4)

Prerequisite: Upper division standing. Methods and techniques of security protection for buildings, personnel, and business, industrial, and technological equipment.

476 Retail Commercial Security (4)

Analysis and assessment of commercial security protection systems, including theft controls, legal authority and liability, safeguards for physical structures and contents.

482 Analyzing Criminal Justice Data (4)

Prerequisite: Upper division standing. Computer-generated analysis of criminal justice systems: budgeting protocols, simulation modeling and forecasting.

483 Computer Techniques in Criminal Justice (4)

Prerequisite: Upper division standing. Computer applications for criminal justice agencies: data types, collection, and format development. Use of programs to abstract and analyze data.

491 Contemporary Studies in Criminal Justice (1-8)

Prerequisite: Upper division standing or professional experience (with instructor consent). Investigation and study of contemporary problems in field. Various subjects as announced. May be repeated as subject matter changes.

499 Undergraduate Directed Study (1-4)

Prerequisites: Upper division standing, 2.5 grade point average; ability to assume responsibility for independent work and to prepare written and oral reports. Project selected in conference with sponsor before registration; progress meetings held regularly. May be repeated to maximum of 8 units.

Courses in Traffic and Safety Education (TSE)

Upper Division Courses

Upper division standing is prerequisite to enrollment in all upper division TSE courses.

473 Driver Training Programs (2)

Prerequisites: TSE 477 (may be taken concurrently), California driver's license, prior approval of department. Study and utilization of dual-control vehicles for use in driver training programs. Field experience required.

474 Driver Education Curriculum (2)

Prerequisites: California driver's license, prior approval of department. Teacher preparation for driver education programs. Field experiences required.

475 Accident and Safety Studies (3)

Accident causes and analysis, education for safe living.

477 Traffic Simulator Instruction (2)

Prerequisite: Prior approval of department. Study and utilization of traffic simulators for use in driver training programs.

479 Organization and Supervision of Safety and Driver Instruction (2)

Prerequisite: TSE 474. Analysis of programs, supervision problems, evaluation requirements, financial and personnel responsibilities, and program organization.

Textiles

FSCS 101 (3), 209 (4), 260 (4), 405 (4), 409 (3), 495 (2-4)
ART 151 (4)

Select 21-23 units from following:

ART 212 (3), 333 (3), 338 (3), 380 (4), 438 (3)
CHEM 151, 152 (5, 5) FSCS 444 (4)

* Select course in this group according to your area of interest.

• **Interior Design and Housing Option (91-93 units)**

This option is designed to provide a wide variety of career opportunities in business, government agencies, retail firms, and museums.

General Education Support Courses (15 units)

ART 153, 159, 203 (4, 4, 3) PSY 150 (4)

Required Core Courses (21 units):

FSCS/SOC 120 Intimate Relationships (4)
FSCS 207 Personal and Family Environmental Aesthetics (4)
FSCS 281 Food for Life (2)
FSCS 282 Management for Living (2)
FSCS 283 Professional Encounters (1)
FSCS 471 Professional Writing in Family Studies and Consumer Sciences (4)
FSCS 480 Family and Professional Interface (3)
FSCS 483 Professional Perspectives (1)

Career Emphasis Courses (70-72 units)

Required Courses (42-44 units)

FSCS 208 (4), 260 (4), 384 (4), 460 (4), 463 (4), 464 (4), 465 (4), 466 (4), 467 (4), 495 (2-4)

Electives (select 28 units from following)

ART 313, 322, 323, 328, 343, 428 (3 each)
MKT 341, 344 (4 each) TECH 311, 490D (3 each)

• **Single Subject Teaching Option (95 units)**

The following courses are required of all students seeking a Single Subject credential with teaching authorization in Home Economics. Students must also complete professional education requirements and should consult advisers both in the School of Education and in the FSCS department. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

General Education Support Courses (17 units)

CHEM 151 (5) FSCS/SOC 120 (4)
ECON 150 (4) SOC 201 (4)

Required Core Courses (21 units)

FSCS 210 Foundations of Food (4)
FSCS 260 Contemporary Interiors (4)
FSCS 283 Professional Encounters (1)
FSCS 321 Urban Family: Contemporary Trends (4)
FSCS 471 Professional Writing in Family Studies and Consumer Sciences (4)
FSCS 480 Family and Professional Interface (3)
FSCS 483 Professional Encounters (1)

Career Emphasis Courses (74 units)

Required Courses (58 units)

FSCS 101 Apparel Construction I (3)
FSCS 202 Clothing, Self, and Society (4)
FSCS 206 Textiles (4)
FSCS 317 Fundamentals of Human Nutrition (3)

FSCS 341 Personal and Family Management Dynamics (4)
FSCS 384 Computer Applications in Family Studies and Consumer Sciences (4)
FSCS 423 Parenting (4)
FSCS 440 Personal and Family Financial Management (4)
FSCS 444 Consumer Issues (4)
FSCS 470 Demonstration Techniques (4)
FSCS 491 Programs for Occupational Education in Family Studies and Consumer Sciences (4)
CHDV 201 Infant Development (4)
CHDV/FSCS 320 The Young Child (4)
CHEM 152 Fundamentals of Chemistry I (5)
EDCI 300 The Teaching Profession (3)

Electives (select 16 units from following)

FSCS 102 (3), 204 (4), 310 (3) or 312 (4), 411 (3), 421 (4), 424 (4), 430 (4), 441 (4), 460 (4)

Students seeking the Single Subject credential will also need to complete the following courses:

EDFN 413 (3), 414 (4) EDIT 430 (4), 450A (1)
EDSE 401 (4), 405 (3), 415 (4), 421E (3), 442AB (11 each)
EDSP 400 (4), 410 (3)

Bachelor of Science Degree in Nutritional Science

The Bachelor of Science degree in Nutritional Science is designed to prepare students for careers in nutrition, dietetics, food service administration, and food science and for graduate work in these areas. Students may select one of three available options: the *Foods* option, the *Nutrition* option (which also prepares students to enter dietetics internships approved by the American Dietetic Association); or the *Coordinated Dietetics Program (CDP)* option. Graduates with the Coordinated Dietetics Program (CDP) option are fully eligible for membership in the American Dietetic Association and to take the national examination to become a Registered Dietitian (R.D.).

• **Requirements for the Major (103-108 units)**

The Bachelor of Science degree in Nutritional Science requires a total of 198 units. The major requires 103-108 units, depending on option selected. The *Coordinated Dietetics Program (CDP)* option requires 108 units, and the *Foods* and *Nutrition* options each require 103 units. A minimum C grade is required in all courses used to meet major requirements.

• **Coordinated Dietetics Program (CDP) Option (108 units)**

The Coordinated Dietetics Program (CDP) option is designed for persons seeking both academic course work and supervised practice required to qualify to take the examination to become a Registered Dietitian. Students who complete the degree requirements in the CDP are eligible for membership in the American Dietetic Association (ADA). The four-year curriculum integrates academic preparation and clinical experience needed by the generalist in dietetics. Upon passing the national examination administered under the direction of the ADA, graduates are recognized as Registered Dietitians (R.D.). Postbaccalaureate students enrolled in the graduate program in Nutritional Science also are eligible to apply for admission to the CDP.

Requirements for the Option

The major with this option requires a total of 108 units, of which 21 are in core courses and 87 are in professional courses, including clinical experience. Students must earn grades of C or higher in courses used to meet major requirements.

Eligibility

Students who seek preliminary admission to the CDP must fulfill the following criteria:

- Eligible for admission to Cal State L.A.
- Minimum 2.75 overall grade point average (on a 4.0 scale).
- Minimum 2.75 grade point average in the major, with no grade lower than C in courses required for membership in the ADA.
- Students may repeat CDP courses and prerequisite science courses in which they earned a grade lower than C only once to meet program admission criteria.
- Students must repeat any nutrition and biochemistry prerequisite courses they completed more than three years before beginning the CDP before they may enter the program.
- Satisfactory health for full participation in the clinical program. Before they may enter the CDP, students must complete a physical examination, including Mantoux skin test or chest x-ray and other laboratory tests (including proof of immunity to rubella), as specified in contractual agreements with clinical facilities.
- Upper division standing and completion of the first two years of the Nutritional Science major. Because of the intensity of the CDP, undergraduate students must complete all lower division general education and major courses before they may enter the program. Graduate students must have completed all prerequisite courses for program admission.
- Valid California driver's license and access to an automobile, or transportation to clinical facilities.
- Professional liability, health, and automobile insurance.

Final approval for admission to the intensive clinical work in the senior year (FSCS 419ABC) is contingent upon recommendation of the CDP Review Board and maintenance of a minimum 2.75 grade point average.

Preparatory Courses (46 units)

- ACCT 202 Survey of Accounting (4)
 ANTH 250 Cultural Anthropology (4) or
 SOC 201 Principles of Sociology (4)
 BIOL 200AB Human Anatomy and Physiology I, II (5, 5)
 CHEM 151, 152 Fundamentals of Chemistry I, II (5, 5)
 CHEM 353 Nutritional Aspects of Biochemistry (5)
 ECON 150 Economics for the Citizen (4)
 MICR 151 Introductory Microbiology (5)
 PSY 150 Introductory Psychology (4)

Required Core Courses (21 units)

- FSCS/SOC 120 Intimate Relationships (4)
 FSCS 210 Foundations of Food (4)
 FSCS 282 Management for Living (2)
 FSCS 283 Professional Encounters (1)
 FSCS 287 Aesthetics for Living (2)
 FSCS 471 Professional Writing in Family Studies and
 Consumer Sciences (4)
 FSCS 480 Family and Professional Interface (3)
 FSCS 483 Professional Perspectives (1)

Required Professional Courses (87 units)

- FSCS 310 Meal Management (3)
 FSCS 312 Cultural Foods of California (4)
 FSCS 315 Communication Skills in Dietetics (3)
 FSCS 317 Fundamentals of Human Nutrition (3)
 FSCS 410 Experimental Foods (5)
 FSCS 413 Maternal and Child Nutrition (4)
 FSCS 414AB Institutional Food Service (4, 4)
 FSCS 415AB Nutrition and Diet Therapy (4, 4)

- FSCS 417AB Advanced Nutrition (3, 3)
 FSCS 417L Nutritional Assessment Laboratory (1)
 FSCS 418 Community Nutrition (3)
 FSCS 419ABC Supervised Practice in Dietetics (8, 8, 8)
 FSCS 419S Seminar: Dietetics (2, 2, 2)
 FSCS 434 Management Principles in Dietetics (5)
 FSCS 479 Clinical Interactions in Dietetics (4)

• Option in Foods (103 units)

The option in *Foods* provides the academic preparation students need for careers in the food industry, including food science, product development, sales, and other aspects. Other career opportunities in the area of food service also are available.

Requirements for the Option

The major with this option requires a total of 103 units, including 21 in core courses and 82 in professional courses. *Students must earn grades of C or higher in all courses used to meet major requirements.*

Preparatory Courses (27 units)

- ANTH 250 Cultural Anthropology (4) or
 SOC 201 Principles of Sociology (4)
 CHEM 151, 152 Fundamentals of Chemistry I, II (5, 5)
 ECON 150 Economics for the Citizen (4)
 MICR 151 Introductory Microbiology (5)
 PSY 150 Introductory Psychology (4)

Required Core Courses (21 units)

- FSCS/SOC 120 Intimate Relationships (4)
 FSCS 210 Foundations of Food (4)
 FSCS 282 Management for Living (2)
 FSCS 283 Professional Encounters (1)
 FSCS 287 Aesthetics for Living (2)
 FSCS 471 Professional Writing in Family Studies and
 Consumer Sciences (4)
 FSCS 480 Family and Professional Interface (3)
 FSCS 483 Professional Perspectives (1)

Required Professional Courses (36 units)

- FSCS 310 Meal Management (3)
 FSCS 312 Cultural Foods of California (4)
 FSCS 317 Fundamentals of Human Nutrition (3)
 FSCS 410 Experimental Foods (5)
 FSCS 412 Advanced Foods (4)
 FSCS 414AB Institutional Food Service (4, 4)
 FSCS 434 Management Principles in Dietetics (5)
 FSCS 495 Field Work in Family Studies and
 Consumer Sciences (2, 2)

Supporting Professional Courses (46 units):

Select from following:

- ACCT 202 (4) or 200AB (4, 4)
 FSCS 411 (3), 413 (4), 417AB (2, 3), 470 (4)
 MGMT 307, 473 (4 each)
 MKT 304, 340, 341, 342, 442, 445 (4 each)
 CHEM 353 (5) SOC 460 (4)
 FIN 303 (4) SPCH 300, 340, 370, 371,
 JOUR 345 (4) 430, 462 (4 each)

• Option in Nutrition (104 units)

The option in *Nutrition* leads to careers in businesses and agencies involved in nutrition-related products and services and enables students to complete the academic requirements needed to qualify for a dietetic internship or supervised practice needed to qualify to take the examination to become a Registered Dietitian (R.D.).

Requirements for the Option

The major with this option requires a total of 104 units, including 21 in core courses and 82 in professional courses. *Students must earn grades of C or higher in all courses used to meet major requirements.*

Preparatory Courses (32 units)

ANTH 250 Cultural Anthropology (4) or
 SOC 201 Principles of Sociology (4)
 BIOL 200AB Human Anatomy and Physiology I, II (5, 5)
 CHEM 151, 152 Fundamentals of Chemistry I, II (5, 5)
 ECON 150 Economics for the Citizen (4)
 PSY 150 Introductory Psychology (4)

Required Core Courses (21 units)

FSCS/SOC 120 Intimate Relationships (4)
 FSCS 210 Foundations of Food (4)
 FSCS 282 Management for Living (2)
 FSCS 283 Professional Encounters (1)
 FSCS 287 Aesthetics for Living (2)
 FSCS 471 Professional Writing in Family Studies and
 Consumer Sciences (4)
 FSCS 480 Family and Professional Interface (3)
 FSCS 483 Professional Perspectives (1)

Required Professional Courses (75 units)

FSCS 310 Meal Management (3)
 FSCS 312 Cultural Foods of California (4)
 FSCS 317 Fundamentals of Human Nutrition (3)
 FSCS 410 Experimental Foods (5)
 FSCS 411 Evaluation of Current Nutrition Concepts (3)
 FSCS 413 Maternal and Child Nutrition (4)
 FSCS 414AB Institutional Food Service (4, 4)
 FSCS 415AB Nutrition and Diet Therapy (4, 4)
 FSCS 417AB Advanced Nutrition (3, 3)
 FSCS 417L Nutritional Assessment Laboratory (1)
 FSCS 418 Community Nutrition (3)
 FSCS 434 Management Principles in Dietetics (5)
 ACCT 202 Survey of Accounting (4)
 CHEM 353 Nutritional Aspects of Biochemistry (5)
 EDFN 452 Statistics in Education (4)
 MICR 151 Introduction to Microbiology (5)
 MKT 304 Principles of Marketing (4)

Supporting Professional Courses (8 units)

Select from the following 4-unit courses:

ANTH 444 FSCS 412, 470
 MKT 340, 342, 346, 440, 442 SOC 424, 425, 450, 460
 SPCH 300, 340, 350, 370, 371, 430, 462, 478

Minor in Home Economics

A minor in Home Economics is available for students majoring in other fields. A total of 50-51 units is required, of which 26-27 are in lower division and 24 are in upper division courses.

Requirements for the Minor (50-51 units)**Required Lower Division Courses (30-31 units):**

FSCS 101 (3), 202 (4), 208 (4), 210 (4), 250 (4) or * 317 (3),
 260 (4)
 FSCS/SOC 120 (4)

* Selection of an upper division course will change total number of lower and upper division units.

Required Upper Division Courses (20 units):

FSCS 310 or 312, 321, 341, 444

Certificate Program in Fashion Design

The Department of Family Studies and Consumer Sciences offers a credit certificate program in Fashion Design for persons who wish to expand their knowledge and experience in the field of fashion design. Courses are drawn from the department and from the Department of Art in the School of Arts and Letters. Interested students should contact the FSCS department for further information. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (43 units)**Prerequisites (9 units):**

FSCS 101, 102 Apparel Construction I, II (3, 3)
 ART 103 Design I (3)

Required Courses (minimum 34 units):

FSCS 204 Fashion Design: Flat Pattern I (4)
 FSCS 208 Textiles (4)
 FSCS 304 Fashion Design: Flat Pattern II (4)
 FSCS 306 Fashion Design: Draping I (3)
 FSCS 400 Tailoring (3)
 FSCS 402 The Fashion Industry (4)
 FSCS 406 Fashion Design: Draping II (3)
 ART 203 Design II (3)
 ART 244 Introduction to Life Drawing (3)
 ART 373 Creative Fashion Design (3)

Electives (select at least 9 units from following):

FSCS 202, 206, 454 (when appropriate)
 ART 312, 333, 338, 378, 438, 463, 471, 486

Certificate Program in Fashion Merchandising

The Department of Family Studies and Consumer Sciences offers a credit certificate program in Fashion Merchandising for persons who wish to expand their knowledge and experience in the field of fashion merchandising. Courses are drawn from the department and from the School of Business and Economics. Interested students should contact the FSCS department for further information. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (40 units)**Required Courses (28 units):**

FSCS 202 Clothing, Self and Society (4)
 FSCS 208 Textiles (4)
 FSCS 402 The Fashion Industry (4)
 FSCS 407 Fashion Merchandising (4)
 FSCS 495 Field Work in Home Economics (4)
 MKT 344 Principles of Retailing (4)

Electives (select 12 units from following):

CIS 294 FSCS 444, 499 (1-4 units)
 MKT 304, 340, 341 UNIV 498 (1-4 units)

In addition, the department offers course work acceptable toward fulfillment of requirements of the interdisciplinary credit certificate in *Child Maltreatment and Family Violence* offered by the School of Health and Human Services.

The Credential Program**• Single Subject Credential**

The B.A. degree program in Home Economics with the credential option is intended for examination waiver for the Single Subject credential in Home Economics. Students should consult advisers in both the department and the School of Education.

• Ryan Designated Subjects Credential (Vocational)

This teaching credential authorizes the holder to teach vocational classes in the subject(s) listed on the credential at grades K-12 and adult levels. The credential requires qualifying industrial, business and/or professional work experience in the subject(s) listed on it.

Requirements for the Credential (19-21 units)

- EDSE 421E Methods of Teaching Home Economics (3)
 EDAC 472 Principles of Adult and Occupational Education (3)
 EDAC 477 Counseling in Adult and Occupational Education (3)
 FSCS 441 Urban Family, Its Resources (4)
 FSCS 491 Programs for Occupational Education in Family Studies and Consumer Sciences (4)
 FSCS 495 Field Work in Family Studies and Consumer Sciences (4)

Additional subject matter course work may be needed, as determined by advisement. Applicants must satisfy the U.S. Constitution requirement. Students interested in the credential should contact the department's credential adviser for further details.

Courses in Family Studies and Consumer Sciences (FSCS)

Lower Division Courses

- 101 Apparel Construction I (3)**
 Clothing construction techniques, with emphasis on application of principles. Lecture-laboratory 6 hours. *CAN H EC 10*
- 102 Apparel Construction II (3)**
 Advanced processes of apparel construction and finishing. Application of couture techniques and methods. Activity 6 hours.
- 120 Intimate Relationships (4) (also listed as SOC 120)**
 Principles of interaction in intimate relationships; development of knowledge, self awareness, control of choices, family life cycle, roles and interpersonal growth; sexuality, love, parenting, conflict, stress, starting and ending relationships. *CAN H EC 12*
- 202 Clothing, Self, and Society (4)**
 Prerequisites: FSCS 207, GE social science requirement. Dress and adornment as products of interrelationships among social, psychological, cultural, economic, aesthetic, and physical factors.
- 204 Fashion Design: Flat Pattern I (4)**
 Prerequisites for Home Economic majors: FSCS 101, 102, 208; for others: instructor consent. Principles and techniques of pattern making, with emphasis on style development and fitting. Lecture-laboratory 8 hours.
- 206 Fashion Merchandising Concepts (4)**
 Concepts, principles, and overview of fashion merchandising.
- 207 Personal and Family Environmental Aesthetics (4)**
 Techniques for the development of critical and evaluative skills that influence the individual's and family's aesthetic environment.
- 208 Textiles (4)**
 Fundamental study of fibers, yarns, fabrics, color, and finishes; emphasis on properties and performance in relation to selection, use, and care. Lecture 3 hours, laboratory 2 hours.
- 209 Fashion Product Analysis (4)**
 Prerequisite: FSCS 208. Knowledge, analysis, and evaluation of fashion products.
- 210 Foundations of Food (4)**
 Introduction to foods as a profession. Principles and procedures of food preparation including selection, storage, food sanitation,

and product evaluation, and meal management. Lecture 1 hour, laboratory 6 hours. *CAN H EC 8*

250 Human Nutrition (4)
 Nutrition and its relation to health, behavior, growth, and development and aging. *No credit toward nursing or science majors or BS major or credential in home economics.* *CAN H EC 2*

260 Contemporary Interiors (4)
 Survey and analysis of contemporary interiors. Selection and arrangement of furnishings and accessories. *CAN H EC 18*

281 Food for Life (2)
 Ways of providing a nutritious diet for individuals and families in the world today.

282 Management for Living (2)
 Managing personal and family resources for effective living.

283 Professional Encounters (1)
 Professional opportunities and careers encompassed by family studies and consumer sciences; interaction with professionals and access to process of making career choices.

287 Aesthetics for Living (2)
 Functional aesthetics in the human environment; emphasis on application to interiors, housing, textiles, apparel, and foods.

Upper Division Courses

Upper division standing is prerequisite to enrollment in 400-level courses.

- 300 Physiological and Nutritional Bases of Fitness (4)**
(also listed as PE 300)
 Prerequisite: BIOL 155 or CHEM 158. Analysis of physiological and nutritional bases of fitness, including energy, for exercise, body composition, and weight control; methods of altering lifestyles in terms of nutritional and exercise habits.
- 304 Fashion Design: Flat Pattern II (4)**
 Prerequisite: FSCS 204. Advanced fashion designing through flat pattern methods. Activity 8 hours.
- 306 Fashion Design: Draping I (3)**
 Prerequisite: FSCS 204. Precision draping; principles and techniques of creating design on the dress form. Lecture-laboratory 6 hours.
- 310 Meal Management (3)**
 Prerequisites: FSCS 210; 250 or 317. Management of time, energy, economic, and aesthetic factors to meet contemporary dietetic requirements. Lecture 2 hours, laboratory 3 hours.
- 311 Science of Nutrition (1)**
 Prerequisites: CHEM 152, FSCS 250. Scientific principles of human nutrition.
- 312 Cultural Foods of California (4)**
 Prerequisite: FSCS 210. Cultural food patterns represented in California: food choices, typical dishes, menus, nutritional aspects, purchasing, preparation techniques, equipment, and significance for community nutrition. Lecture 2 hours, laboratory 6 hours.
- 314 Preserving Food at Home (2)**
 Home food preservation techniques: drying, canning, freezing, preserving, and pickling; causes of food spoilage, potential problems of toxicity, and safety factors; nutritional content, cost factors, storage, and use. Meets 4 hours weekly.
- 315 Communication Skills in Dietetics (3)**
 Prerequisites: FSCS 210, 317; PSY 150; SPCH 150. Basic communication skills needed by dietitian; sociopsychological

aspects of nutritional care in outpatient or clinical setting. Lecture 1 hour, laboratory 6 hours.

317 Fundamentals of Human Nutrition (3)

Prerequisite: CHEM 152. Scientific role of nutrients in the body and in development, growth, and maturation.

320 The Young Child (4) (also listed as CHDV 320)

Prerequisite: CHDV 200. Theoretical and empirical bases for understanding the child from 2 1/2 to seven years; participation with children in supervised setting, 3 hours.

321 Urban Family: Contemporary Trends (4)

Developmental processes and related problems of marital, parental, and family functioning in the urban setting.

341 Personal and Family Management Dynamics (4)

Resource management within the family ecosystem: family goal setting, decision making and change; time, money, and stress management; household communication; ergonomics, work simplification; home production; and use of personal computers.

384 Computer Applications in Family Studies and Consumer Sciences (4)

Prerequisite: FSCS 341; recommended prerequisite: CS 160. Basic information and specific computer applications in the work place, classroom, and home for FSCS department majors, home economics teachers, and practitioners. Lecture 1 hour, activity 6 hours.

400 Tailoring (3)

Prerequisite: FSCS 204. Principles and techniques used in tailoring of coats and suits. Lecture-laboratory 6 hours.

402 The Fashion Industry (4)

Analysis of the fashion industry from textiles to retailing and consumerism.

404 Textiles: Analysis of Current Concepts (4)

Prerequisite: FSCS 208. Evaluation of research, technical developments, and issues related to the production and consumption of textile products.

405 Textile Study (4)

Prerequisites: FSCS 208, CHEM 152. Physical testing of textile fabrics: fiber identification; new developments in fiber production, special finishes, yarn and fabric structure and properties. Lecture 2 hours, laboratory 4 hours.

406 Fashion Design: Draping II (3)

Prerequisite: FSCS 306. Advanced techniques of designing garment on the dress form. Creative ideas emphasized. Activity 6 hours.

407 Fashion Merchandising Processes (4)

Prerequisites: FSCS 206, MKT 344. Merchandising processes and fashion promotion strategies: planning, buying, and control of fashion products.

408 Fashion Promotion (4)

Prerequisites: FSCS 206, 209; MKT 340. Merchandising process and strategies; advertising and sales promotion of fashion products.

409 Historic Textiles (4)

Prerequisite: FSCS 208. Historic textiles from earliest times to present; records and preserved textiles viewed as reflections of life and textile development of countries and major civilizations.

410 Experimental Foods (5)

Prerequisites: FSCS 210, CHEM 152. Application of scientific principles to experimental methods in food preparation and recipe analysis. Lecture 3 hours, laboratory 6 hours.

411 Evaluation of Current Nutrition Concepts (3)

Prerequisite: FSCS 317. Interpretation of nutrition research findings and consideration of possible applications for individuals and population groups.

412 Advanced Foods (4)

Prerequisites: FSCS 210, 311F. Scientific principles and procedures concerned with food selection and preparation; experiences designed to broaden background in complex preparations; recipe analysis and development, and some analysis of foreign foods. Lecture 2 hours, laboratory 6 hours.

413 Maternal and Child Nutrition (4)

Prerequisite: FSCS 317. Nutritional requirements of pregnant women and of children; nutrition-related health considerations.

414AB Institutional Food Service (4, 4)

Prerequisites: FSCS 210, 250 or 317; MICR 151. Experience in organization and management of quantity food service, including menu writing, quantity food preparation, equipment selection, and institutional kitchen design.

414A: Lecture 3 hours, laboratory 3 hours.

414B: Lecture 2 hours, laboratory 6 hours.

415AB Nutrition and Diet Therapy (4, 4)

Prerequisites: (for 415A) FSCS 210, 417B; (for 415B) FSCS 414A. Nutritional intervention in disease processes; special emphasis on interrelationships between pathophysiology of disease processes and dietary modifications. Lecture 3 hours, laboratory 3 hours.

416 Child Nutrition (4)

Prerequisite: CHDV 200. Nutritional needs of pregnant and lactating women and of children from conception through adolescence; strategies for nutrition education in early childhood.

417AB Advanced Nutrition I, II (3, 3)

Prerequisites: (for 417A) FSCS 317, BIOL 200B, CHEM 353, MICR 151; (for 417B) FSCS 417A. Scientific bases for nutritional needs of humans; factors involved in meeting such needs in individuals and population groups; metabolic factors in nutrition.

417L Nutritional Assessment Laboratory (1)

Prerequisites: FSCS 317, BIOL 200B, CHEM 353, MICR 151, each with a minimum C grade. Laboratory experience in nutritional assessment using anthropometric, dietary, biochemical, and clinical tests and criteria.

418 Community Nutrition (3)

Prerequisite: FSCS 417B. Community nutrition problems, agencies, and programs. Lecture 1 hour, field experience 6 hours.

419ABC Supervised Practice in Dietetics (8-8-8)

Prerequisites: FSCS 415B, 434, 479; corequisite: FSCS 419S. Intensive learning experiences in food service administration and nutritional intervention in hospitals, public health facilities, or other health care facilities. Field experience 24 hours weekly; concurrent weekly professional colloquium required.

419S Seminar: Dietetics (2)

Prerequisites: FSCS 415B, 434, 479; corequisite: FSCS 419A, 419B, or 419C. Selected professional topics in food service administration and nutritional care.

420 Middle Childhood and Adolescence (4)*(also listed as CHDV 420)*

Prerequisite: CHDV 200. Theoretical and empirical bases for understanding children from seven to 18 years.

421 Marriage and Family Dynamics (4)

Prerequisite: FSCS/SOC 120. Dynamic processes of constructive family interaction.

422 Administration of Preschool and Day Care Programs (5) (also listed as CHDV 422)

Prerequisite: CHDV/FSCS 320 or 426. Organization and management of finances, staff, equipment, physical space, and programs. Meets State Health Department requirements for licensing as a director. Lecture 4 hours, activity 2 hours.

423 Parenting (4)

Prerequisite: FSCS/SOC 120 or CHDV 200. Aspects and problems of parenting from conception to adulthood.

424 The Formerly Married (4)

Life situations of the divorced and widowed, with or without children; effect on children.

425 Ethnic Identity and Awareness in Children and Families (4) (also listed as CHDV 425)

Prerequisite: CHDV/FSCS 420 or PSY 412B. Children's development of ethnic identity and awareness; transmission of differing cultural patterns within family systems and social institutions; issues of prejudice, stereotyping, and ethnic pride.

426 Hospitalized Child/Child Life Program (5) (also listed as CHDV 426)

Prerequisites: CHDV 200; extensive experience in nursery school setting or CHDV/FSCS 320. Working with hospitalized children from a nonmedical perspective; interaction and activity planning; play therapy. Six hours activity weekly in a hospital setting.

430 Household Equipment (4)

Prerequisite: PHYS 150 recommended. Fundamental considerations governing selection, operation, and care; consumer and testing information. Lecture-laboratory 8 hours.

434 Management Principles in Dietetics (5)

Prerequisites: FSCS 414B; ACCT 202. Principles of management for quality food service systems. Lecture-laboratory 10 hours.

440 Personal and Family Financial Management (4)

Family financial concerns from the consumer viewpoint; banking, savings, and credit; home financing; insurance; investment; income tax; wills and estate planning.

441 Urban Family, Its Resources (4)

Prerequisites: Appropriate courses in sociology and economics. Focus on individual and family management of limited personal resources and use of community resources by low-income and otherwise disadvantaged families in urban environment.

443 Management Problems in Urban Housing (4)

Urban housing and home environments for low-income housing; related housing laws and regulations; home operation, beautification, and sanitation.

444 Consumer Issues (4)

Recommended prerequisites: FSCS 341. Factors influencing selection of goods and services for the family; role, responsibility, and protection of consumer.

445 Management for Aged or Physically Handicapped (4)

Prerequisites: EDSP 460, PSY 150. Management of resources to meet functional needs of aged and/or physically handicapped.

Emphasis on adaptation of family living situations, life styles, processes, and equipment in home. Field trips included.

450N Nutrition and Well-Being (4)

Prerequisite: BIOL 165 or CHEM 158. Nutrition in the life cycle as related to maturation, aging, well-being, emphasizing the individual as an integrated being.

451 Nutrition and Aging (4)

Prerequisite: BIOL 165 or CHEM 158. Relationship of nutrition, aging and diseases common among elderly; nutritional needs and problems of elderly.

452 Nutrition for Educators (2)

Prerequisite: Admission to teaching credential program. Role of nutrition in physiologic and cognitive development and common nutrition problems of school children.

454L,P Selected Topics in Family Studies and Consumer Sciences (1-6)Current topics of special interest in family studies and consumer sciences as announced in *Schedule of Classes*. May be repeated for credit.**458 Physical Aspects of Aging (4) (also listed as PE 458)**

Aging process, fitness, and nutrition; influences on wellness, life styles, and recuperation; strategies for optimizing physical quality of life for elderly.

460 Housing: Shelter and Environment (4)

Relations of housing, environment, individual, family; development of criteria for evaluation and planning for life cycle; analysis of energy-saving techniques, passive and active solar.

461 Home Furnishings Problems (4)

Prerequisite: FSCS 360. Comparative study of products of industrial and custom drapery, upholstery, and wood finishing; materials, finishes, and structure. Lecture 3 hours, lecture-laboratory 2 hours.

463 Residential Interiors II (4)

Prerequisite: FSCS 360. Application of residential interior design concepts to development of home environment. Activity 8 hours. May be repeated to maximum of 8 units.

464 Materials and Resources for Residential Interiors (4)

Prerequisites: FSCS 208, 360. Materials and services; development of designs using interior finishing materials; specifications. Lecture and field trips.

465 History of Housing Design (4)

Development of housing in America from seventeenth century to present; international influences; social, economic, and cultural influences; architects and architectural styles and movements.

466 History of Furnishings and Interiors: Antiquity to Mid-Eighteenth Century (4)

Major furnishings and interior style developments from ancient times to mid-eighteenth century; influences of changing cultural patterns, materials, methods, designers, and philosophies.

467 History of Furnishings and Interiors: Neoclassic to Present (4)

Major furnishings and interior style developments from neoclassic period to present; influences of changing cultural patterns, materials, methods, designers, and philosophies.

470 Demonstration Techniques (4)

Practice in techniques used in promotional and educational demonstrations; field experience through cooperation with local business and utility companies. Lecture 2 hours, laboratory 6 hours.

471 Professional Writing in Family Studies and Consumer Sciences (4)

Prerequisites: ENGL 190, SPCH 150, minimum of 20 FSCS units, passing WPE score. Aspects of written communication specific to family studies and consumer sciences in education, community service, and business.

472 Interiors for Special Populations (4)

Prerequisite: FSCS 260. Designing interiors for the elderly and those with marginal-to-serious physical disabilities; safety considerations in public and private environments. Field trips.

479 Clinical Interactions in Dietetics (4)

Prerequisites: FSCS 315, 415B; PSY 150. Role, responsibilities, and practices of dietitian as a nutrition teacher on health care team. Lecture 3 hours, laboratory 3 hours. Concurrent weekly professional colloquium required.

480 Family and Professional Interface (3)

Prerequisites: FSCS/SOC 120, 281, 282, 283, 287, 471; corequisite: FSCS 483. Interface between family developmental needs and professional services.

483 Professional Perspectives (1)

Prerequisites: FSCS/SOC 120, 281, 282, 283, 287, 471; corequisite: FSCS 480. Strategies for career development.

491 Programs for Occupational Education in Family Studies and Consumer Sciences (4)

Prerequisites: Senior standing, minimum of 20 FSCS units. Survey, organization, implementation, and coordination of home economics wage earning programs in high schools and community colleges.

495 Field Work in Family Studies and Consumer Sciences (2-4)

Prerequisites: Thirty-five FSCS units, of which at least 15 must be upper division; departmental approval. Supervised experience utilizing professional preparation in field setting. Lecture 1 hour, laboratory 6 hours. Graded CR/NC.

499 Undergraduate Directed Study (1-4)

Prerequisite: Consent of an instructor to act as sponsor. Project selected in conference with sponsor before registration; progress meetings held regularly, and final report submitted. May be repeated for credit.

HEALTH SCIENCE

School of Health and Human Services

DEPARTMENT OFFICE

Engineering and Technology A505
Phone: (213) 343-4740

Programs in Health Science include Bachelor of Science and Master of Arts degrees that prepare students for professional service in health education, the health sciences and safety studies fields, and for advancement in allied health positions such as teaching in public and private health agencies; environmental, safety, public health, and consumer health investigators, specialists in alcohol and drug programs. The M.A. degree program is described in the *Graduate Programs* section.

The Faculty

Emeriti: Saxon C. Elliot, Ben C. Gmur, Barbara O. Henkel, David L. Jacobsohn, Ben F. Scherer, Bernard Warner.

Professors: Robert L. Fennessy, Edward Maljanian.

Associate Professors: Carlton Blanton, Segundo V. Zapata (*Chair*).

Assistant Professor: Constantina Skanavis.

Bachelor of Science Degree in Health Science

The Bachelor of Science degree in Health Science prepares students for leadership and educational roles in allied health, community health, safety studies, school health, and substance abuse prevention.

Requirements for the Major (112 units)

The Bachelor of Science degree in Health Science, available with a choice among five options—*Allied Health, Community Health, Safety, School Health, and Substance Abuse*—requires a total of 186 units. The major consists of 52-72 units (depending on the option selected), plus 36-37 units of lower division prerequisites which must be completed prior to enrollment in upper division courses. The core consists of 17 units.

Lower Division Prerequisite Courses (36 or 37 units):

HS 284 Utilizing Health Care Data (4)
BIOL 200AB Human Anatomy and Physiology I, II (5, 5) or
BIOL 201 Structure of Human Body (5) plus
BIOL 202 Function of Human Body (5)
CHEM 151 Fundamentals of Chemistry I (5)
MATH 102 College Algebra (4)
MICR 151 Introductory Microbiology (5) or
MICR 201, 202 Microbiology for Health Related
Sciences (w/lab) (4,2)
PHYS 150 Principles of Physics (4) or
PHYS 155 Nature of Physical World (4)
SOC 201 Principles of Sociology (4)

Upper Division Required Core Courses (17 units):

HS 350 Health Maintenance Problems (3)
HS 360 Selecting Health and Medical Services and Products (3)
HS 463 National and International Health Problems (3)
HS 472 Data Analysis for Health Science (4)
ENGL 306 Technical Writing (4)

Options (35-55 units)

Select one from following:

• Allied Health (42 units)

Required Courses (34 units):

HS 440 Health Care Delivery System (4)
HS 444 Health and Safety Law (4)
HS 464 Inventory of Community Health Care Programs (3)
HS 473 Evaluation of Health Programs (4)
HS 474 Seminar: Issues and Trends in Allied Health (4)
HS 476 Quality Assurance in Health Programs (4)
NURS 468 Legal Aspects of Health Care Provision of
California (3)
PHIL 491 Medical Ethics (4)
SOC 425 Medical Sociology (4)

Option Emphasis (8 units):

Select one from following:

Administration (8 units)

MGMT 478 Financial Management of Health Care Institutions (4)
Additional administrative focus course selected with adviser approval.

Education (8 units)

HS 480 Program Design in Allied Health (4)
Additional educational focus course selected with adviser approval.

• Community Health (35 units)

Required Courses (35 units):

HS 201 Management of Medical Emergencies (2)
HS 401 Medical Emergency Studies (3)
HS 444 Health and Safety Law (4)
HS 462 Chronic and Degenerative Disorders (3)
HS 464 Inventory of Community Health Care Programs (3)
HS 470 Public Health Administration (4)
HS 473 Evaluation of Health Programs (4)
HS 479 Health Program Planning (4)
FSCS 250 Human Nutrition (4)
MICR 412 Epidemiology (4)

• Safety (50 units)

With careful course selection and adviser approval, students may earn the credit certificate in *Occupational Safety and Health* concurrently with the major with this option.

Required Courses (34 units):

HS 201 Management of Medical Emergencies (2)
HS 401 Medical Emergency Studies (3)
HS 430 Occupational Safety and Health Programs (4)
HS 431 Occupational Health and Safety Law (4)
HS 432 Theory and Principles of Industrial Hygiene (4)
HS 433 Principles of Hazard Control (3)
HS 434 Control of Mechanical Hazards (3)
HS 435 Control of Materials and Process Hazards (3)
HS 436 Occupational Safety Program Administration (3)
HS 496 Directed Field Work (5)

Selected Electives (16 units):

With adviser approval, select 16 units from the following approved electives which are also applicable toward fulfillment of requirements of the certificate program in *Occupational Safety and Health*:

Communications Area (4 units)

Select one from following:

ENGL 306, OSBE 301, SPCH 430, 370, TECH 400

Select two courses from one of the five areas listed below. Area selected should reflect the student's academic preparation and, when applicable, work experience and professional objective.

Business Orientation

CIS 301 ECON/ENGR 300
FIN 335, 436 MATH 342
PSY 442

Emergency Services

CRIM 362, 404, 437 HS 301
TSE 475

Fire Protection

TECH 351AB, 352AB, 451, 453AB

Occupational Health/Industrial Hygiene Area

CHEM 301ABC, 401-403, 412AB, 418, 462
COMD 400, 401, 402, 409 HS 444, 456, 462, 467, 468
MIGR 412 PHYS 351N

Technical Aspects

CE/ME 320 PHYS 312, 313, 427
HS 422, 478 PSY 447
ME 321 TECH 411, 440

Select remaining electives from any academic department or division with adviser approval.

• School Health (48 units)

This option is intended for students pursuing the Single Subject credential in Health Science. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

Required Courses (48 units):

HS 201 Management of Medical Emergencies (2)
HS 301 Cardiopulmonary Resuscitation and Basic Life Support Systems (1)
HS 401 Medical Emergency Studies (3)
HS 444 Health and Safety Law (4)
HS 455 Sex Information for Health Education (3)
HS 460 School Health Programs (4)
HS 462 Chronic and Degenerative Disorders (3)
HS 464 Inventory of Community Health Care Programs (3)
HS 466 Strategies for Substance Abuse Treatment Programs (2)
HS 473 Evaluation of Health Programs (4)
HS 478 Human Factors in Health and Safety Studies Programs (4)
HS 490 Administration of School Health Programs (3)
FSCS 450N Nutrition and Well-Being (4)
PSY 170-171 Introductory Physiological Psychology (w/lab) (4,1)
TSE 475 Accident and Safety Studies (3)

• Substance Abuse (55 units)

With careful course selection and adviser approval, students may earn the credit certificate entitled *Specialist in Alcohol and Drug Problems* concurrently with the major with this option.

Required Courses (25 units):

HS 201 Management of Medical Emergencies (2)
HS 301 Cardiopulmonary Resuscitation and Basic Life Support Systems (1)

HS 401 Medical Emergency Studies (3)
HS 462 Chronic and Degenerative Disorders (3)
HS 465 Strategies in Drug Abuse Prevention (2)
HS 467 Problem Drinking and Alcoholism (3)
HS 468 Problems in Controlled Substances (3)
HS 469 Administration of Substance Abuse Programs and Facilities (4)
HS 496 Directed Field Work (4)

Selected Electives (30 units):

With adviser approval, select 30 units from the following approved electives which also apply toward fulfillment of requirements for the certificate program in *Specialist in Alcohol and Drug Problems*:

ANTH 444 ART 425, 440, 445
COUN 405AB, 406, 445, 450, 480, 490
CRIM 439, 447, 460
HS 444, 456, 464, 466, 476, 491, 496
MGMT 470 PSY 410AB, 441
SOC 422, 425 SPCH 454, 478, 489

Minor in Health and Safety Studies

A total of 36 units is required for the minor in Health and Safety Studies. This program provides preparation for teaching in the areas of adult education, civil defense, driver education, medical self-help, Red Cross instructional programs, and in public schools.

Requirements for the Minor (36 units)

Lower Division Required Courses (12 units):

BIOL 200AB Human Anatomy and Physiology I, II (5, 5)
HS 201 Management of Medical Emergencies (2)

Upper Division Required Courses (12 units):

HS 350 Health Maintenance Problems (3)
HS 360 Selecting Health and Medical Services and Products (3)
HS 401 Medical Emergency Studies (3)
TSE 475 Accident and Safety Studies (3)

Electives (select 12 HS units with adviser approval).

Certificate Program: Specialist in Alcohol and Drug Problems

The certificate requires a total of 60 units, including 30 units of course work and field experience in health science and 30 units in related fields. Course selection is designed to supplement previous academic and/or vocational experience and to apply to basic professional training leading to the baccalaureate or to graduate degrees. The program prepares alcohol and other drug abuse specialists for employment in educational, therapeutic, rehabilitative, and consultant settings. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (60 units)

Required Courses (30 units):

HS 201 Management of Medical Emergencies (2)
HS 301 Cardiopulmonary Resuscitation and Basic Life Support Systems (1)
HS 401 Medical Emergency Studies (3)
HS 467 Problem Drinking and Alcoholism (3)
HS 468 Problems in Controlled Substances (3)
* HS 496 Field Work (15)
HS 499 Undergraduate Directed Study (3)

* Rehabilitation Counseling majors may substitute COUN 496 when placement is in agency providing services to alcohol-dependent or drug-dependent persons.
maximum 15 units in internships and/or independent study courses

Electives (select 30 units from following):

ANTH 444	ART 425, 440, 445
BIOL 200AB	CRIM 439, 447, 460
COUN 200AB, 405AB, 445, 450, 480, 490, 494**	
HS 444, 456, 462, 464, 491***	
MGMT 470	PSY 150, 405, 410AB, 441
RECR 422, 472	SOC 201, 322A, 422, 425
SPCH 150, 278, 350, 454, 478, 489**	
TSE 472, 475	UNIV 398

** maximum 6 units

*** maximum 4 units

Certificate Program in Occupational Safety and Health

The Department of Health Science offers a credit certificate program designed to prepare occupational safety and health professionals to function as generalists in implementing safety and loss control programs in industry or in medical institutions. Developed in accordance with federal and state legal occupational safety and health acts, the program is applicable to the requirements for a bachelor's or a master's degree in health science. The program requires 45 units of upper division course work, including a 29-unit core and 16 units of electives. Admission to the program requires filing of a formal application to the department, a screening interview with the program adviser covering the applicant's prior academic work and employment experience, and departmental approval of the individual student program. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Prerequisites:

Required: MATH 102

Select five from following, with adviser approval:

BIOL 165 or 200AB	CHEM 151 or 158
HS 150 or 201	MICR 151
PHYS 150 or 155	POLS 150
PSY 150	SOC 201

Requirements for the Certificate (45 units)

Required core (29 units):

HS 496 or * 595 (5 units) HS 430-436 (24 units)

* open only to graduate students

Electives (16 units):

Communications Area (select 4 units from following)

ENGL 306	OSBE 301
SPCH 430, 370	TECH 400

Select two courses from one of the five areas listed below. Area selected should reflect the student's academic preparation and, when applicable, work experience and certificate objective.

Business Orientation

CIS 301	ECON/ENGR 300
FIN 335, 436	MATH 342
PSY 442	

Emergency Services

CRIM 362, 404, 437 HS 301, 401
TSE 475

Fire Protection

TECH 351AB, 352AB, 451, 453AB

Occupational Health/Industrial Hygiene Area

COMD 400, 401, 402, 409
CHEM 301ABC, 401-403, 412AB, 418, 462
HS 350, 360, 444, 456, 462, 467, 468
MICR 412 PHYS 351N

Technical Aspects

CE/ME 320 HS 422, 478
ME 321 PHYS 312, 313, 427
PSY 447 TECH 411, 440

Select remaining electives from any academic department with adviser approval.

The Credential Program

The Bachelor of Science degree in Health Science is authorized for examination waiver for the Single Subject credential in Health Science. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs. Students interested in this credential should consult advisers in the Department of Health Science and the School of Education. In addition, they must include the following courses in the major:

HS 201, 301, 350, 360, 401, 444, 455, 456, 460, 462, 464, 466, 490
BIOL 200AB CHEM 151
ENGL 306 or 406 HS 478
PSY 170 and 171 TSE 475

Courses in Health Science (HS)

Lower Division Courses

150 Basic Health and Safety Studies (4)

Current health and safety issues facing the student population, emphasis on utilizing scientific methods to solve personal health and safety problems and applying research findings to daily living.

201 Management of Medical Emergencies (2)

Prepares students to give immediate and temporary treatment in emergency situations; includes first aid and personal safety, legal and safety aspects of medical aid. Qualifies for Red Cross certification.

284 Utilizing Health Care Data (4)

An overview of the utilization of data in all phases of health care delivery, including administration, diagnosis, therapy, patient monitoring, and continuing education.

Upper Division Courses

Upper division standing is prerequisite to enrollment in all 300- and 400-level HS courses.

301 Cardiopulmonary Resuscitation and Basic Life Support Systems (1)

Prerequisite: HS 201. Principles and techniques of cardiopulmonary resuscitation in emergency care. American Red Cross CPR certification.

350 Health Maintenance Problems (3)

Prerequisite: GE biological science requirement. Beneficial and detrimental factors of environment and their effect on the body and maintenance of health.

360 Selecting Health and Medical Services and Products (3)

Consumer health, evaluation of health and accident insurance, quackery and fraudulent health practices, food and drug controls.

401 Medical Emergency Studies (3)

Prerequisites: HS 201, BIOL 200AB. Includes instructor certification for first aid and medical self-help. Practice instruction required.

422 Radiological Health and Safety Education (4)

Prerequisites: BIOL 200AB, HS 350, PHYS 150. Responsibilities of schools and public agencies for programs of education, protection, and training; radiation exposure problems; radiation and environmental effects.

430 Occupational Safety and Health Programs (4)

Overview of safety and health programs in industrial settings including professional resources, typical safety problems, major program components; awareness, accident investigation, committees, job safety analysis. Site visits.

431 Occupational Health and Safety Law (4)

Laws related to Cal/OSHA; sources of law; employer/employee rights and responsibilities; legal procedures, enforcement, and penalties; selected statutes and case law.

432 Theory and Principles of Industrial Hygiene (4)

Principles and practices of industrial hygiene; consideration of selected substances, processes, and controls; uses and calibration of primary instruments.

433 Principles of Hazard Control (3)

Principles underlying protection of workers from hazards; systematic and practical analysis of hazards; discussions of applicable safety protection; relationships between engineering solutions, education, and personal protection.

434 Control of Mechanical Hazards (3)

Common physical hazards in industrial settings and applicable codes, standards, and methods of control, emphasis on facilities and mechanical and electrical hazards.

435 Control of Materials and Process Hazards (3)

Common processes and chemical hazards in the work place; standards, measurements, hazard control mechanisms for flammable liquids, industrial gases, welding, and other materials and processes.

436 Occupational Safety Program Administration (3)

Analysis of successful safety programs; management involvement, program evaluation, employee participation, and motivation component; goal setting and tactics designed to improve safety programs.

440 Health Care Delivery System (4)

U.S. health care delivery system and its relationship to health science professions using a systems model; input, throughout, and output issues identified and explored.

444 Health and Safety Law (4)

Prerequisites: GE biological and social science requirements. Study, analysis, and application of federal, state, county, and city codes and ordinances relating to health science and safety programs.

455 Sex Information for Health Education (3)

Advanced sex information and education, physiological individuality and response, contraceptives and their health effects, selection and application of content in teaching sex education.

456 Health Studies on Alcohol, Narcotics, Nutrition, and Tobacco (4)

Scientific data on effects of tobacco, alcohol, narcotics, nutrition, and dangerous drugs on health. Current problems relating to control of illegal substances. *Fulfills teacher certification requirement in California.*

460 School Health Programs (4)

Prerequisites: HS 201, 350. Responsibility of classroom teacher in instructing in health content areas commonly taught in elementary and secondary schools, assisting with school health services, and maintaining a healthful school environment.

461 Physiology and Pharmacology of Substance Abuse (5)

Effects and medical implications of substance abuse on the body at system, organ, and cell levels; for nonmedically trained professionals. Meets CAADAC requirements for substance abuse counseling certification.

462 Chronic and Degenerative Disorders (3)

Prerequisites: HS 350, BIOL 200AB. Etiology and prognosis of degenerating tissue and their effects on health; new developments and research.

463 National and International Health Problems (3)

Prerequisite: HS 350. Review of historical and modern efforts to solve health problems; survey of health problems on local, state, national and international levels.

464 Inventory of Community Health Care Programs (3)

Prerequisite: HS 350. Types of community structures and agencies organized to meet health needs of the community.

465 Strategies in Drug Abuse Prevention (2)

Theories of drug abuse prevention; dysfunctional behavior related to drug abuse; practical application of specific techniques and strategies for drug abuse prevention.

466 Strategies for Substance Abuse Treatment Programs (2)

Prerequisite: HS 150, 350, or 456. Substance abuse problems with an emphasis on polysubstance abuse; analysis of appropriate strategies for polysubstance abuse programs.

467 Problem Drinking and Alcoholism (3)

Prerequisites: GE biological science requirement. Multidisciplinary study of problems of alcohol and alcoholism in society.

468 Problems in Controlled Substances (3)

Prerequisites: GE biological science requirement. Concepts of drug addiction; problems in education, prevention, and treatment.

469 Administration of Substance Abuse Programs and Facilities (4)

Prerequisites: HS 467; 456 or 468. Tasks and problems associated with administration and supervision of substance abuse programs and facilities.

470 Public Health Administration (4)

Prerequisite: HS 464. Fundamental and historical aspects of public health administration including development of public health in U.S., policies and procedures for disease control, present and future trends in public health.

472 Data Analysis for Health Science (4)

Prerequisite: MATH 100 or 102. Techniques and methods for health science data analysis including basic statistical techniques; methods of deriving morbidity and mortality rates, life tables, and risk assessment.

473 Evaluation of Health Programs (4)

Prerequisite: HS 472. History and development of program evaluation techniques for health services including models, designs, and statistical techniques for program evaluation.

474 Seminar: Trends and Issues in Allied Health (4)

Prerequisite: HS 440. Critical issues and new trends involving allied health professionals; analysis of educational and practice implications and application of problem solving technique.

476 Quality Assurance in Health Programs (4)

Historical development of quality assurance regulations including accreditation, credentials, licenses, regulations, and health education evaluation; emphasis on current regulations including audits, utilization reviews; professional standards, and continuing education in relation to health care delivery programs.

478 Human Factors in Health and Safety Studies Programs (4)

Human factors, information input, human output, working environment, stress and fatigue, design implication, and safety management as they relate to health and safety studies.

479 Health Program Planning (4)

Prerequisite: HS 473. Concepts, organization, legislation, and techniques involved in health program planning.

480 Program Design in Allied Health (4)

Prerequisite: HS 474. Organization, planning, development, and administration of educational programs in allied health: budgeting, financing, student and faculty matters, clinical affiliations, program accreditation; includes in-service and continuing education.

482 Health Education in Health Care Setting (4)
(also listed as NURS 482)

Prerequisite: Professional experience or upper division standing in health related field. Organization and development of health education programs in health care setting; patient education in acute, ambulatory, and long-term care facilities; methods of financing and evaluating program effectiveness, including cost benefit analysis.

486 Loss Control in Safety and Health (4)

Prerequisite: HS 476. Theories and principles of loss control in safety and health fields, components and strategies of loss control, administrative roles and responsibilities data analysis for loss, treatment, and evaluation.

490 Administration of School Health Programs (3)

Prerequisite: HS 460. Principles and practices of supervision and administration in school health programs.

491 Special Studies in Health and Safety (1-4)

Prerequisite: Senior or graduate standing. Intensive study of an area of health or safety; specific area announced in *Schedule of Classes*. May be repeated to maximum of 16 units as subject matter changes.

496 Directed Field Work (1-6)

Prerequisites: Departmental approval, agency acceptance. Supervised experience in a health or safety agency; group sessions and individual evaluative conferences. May be repeated to maximum of 18 units. Graded CR/NC.

499 Undergraduate Directed Study (1-4)

Prerequisites: For health studies, BIOL 200AB; for both health and safety studies, instructor consent to act as sponsor. Project selected in conference with sponsor before registration, progress meetings held regularly, and a final report submitted. May be repeated to maximum of 6 units.

NURSING

School of Health and Human Services

DEPARTMENT OFFICE

Simpson Tower F417

Phone: (213) 343-4700

The Nursing curriculum prepares nurses for professional careers in the maintenance and promotion of health and in supportive, preventive, therapeutic, and restorative nursing care for individuals and families in institutional and community settings. Students who complete the undergraduate program will have acquired knowledge and skills specific to generalized professional nursing practice and will be qualified to assume intermediate leadership roles.

Students interested in undertaking graduate study leading to a Master of Science degree are referred to the *Graduate Programs* section.

The Faculty

Emeritae: Evelyn Malkin Barclay, Henry Etta Brown Blackmon, Miriam Blomquist, Eloise M. King, Wanda L. King, Marilyn A. Lemon, Irene M. Molloy, Helen O'Connell.

Professors: Marlohn Balas, Beverly R. Bigler, Linda LaPlante Fahey, Sarah P. Farnham, Marlene Farrell, Marilyn Friedman, Virginia Hunter, Jo Ann Johnson (*Chair*), Christine Pollack Latham, Freda V. O'Bannon, Judith L. Papenhausen, Barbara Peterson Sinclair, S. Winifred Utz, Diane Vernon, Ruth R. Wu, DeAnn Marie Young.

Associate Professors: Loretta Birkhead, Evelyn Ruiz Calvillo, Marjorie Elaine O'Leary, Rhea P. Williams.

Assistant Professors: Patricia Ann Chin, Jung Kim Miller, Genevieve L. Monahan.

Bachelor of Science Degree

The professional Nursing curriculum leads to the Bachelor of Science degree with a major in Nursing.

The undergraduate program is accredited by the California Board of Registered Nursing and the National League for Nursing. Some courses are open to nonmajors who may find one or more courses helpful in achieving their own professional or personal goals.

Admission to the Program

The program consists of lower and upper division segments. Students admitted to Cal State L.A. as freshmen or lower division transfers are enrolled in the lower division portion of the program. Students who transfer from community colleges with the Associate of Arts or Associate of Science degree in Nursing and the R.N., or from N.L.N.-accredited hospital diploma schools, are admitted to the upper division program. This professional program is designed for students who have completed the lower division nursing courses in accredited colleges and universities, including Cal State L.A.

General Information

Students in the Nursing program must carry malpractice insurance, personal health insurance, and workers' compensation when required by a clinical agency. Low-cost insurance is available through the Student Nurses Association of California and the California Nurses Association (for registered nurses), or through many independent companies. Nursing students must have a valid California driver's license and access to an automobile covered by

appropriate automobile insurance. Prior to entering the first clinical lab, students must have a current CPR card, a physical examination including Mantoux skin test or chest x-ray, if indicated, and proof of immunity to rubella. Annual renewal of CPR certification, an annual physical examination and Mantoux skin test or chest x-ray, if indicated, will be required. Information about uniforms may be obtained from departmental advisers.

Departmental Regulations

- Students in the Nursing major must maintain good academic standing and attain grades of *C* or better in all nursing courses and in all natural and social science courses prerequisite or corequisite to the major. Nursing courses and prerequisite science courses for which the student earns less than a grade of *C* may be repeated only once, and then with instructor consent. To meet the requirement of continuing satisfactory performance, students on academic probation are not permitted to enroll in a nursing course until the probation has been removed.
- Students may not enroll in any course that requires other nursing prerequisites unless the prerequisite courses are completed with grades of *C* or better.
- Basic nursing students must take the National League for Nursing (NLN) Diagnostic Readiness Test before registering for the senior clinical electives. The test results will be used to determine the appropriate clinical electives.

Requirements for the Major (120-121 units)

A total of 198 units is required for the degree, including 120-121 units in required or selected courses in nursing and related fields.

Required Prerequisites (28 units):

The following courses are prerequisite to the Nursing major.

BIOL 200AB Human Anatomy and Physiology I, II (5, 5)
 CHEM 151, 152 Fundamentals of Chemistry I, II (5, 5)
 ENGL 190 Freshman Composition: Explanation (4)
 SPCH 150 Oral Communication (4)

Required in Related Fields (25 units)

ANTH 444 Medical Anthropology (4)
 * FSCS 317 Fundamentals of Human Nutrition (3)
 ** MICR 201 Microbiology for Health Related Sciences (4)
 ** MICR 202 Microbiology Laboratory for Health Related Sciences (2)
 PSY 150 Introduction to Psychology (4)
 SOC 201 Principles of Sociology (4)

Any upper division statistics course of 4 units or more

* Students entering with 3 or more semester units (4 1/2 quarter units) of credit for a course in general nutrition from an accredited college or diploma program satisfy this requirement by transfer credit.

** Students entering with 4 or more semester units (6 or more quarter units) of credit from an accredited college for a course including laboratory satisfy this requirement by transfer credit.

Required in Nursing (95-96 units)

Lower Division Required Courses (44 units):

NURS 101 Clinical Nursing Skills Laboratory (1)

NURS 192	Introduction to Nursing (2)
NURS 200	Nursing Care of Adults I (2)
NURS 201	Adult Clinical Nursing Laboratory I (4)
NURS 202	Nursing Care of Adults II (2)
NURS 203	Adult Clinical Nursing Laboratory II (4)
NURS 204A	Clinical Response to Disease Processes I (2)
NURS 204B	Clinical Response to Disease Processes II (2)
NURS 207	Psychiatric Clinical Nursing Laboratory (2)
NURS 208	Nursing Care of Psychiatric Patients (2)
NURS 220	Nursing Care of Children (4)
NURS 221	Nursing Care of Children Clinical Laboratory (4)
NURS 234	Assessment and Management Maternal-Child Health (3)
NURS 235	Maternal-Child Clinical Nursing Laboratory (4)
NURS 240	Introduction to Nursing Process (2)
NURS 241	Introduction to Clinical Nursing Laboratory (4)

Students must complete lower division nursing and natural science courses before beginning upper division courses. R.N. students may enroll in NURS 342-343 and/or the last natural science course concurrent with the first quarter of 300-level nursing courses.

Upper Division Required Courses (39-40 units):

NURS 302	Coping with Chronic Illness and Aging (3)
NURS 303	Nursing Process Laboratory: Chronicity and Aging (3)
NURS 304	Coping with Selected Problems of Illness and Disability (3)
* NURS 342	Nursing Process: Self-Care (2)
* NURS 343	Nursing Process: Self-Care Laboratory (1)
NURS 344	Coping with Loss (3)
NURS 345	Nursing Process Laboratory: Home Health Care (3)
NURS 372	Physical Assessment (3)
NURS 373	Physical Assessment Laboratory (1)
NURS 390	Introduction to Nursing Research (4)
NURS 470	Family and Community Health Assessment (4)
NURS 471	Family and Community Health Assessment Laboratory (3)
NURS 488	Team Dynamics in Nursing (2)
NURS 489	Nursing Leadership Laboratory (3)
NURS 492	Problems and Trends in Health Care System (2)
** UNIV (NURS) 398	Cooperative Education (2)

* required of all R.N. transfer students

** required of all Basic Nursing students before enrollment in 300-level NURS courses

Clinical electives (12 units):

Select four courses, two lectures with respective concurrent laboratories, from the list of clinical electives below. Prerequisite to any required clinical elective is completion of all required 300-level courses.

NURS 400+401	NURS 403+404
NURS 430+431	NURS 442+443
NURS 456+457	NURS 474+475A or 475B

Certificate Program: Adult Nurse Practitioner

The Department of Nursing offers a credit certificate program designed to prepare adult nurse practitioners to meet selected deficits in the health care delivery system. Graduates of the program may be employed by medical groups, colleges and universities, and other health care providers in the private and public sectors of the community.

The program requires completion of 24 units of upper division credit course work. Admission to the program requires formal application to the department; a screening interview with the Admission Committee; academic work and employment experience which must

include at least an associate degree in Nursing, a minimum 2.5 grade point average in work completed at all institutions of higher education, current licensure as a registered nurse in the state of California, at least one year of nursing experience or the equivalent; and departmental approval.

In addition to the 24 units of required upper division course work, students must complete 34 units of professional course work through the Department of Nursing's Institute of Nursing to qualify for the certificate. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (24 units)

Required Courses (24 units):

NURS 412	Assessment and Management of Acute Health Problems (4)
NURS 413	Acute Health Care Laboratory for Nurse Practitioners (4)
NURS 416	Assessment and Management of Chronic Health Problems (4)
NURS 417	Chronic Health Care Laboratory for Nurse Practitioners (4)
NURS 472	Physical Assessment for Nurse Practitioners (4)
NURS 473	Physical Assessment Laboratory for Nurse Practitioners (4)

Required Professional Course Work (34 units)

Certificate Program: Nurse Midwifery Education

The Department of Nursing offers a credit certificate program designed to prepare registered nurses to expand their practice roles by becoming Certified Nurse Midwives (C.N.M.), to reduce the existing severe obstetrical care provider shortages that exist in the greater Los Angeles area.

Admission to the program requires the following:

- Current RN licensure in California
- Current enrollment as a B.S.-Nursing major (Track I) or Bachelor of Science degree in Nursing (Track II)
- Minimum 2.5 grade point average
- Minimum one year experience in labor and delivery (within last three years)
- Three letters of recommendation
- Completion of prerequisite courses in critical thinking, pathophysiology, and physical assessment each with a minimum C grade
- Malpractice insurance for professional nursing practice
- A personal interview
- Current C.P.R. (B.C.L.S.) certification
- Physical examination within past year indicating negative tuberculin test of chest x-ray and evidence of immunity to rubella, rubeola, and hepatitis B.

Obstetrics/gynecological nurse practitioners and R.N. physician assistants with an OB/GYN specialty are eligible, but consideration is given on an individual basis.

The program requires completion of 24 units of upper division course work. Nursing majors may substitute courses required for the certificate for certain courses required for the major. The certificate is awarded upon completion of all requirements for the baccalaureate. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (54 units)*Required Courses (54 units):*

- NURS 438 Health Assessment of Women (4)
 NURS 439 Health Assessment of Women Laboratory for Nurse Midwives (2)
 NURS 444 Assessment and Management of Family Planning/GYN Problems (3)
 NURS 445 Family Planning/GYN Laboratory for Nurse Midwives (5)
 NURS 446 Assessment and Management of Antepartal Families (4)
 NURS 447 Antepartal Care Laboratory for Nurse Midwives (8)
 NURS 448 Assessment and Management of Intrapartal Families (4)
 NURS 449 Intrapartal Care Laboratory for Nurse Midwives (8)
 NURS 450 Assessment and Management of Postpartal Families (3)
 NURS 451 Postpartal Care Laboratory for Nurse Midwives (2)
 NURS 452 Assessment and Management of Neonates (2)
 NURS 453 Neonatal Care Laboratory for Nurse Midwives (2)
 NURS 458 Professional and Legal Midwifery Practice Issues (3)
 NURS 459 Preceptorship for Nurse Midwives (4)

Certificate Program: Obstetrics-Gynecology Nurse Practitioner

The Department of Nursing offers a credit certificate program designed to prepare registered nurses to assume expanded roles in the delivery of primary health care to ambulatory women. Emphasis is on the recognition of the normal—and thus the abnormal—and the appropriate management of each within a team approach. Graduates of the program may be employed by medical groups, colleges and universities, and other health care providers in the private and public sectors of the community.

The program requires completion of 24 units of upper division credit course work. Admission to the program requires formal application to the department; a screening interview with the Admission Committee; academic work and employment experience, which must at least include an associate degree in Nursing; a minimum 2.5 grade point average in work completed at all institutions of higher education; current licensure as a registered nurse in the state of California; at least one year of nursing experience or the equivalent; and departmental approval.

In addition to the 24 units of required upper division course work, students must complete 26 units of professional course work through the Department of Nursing's Institute of Nursing to qualify for the certificate. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (24 units)*Required Credit Courses (24 units):*

- NURS 432 Assessment and Management of Obstetric Health (4)
 NURS 433 Obstetric Health Care Laboratory for Nurse Practitioners (4)
 NURS 436 Assessment and Management of Gynecologic Health (4)
 NURS 437 Gynecological Health Care Laboratory for Nurse Practitioners (4)
 NURS 472 Physical Assessment for Nurse Practitioners (4)
 NURS 473 Physical Assessment Laboratory for Nurse Practitioners (4)

*Required Professional Course Work (26 units)***Courses in Nursing (NURS)****Lower Division Courses****101 Clinical Nursing Skills Laboratory (1)**

Prerequisites: BIOL 200B, CHEM 152, ENGL 190, MICR 201, 202, PSY 150, SPCH 150. *Should be taken immediately before NURS 201.* Demonstration and practice of basic clinical skills required to assist patients with health deviation self-care requisites. Emphasis on administration of medications and performance of sterile and nonsterile procedures.

192 Introduction to Nursing (2)

First nursing course for basic nursing students. Open to students considering nursing as a major. Nurse's role within health care system; introduction to philosophies of nursing education.

200 Nursing Care of Adults I (2)

Prerequisites: NURS 101, 204A, 240, 241; corequisite: NURS 201. Nursing care of hospitalized patients with disruptions of homeostatic, immunologic, and integumentary protective mechanisms, gas transport, and cardiovascular function.

201 Adult Clinical Nursing Laboratory I (4)

Prerequisites: NURS 101, 204A, 240, 241, successful completion of medication exam; corequisite: NURS 200. Nursing care of hospitalized adults experiencing health disturbances of cardiovascular, hematologic, respiratory, integumentary, neoplastic, and fluid/electrolyte disorders.

202 Nursing Care of Adults II (2)

Prerequisites: NURS 200, 201, 204B; corequisite: NURS 203. Nursing care of adults experiencing health disturbances of the metabolic, renal, neuroendocrine, gastrointestinal, hepatobiliary, reticuloendothelial, and oto-ophthalmic systems.

203 Adult Clinical Nursing Laboratory II (4)

Prerequisites: NURS 200, 201, 204B; corequisite: NURS 202. Nursing care of hospitalized adults experiencing health disturbances involving metabolic, renal, neuroendocrine, orthopedic, hepatobiliary, and oto-ophthalmic systems.

204A Clinical Response to Disease Processes I (2)

Prerequisites: BIOL 200B, CHEM 152, ENGL 190, MICR 201, 202, SPCH 150. Clinical nursing care rationale for common health care disturbances including disorders of the immunologic, fluid/electrolyte, acid/base, cardiovascular, respiratory, and hematopoietic systems.

204B Clinical Response to Disease Processes II (2)

Prerequisites: BIOL 200B, CHEM 152, ENGL 190, MICR 201, 202, SPCH 150. Clinical nursing care rationale for common health disturbances including renal, genitourinary, musculoskeletal, neuroendocrine, gastrointestinal, hepatobiliary, and oto-ophthalmic systems.

206 Basic Drug Administration (2)

Prerequisites: BIOL 200AB. Introduction to drug administration, including legal aspects, drug classifications, and dosage calculation; selected specific drug indications, modes of action, usual doses, possible side effects, and routes of administration.

207 Psychiatric Clinical Nursing Laboratory (2)

Prerequisites: NURS 202, 203; corequisite: NURS 208. Clinical experience in implementing the nursing process in the care of adult patients/clients demonstrating self-care deficits in social and psychological functioning.

208 Nursing Care of Psychiatric Patients (2)

Prerequisites: NURS 202, 203; corequisite: NURS 207. Introduction to nursing actions with clients demonstrating self-care deficits in social and psychological functioning.

220 Nursing Care of Children (4)

Prerequisites: NURS 234, 235; corequisite: NURS 221. Care of hospitalized children with emphasis on common health disturbances including normal and abnormal growth and development.

221 Nursing Care of Children Clinical Laboratory (4)

Prerequisite: NURS 234, 235; corequisite: NURS 220. Patient care experiences with hospitalized children encountering common health disturbances.

234 Assessment and Management Maternal-Child Health (3)

Prerequisite: NURS 202, 203; corequisite: NURS 235. Nursing assessment and management of mother and infant during pregnancy, delivery, and neonatal stage; obstetrical complications and gynecological disorders.

235 Maternal-Child Clinical Nursing Laboratory (4)

Prerequisite: NURS 202, 203; corequisite: NURS 234. Nursing care of mother and infant during pregnancy, delivery, and neonatal stage; obstetrical complications and gynecological disorders.

240 Introduction to Nursing Process (2)

Prerequisites: BIOL 200B, CHEM 152, ENGL 190, MICR 201, 202, PSY 150, SPCH 150; prerequisite or corequisite: NURS 192; corequisite: NURS 241. Introduction to the nursing process with a focus on coping with requirements of daily living during hospitalization.

241 Introduction to Clinical Nursing Laboratory (4)

Prerequisites: BIOL 200B, CHEM 152, ENGL 190, MICR 201, 202, PSY 150, SPCH 150; prerequisite or corequisite: NURS 192; corequisite: NURS 240. Nursing technologies that support patient self-care requisites utilizing the nursing process including beginning physical assessment skills.

254L,P Selected Topics in Nursing (1-6)

Prerequisites: As needed for specific topic. Current topics of special interest to nursing students, as announced in *Schedule of Classes*. May be repeated for credit.

Upper Division Courses**302 Coping with Chronic Illness and Aging (3)**

Prerequisites or corequisites for Nursing majors: NURS 304, 372, 373; corequisite: NURS 303; prerequisite for other majors: upper division standing. Management of selected self-care limitations associated with aging and chronic illness.

303 Nursing Process Laboratory I: Chronicity and Aging (3)

Prerequisites or corequisites for nursing majors: NURS 304, 372, 373; corequisite: NURS 302. Applying nursing technologies to promote self-care in chronically ill aged; emphasis on limitations resulting from sensory-cognitive changes, pain, and sleep disturbances.

304 Coping with Selected Problems of Illness and Disability (3)

Prerequisites for generic nursing students: NURS 220, 221; prerequisites or corequisites for transfer nursing majors: NURS 342, 343; prerequisite for other majors: upper division standing. Effects of pain and sleep disturbances; nursing technologies with emphasis on educative strategies.

307 Physiology and Psychology of Violence and Aggression (4) (also listed as PSY 307)

Prerequisites: PSY 150, GE blocks A and B. Biological and psychobehavioral approaches to violent individuals; analysis and research support for understanding violence drawn from natural, medical, and behavioral sciences.

342 Nursing Process: Self-Care (2)

Prerequisite: transfer nursing major; corequisite: NURS 341. Socialization of the transfer student to the professional role; focus on nursing process with assessment for self-care/dependent care requisites, capabilities, and deficits.

343 Nursing Process: Self-Care Laboratory (1)

Prerequisite: transfer nursing student; corequisite: NURS 342. Nursing process utilizing nursing technologies and ways of assisting patients/clients in achieving health-related goals.

344 Coping with Loss (3)

Prerequisites for nursing majors: NURS 302, 303; corequisite for nursing majors: NURS 345; prerequisite for other majors: upper division standing. Theoretical explanations of response to loss related to illness, disability and death; family focused nursing care in home setting.

345 Nursing Process Laboratory: Home Health Care (4)

Prerequisites: NURS 302, 303; prerequisite or corequisite: ANTH 444; corequisite: NURS 344. Nursing assessment, care, teaching of patients and families in the home; emphasis on work with families experiencing psychosocial responses to illness-related losses.

354L,P Selected Topics in Nursing (1-6)

Prerequisites: As needed for specific topic. Current topics of special interest to nursing students, as announced in *Schedule of Classes*. May be repeated for credit.

372 Physical Assessment (3)

Prerequisites for generic nursing students: NURS 220, 221; corequisite: NURS 373. Cognitive, affective, and motor components of physical assessment, including history taking, physical examinations, and diagnostic tests of normal individuals for determining degree to which physical requisites are met.

373 Physical Assessment Laboratory (1)

Prerequisites for generic nursing students: NURS 220, 221; corequisite: NURS 372. Clinical experience in physical assessment of individual patients/clients across the age span; includes data gathering through health histories, physical examinations, and selected diagnostic tests and data analysis.

390 Introduction to Nursing Research (4)

Prerequisites: NURS 221, 235, ENGL 190, passing WPE score; prerequisite or corequisite: EDFN 452. Nursing research process and concepts applicable to clinical practice; reading and analyzing research; developing skill in writing professional nursing papers.

400 Acute Health Deviations in Cardiorespiratory Function (3)

Prerequisites: NURS 344, 345, 390 (graduate students may take 390 as corequisite); prerequisite or corequisite: 402A or successful completion of arrhythmia placement examination. Nursing management of patients who have health deviation self-care deficits due to critical physiological dysfunction of the cardiorespiratory system.

401 Advanced Clinical Nursing Laboratory (3)

Prerequisites: NURS 344, 345; prerequisite or corequisite: 402A or successful completion of arrhythmia placement examination; corequisite: NURS 400. Direct clinical experience with patient

experiencing critical physiological dysfunction of cardiorespiratory system requiring partly or wholly compensatory nursing action.

402A Fundamentals of Electrocardiography (2)

Fundamentals of vector analysis of the 12 lead electrocardiogram and basic arrhythmia detection.

402B Advanced Electrocardiography (2)

Prerequisite: NURS 402A. Advanced electrocardiography including detailed evaluation of 12 lead electrocardiogram in determining axis changes, conduction defect, cardiovascular hypertrophies, location of myocardial infarction, differentiation of complicated arrhythmias, and selected electrolyte and drug effects.

403 Advanced Clinical Nursing Laboratory (3)

Prerequisite or corequisite: NURS 402A or successful completion of arrhythmia placement examination. Direct clinical experience with patient experiencing acute physiological dysfunction of the metabolic, hematologic, or sensorimotor systems requiring partly or wholly compensatory nursing action.

404 Acute Health Deviations in Metabolic, Hematologic, and Sensorimotor Function (3)

Prerequisites: NURS 344, 345, 390; 402A or successful completion of arrhythmia placement examination. Nursing care related to acute health deviations in metabolic, hematologic, and sensorimotor functions with their related pathophysiology and nursing care implications.

412 Assessment and Management of Acute Health Problems (4)

Assessment, differential diagnosis, and management of frequently occurring acute health problems relative to primary care of adolescents, adults, and elderly patients.

413 Acute Health Care Laboratory for Nurse Practitioners (4)

Clinical experience for nurse practitioner students in primary care of adolescents, adults, and elderly patients with acute health problems.

416 Assessment and Management of Chronic Health Problems (4)

Assessment, diagnosis, and management—including therapeutic and educational strategies—of chronic health problems of adolescents, adults, and aging patients.

417 Chronic Health Care Laboratory for Nurse Practitioners (4)

Clinical experience for nurse practitioner students in primary care of adolescents, adults, and elderly patients with chronic health problems.

423 Nursing in School Health Programs Clinical Laboratory (6)

Prerequisite or corequisite: NURS 422. Laboratory experience of 180 clock hours in school nursing which includes observation and participation under direction of a master school nurse at elementary and secondary school levels.

426 Nursing Management in Public Schools (4)

Prerequisite: admission into Health Services credential program under Ryan Act. Introduction to organization and management of school health services through techniques of coordination and integration of human and material resources to accomplish health goals in the educational setting.

428 Nursing Assessment in Public Schools (4)

Prerequisites: NURS 372, 373; admission into Health Services credential programs under Ryan Act. Assessment and management of physical, psychosocial, and environmental needs and

processes of school age children and their common health problems; State-mandated screening in the educational setting.

430 Primary Health Care of Women (3)

Prerequisites for students enrolled in B.S. Nursing program: NURS 390, 470, 471; corequisite for students enrolled in B.S. Nursing program: NURS 431. Assessment and management of self-care requisites unique to women in primary health care settings.

431 Primary Health Care of Women Laboratory (3)

Prerequisites: NURS 470, 471; corequisite: NURS 430. Introduction to health assessment and maintenance, diagnosis, and management of health care unique to obstetrics and gynecology.

432 Assessment and Management of Obstetric Health (4)

Prerequisites: NURS 436, 437; corequisite: NURS 433. Assessment and management of normal and selected high risk women during pregnancy; includes fetal evaluation, health teaching, and psychosocial support.

433 Obstetric Health Care Laboratory for Nurse Practitioners (4)

Prerequisites: NURS 436, 437; corequisite: NURS 432. Clinical experience for nurse practitioner students in ambulatory care of pregnant women.

436 Assessment and Management of Gynecologic Health (4)

Prerequisites: NURS 472, 473; corequisite: NURS 437. Assessment and management of gynecologic health of women throughout the life span; includes pelvic and breast screening, health teaching, and care of episodic illnesses.

437 Gynecologic Health Care Laboratory for Nurse Practitioners (4)

Prerequisites: NURS 472, 473; corequisite: NURS 436. Clinical experience for nurse practitioner students in ambulatory gynecologic health care.

438 Health Assessment of Women (4)

Prerequisite: Admission into Nurse Midwifery program; corequisites: NURS 439, 444, 445. Knowledge needed for complete physical and health assessment of women including history, physical examination, collection and analysis of laboratory studies, and development of treatment plan.

439 Health Assessment of Women Laboratory for Nurse Midwives (2)

Prerequisite: Admission into Nurse Midwifery program; corequisites: NURS 438, 444, 445. Clinical experience in obtaining complete histories and performing physical examinations, formulating medical diagnoses, and devising and implementing management plans; emphasis on consultation and collaborative skills.

440 Introduction to Community Mental Health (2)

Prerequisites: For Nursing majors, upper division standing and NURS 488 and 492; for other majors, approval of Nursing adviser. Models for community-based intervention in mental health problems; mental health services; nurses' role in community mental health agencies.

442 Assisting Strategies in Psychosocial Nursing (3)

Prerequisites: NURS 390, 470, 471; corequisite: NURS 443. Exploring concepts and theories from biobehavioral sciences and humanities related to development of self-care nursing actions in psychosocial nursing.

443 Assisting Strategies in Psychosocial Nursing Laboratory (3)

Prerequisites: NURS 470, 471; corequisite: NURS 442. Clinical experience in selected health care settings for clients with disruptions in social and psychological functioning.

444 Assessment and Management of Family Planning and Gynecologic Problems (3)

Prerequisite: Admission into Nurse Midwifery program; corequisites: NURS 438, 439, 445. Utilization of midwifery management process, assessment and management of women's and adolescents' problems regarding family planning and gynecology, including perimenopausal.

445 Family Planning and Gynecologic Problems Laboratory for Nurse Midwives (5)

Prerequisite: Admission into Nurse Midwifery program; corequisites: NURS 438, 439, 444. Clinical experience for nurse midwifery students focusing on assessment and management of women's and adolescents' problems regarding family planning and gynecology.

446 Assessment and Management of Antepartal Families (4)

Prerequisites: NURS 444, 445; corequisite: NURS 447. Assessment, diagnosis, and management of women during antepartal phase of pregnancy; emphasis on low-to-moderate risk women.

447 Antepartal Care Laboratory for Nurse Midwives (8)

Prerequisites: NURS 444, 445; corequisite: NURS 446. Antepartal clinical experience for nurse midwifery students utilizing midwifery management principles and process; emphasis on low-to-moderate risk clients.

448 Assessment and Management of Intrapartal Families (4)

Prerequisites: NURS 446, 447; corequisite: NURS 449. Assessment, diagnosis, and management of physiological and psychological aspects of four stages of labor in moderate- and high-risk intrapartal clients.

449 Intrapartal Care Laboratory for Nurse Midwives (8)

Prerequisites: NURS 446, 447; corequisite: NURS 448. Intrapartal clinical experience for nurse midwifery students utilizing management process; emphasis on four stages of labor in moderate- to high-risk clients.

450 Assessment and Management of Postpartal Families (3)

Prerequisites: NURS 448, 449; corequisite: NURS 451. Assessment and management of postpartal families from immediate postpartum period through six-week period after childbirth.

451 Postpartal Care Laboratory for Nurse Midwives (2)

Prerequisites: NURS 448, 449; corequisite: NURS 450. Clinical experience for nurse midwifery students focusing on managing postpartal families immediately after birth through six-week postpartal period.

452 Assessment and Management of Neonates (2)

Prerequisites: NURS 450, 451; corequisite: NURS 453. Assessment and management of newborns utilizing midwifery process, principles, and skills; emphasis on emergency resuscitation knowledge and skills.

453 Neonatal Care Laboratory for Nurse Midwives (2)

Prerequisites: NURS 450, 451. Clinical experience for nurse midwifery students in managing newborns in first few days of life.

454L.P Selected Topics in Nursing (1-6)

Prerequisites: As needed for specific topic. Current topics of special interest to nursing students announced in *Schedule of Classes*. May be repeated for credit.

455 Strategies for Preventing and Intervening in Family Violence and Abuse (4) (also listed as SW 455)

Major theories used to explain family violence; emphasis on preventing abuse and intervening with victims across the age span; social, policy, and legal issues.

456 Crisis Theory: Mental Health Promotion (3)

Prerequisites: NURS 390, 470, 471. Crisis theory as a basis for identification of maturational and situational high risk events that create an impact on mental health.

457 Mental Health Promotion Nursing Laboratory (3)

Prerequisites: NURS 470, 471; corequisite: NURS 456. Identification of situational and maturational hazards that may impinge on self-care capabilities. Nursing application of crisis model of educative-supportive techniques for promotion of self care.

458 Professional and Legal Midwifery Practice Issues (4)

Prerequisites: NURS 452, 453. Historical and contemporary issues in nurse midwifery practice; emphasis on legal, ethical, moral, and entrepreneurial issues. Graded CR/NC.

459 Preceptorship for Nurse Midwives (4)

Prerequisite: NURS 458. Synthesis and integration of knowledge and skills learned in Nurse Midwifery program; emphasis on independent function in nurse midwife role under preceptorship of certified nurse midwife.

460 Problems of Parenting (2)

Prerequisites: PSY 150, upper division standing; FSCS 423 recommended. Parent and child health problems created by inadequate parent-child relationships. Health assessment and exploration of nursing intervention techniques.

462 Behavior Modification in Health Care (4)

Prerequisite: Upper division standing. Techniques for behavior modification in variety of health care problems.

464 Family Interaction Problems (2)

Prerequisite: Upper division standing; FSCS 421 recommended. Dysfunctional role and communication patterns in family unit.

466 Nursing Management Systems (2)

Prerequisite: NURS 489. Expands skills and knowledge base of management process utilized in nursing service system, with primary focus on the following subsystems: staffing and scheduling, budget planning and cost containment, quality assurance.

468 Legal Aspects of Health Care Provision in California (3)

Prerequisite: Professional experience or upper division standing in a health related program. Exploration of legal aspects of health care provision: intentional torts, negligence and malpractice, practice acts, ethical-legal conflicts, and litigation procedure.

470 Family and Community Health Assessment (4)

Prerequisites: NURS 344, 345, 492; corequisite: NURS 471. Criteria used in family and community health assessment including discussion of sociocultural variables and roles of community health nurses in working with families and communities.

471 Family and Community Health Assessment Laboratory (3)

Prerequisite: NURS 344, 345; corequisite: NURS 470. Family and community health assessment and intervention in the community setting.

472 Physical Assessment for Nurse Practitioners (4)

Cognitive, effective, and motor components of complete health assessment for nurse practitioner students including history, physical examination, laboratory studies, and formation of diagnostic, treatment, and educational plans of care.

473 Physical Assessment Laboratory for Nurse Practitioners (4)

Clinical experience for nurse practitioner students in obtaining and performing complete histories and physical examinations, formulating diagnoses, developing and implementing plans of care for adolescent, adult, and geriatric patients.

474 Primary Health Care of Children and Adults (3)

Prerequisites: NURS 390, 470, 471. Holistic primary health care of children and adults; emphasis on comprehensive assessment, management, patient education, and research.

475A Primary Health Care of Adults Laboratory (3)

Prerequisite: NURS 470, 471; corequisite: NURS 474. Diagnosis and management of self-care deficits in adult primary care settings; additional focus on patient education and implications of related nursing research.

475B Primary Health Care of Children Laboratory (3)

Prerequisite: NURS 470, 471; corequisite: NURS 474. Eliciting and recording health histories, performing physical examinations, and evaluating developmental status of children, newborn through adolescence.

480 Assessment and Care of Patients' Spiritual Needs (4)

Exploration of individual's spiritual needs in health care, and how spiritual care may be closely integrated with that of body and mind.

482 Health Education in Health Care Setting (4)

(also listed as HS 482)

Prerequisite: Professional experience or upper division standing in health-related field. Organization and development of health education programs in health care setting; patient education in acute, ambulatory, and long-term care facilities; methods to finance and evaluate program effectiveness, including cost benefit analysis.

488 Team Dynamics in Nursing (2)

Prerequisites: NURS 302, 303. Team dynamics and strategies for change as applied in nursing situations.

489 Nursing Leadership Laboratory (3)

Prerequisites: NURS 344, 345; prerequisite or corequisite: NURS 488 (corequisite only when enrolled in NURS 489 second five weeks of quarter). Clinical experience in organization and delivery of care to groups of hospital patients; emphasis on integrating leadership skills.

490 Proseminar: Nursing Research (4)

Prerequisite: NURS 390. Critique of selected nursing studies; research problems, theories, designs, and instruments; alternative interpretations of findings explored.

492 Problems and Trends in Health Care System (2)

Prerequisite for nursing majors: upper division standing. Major problems and trends in health care system; effects on nursing.

494 Ethics in Nursing (3)

Lecture-seminar course covering the history and development of ethics in American nursing from 1800s to the present.

499 Undergraduate Directed Study (1-4)

Prerequisites: Instructor consent to act as sponsor; ability to assume responsibility for independent work and to prepare written and oral reports. Project selected with sponsor before registration; progress meetings held regularly. May be repeated for credit.

PHYSICAL EDUCATION AND RECREATION / LEISURE STUDIES

School of Health and Human Services

DEPARTMENT OFFICE

Physical Education 206
Phone: (213) 343-4650

The Department of Physical Education and Recreation/Leisure Studies offers programs leading to the Bachelor of Science and Master of Arts degrees for students interested in teaching, coaching, athletic training, exercise science, adapted physical education, or preparing for advanced study in the foundations of human physical performance. General activity courses are open to all students with requisite proficiency, at a wide range of skill levels and in a variety of activities and sports. Adapted physical education, providing individual programs of corrective exercises and specially designed sports activities, may be taken by students who need such a program. Assignment by a university physician or department adviser is required.

The department's graduate programs are described in the *Graduate Programs* section.

The Faculty

Emeriti: Leonard L. Adams, Cameron Scott Deeds, James G. Dunkelberg, Anita H. Fisher, Marguerite Mochel, Reid E. Nilsen, Dorothy O'Brien, Marion J. Olson, Warren E. Reeves, Burton M. Seidler, Albert A. Tilman, Beverly Warner, Patricia M. White, George W. Willott, Emil Wroblicky.

Professors: Jerry Reed Ball (Chair), Mary Conroy, Patricia A. Delaney, Rod A. Faurot, Reid J. Gunnell, Jackie Lou Hoyt, Joan Johnson, Karen M. Johnson, Carol G. McKenzie, Robert A. Miller, Ronald H. Morris, Robert M. Oldham, Mary L. Schreiber, Janet A. Seaman, Patricia L. Wagner, William E. Wilgus.

Assistant Professors: Mark Lee Bailey, Ron E. Hull, Nazareth Khodiguian, Mary Catherine Marks.

Bachelor of Science Degree in Physical Education

The Bachelor of Science degree program in Physical Education prepares students for careers in educational settings and public and private fitness industries. A minor is available for students majoring in other fields.

Requirements for the Major (80-82 units)

A total of 196 units is required for the Bachelor of Science degree in Physical Education. The major requires 80-82 units and consists of a required core of 40 units of lower and upper division PE courses plus one of two available options: the *Exercise Science* option (41 or 42 units) or *Single Subject Teaching* option (40 units). Students must earn minimum C grades in all required major courses.

Courses in Related Fields

Physical Education majors must include BIOL 200AB or BIOL 201-202 in their program. These courses fulfill general education Block B (Natural Sciences) biological science requirement. Students must also include PSY 150 and SOC 201 in the program. These courses fulfill GE Block D (Social Sciences) requirements. In addition, completion of a GE course in CHEM 158 or 159 or PHYS 150 is recommended.

Required Physical Education Core (40 units):

The core, taken by all majors, consists of 10 units of professional activities, 10 units of foundations courses, and 20 units of upper division concept courses.

Lower Division

Professional Activities (10 units):

Required Courses (6 units):

- PE 283 Aquatics Activities (2)
- PE 286 Square, Folk, and Social Dance (2)
- PE 288 Professional Activities: Physical Fitness (2)

Individual and Dual Sports (select one from following):

- PE 281A Archery and Badminton (2)
- PE 281G Golf and Tennis (2)
- PE 281T Track and Field (2)
- PE 289 Gymnastics and Tumbling (2)

Team Sports (select one from following):

- PE 282C Contemporary Games and Flag Football (2)
- PE 282S Softball and Soccer (2)
- PE 282V Volleyball and Basketball (2)

Foundations Courses (10 units):

- PE 160 Dimensions of Physical Education (2)
- PE 161 Introduction to Movement (4)
- PE 260 Historical and Philosophical Bases of Physical Education (4)

Upper Division

Successful completion of UNIV 400, the *Writing Proficiency Examination (WPE)*, is prerequisite to enrollment in all upper division major courses.

Concept Courses (20 units):

- PE 400A Kinesiology (4)
- PE 400B Physiology of Activity (4)
- PE 401 Measurement of Human Performance (4)
- PE 402 Nature of Human Performance (4)
- PE 408 Behavioral Foundations of Physical Education and Sport (4)

Options (40-42 units)

Select one of the following options and complete the required courses as listed below.

• Exercise Science Option (41-42 units)

This option prepares students for careers in fitness and related fields. Students acquire skills and knowledge necessary for employment in health and fitness centers, hospitals, orthopaedic centers, sport medicine clinics, and similar health care environments. Students who complete this major will have 42-43 units of free electives which may be used, if desired, for further specialization in courses related to fitness and business management, laboratory technology, and biomechanics. Completion of GE courses in CHEM 151 and PHYS 150 is highly recommended.

Required Courses (35 units):**Lower Division Activity Courses (2 units)**

- PE 151C Beginning Bicycling (1)
PE 257R Intermediate Racquetball (1)

Upper Division Concept Courses (33 units):

- PE 470 Statistical Processes and Experimental Design in Physical Education (3)
PE 471 Computer Applications in Physical Education (3)
PE 472 Proseminar: Laboratory Assessment Techniques (3)
PE 474 Proseminar: Field Evaluation Techniques (4)
PE 475 Proseminar: Exercise Prescription and Implementation (3)
PE 476 Administration of Fitness Programs (4)
PE 483 Theory and Analysis of Aquatics (3)
PE 488 Theory and Analysis of Fitness (3)
PE 492 Field Experience in Exercise Science (1-4)

Select one from following (3 units):

- PE 481 Theory and Analysis of Individual Sports (3)
PE 486 Theory and Analysis of Square, Folk, and Social Dance (3)
PE 489 Theory and Analysis of Gymnastics and Tumbling (3)

Electives (select 6-7 units from following with adviser approval):

- PE 405 Water Safety for Instructors (4)
PE 412 Prevention and Care of Injuries (3)
PE 441 Motivation in Athletics (3)
PE 473 Motor Learning (3)
PE 477 Proseminar: Biomechanical Analysis of Human Motion (3)
PE 478 Proseminar: Structural Kinesiology (3)

• Single Subject Teaching Option (40 units)

This option is designed for individuals interested in teaching physical education. Students seeking a teaching credential should see advisers in the department and in the School of Education. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

Lower Division (12 units):**Professional Activity Courses (10 units):**

Select five from following with no duplication from the core.

Individual and Dual Sports

- PE 281A Archery and Badminton (2)
PE 281G Golf and Tennis (2)
PE 281T Track and Field (2)
PE 289 Gymnastics and Tumbling (2)

Team Sports

- PE 282C Contemporary Games and Flag Football (2)
PE 282S Softball and Soccer (2)
PE 282V Volleyball and Basketball (2)

Required Related Course (2 units):

- HS 201 Management of Medical Emergencies (2)

Upper Division (28 units):**Professional Preparation Courses (20 units):**

- PE 410 Program Designs in Physical Education (3)
PE 411 Class Organization and Conduct (4)
PE 450 Dimensions of Physical Education for Exceptional Students (4)
PE 481 Theory and Analysis of Individual Sports (3)
PE 482 Theory and Analysis of Team Sports (3)

- PE 488 Theory and Analysis of Fitness (3)

Elective (3 units):

Select one from following:

- PE 483 Theory and Analysis of Aquatics (3)
PE 486 Theory and Analysis of Square, Folk, and Social Dance (3)
PE 489 Theory and Analysis of Gymnastics and Tumbling (3)

Required Related Courses (5 units):

- HS 301 CPR and Basic Life Support Systems (1)
HS 456 Health Studies on Alcohol, Narcotics, Nutrition, and Tobacco (4)

Minor in Physical Education

A minor in Physical Education is available for students majoring in other fields. Prerequisite are BIOL 200AB or 201-202. A total of 34-38 units is required. Students must earn a minimum C grade in all courses included in the minor.

Requirements for the Minor (34-38 units)**Lower Division (16-18 units):**

Select two from following (6-8 units):

- PE 160 Dimensions of Physical Education (2)
PE 161 Introduction to Movement (4)
PE 260 Historical and Philosophical Bases of Physical Education (4)

Professional Activity Courses (10 units):

Select five from following with adviser approval.

- PE 281A Archery and Badminton (2)
PE 281G Golf and Tennis (2)
PE 281T Track and Field (2)
PE 282C Contemporary Games and Flag Football (2)
PE 282S Softball and Soccer (2)
PE 282V Volleyball and Basketball (2)
PE 283 Aquatics (2)
PE 286 Square, Folk, and Social Dance (2)
PE 288 Professional Activities: Physical Fitness (2)
PE 289 Gymnastics and Tumbling (2)

Upper Division (18-20 units):

Successful completion of UNIV 400, the Writing Proficiency Examination, is prerequisite to enrollment in all upper division courses in the minor. Adviser approval is required prior to enrollment in any upper division course.

Required Courses (8 units):

- PE 400A Kinesiology (4)
PE 400B Physiology of Exercise (4)

Electives (10-12 units):

Select one from following (4 units):

- PE 401, 402, 408

Select one from following (3-4 units):

- PE 410, 411, 450, 470, 474, 476

Select one from following (3-4 units):

- PE 471, *476, 481, 482, 483, 486, 487, 489

* unless taken above

The Credential Program

Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

Single Subject Credential

The B.A. degree program in Physical Education has been approved by the Commission on Teacher Credentialing for examination waiver for the Single Subject credential in Physical Education. Students should consult credential advisers in the department and the School of Education.

Adapted Physical Education Specialist Credential

The program leading to the Adapted Physical Education Specialist credential is a waiver-status program entitling the holder to teach adapted physical education in California to individuals between the ages of 3 and 21 years who have exceptional needs. The 28-unit program is based upon a basic authorization to teach physical education. Candidates must hold (or concurrently complete) a Single Subject credential in Physical Education, a Multiple Subject credential, or an equivalent authorization. They also must maintain a minimum 2.5 grade point average for all courses required in the program, complete directed teaching, and receive departmental recommendation.

Required Courses (24–28 units):

- * EDSP 400 Education and Psychology of Exceptional Individuals (4)
- PE 450 Dimensions of Physical Education for Exceptional Students (4)
- PE 452 Physical Education for Severely Handicapped (4)
- PE 453 Physical Education for Learning Handicapped (4)
- PE 455 Motor Assessment of Exceptional Students (4)
- PE 456 Physical Education for Physically Handicapped (4)
- PE 457 Interdisciplinary Approach to Physical Education for Exceptional Students (4)

* required for students entering the program who already possess a clear credential

Courses in Physical Education (PE)

A student who has completed an intermediate or advanced course may not subsequently receive credit for a lower level course in the same activity.

Lower Division Courses

110 Intramural Sports (1)

Participation in university intramural sports. Elective credit only; may be repeated to maximum of 16 units. Activity 2 hours minimum. Graded CR/NC.

150 Exercise, Fitness, and Sport in Modern Society (4)

Understanding of humans as integrated physiological, psychological, and sociological beings. Importance of physical activity in delaying, alleviating, and rehabilitating degenerative cardiovascular disease and stress-related illness. Lecture 3 hours, laboratory 2 hours.

151 Series: Individual Sports (1 or 2 units each)

Individual activities designed to develop skill, knowledge of rules, background and analysis of techniques at beginning level.

- 151A Beginning Archery
- 151C Beginning Bicycling
- 151B Beginning Bowling
- 151G Beginning Golf
- 151H Beginning Horseback Riding
- 151I Beginning Ice Skating
- 151S Beginning Skiing

- 151F Beginning Track and Field: Field Events
- 151R Beginning Track and Field: Running Events

152 Series: Team Sports (1 each)

Team activities designed to develop skill, knowledge of rules, background and analysis of techniques at beginning level.

- 152B Beginning Baseball
- 152D Beginning Basketball
- 152H Beginning Field Hockey
- 152F Beginning Football
- 152R Beginning Soccer
- 152S Beginning Softball
- 152T Beginning Team Handball
- 152U Beginning Ultimate Football
- 152V Beginning Volleyball

153 Series: Aquatics (1 each)

Aquatic activities designed to develop skill, knowledge of rules, background and analysis of techniques, and safety procedures at beginning level.

- 153A Aerobic Swimming
- 153D Beginning Springboard Diving
Prerequisite: PE 153S.
- 153S Beginning Swimming
- 153W Beginning Water Polo

154 Special Activities in Physical Education (1)

Varied experiences reflecting current interests of students in physical education and related experimental areas, as announced in *Schedule of Classes*. May be repeated as subject matter changes. Activity 2 hours.

155 Series: Physical Education for the Disabled (1 each)

Prerequisite: Physical disability or assignment by university physician. Theory, analysis, and beginning performance techniques of sports for the disabled. Open to interested physical education and recreation majors as well as disabled students in all majors. Each course may be repeated to maximum of 6 units as emphasis changes.

156 Series: Dance (1 each)

Activities designed to develop beginning skills in various dance forms accompanied by background information relevant to each form.

- 156F Beginning Folk Dance
- 156S Beginning Social Dance
- 156R Beginning Square and Round Dance

157 Series: Dual Sports (1 each)

Dual activities designed to develop skill, knowledge of rules, background and analysis of techniques at beginning level.

- 157B Beginning Badminton
- 157F Beginning Fencing
- 157H Beginning Handball
- 157J Beginning Judo
- 157K Beginning Karate
- 157R Beginning Racquetball
- 157S Beginning Self Defense
- 157T Beginning Tennis
- 157U Beginning Jujitsu
- 157W Beginning Wrestling

158 Series: Fitness Activities (1 or 2 units each)

Fitness activities designed to develop skill, knowledge of rules, background and analysis of techniques at beginning level.

- 158A Beginning Aerobics
- 158B Beginning Body Building
- 158D Body Dynamics I

- 158E Beginning Jazz Exercise
 158J Beginning Jogging
 158P Beginning Physical Conditioning
 158R Beginning Rope Jumping
 158X Beginning Techniques of Relaxation
 158S Beginning Techniques of Stretching
 158W Beginning Weight Training
 158Y Beginning Hatha Yoga

159 Series: Gymnastics Activities (1 or 2 units each)

Gymnastics activities designed to develop skill, knowledge of rules, background and analysis of techniques at beginning level.

- 159M Beginning Men's Gymnastic Events
 159W Beginning Women's Gymnastic Events
 159T Beginning Tumbling and Trampoline

160 Dimensions of Physical Education (2)

Scope and content of physical education discipline. Lecture 1 hour, supervised field experience 2 hours.

161 Introduction to Movement (4)

Movement experiences applicable to programs of physical education, kindergarten through grade twelve. Individual learning experiences related to motor development and basic movement skills. Lecture 2 hours; demonstration-laboratory 4 hours.

251 Series: Individual Sports (1 each)

Prerequisite: Corresponding PE 151 course. Individual activities designed to develop skill, knowledge of rules, background and analysis of techniques at intermediate level.

- 251A Intermediate Archery
 251B Intermediate Bowling
 251G Intermediate Golf
 251H Intermediate Horseback Riding
 251S Intermediate Skiing
 251F Intermediate Track and Field: Field Events
 251R Intermediate Track and Field: Running Events

252 Series: Team Sports (1 each)

Prerequisite: Corresponding PE 152 course. Team activities designed to develop skill, knowledge of rules, background and analysis of techniques at intermediate level.

- 252T Intermediate Team Handball
 252V Intermediate Volleyball

253 Series: Aquatics (1 or 2 each)

Prerequisite: PE 153S. Water activities designed to develop skill, background and analysis of techniques, and safety procedures at intermediate or advanced levels.

- 253A Intermediate Aerobic Swimming
 253N Snorkeling (Advanced)
 253S Intermediate Swimming

254L,P Selected Topics in Physical Education (1-3)

Current activities, new and varied, of interest to general student body, as announced in *Schedule of Classes*. May be repeated for credit as subject matter changes.

256 Series: Dance (1 each)

Prerequisite: Corresponding PE 156 course. Activities designed to develop intermediate skills in various dance forms accompanied by background information relevant to each form.

- 256F Intermediate Folk Dance
 256S Intermediate Social Dance

257 Series: Dual Sports (1 each)

Prerequisite: Corresponding PE 157 course. Dual activities designed to develop skill, knowledge of rules, background and analysis of techniques at intermediate level.

- 257B Intermediate Badminton
 257F Intermediate Fencing
 257H Intermediate Handball
 257K Intermediate Karate
 257P Intermediate Personal Defense
 257R Intermediate Racquetball
 257T Intermediate Tennis

258 Series: Fitness Activities (1 each)

Prerequisite: Corresponding PE 158 course. Fitness activities designed to develop skill, knowledge of rules, background and analysis of techniques at intermediate level.

- 258A Intermediate Aerobics
 258B Body Dynamics and Intermediate Techniques of Relaxation
 258J Intermediate Jazz Exercise
 258P Intermediate Physical Conditioning
 258W Intermediate Weight Training

259 Series: Gymnastics Activities (1 each)

Prerequisite: Corresponding PE 159 course. Gymnastics activities designed to develop skill, knowledge of rules, background and analysis of techniques at intermediate level.

- 259M Intermediate Men's Gymnastic Events
 259W Intermediate Women's Gymnastic Events
 259T Intermediate Tumbling and Trampoline

260 Historical and Philosophical Bases of Physical Education (4)

Historical and philosophical backgrounds in development of physical education.

281 Series: Professional Activities (2 each)

Development of skill, knowledge of rules, and analysis of techniques at intermediate level. *For students majoring or minoring in Physical Education.*

- 281A Archery and Badminton
 281G Golf and Tennis
 281T Track and Field

282 Series: Professional Activities (2 each)

Development of skill, knowledge of rules, and analysis of techniques at intermediate level. *For students majoring or minoring in Physical Education.*

- 282C Contemporary Games and Flag Football
 282S Softball and Soccer
 282V Volleyball and Basketball

283 Professional Activities: Aquatics (2)

Development of skill, knowledge of safety, and analysis of techniques at intermediate level. *For students majoring or minoring in Physical Education.*

286 Professional Activities: Square, Folk, and Social Dance (2)

Development of skill, knowledge of dance forms, and analysis of techniques at intermediate level. *For students majoring or minoring in Physical Education.*

288 Professional Activities: Physical Fitness (2)

Development of fitness, knowledge of principles, analysis of components. *For students majoring or minoring in Physical Education.*

289 Professional Activities: Gymnastics and Tumbling (2)

Development of skill, knowledge of rules, and analysis of techniques at intermediate level. *For students majoring or minoring in Physical Education.*

Upper Division Courses

Successful completion of UNIV 400, the Writing Proficiency Examination, is prerequisite to enrollment in all upper division major and minor courses in physical education.

300 Physiological and Nutritional Bases of Fitness (4)
(also listed as FSCS 300)

Prerequisite: BIOL 155 or CHEM 158. Analysis of physiological and nutritional bases of fitness, including energy for exercise, body composition, and weight control; methods of altering lifestyles in terms of nutritional and exercise habits.

351 Series: Individual Sports (1 each)

Prerequisite: Corresponding PE 251 course. Individual activities designed to develop skill, knowledge of rules, background and analysis of techniques at advanced level.

- 351A Advanced Archery
- 351F Advanced Fencing
- 351G Advanced Golf
- 351S Advanced Skiing
- 357W Advanced Wrestling

352 Series: Team Sports (1 each)

Prerequisite: Corresponding PE 252 course. Team activities designed to develop skill, knowledge of rules, background and analysis of techniques at advanced level.

- 352B Advanced Baseball
- 352D Advanced Basketball
- 352S Advanced Softball
- 352V Advanced Volleyball

353 Series: Aquatics (1 each)

Prerequisite: PE 253S. Water activities designed to develop skill, background, analysis of techniques, and safety procedures at advanced levels.

- 353D Advanced Diving
- 353L Advanced Life Saving
- 353S Advanced Swimming
- 353X Synchronized Swimming
- 353W Advanced Water Polo

355 Series: Competitive Sports (2 each)

Introduction to tournament competition, development of advanced skills, knowledge of rules, and officiating as required at tournament level; participation in various types of tournament play.

- 355B Competitive Baseball
Prerequisite: Previous competitive baseball experience preferred.
- 355R Competitive Racquetball
Prerequisite: PE 357R.
- 355T Competitive Tennis
Prerequisite: PE 357T.
- 355V Competitive Volleyball
Prerequisite: PE 252V.

357 Series: Dual Sports (1 each)

Prerequisite: Corresponding PE 257 course. Dual activities designed to develop skill, knowledge of rules, background and analysis of techniques at advanced level.

- 357B Advanced Badminton
- 357H Advanced Handball
- 357K Advanced Karate
- 357R Advanced Racquetball
- 357T Advanced Tennis
- 357W Advanced Wrestling

390 Written Communication Skills (4)

Prerequisite: ENGL 190. Techniques of writing formal report, public relations information, and essays.

400A Kinesiology (4)

Prerequisites: PE 161, BIOL 202. Analysis of anatomical and mechanical bases for efficiency of human movement. Lecture 3 hours, laboratory 3 hours.

400B Physiology of Activity (4)

Prerequisite: PE 400A. Analysis of physiological bases of effect of movement and stress on human organism; factors affecting conditioning. Lecture 3 hours, laboratory 3 hours.

401 Measurement of Human Performance (4)

Prerequisite: PE 161; MATH 100 or 102. Analysis, evaluation, interpretation, use of tests and other assessment devices in physical education; application of basic statistical procedures using computer programs. Lecture 3 hours, discussion-laboratory 3 hours.

402 Nature of Human Performance (4)

Prerequisite: PE 401. Physical growth, motor development, and motor learning and control related to skill performance. Lecture 3 hours, laboratory 3 hours.

405 Water Safety for Instructors (4)

Advanced instruction in water safety technique, and teaching techniques used at all levels of swimming. Leads to Red Cross Water Safety Instructor certification and introduction to health service education certification. Lecture 2 hours, laboratory 4 hours.

408 Behavioral Foundations of Physical Education and Sport (4)

Prerequisites: PE 260; PSY 150; SOC 201 or 322A. Psychological and sociological influences on physical education and sport; implications for personal and professional direction.

410 Program Designs in Physical Education (3)

Prerequisite: PE 160. Theory, practice, and development of curricula in physical education for kindergarten through twelfth grade.

411 Class Organization and Conduct (4)

Prerequisite: PE 401, 410. Analysis and application of organizational patterns; motivational techniques related to effective conduct of physical education classes for kindergarten through twelfth grade. Lecture 2 hours, demonstration-laboratory 6 hours.

412 Prevention and Care of Injuries (3)

Prerequisites: PE 400A; instructor consent for nonmajors. Common injuries occurring in physical activity and athletics with emphasis on prevention and care. Lecture 2 hours, laboratory 3 hours.

415 Officiating Basketball (2)

Prerequisite: PE 152D or 352D or ATHL 342k. Problems, techniques, and practice in officiating basketball. Lecture 1 hour, activity 2 hours.

416 Officiating Football (2)

Prerequisite: PE 152F. Problems, techniques, and practice in officiating football. Lecture 1 hour, activity 2 hours.

418 Officiating Volleyball (2)

Prerequisite: PE 152V, 252V, 352V, or ATHL 342V (volleyball). Problems, techniques, and practice in officiating volleyball. Lecture 1 hour, activity 2 hours.

419 Officiating Softball (2)

Prerequisite: PE 352S. Problems, techniques, and practice in officiating softball. Lecture 1 hour, activity 2 hours.

420 Movement Experiences in Growth and Development (3)

Movement experiences involving basic locomotor and non-locomotor patterns and their relationships to time, space, and projectiles as they affect growth and development. Lecture 2 hours, activity 2 hours.

424 Movement and Maturation (4)

Prerequisites: PE 420, ENGL 290, passing WPE score. Integration of theory, research, and practice of maturational factors on motor development from prenatal through later childhood periods; development of portfolio and written research project. Lecture 3 hours, field experience 2 hours per week.

440 Conduct of Athletic Programs (3)

Prerequisite: PE 160. Administrative and organizational principles applicable to athletic coaching.

441 Motivation in Athletics (3)

Personal qualities of coaches and athletes; suggested philosophies, methods, and techniques of communicating with and motivating athletes for consistent, maximal performance.

445 Sports Information and Game Management (3)

Athletic public relations with emphasis on writing publicity, compiling statistics, producing brochures, electronic media, game management.

450 Dimensions of Physical Education for Exceptional Students (4)

Prerequisite: PE 401. Conditions requiring special physical education, including: learning disabilities, retardation, neurological and orthopedic conditions. Lecture 3 hours, practical teaching in programs for exceptional students 2 hours.

452 Physical Education for Severely Handicapped (4)

Prerequisite: PE 450. Etiology, movement characteristics, learning problems of severely handicapped individuals (trainable mentally retarded, severely multiple handicapped, seriously emotionally disturbed, and autistic). Lecture 3 hours, practicum 3 hours.

453 Physical Education for Learning Handicapped (4)

Prerequisite: PE 450. Problems of learning handicapped pupils in physical activity context; implications for physical education program development. Lecture 3 hours, practicum 2 hours.

454L,P Special Topics in Physical Education (1-4)

Prerequisite: Varies with topic. Current issues and interests of students in physical education and related experimental areas, as announced in *Schedule of Classes*. May be repeated as subject matter changes. Lecture and activity.

455 Motor Assessment of Exceptional Students (4)

Prerequisite: PE 450. Study of prevalent disabilities, with implications for program development, organization, administration, and evaluation of adapted physical education at elementary and secondary school levels. Evaluation and diagnosis of motor problems; prescription of adapted, developmental, and remedial physical education programs for elementary and secondary school students. Practical experience with assessment required.

456 Physical Education for Physically Handicapped (4)

Prerequisite: PE 450. Study of prevalent disabilities; implications for program development, organization, administration, and evaluation of adapted physical education students in elementary and secondary schools. Lecture 3 hours, practicum 2 hours.

457 Interdisciplinary Approach to Physical Education for Exceptional Students (4)

Roles and responsibilities of recreation, psychology, special education, nursing, physical and occupational therapy, and other professions in physical education of exceptional students.

458 Physical Aspects of Aging (4)

(also listed as FSCS 458)

Aging process, fitness, and nutrition; influences on wellness, life styles, and recuperation; strategies for optimizing physical quality of life for elderly.

459ABC Internship in Adapted Physical Education (2, 2-1)

Prerequisites: Physical education core, 12 units in adapted physical education specialization, minimum B (3.0) grade point average, and recommendation of major adviser. Directed experience with weekly adviser conference. Students must complete minimum of 200 hours of internship experience. Segments A, B, and C need not be taken in sequence.

459A: Clinic (80 hours)

459B: School/agency/institution (80 hours)

459C: Research (40 hours)

460 Outdoor Education (3)

Aims, organization, administration, and program of the outdoor school.

470 Statistical Processes and Experimental Design in Physical Education (3)

Prerequisite: PE 401. Measurement of kinesiological variables in physical education; application of statistical procedures and experimental design.

471 Computer Applications in Physical Education (3)

Introduction of computer technology in physical education; laboratory equipment interface techniques; software applications in physical education. Lecture 2 hours, laboratory 3 hours.

472 Proseminar: Laboratory Assessment Techniques (3)

Prerequisites: PE 400B, 470. Fitness assessment techniques employed within laboratory environment: electromyography, electrocardiography, electrogoniometry, gas analysis, stress testing, hydrostatic weighing, and respirometry. Lecture 2 hours, laboratory 3 hours.

473 Motor Learning (3)

Prerequisites: PE 402, 470. Neurophysiological and psychosocial bases of motor learning in relation to skill acquisition and performance. Lecture 2 hours, laboratory 3 hours.

474 Proseminar: Field Evaluation of Fitness (4)

Prerequisites: PE 400B, 470. Analysis of physical fitness assessment techniques utilized in the field, e.g., field tests for aerobic capacity, pulmonary function, fat estimation, and anthropometry. Lecture 3 hours, activity 3 hours.

475 Proseminar: Exercise Prescription and Implementation (3)

Prerequisites: PE 400B, 470. Development and implementation of exercise prescription for aerobic endurance, anaerobic power, strength, flexibility, and optimal body composition. Lecture 2 hours, laboratory 3 hours.

476 Administration of Fitness Programs (4)

Prerequisites: PE 472, 474, 475. Conducting fitness programs in private and public sectors, implementing exercise prescriptive techniques, feasibility studies, marketing fitness services, staffing, equipment purchasing, structuring the organizations.

477 Proseminar: Biomechanical Analysis of Human Motion (3)

Prerequisites: PE 400A, 470. Kinematic and kinetic bases of human motion; techniques of cinematographic analysis of sports skills and human movement. Lecture 2 hours, laboratory 3 hours.

478 Proseminar: Structural Kinesiology (3)

Prerequisites: PE 400A, 470. Structure of human body in gross motor movement; structural analysis of motor skills and conditioning exercises. Lecture 2 hours, laboratory 3 hours.

481 Theory and Analysis of Individual Sports (3)

Prerequisites: PE 281A, 281G, 281T. Theory, analysis, and advanced performance techniques of individual sports, emphasizing strategy and offensive and defensive systems. Lecture 2 hours, demonstration-laboratory 2 hours.

481G Golf

Prerequisites: PE 160, 161, 251G for majors; consent of instructor for nonmajors.

481T Tennis

Prerequisites: PE 160, 161, 257T for majors; instructor consent for nonmajors.

481F Track and Field

Prerequisite: PE 151F or 151R.

482 Series: Theory and Analysis of Team Sports (3 each)

Prerequisite: Appropriate corresponding professional activity courses as indicated. Theory, analysis, and advanced performance techniques of team sports, emphasizing strategy and offensive and defensive systems. Lecture 2 hours, demonstration-laboratory 2 hours.

482B Baseball

Prerequisite: PE 152B.

482D Basketball

Prerequisite: PE 152D.

482F Football

Prerequisite: PE 152F.

482R Soccer

Prerequisites: PE 152R for majors; instructor consent for nonmajors.

482V Volleyball

Prerequisites: PE 152V and 161 for majors; consent of instructor for nonmajors.

482W Water Polo

Prerequisite: PE 153W.

483 Theory and Analysis of Aquatics (3)

Prerequisite: PE 283. Theory and analysis of performance techniques, historical knowledge, safety procedures, and conditioning. Lecture 2 hours, demonstration-laboratory 2 hours.

483D Diving

Prerequisites: PE 161 and 353D for majors; consent of instructor for nonmajors.

483S Swimming

Prerequisites: PE 161; 253S or 353S for majors; instructor consent for nonmajors.

485S Self Defense

Prerequisite: PE 157S.

485W Wrestling

Prerequisite: PE 157W.

486 Theory and Analysis of Square, Folk, and Social Dance (3)

Prerequisite: PE 286. Theory, analysis of performance techniques, and teaching progressions of square, folk, and social dance. Lecture 2 hours, demonstration-laboratory 2 hours.

488 Theory and Analysis of Fitness (3)

Prerequisite: PE 288. Theory and analysis of performance techniques; emphasis on components of fitness. Lecture 2 hours, demonstration-laboratory 2 hours.

488A Aerobics**488F Fitness****489 Theory and Analysis of Gymnastics and Tumbling (3)**

Prerequisite: PE 289. Theory and analysis of performance techniques, historical knowledge, safety procedures, and conditioning. Lecture 2 hours, demonstration-laboratory 2 hours.

490 Backpacking (3)

Techniques of hiking, planning, understanding, and learning the skills for safe backpacking experiences, including survival skills, ecology, and equipment.

490P Backpacking Practicum (1)

Corequisite: PE 490. Field experiences for backpacking skills. Field trips scheduled for weekends or quarter breaks.

492 Field Experience in Exercise Science (1-4)

Directed practicum or internship in a school, community agency, hospital, athletic club, or corporate business setting. Regular conferences with faculty.

496 Special Projects (1-3)

Prerequisites: Senior or graduate standing, consent of department chair and faculty member. Participation under faculty supervision in planning, preparing, presenting, and coaching Cal State L.A.-sponsored intramural, extramural, or intercollegiate athletic activities. May be repeated for credit.

499 Undergraduate Directed Study (1-4)

Prerequisite: Consent of an instructor to act as sponsor. Project selected in conference with sponsor before registration; progress meetings held regularly, and final report submitted. May be repeated for credit.

Courses in Recreation (RECR)**Lower Division Courses****201-204 Series: Recreation Principles and Activities (2 each)**

Methods, techniques, materials, and fundamental skills of recreational activities as utilized in organized programs of recreation and leisure services for various groups and settings. Lecture 1 hour, activity 2 hours; additional field observation.

201 Sports and Games**202 Social Recreation****203 Outdoor Recreation****204 Dance in Recreation****260 Recreation and Leisure Services (3)**

Identification and analysis of various agencies providing organized programs of recreation and leisure services; emphasizes functions, areas, facilities, clientele, career opportunities. Field visits required.

280 Theories and Techniques of Recreation Leadership (2)

Prerequisite: Required courses in RECR 201-204 series. Corequisite: RECR 281. Roles of recreation leader in face-to-face and group relationships; overall program leadership, Emphasis on various types of groups; application of leadership techniques. Lecture 1 hour, demonstration laboratory 2 hours.

281 Practicum in Recreation Leadership (1)

Corequisite: RECR 280. Observation and participation in recreation leadership. Volunteer experience in variety of recreational settings; field work at approved agency, 4 hours per week minimum.

Upper Division Courses**330 Leisure and Recreation in Society (3)**

Prerequisite: PHIL 151 or 152. Evaluation and interpretation of concepts of leisure: role in individual, community, and national lifestyles; social and economic significance, recreational programs to meet leisure needs of modern society.

331 History and Philosophy of Recreation and Leisure Services (3)

Prerequisite: RECR 260. History and development of recreation and leisure services in the U.S.; philosophical bases, current theories and practices.

344 Program Development in Recreation and Leisure Services (3)

Prerequisite: RECR 280. Analysis of factors in planning and evaluating recreation programs, interrelationship of needs of people; community setting and activity content. Emphasis on program construction and scheduling. Field visits required.

360 Organizational Patterns of Recreation and Leisure Services (3)

Prerequisite: RECR 260, POLS 472 recommended; recommended corequisite: RECR 331. Organizational patterns and legal aspects of public, private, commercial, and voluntary agencies for organized recreation programs or leisure services at national, regional, state, or local level. Field visits required.

361 Administration and Supervision of Recreation and Leisure Services (3)

Prerequisites: RECR 280, 360; MGMT 307 or POLS 460 recommended. Principles, practices, and procedures in administration and supervision of recreation and leisure services; emphasis on program and personnel supervision, budgeting, facility management and maintenance, community relations. Field visits required.

380 Directed Field Work in Recreation (6)

Prerequisites: Completion of upper division core; minimum 2.0 grade point average overall and in major. Supervised work experience at leadership level in approved recreation agency. Field work 20 hours minimum. Individual and group conferences required.

412 Recreation and Leisure Services in Urban Setting (3)

Prerequisite: RECR 361, SOC 430 recommended. Urban recreation and leisure services; urban residents and environment. Emphasis on cultural, social, and economic implications for program development. Field visits required.

422 Institutional Recreation and Leisure Services (3)

Prerequisite: RECR 361, 412 recommended. Analysis of clientele, history, characteristics, functions, nature, and scope of services provided by various correctional, educational, and medical institutions. Field visits required.

423 Public Recreation and Leisure Services (3)

Prerequisite: RECR 361, RECR 412, POLS 403, 461 recommended. Roles of federal, regional, state, and local governmental agencies providing recreation and leisure services. History, characteristics, legal basis, functions, and nature of services provided. Field visits required.

424 Voluntary Recreation and Leisure Services (3)

Prerequisite: RECR 361; 412 recommended. Roles of various voluntary or private associations, clubs, youth agencies, special interest associations, and employee recreation; emphasis on functional services. Field visits required.

445 Planning and Promotion of Special Events (3)

Prerequisite: RECR 422, 423, or 424; instructor consent for nonmajors. Factors involved in production and promotion of special events that involve large and diverse publics; budgets, specialized facilities and equipment, legal aspects, crowd management. Field visits required.

454L.P Special Topics in Recreation (1-4)

Prerequisites: Upper division standing; others as needed for specific topics. Current issues and interests of students in areas of leisure and recreation, as announced in *Schedule of Classes*. May be repeated to maximum of 9 units as subject matter changes.

461 Community and Public Relations in Recreation (3)

Prerequisite: RECR 422, 423, or 424; POLS 470 or SOC 424 recommended. Principles, techniques, methods, and materials utilized to interpret, promote, and publicize organized recreation and leisure activities through various media and personal contacts. Field visits required.

471 Recreation for the Handicapped (3)

Prerequisites: RECR 361, EDSP 462. Adaptation of recreation and leisure activities for persons with special needs or limitations; role of community agencies; specialized leadership techniques. Field visits required.

472 Recreation Therapy (3)

Prerequisite: RECR 471. Philosophy and principles in use of recreation as a modality in rehabilitation of ill or disabled; role of recreation in total rehabilitation process of various agencies. Field visits required.

480 Undergraduate Internship in Recreation (12)

Prerequisites: Core and professional focus requirements and all course work for graduation recommended; minimum 2.5 grade point average in major; above-average rating in RECR 380 or recommendation of recreation or leisure agency. Directed full-time professional supervisory experience in recreation agency; comprehensive participation in agency's resources and program. Individual development in program planning, conduct, and evaluation; budget and finance; legal aspects; community and public relations. Minimum of 40 hours per week at agency, individual conferences and reports.

492 Research and Evaluation in Recreation and Leisure (3)

Prerequisite: Senior standing in Recreation. Measurement and evaluation; interpretation and use of research findings; typical research models applicable to fields of recreation and leisure.

495 Proseminar: Recreation and Leisure Studies (3)

Prerequisite: Senior standing in Recreation. Individual and group analysis and synthesis of problems related to major areas in recreation and leisure.

499 Undergraduate Directed Study (1-3)

Prerequisite: Instructor consent to act as sponsor. Project selected in conference with sponsor before registration; progress reports filed regularly and final report submitted. May be repeated for credit.

SOCIAL WORK

School of Health and Human Services

DEPARTMENT OFFICE
King Hall C4069
Phone: (213) 343-4680

The Department of Social Work offers the Bachelor of Arts degree in Social Work. Social work is a profession based on a set of values, scientific knowledge, and human relations skills and concerned with helping individuals, groups, and communities interact with and confront their environment. Social workers strive to create the societal conditions necessary to improve social functioning.

The social work program prepares students for careers in corrections, health, mental health, family/children's services, services to the disabled, substance abuse, work with the elderly, public welfare, neighborhood development, community services, probation and parole, residential treatment programs, industrial social work, planning, administration, organizing, and program development.

The Faculty

Emeritus: Phillip L. Carter.

Professors: Shirley Jean Better (*Chair*), Neil A. Cohen, Alfredo G. Gonzalez, Nathan R. Horwitz.

Associate Professor: Roger Delgado.

Bachelor of Arts Degree

The Bachelor of Arts degree in Social Work enables students to explore and develop values, knowledge and generalist skills essential to the practice of social work in a multiethnic environment. The goals of the program include: providing continuing education for persons already employed in the field of social work or related human services; preparing students for professional entry level positions in social work; and preparing students for further study in graduate schools of social work or related human services.

Required Advisement

All students desiring to pursue a social work major must confer with a department adviser during their first quarter in the program. During the first quarter of their junior year, students must meet again with an adviser to plan the remainder of their program. Transfer students must see an adviser in their first quarter of enrollment at Cal State L.A. It is strongly recommended that students meet at least once a year with their faculty adviser.

Sequence Recommendations

It is highly recommended that students observed suggested sequences because later course work assumes familiarity with prior course material. The following are strongly recommended or required:

- Students who transfer without having completed equivalent courses should include PSY 150 or SOC 201 or 202 and SOC 210A or EDFN 452 among their first courses at Cal State L.A.;
- SW 391 should be taken soon after 210A or EDFN 452;
- SW 301 should be taken early in the major;
- SW 370, prerequisite to SW 461, 474, and 475, should be taken early in the major;
- SW 371AB is part of the upper division core and should be taken early in the junior year;

- All social work methods courses, i.e., SW 461, 472, 474, 475, should be taken before, or concurrently with, SW 495.

Requirements for the Major (70-71 units)

Required Courses (62-63 units):

- SW 301 Writing for Social Work (4)
- SW 370 Field of Social Work (4)
- SW 371AB Social Work Practice, Human Behavior, and Social Environment (4, 4)
- SW 391 Social Work Research Methods (4)
- SW 461 Social Work Practice in Minority Communities (4)
- SW 472 Community Organization (4)
- SW 474 Casework Methods in Social Services (4)
- SW 475 Social Work with Groups (4)
- SW 478 Social Welfare Policy and Social Services (4)
- SW 495 Directed Field Experience (4, 4, 4)
- SW 496 Integrative Seminar (1, 1, 1)
- EDFN 452 Statistics in Education (4) or
- SOC 210A Elementary Statistics (3)
- PSY 150 Introductory Psychology (4) or
- SOC 201 Principles of Sociology (4) or
- SOC 202 Society and Individual Development (4)

Electives in Social Work and other fields (8 units):

Select with prior adviser approval.

Certificate Programs

The *Applied Gerontology* credit certificate, offered by the School of Health and Human Services, contains course work in social work and is available to both Social Work majors and others. The department also offers course work applicable toward the interdisciplinary credit certificate in *Child Maltreatment and Family Violence* offered by the School of Health and Human Services.

Courses in Social Work (SW)

Upper Division Courses

PSY 150 or SOC 201 or 202, normally prerequisite to all upper division SW courses, may be waived only with instructor consent.

301 Writing for Social Work (4)

Prerequisite: ENGL 190. Reasoning and writing skills for comprehending and communicating information in social work.

370 Field of Social Work (4)

Social welfare: historical development, analysis of structure, policies, and issues; emergence of social work profession; contemporary practices and policies of social welfare agencies.

371AB Social Work Practice, Human Behavior, and Social Environment (4, 4)

Prerequisite: PSY 150. Application of social work practice principles, values, knowledge, and skills in assessment of human behavior within context of social environment.

371A: Prenatal through early adolescence.

371B: Late adolescence through old age.

391 Social Work Research Methods (4)

Prerequisite: SOC 210A or EDFN 452. Scientific, analytic approach to knowledge building and practice in social work; ex-

perimental, quasiexperimental, and single subject research designs; sampling, survey methods, case studies, exploratory-descriptive studies, and evaluation research.

411 Computer Applications in Social Work (4)

Computers in field of social work and human service programs; includes use of DOS and major "applications" programs that have specific relevance to field of social work.

450 Crosscultural Practice with Aging Populations (4)

Prerequisite: Upper division standing. Ethnic factors in aging; ethnic specific and comparative analysis of ethnicity as it influences sociocultural context of older persons, care giving, and service delivery and utilization.

454 Selected Topics in Social Work (1-6)

Current topics of special interest in social work, as announced in Schedule of Classes. May be repeated for credit.

455 Strategies for Preventing and Intervening in Family Violence and Abuse (4) (also listed as NURS 455)

Major theories used to explain family violence; emphasis on preventing abuse and intervening with victims across the age span; social policy and legal issues.

456 Multidisciplinary Teams, Child Maltreatment, and Family Violence (4)

Prerequisite: PSY 150 or SOC 201. Personal and professional responsibility in reporting, preventing, and treating child maltreatment; a multidisciplinary team approach to problems of child maltreatment and family violence.

461 Social Work Practice in Minority Communities (4)

Prerequisite: SW 370. Social work practice and its relationship to minority group communities; innovative methods of delivery of services; casework approaches, racism, role of social worker.

462 Institutional Racism and Poverty (4)

Prerequisite: SOC 201. Development of institutional racism and poverty; impact on social policy development and social service delivery; methods to reduce racism and poverty in America.

463 Women's Issues in Social Welfare (4)

Prerequisite: SW 370. Women's issues within social work practice areas; analysis of social welfare response to women's special concerns; social policy implications for future directions.

465 Programs and Policies Related to the Elderly (4)

Prerequisite: Upper division standing. Policies, programs, and service delivery systems related to the elderly; descriptive and normative analysis of social problems related to aging with emphasis on ethnic minorities.

472 Community Organization (4)

Examination of social work methods of purposive change in the community including community development, social action, and social planning; emphasis on empowerment, organizational change, and grass roots organizing.

474 Casework Methods in Social Services (4)

Prerequisite: SW 370 or graduate standing. Theories, concepts, and values used by social workers counseling individuals and families in child welfare, mental health, psychiatric, family service, correctional, medical, public assistance, and other agencies.

475 Social Work with Groups (4)

Prerequisite: SW 370. Historical development, empirical and theoretical knowledge underlying content and methods of group social work; role of group social worker in managing stages of group development; use of groups for treatment, prevention, social

action; staff and volunteer training in correctional, community, and mental health agencies.

476 Child Welfare (4)

Services to families, children, and youth; the network of preventive and supportive services; child neglect and abuse; children and the legal system; foster care, institutional care, group homes, and adoptions.

478 Social Welfare Policy and Social Services (4)

Identifying, formulating, implementing, and evaluating social welfare policy options including: education, employment, health, mental health, housing, justice, public welfare, and social security; design and implementation of social service delivery systems.

479 Biofeedback and Stress Reduction (4)

Prerequisite: PSY 170 or SW 474 or BIOL 200B. Seminar about biofeedback theory; clinical applications and role in mental health and medical professions; relaxation and autogenic techniques as they augment biofeedback training with EEG, EMG, Temperature, GSR, and other instruments; opportunity to use instruments.

480 Social Work in the Criminal Justice System (4)

Development and application of individual, group, social change methods of social work in criminal justice system. Focus on methods used with victims and communities as well as offenders.

485 The Homeless in Society (4)

Prerequisite: SOC 201 or 202. The homeless and homelessness including cultural, health/mental health, sociopolitical, economic, legal issues, consequences; policy, programs, service delivery responses and options. Lecture 3 hours, laboratory 3 hours.

486 Probation and Parole (4) (also listed as SOC 486)

Prerequisite: SOC 480 or 482. History, philosophy, legal bases, and procedures governing investigation, treatment, and supervision of adjudged juvenile offenders and adult violators placed on probation and parole.

490 Latino Mental Health (4)

Prerequisite: SW 474 or other upper division course in mental health or counseling. Psychosociocultural aspects of mental health problems and issues within Latino community; factors affecting mental health, how professionals address them in social work and other human services; social work and human service implications for practice.

495 Directed Field Experience (4)

Prerequisites or corequisites: SW 472, 474, 475; corequisite: SW 496. Student internship in a social agency; supervised activities in application of theory and skills acquired in foundation courses. Must be repeated to total of 12 units. Graded CR/NC.

496 Integrative Seminar (1)

Prerequisites or corequisites: SW 472, 474, 475; corequisite: SW 495. Examination of the relationship between social work theory and practice to provide integration of academic and directed social work field experiences. Must be repeated to total of 3 units.

497 Social Work Proseminar (4)

Prerequisite: Sixteen upper division SW units. Comprehensive survey and analysis of selected areas of social work inquiry as announced in Schedule of Classes. May be repeated once for credit.

499 Undergraduate Directed Study (1-4)

Prerequisites: Senior standing, 2.75 overall grade point average, consent of a faculty sponsor, approval of proposed project prior to registration, ability to assume responsibility for independent research and analysis. Regular discussion of progress with sponsor before presentation of final written report.

YOUTH AGENCY ADMINISTRATION

American Humanics, Inc. (AH)

PROGRAM OFFICE

Library North Lobby
Phone: (213) 343-4580

Program Director: Jan Mackay.

American Humanics, Inc. (AH), founded in 1948 as a nonprofit program dedicated to developing professional leadership for the nation's youth-serving agencies, has established programs in selected colleges and universities throughout the U.S. The primary objective is to present a program that prepares professionals for careers with youth and human service agencies such as Boy Scouts, Girl Scouts, Camp Fire, 4-H, YMCA, YWCA, and others.

AH at Cal State L.A. provides a unique opportunity for students interested in youth agency administration careers to receive a specific, practical, educational emphasis. In addition to the course work and internship required for completion of the Voluntary Youth Agency Administration certificate program (listed below), the program affords participants many other services and opportunities. Among these are the AH Student Association, national conferences and seminars, personal counseling, career placement, an annual retreat, and a student loan and scholarship program.

The Faculty

The faculty for the American Humanics program is interdisciplinary in nature, representing the various departments whose courses comprise the certificate program offered. The program is coordinated by the American Humanics program director.

Certificate Program in Voluntary Youth Agency Administration

This credit certificate program, which is intended to prepare professionals for careers in youth agency administration, requires a minimum of 36 units, selected in consultation with the American Humanics director. The program includes course work in seven major areas and an internship designed specifically for the program. In addition to the requirements listed below, students who have not taken CHS 111, PAS 101, or SOCS 180 as part of their general education program must complete SOC 460.

Students should plan their program with careful attention given to prerequisites for upper division courses. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (36 units)

Accounting and Budgeting (select 4 units from)

ACCT 202 Survey of Accounting (4)
POLS 466 Public Financial Administration (4)

Community Organization (select 4 units from)

CRIM 439 Juvenile Law and Procedure (4)
PSY 445 Community Psychology (4)
SW 472 Community Organization (4)

Counseling and Group Work (select 4 units from)

COUN 406 Behavioral Counseling and Self-Management (4)
PSY 405 Group Methods for Psychological Intervention (4)

SOC 420 Small Groups (4)
SW 461 Social Work Practice in Minority Communities (4)
SW 475 Social Work with Groups (4)

Personnel Management (select 4 units from)

MGMT 473 Personnel Management (4)
POLS 463 Public Personnel Administration (4)
POLS 472 Organization and Management (4)
PSY 446 Employment and Personnel Psychology (4)

Public Relations and Communication (select 4 units from)

JOUR 496 Publicity and Public Relations (4)
POLS 470 Public Relations in Government (4)
PSY 420 Psychology of Communications (4)
SOC 424 Mass Communications and Public Opinion (4)
SPCH 430 Organizational and Professional Communications (4)
SPCH 489 Intercultural Communication (4)

Youth Agency Administration (8 units)

SW 476 Child Welfare (4)
YAA 290 Introduction to Youth Agency Administration (4)

Fund Raising (4 units)

YAA 490 Volunteer Management and Fund Raising (4)

Internship (4-6 units)

YAA 495 Directed Field Experience (4-6)

Elective (1-4 units)

YAA 499 Undergraduate Directed Study (1-4)

Courses in Youth Agency Administration (YAA)

Lower Division Course

290 Introduction to Youth Agency Administration (4)

History, philosophy, programs, and organization of the major national voluntary youth service agencies from a professional management perspective; role of the professional executive; the nature of volunteerism. Required field visits.

Upper Division Courses

490 Volunteer Management and Fund-Raising (4)

Prerequisite: YAA 290. Development of executive skills in managing volunteers and raising funds for youth-serving agencies; sources and techniques of financial development for community agencies; management of voluntary staff and directorial boards.

495 Directed Field Experience (4-6)

Prerequisites: YAA 290, instructor consent, agency acceptance. Student placement to provide experience under supervision in a youth agency; individual evaluative conferences. Graded CR/NC.

499 Undergraduate Directed Study (1-4)

Prerequisites: YAA 290, upper division standing, consent of a faculty sponsor, approval of program coordinator, approval of proposed project prior to registration, ability to assume responsibility for independent research and analysis. Project selected in conference with sponsor; progress meetings held regularly and a final report submitted. May be repeated to maximum of 4 units.

SCHOOL OF NATURAL AND SOCIAL SCIENCES

Departments and Programs within the School

Department of Anthropology

Department of Biology

Department of Chemistry and Biochemistry

Department of Chicano Studies

Department of Geography and Urban Analysis

Department of Geological Sciences

Department of History

Latin American Studies Program

Department of Mathematics and Computer Science

Department of Microbiology

Department of Pan-African Studies

Physical Science Program

Department of Physics and Astronomy

Department of Political Science

Department of Psychology

Social Science Program

Department of Sociology

ANTHROPOLOGY

School of Natural and Social Sciences

DEPARTMENT OFFICE

King Hall C4068

Phone: (213) 343-2440

The Department of Anthropology offers a wide range of courses in the biological origins and variation of humankind, the prehistoric record, and particularly, the comparative study of contemporary world cultures. The department offers courses that support programs in the social, behavioral, and life sciences. In addition to preparing students for advanced study or a professional career in anthropology, the degree provides a broad liberal education appropriate to careers in business, law, government service, and teaching. The Bachelor of Arts degree program is described below. The Master of Arts degree program is described in the *Graduate Programs* section.

The Faculty

Emeriti: Robert H. Ewald, Arthur H. Niehoff, Fred M. Reinman, Richard L. Stone, Jeannette R. Witucki.

Professors: Norman Klein (*Chair*), Catherine Martin, Jon L. Olson, Elliott Oring, Mary Elizabeth Shutler.

Assistant Professors: Raquel Ackerman, James R. Beil, Patricia Martz.

Adjunct Assistant Professor: Maxene Johnston.

Bachelor of Arts Degree.

The Bachelor of Arts degree in Anthropology is available for those who seek a liberal arts education or who wish to prepare for advanced study and research.

Departmental Honors Program

The Department of Anthropology offers an *honors program* for students who have completed at least 16 upper division units in anthropology, who have a minimum 3.25 grade point average in all anthropology courses, and who possess a minimum 3.0 grade point average in all college work. Application to the program is made by written petition.

The program is designed to introduce superior students to intensive research experience in anthropology and related fields, as well as to more sophisticated and thorough study of anthropological theory in relevant subareas of the discipline. Honors students are permitted to depart from the normal major program in various ways to broaden and enrich their curriculum.

Honors students plan their programs in consultation with an honors adviser. Students enroll during each of their final three quarters in ANTH 396, and submit a written thesis to the departmental honors committee. Diplomas and transcripts of honors program graduates are designated: "*Graduated with Departmental Honors in Anthropology.*"

Requirements for the Major (62 units)

The major requires 62 units in anthropology, of which 8 are in lower division and 54 are in upper division courses. In addition, students must include 12 units of a modern foreign language in their lower division program or offer proof of successful completion of three years of modern language study in high school as an acceptable equivalent. An additional acceptable equivalent can be the suc-

cessful completion of three upper division courses in linguistics: ANTH 470/ENGL 403; ANTH 471/ENGL 400; and ANTH 472.

Lower Division Required Courses (8 units):

ANTH 250 Cultural Anthropology (4)

ANTH 260 Physical Anthropology (4)

Upper Division Required Courses (8 units):

ANTH 430 Social Organization (4)

ANTH 497 History of Ethnological Theory (4)

Electives (34 units):

Select two from following (8 units):

ANTH 401, 404, 406-408, 410, 413, 414

Select one from following (4 units):

ANTH 421, 423, 425

Select one from following (6 units):

ANTH 424, 464, 480

Select one from following (4 units):

ANTH 432, 434, 437

Select one from following (4 units):

ANTH 435, 444, 445, 462

Select one from following (4 units):

ANTH 460, 461, 462

Select one from following (4 units):

ANTH 470/ENGL 403 or ANTH 471/ENGL 400

Additional Electives (12 units):

Select courses in anthropology to complete upper division minimum of 54 units. Beyond this minimum, students are encouraged to add elective courses from other disciplines, in consultation with major advisers.

Minor in Anthropology

A minor in Anthropology is available for students majoring in other fields. A total of 28 units in anthropology, of which 8 units are in lower division courses and 20 units are in upper division courses, is required.

Requirements for the Minor (28 units)

Lower Division Required Courses (8 units):

ANTH 250 Cultural Anthropology (4)

ANTH 260 Physical Anthropology (4)

Upper Division Electives (20 units):

Select two from following (8 units):

ANTH 401, 404, 406, 407, 408, 410, 413, 414, 421, 425

Select one from following (4 units):

ANTH 430, 497

Select two from following (8 units):

ANTH 432, 435, 437, 443, 444, 445, 460, 461, 462, 470, 471

Courses in Anthropology (ANTH)**Lower Division Courses****250 Cultural Anthropology (4)**

Exploration of concept of culture, evolution of cultural systems, application of concept of culture to selected anthropological problems, relevance of concept of culture to modern life

CAN ANTH 4

260 Physical Anthropology (4)

Origin and antiquity of the human species and its place in nature, fossil evidence for human evolution, varieties of humans, somatological and genetic bases for racial classifications.

CAN ANTH 2

265 The Cultural Animal (4)

Exploration of the human biocultural experience. Perspectives on the human primate inheritance in the formation of cultural behavior and cultural organizations. **CAN ANTH 6**

270 Introduction to Archeology (4)

Introduction to world prehistory, examination of basic archaeological concepts, investigation of extinct cultures.

Upper Division Courses**350 Evolution of Culture (4)**

Prerequisite: GE social science requirement. The interrelationships of human biological and cultural evolution, with an emphasis on changing adaptive patterns and sociocultural organization.

396 Honors Thesis (1-3)

Prerequisite: Admission to honors program in Anthropology. Preparation of an honors thesis, under supervision of an adviser, acceptable to departmental honors committee. May be repeated to maximum of 6 units.

400 Primate Behavior and Human Emotion (4)

Prerequisite: BIOL 155 or PSY 270. Scientific explanations of primate behavior in various ecological settings and of its relationship to human behavior and emotions.

401 Comparative Cultures (4)

Prerequisite: ANTH 250. Principal culture types and their geographical distribution, application of cultural data to ethnological problems.

404 Peoples of South America (4)

Prerequisite: ANTH 250. Prehistoric, historic, and contemporary cultures of South America, with emphasis on sociological and ethnological principles of analysis and comparison.

406 Indians of North America (4)

Prerequisite: ANTH 250. Native peoples of North America north of Mexico, their origins, culture change after contact with Europeans.

407 Indians of California (4)

Prerequisite: ANTH 250. Native peoples of California, their origins, languages, and cultures.

408 Peasant Cultures of Middle America (4)

Prerequisite: ANTH 250. Pre-Spanish civilizations of Mexico and Central America, the conquest and colonial backgrounds of present-day peoples, contemporary societies and cultures of area.

410 Peoples of the Pacific (4)

Prerequisite: ANTH 250. Island peoples of Polynesia, Melanesia, and Micronesia, migration theories, contemporary social and political systems, European contacts and culture change.

413 Peoples of Africa (4)

Prerequisite: ANTH 250. Historical and cultural backgrounds of traditional and contemporary societies of Africa south of the Sahara, Western and Asian influences, problems of social, economic, and political development.

414 Peoples of Asia (4)

Prerequisite: ANTH 250. Peoples and cultures of Asia; interrelationships of contemporary groups and dynamics of culture change. Emphasis alternates among four areas: Japan and Korea; South Asia; Southeast Asia; China. May be repeated until all areas of emphasis are covered.

421 Archeology of North America (4)

Prerequisite: ANTH 250. Early peopling of North America and development of prehistoric cultures in New World north of Mexican high culture area.

423 Primitive Technology (4)

Prerequisite: ANTH 250. Investigation of role of technology in early human culture, materials and use of tools during human evolution, techniques of manufacturing, and influence of early technology in culture.

424 Archaeological Research Techniques (6)

Prerequisites: ANTH 270 or 407 or 421; instructor consent. Instruction in recovery and interpretation of archaeological data. Lecture 4 hours, laboratory and field work 6 hours. May be repeated to maximum of 12 units.

425 Archeology of the Old World (4)

Prerequisite: ANTH 250. Growth of culture from its earliest beginnings to emergence of great civilizations, utilizing concepts, methods, and data of archeology.

430 Social Organization (4)

Prerequisites: ANTH 250 or 401 or SOC 414 or 444; instructor consent. Systems of kinship and marriage, with reference to social control, religion, law, politics, and economic organization.

432 Anthropology of Wealth and Power (4)

Prerequisite: ANTH 250. Theoretical perspectives and comparative ethnographic analyses of political-economic systems of preindustrial societies ranging from bands through contemporary peasantry.

434 Anthropology in A Changing World (4)

Prerequisite: ANTH 250. Examination of culture change; review of various theoretical positions, and application of anthropological concepts and data to crises facing contemporary societies.

435 Culture and the Individual (4)

Prerequisite: ANTH 250. Exploration of conformity and deviance in society through the comparative study of personality formation in different cultural and subcultural settings.

437 Magic, Witchcraft, and Religion (4)

Prerequisite: ANTH 250. Investigation of the domain of the sacred and supernatural in both technologically primitive and advanced societies. Emphasis on magic, witchcraft, taboo, myth, ritual, belief systems, and religious symbols.

438 Sex Roles in Crosscultural Perspective (4)

Prerequisite: ANTH 250. Evolutionary and comparative approach to study of roles of men and women in societies past and present.

443 Anthropology and Education (4)

Prerequisite: ANTH 250. Education in crosscultural perspective; application of anthropological concepts and knowledge to understanding of educative process.

444 Medical Anthropology (4)

Prerequisite: ANTH 250 or SOC 201 or 202. Medical practice within sociocultural perspective; applying anthropological concepts and knowledge to an understanding of health, illness, and curing.

445 Myth and Folklore (4)

Prerequisite: ANTH 250 or AMER 405. Basic forms of folklore including myth, legend, tale, song, and custom in cultural context, with attention to their origin, transmission, performance, function, and meaning.

446 Anthropological Film (5)

Prerequisite: ANTH 250. Survey of films and approaches to film making in anthropology; methods of presenting data and theoretical analysis in film; practice in using film and videotape in field research. Lecture 3 hours; field activity 4 hours.

450 Culture and Innovation (4)

Prerequisite: GE social science requirement. The creative experience and its cultural parameters; effect of culture in structuring the innovative process; emphasis on forces that initiate, direct, and impede the course of creative effort.

454L,P Special Topics in Anthropology (1-6)

Prerequisites: As needed for specific topic. Topics of special interest in anthropology, as announced in *Schedule of Classes*. May be repeated for credit as subject matter changes.

460 Human Evolution (4)

Prerequisite: ANTH 260. Critical examination of fossil evidence for human evolution considering importance of cultural evolution. Emphasizes recent discoveries and controversial theories surrounding them.

461 Human Variation (4)

Prerequisite: ANTH 260. Evaluation of culture and environmental influences upon composition and distribution of human populations; consideration of genetic basis for human variation and biological validity of race concept.

462 Human Ecology and Adaptation (4)

Prerequisite: ANTH 260. Comparative study of the ecological adaptations of diverse human populations to their environments.

464 Methods and Techniques of Physical Anthropology (6)

Prerequisites: ANTH 260, instructor consent. Methods of data gathering and analysis in physical anthropology, including consideration of practical problems in field research and advantages and limitations of various field and laboratory techniques. Lecture 4 hours, laboratory 6 hours. May be repeated to maximum of 12 units.

470 Language and Culture (4) (also listed as ENGL 403)

Prerequisite: ANTH 250. Nature, origin, and evolution of language; survey of approaches and studies illustrating variations in the relation of habitual thought and behavior to language.

471 Introduction to Linguistics (4) (also listed as ENGL 400)

Prerequisite: Upper division standing. Descriptive and historical study of language; problems of data collection and techniques of analysis, linguistic structure, language classification, language families of the world, language in its sociocultural setting.

472 Linguistic Analysis (3)

Prerequisite: ANTH 471 (may be taken concurrently); 250 recommended. A problems course in anthropological techniques of phonemic and morphemic analysis; close reading of technical, descriptive literature; survey of phonological and grammatical systems of non-Indo-European languages.

480 Anthropological Methods and Techniques (6)

Prerequisites: ANTH 250; instructor consent. Introduction to methodology of anthropological research, including methods of ethnographic investigation, ethnological analysis, and logical processes of problem solving. Lecture 4 hours, laboratory and field work 6 hours.

497 History of Ethnological Theory (4)

Prerequisites: Senior or graduate standing, 16 units of anthropology and/or sociology, as approved by instructor. Historical survey and analysis of major schools of anthropological thought.

499 Undergraduate Directed Study (1-8)

Prerequisite: Instructor consent to act as sponsor. Project selected in conference with sponsor before registration, progress meetings held regularly, and final report submitted. May be repeated to maximum of 8 units.

BIOLOGY

School of Natural and Social Sciences

DEPARTMENT OFFICE

Biological Sciences 142
Phone: (213) 343-2050

The Department of Biology offers programs leading to Bachelor of Science and Master of Science degrees in Biology. The master's degree program is described in the *Graduate Programs* section.

The Faculty

Emeriti: Samuel M. Caplin, William R. Hanson, James V. Harvey, Donald C. Lowrie, Louis W. Stearns, Richard M. Straw.

Professors: Wayne Paul Alley, Roger R. Bowers, Brian Capon, Theodore J. Crovello, Margaret J. Hartman, James Henrickson, Margaret Jefferson, Genaro A. Lopez, Alan E. Muchlinski (Chair), Evan K. Oyakawa, David Pearson, Betsy Peltz, Carlos D. Robles, Howard Rosen, Mercer Price Russell, Velma J. Vance, Richard J. Vogl.

Associate Professors: Alan H. Goldstein, George E. Jakway, Daniel P. Mahoney.

Assistant Professors: Robert A. Desharnais, Beverly Krlowicz, Sandra B. Sharp.

Bachelor of Science Degree

The Department of Biology offers a diversified program of courses leading to the Bachelor of Science degree in Biology. The program provides a balanced blend of traditional and modern biology, incorporating the important generalizations of traditional biology with the more recent advances. The degree may lead to graduate study in biology; entrance into professional schools in medicine, dentistry, or pharmacy; and employment in applied or technical aspects of biology and environmental science. In addition to the usual course offerings, the Department of Biology participates in the Southern California Ocean Studies Institute (SCOSI) and the California Desert Studies Consortium which are explained in detail under *Consortia* in the first chapter of this catalog. Students who complete this program may receive an examination waiver for the Single Subject credential in Life Science for secondary school teaching.

Departmental Honors Program

The Department of Biology offers an *honors program* for upper division students who have completed 94 quarter units, including 40 units in the major, with a minimum *B* (3.0) grade point average both overall and in the major. Students shall have completed 24 units of the major in residence at Cal State L.A.

The *honors program* introduces superior students to intensive research experience in biology. Honors students are assisted by an honors adviser and two other committee members. Enrollment in BIOL 395, Honors Study in Biology, for 5 units is required, and enrollment in BIOL 499, Undergraduate Directed Study, for 1-4 units, is optional. A prospectus, a written thesis, and a final oral examination about the thesis, administered by the committee, are required parts of the program. Diplomas and transcripts of *Honors Program* graduates are designated: "Graduated with Departmental Honors in Biology."

Requirements for the Major (113-118 units)

Of the 198 units required for the Bachelor of Science degree in Biology, the major requires 113-118. Competence in mathematics

through MATH 230 is required. *It is recommended that students complete at least one year of a foreign language.*

Successful completion of the major requires a minimum *C* (2.0) overall grade point average in required courses taken in residence and in all required courses (in residence and transferred). At least 16 units of upper division course work that fulfills major requirements must be taken in residence (not to include courses graded *CR/NC*).

Lower Division Required Courses (48-53 units):

BIOL 101-103 Principles of Biology I-III (5, 5, 3)
CHEM 101 General Chemistry I (5) *plus*
CHEM 122, 123 Principles of Chemistry (5, 5) *or*
CHEM 101-103 General Chemistry I-III (5, 5, 5) *plus*
CHEM 201 Quantitative Analysis (5)
MATH 206 Calculus I: Differentiation (4)
MATH 230 Calculus for Biologists (4)
PHYS 101-103 Physics (4, 4, 4) *or*
PHYS 121-123 Physics (with calculus) (4, 4, 4)

Upper Division Required Courses (33 units)

BIOL 302 Biometrics (4)
BIOL 315 General Genetics (4)
BIOL 330 Cell Biology (4)
BIOL 357 Writing for Biologists (4)
BIOL 360 General Ecology (4)
CHEM 301ABC Organic Chemistry (3, 3, 3) *and*
CHEM 302AB Organic Chemistry Lab (2, 2)

Electives (32 units):

With prior written approval of their adviser, students must select certain upper division courses in biology and other natural sciences, mathematics, and physical sciences. No upper division course with the suffix *N* or upper division general education course may be used to fulfill major requirements.

Minor in Biology

A Biology minor, which is available for students majoring in other fields, offers a general exposure that is beneficial in some areas of environmental science, recreation, conservation, and comparable fields.

A total of 29-34 units is required, including 18-22 units in lower division courses and 11-12 units in upper division electives.

Successful completion of the minor requires a *C* (2.0) overall grade point average for required courses taken in residence and for all required courses (in residence and transferred). At least 8 units of upper division course work that fulfills requirements of the minor must be taken in residence (not to include courses graded *CR/NC*).

Requirements for the Minor (29-34 units)

Lower Division Required Courses (18-22 units)

BIOL 101, 102, 103
CHEM 151

MATH 102 (May be met by satisfactory performance on mathematics placement examination or by high school preparation certified as adequate by Department of Mathematics and Computer Science)

Upper Division Electives in Biology (11–12 units):

With adviser approval, choose 3 courses from among upper division courses in biology, excluding 454LP, 499, and courses with the suffix N.

The Credential Program

The Bachelor of Science degree program in Biology has been approved by the Commission on Teacher Credentialing for examination waiver for the Single Subject credential in Life Science. Students should consult advisers in the department and in the School of Education. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

Supplementary Authorization for Single Subject Teaching Credential (30 units)

Holders of a *Single Subject* teaching credential, issued by the state of California in a subject other than Life Sciences may supplement that credential with an authorization in *Biology* for teaching biology at any grade level through grade 12 or in classes organized primarily for adults by completing the following program with a grade of C or higher in each course. For other requirements governing issuance of this authorization, consult the School of Education.

Complete or demonstrate proficiency in each of the following courses (30 units):

- BIOL 101–103 Principles of Biology I–III (5, 5, 3)
- BIOL 200A Human Anatomy and Physiology I (5)
- BIOL 302 Biometrics (4)
- BIOL 315 General Genetics (4)
- BIOL 360 General Ecology (4)

Courses in Biology (BIOL)**Lower Division Courses****101 Principles of Biology I (5)**

Prerequisite: One year of high school biology. Introduction to organismic animal biology, survey of phyla, function and development of organ systems, and adaptation to environment. Recommended for science majors. Lecture 3 hours, laboratory 6 hours.

102 Principles of Biology II (5)

Prerequisite: One year of high school biology. Survey of plant phyla, relationships of structure to function, unique adaptations to environment; evolution and economic roles of plants. Recommended for science majors. Lecture 3 hours, laboratory 6 hours.

103 Principles of Biology III (3)

Prerequisites: Grades of C or higher in BIOL 101 and 102. Corequisite: CHEM 101 or 151. Principles of genetic coding and transfer, ecology, and evolution.

154 Selected Topics in Biology (1–4)

Topics of current interest in biology as announced in *Schedule of Classes*. *No credit toward Biology major or minor.*

155 Natural History of Animals (4)

Biology of animals with emphasis on their adaptations to the environment and evolution and their importance to humans. Lecture 3 hours, laboratory 3 hours. *No credit toward biology major or minor.*

156 Natural History of Plants (4)

Biology of plants with emphasis on their adaptations to the environment and evolution and their importance to humans. Lecture 3 hours, laboratory 3 hours. *No credit toward biology major or minor.*

165 Humans and the Biological Environment (4)

Biological implications of the effect of humans on the environment. Emphasis on biological problems created by overpopulation and pollution. Designed for students not majoring in sciences. *No credit toward Biology major or minor.*

168 Marine Biology (4)

Natural history and survey of marine organisms with emphasis on their adaptations to their environments. Effects of human exploitation of marine wildlife. *No credit toward Biology major or minor.*

200A Human Anatomy and Physiology I (5)

Prerequisite or corequisite: CHEM 151. Structure and function of the cell and tissue; anatomy and physiology of the skeletal, muscular, digestive, and urinary systems. Lecture 3 hours, laboratory 6 hours. *No credit toward Biology major or minor.*

200B Human Anatomy and Physiology II (5)

Prerequisite: BIOL 200A. Anatomy and physiology of the cardiovascular, respiratory, nervous, endocrine, and reproductive systems. Lecture 3 hours, laboratory 6 hours. *No credit toward Biology major or minor.*

201 Structure of Human Body (5)

Human anatomy from cellular to systems level of organization; articulations, skeletal, muscular systems. Lecture 3 hours, laboratory 6 hours. *No credit toward Biology major or minor or Nursing major.*

202 Function of Human Body (5)

Prerequisite: BIOL 201. Functions and control processes of human body; musculoskeletal activity; neural, endocrine integration. Lecture 3 hours, laboratory 6 hours. *No credit toward Biology major or minor or Nursing major.*

Upper Division Courses**302 Biometrics (4)**

Prerequisites: Grade of C or higher in BIOL 103; MATH 103. Statistical analysis applied to biological problems, with emphasis on sampling, experimental design, chi-square analysis, t-test, analysis of variance, regression analysis, and correlation analysis. Lecture 3 hours, laboratory 3 hours.

315 General Genetics (4)

Prerequisites: BIOL 302. Principles of classical and molecular genetics as demonstrated in plants, animals, and microorganisms; emphasis on mechanisms of inheritance, structure of genetic material, breeding experiments with suitable organisms, analysis and interpretation of data. Lecture 3 hours, laboratory 3 hours.

319N Human Genetics (4)

Prerequisite: BIOL 155. Basic principles of genetics and their applicability to human heredity; emphasis on race; IQ; diseases; counseling; social, ethical, and legal implications of genetic research; historical misuse of genetic information. *No credit toward Biology major or minor.*

321N Institutional Racism: The Social Darwinian Rationale (4)

Prerequisite: BIOL 155, 156, or 165. Scientific criticism of Social Darwinian precepts of the racial basis of human potential; "Scientific" rationalization of discriminatory social policy. *No credit toward Biology major or minor.*

330 Cell Biology (4)

Prerequisites: BIOL 302, CHEM 301A. Structure and function of the cell surface, membranes, organelles, and of the cytosol; control of information flow and of metabolism. Lecture 3 hours, laboratory 3 hours.

350N Evolution of Life (4) (also listed as CHEM 350N)

Prerequisite: GE natural science requirement. Biochemical origins of life from the newly formed planet Earth through the evolution of higher groups of both plants and animals. *No credit toward Biology or Chemistry major or Biology minor.*

357 Writing for Biologists (4)

Prerequisites: BIOL 302, ENGL 190. Introduction to writing skills and techniques necessary for presentation of biological information; intensive practice in writing abstracts, reports, reviews, and other forms of scientific papers.

358N Science and Controversy (4)

(also listed as CHEM 358N, CS 358N, and PHYS 358N)

Prerequisite: GE natural science requirement. Scientific background of issues that affect public welfare, such as genetic technology, chemical pesticides, and energy production and utilization. *No credit toward Biology, Chemistry, Computer Science, or Physics major or Biology minor.*

360 General Ecology (4)

Prerequisite: BIOL 302. Relation of plants and animals to their environment and to each other; environmental complexes, ecological life histories, and relationships among individuals in populations and communities. Lecture 2 hours, laboratory and field work 6 hours.

361N Ecology of the Urban Environment (4)

Prerequisite: BIOL 155 or 156. Influences of urbanization on natural plant and animal communities with special emphasis on the Los Angeles basin; ecological consideration of effects of agriculture, housing, natural areas, pollution, parks, and recreational areas. Lecture 2 hours, discussion 1 hour, laboratory 3 hours including field trips. *No credit toward Biology major or minor.*

396 Honors Thesis (1-5)

Prerequisites: Upper division standing, 40 units in the major, ENGL 190, admission to Biology Honors Program. Independent research in biology; regular consultations with research adviser; written thesis required. Student must complete 5 units before submitting thesis and receiving grade.

401 Microtechniques (4)

Prerequisites: CHEM 301C, upper division standing in a biological science major. Preparative and histochemical study of cells and tissues, including squash, sectioning, and staining methods. Lecture 1 hour, laboratory 9 hours.

402 Electron Microscopy (4)

Prerequisites: Senior standing in a biological or physical science major, instructor consent. Theory of electron microscopy; practical experience in the preparation of biological and physical materials for examination and operation of transmission and scanning electron microscope. Lecture 1 hour, laboratory 9 hours.

408 Experimental Design and Advanced Biometry (4)

Prerequisite: BIOL 302. Experimental design in statistical procedures, advanced topics in analysis of variance, linear and nonlinear regression analysis, covariance; introduction to multivariate techniques used in biological research. Lecture 3 hours, laboratory 3 hours.

414 Cytogenetics (4)

Prerequisites: BIOL 315, 330. Physical basis of heredity in plants, animals, and humans; structure, number, and behavior of chromosomes in normal and abnormal conditions, karyotyping. Lecture 3 hours, laboratory 3 hours.

416 Molecular Genetics (4)

Prerequisites: BIOL 315, CHEM 301C. Special topics concerning chemical nature of genes, their replication, and their mode of action at molecular level.

417 Gene Manipulation (4)

Prerequisites: BIOL 315 or MICR 340; BIOL 330 or CHEM 431AB and 432A. Genetic engineering and its application in molecular biology and biotechnology.

418 Evolution (4)

Prerequisite: BIOL 315. Genetic and ecological bases of evolutionary changes in animals and plants; microevolution, speciation, and macroevolution.

422 Vertebrate Structure and Function (5)

Prerequisite: BIOL 103 with grade of C or higher. Evolution of vertebrate structure and functional morphology; evolutionary adaptations of vertebrates presented in a phylogenetic text. Lecture 3 hours, laboratory 6 hours.

424 General Embryology (4)

Prerequisites: Grade of C or higher in BIOL 103; CHEM 301C. Molecular biology of genetic programming, cellular events of early embryo-genesis, mechanisms of differentiation, and elements of organogenesis. Lecture 2 hours, laboratory 6 hours.

425 Plant Anatomy (4)

Prerequisite: Grade of C or higher in BIOL 103. Microscopic structure of vascular plants with emphasis on organization and functioning of meristems; structure, function, and differentiation of cells and tissues; development and comparative anatomy of stem, leaf, and root. Lecture 2 hours, laboratory 6 hours.

427 Fungi (4)

Prerequisite: Grade of C or higher in BIOL 103. Structure, development, physiology, and classification of fungi. Lecture 2 hours, laboratory 6 hours.

429 Animal Histology (5)

Prerequisite: Grade of C or higher in BIOL 103. Basic structural, chemical, and physiological aspects of tissues, recent advances in histological technology; traditional microscopic study of tissues and organs, primarily mammalian. Lecture 3 hours, laboratory 6 hours.

430 Plant Physiology I (4)

Prerequisites: Grade of C or higher in BIOL 103; CHEM 103. Growth and development, growth regulation, plant-water relations, mineral nutrition, photosynthesis and respiration. Lecture 2 hours, laboratory 6 hours.

431 Plant Physiology II (4)

Prerequisite: BIOL 430. Ecological physiology of plants; physiological adaptations to stress, seasonal environmental changes, aquatic and various terrestrial habitats. Lecture 4 hours.

433 Animal Physiology I (4)

Prerequisite: BIOL 330. Physiological phenomena at the organismic level. Muscular, nervous, endocrine, and reproductive systems; laboratory techniques and principles. Lecture 3 hours, laboratory 3 hours.

434 Animal Physiology II (4)

Prerequisite: BIOL 330. Physiological phenomena at organismic level. Digestive, respiratory, excretory, and circulatory systems. Laboratory techniques and principles. Lecture 3 hours, laboratory 3 hours.

437 Advanced Cell Physiology (4)

Prerequisite: BIOL 330. A topical course on cellular phenomena such as information flow, bioenergetics, control mechanisms, motility phenomena, and molecular behavior of reactive surfaces. Lecture 3 hours, laboratory 3 hours.

438 Comparative Physiology (4)

Prerequisite: BIOL 330. Physiological principles and adaptations to the environment, with special emphasis on invertebrates; laboratory work includes independent projects. Lecture 3 hours, laboratory 3 hours.

440 Taxonomy of Angiosperms (4)

Prerequisite: Grade of C or higher in BIOL 103. Identification, classification, and nomenclature of angiosperms; speciation and population structure. Lecture 2 hours, laboratory or field work 6 hours; weekend field trips may be required.

442 Marine Botany (4)

Prerequisite: Grade of C or higher in BIOL 103. Taxonomy, morphology, and ecology of marine plants, with emphasis on the seaweeds. Lecture 2 hours, laboratory 6 hours.

444 Freshwater Algae (4)

Prerequisite: Grade of C or higher in BIOL 103. Taxonomy, morphology, and ecology of freshwater algae. Lecture 2 hours, laboratory 6 hours.

451 Ornithology (4)

Prerequisite: Grade of C or higher in BIOL 103. Taxonomy, distribution, physiology, life history, ecology, and behavior of birds. Lecture 2 hours, laboratory and field work 6 hours.

452 Ichthyology (4)

Prerequisite: Grade of C or higher in BIOL 103. Taxonomy, distribution, ecology, and physiology of fishes. Lecture 2 hours, laboratory and field work 6 hours.

453 Herpetology (4)

Prerequisite: Grade of C or higher in BIOL 103. Taxonomy, distribution, ecology, and physiology of amphibians and reptiles. Lecture 2 hours, laboratory and field work 6 hours.

454L,P Special Topics in Biology (1-4)

Prerequisites: Upper division standing, others as needed for specific topic. Topics of current interest in biology as announced in *Schedule of Classes*. May be repeated to maximum of 8 units.

455 Mammalogy (4)

Prerequisite: Grade of C or higher in BIOL 103. Taxonomy, distribution, ecology, and physiology of mammals. Lecture 2 hours, laboratory and field work 6 hours.

457 Marine Invertebrate Zoology (5)

Prerequisite: Grade of C or higher in BIOL 103. Taxonomy, phylogeny, and natural history of major marine invertebrates taxa; laboratory work emphasizes species from local fauna and those of economic importance. Lecture 3 hours, laboratory 6 hours.

458 General Entomology (4)

Prerequisite: Grade of C or higher in BIOL 103. Anatomy, ecology, classification, and habits of insects, with emphasis on western species; techniques for capture, observation, and preservation of specimens. Lecture 2 hours, laboratory 6 hours.

462 Plant Ecology (4)

Prerequisite: BIOL 360. Plants and plant associations in relation to physical and biotic environments, including plant community structure, history, analysis, and developmental processes. Lecture 2 hours, laboratory and/or field work 6 hours.

463 Biogeography (4)

Prerequisite: BIOL 360. Distributional patterns of flora and fauna of the world; emphasis on principles and problems of their development; special consideration given to North American communities.

464 Freshwater Zoology (4)

Prerequisites: BIOL 360; one year of chemistry. Physical, chemical, and geological characteristics of aquatic habitats; characteristics and natural history of common aquatic organisms; emphasis on animals. Lecture 2 hours, laboratory 6 hours.

470 Conservation of Wildlife (4)

Prerequisite: BIOL 360. Main environmental and population principles affecting wildlife food and shelter; predation and disease; major habitats and their conservation; wildlife protection; ecology of selected species. Lecture 3 hours, laboratory/field work 3 hours.

471 Population Ecology (4)

Prerequisite: BIOL 360. Structure and dynamics of animal populations, including density, spatial patterns, growth rates, predation, competition, regulation, and population cycles. Lecture 3 hours, laboratory or field work 3 hours.

472 Marine Ecology (4)

Prerequisite: BIOL 360. Population and community ecology of major habitats in marine environment; lecture emphasizes contemporary theories in marine ecology; laboratory offers practical field experience. Lecture 3 hours, laboratory or field work 3 hours.

475 Animal Behavior (3)

Prerequisite: Grade of C or higher in BIOL 103 or one year of zoology. Natural behavior of animals, with emphasis on mechanism, functions, and evolution of behavior.

476 Physiological Animal Ecology (4)

Prerequisite: BIOL 330. Physiological responses of animals in various environments; emphasis on energetics and thermal relationships of vertebrates. Lecture 2 hours, laboratory and field work 6 hours.

478 Fundamentals of Parasitology (4)

Prerequisite: Grade of C or higher in BIOL 103. Parasitism among protozoa and helminths, emphasizing the biological role of the parasite, its ecology, physiology, and life history. Lecture 3 hours, laboratory 3 hours.

484N Biology of Human Aging (4)

Prerequisite: BIOL 155. Physiological and anatomical age-related changes at the cellular, tissue, organ, organ system and organism levels; relationship of late-onset diseases to the aging process. No credit toward Biology major or minor.

485 Medical Parasitology (5)

Prerequisite: Grade of C or higher in BIOL 103. Synopsis of parasitic protozoa and helminths of humans; emphasis on recognition and control. Lecture 3 hours, laboratory 6 hours.

488N Gender Differences (4) (also listed as PSY 488)

Prerequisite: BIOL 155. Biological and psychological differences between the sexes; topics include genetic sexual determination, sexual differentiation, role of hormones in physiology and behavior, experimental methodology, psychological differences in ability and personality. No credit toward Biology major or minor.

499 Undergraduate Directed Study (1-4)

Prerequisites: Consent of full-time faculty member in consultation with department chair, grade point average of 2.5 or higher. Project must be approved before registration. Student must have ability to assume responsibility for independent research and analysis. Regular discussion of progress with sponsor before presentation of final written report. Graded CR/NC.

CHEMISTRY AND BIOCHEMISTRY

School of Natural and Social Sciences

DEPARTMENT OFFICE

Physical Sciences 616

Phone: (213) 343-2300

The Department of Chemistry and Biochemistry offers undergraduate programs leading to the Bachelor of Science degrees in Chemistry and Biochemistry and the Bachelor of Arts degree in Chemistry. In addition, the department participates in the interdisciplinary Bachelor of Science degree in Physical Sciences. The Master of Science degree program in Chemistry is described in the *Graduate Programs* section.

The Faculty

Emeriti: Anthony J. Andreoli, Lloyd N. Ferguson, Sigmund Jaffe, Stewart A. Johnston, Rashad E. Razouk.

Professors: Joseph Bragin, Costello L. Brown, Joseph Casanova, Jr., Douglas L. Currell, Phoebe Dea, Anthony Fratiello, Harold Goldwhite, Carlos G. Gutierrez (*Chair*), Richard T. Keys, Hendrik Keyzer, Thomas P. Onak, Donald R. Paulson, Stanley H. Pine.

Associate Professors: Raymond E. Garcia, Scott D. Grover, Wayne R. Tikkanen, Trina J. Valencich.

Assistant Professors: Cathy L. Cobb, Mark W. Roberts.

Undergraduate Degrees

Students who expect to earn a bachelor's degree in Chemistry in the minimum time should include chemistry, physics, German, geometry, trigonometry, and algebra (two years) in their high school preparation.

It should also be noted that the chemistry programs are tightly structured and that students should begin calculus and physics sequences at the earliest possible time in order to complete the degree in four years.

For Chemistry and Biochemistry majors, only courses with a grade of *C* or higher in the major program are credited toward the degree. Students who have credit for community college organic chemistry have the option of earning credit by examination in CHEM 301A, 301B, and/or 301C. In the programs described below, CHEM 102, 103, and 201 may be substituted for CHEM 122 and 123. *One year of German is required for the B.S. degree in Chemistry; one year of French or German is required for the B.S. degree in Biochemistry; the B.A. degree in Chemistry has no foreign language requirement.*

Departmental Honors Program

A Departmental Honors Program in Chemistry is offered for students who possess a minimum *B* (3.0) grade point average in all college work and in chemistry, averaged separately, and who are recommended in writing by two members of the faculty.

The program is designed to encourage independent study and to provide an introduction to research. The traditional curriculum is enriched by the selection of electives that provide depth in areas outside the field of chemistry.

Honor students are assisted by an honors adviser in planning their programs. Enrollment in CHEM 196 and 396 and a written thesis are required parts of the program. Diplomas and transcripts of

Honors Program graduates are designated: "Graduated with Departmental Honors in Chemistry."

Bachelor of Arts Degree in Chemistry

The Bachelor of Arts degree, which requires 186 units, is designed for those who want a liberal education with a major in Chemistry. This degree allows students to include a minor in another science, business, economics, or humanities within their degree program. The degree is suitable for students planning careers in government or industry where a physical science background is desirable. It is also appropriate for some preprofessional health science majors but is not recommended for students planning graduate study in a physical science.

Requirements for the Major (74 units)

Lower Division Required Courses (39 units):

*CHEM 101 General Chemistry I (5)
 *CHEM 122, 123 Principles of Chemistry (5, 5)
 MATH 206-208 Calculus I-III (4 each)
 PHYS 201-203 General Physics (4 each) or
 PHYS 121-123 Physics (4 each)

*CHEM 101-103 plus 201 may be taken in lieu of 101-122-123

Upper Division Required Courses (28 units):

CHEM 301ABC Organic Chemistry (3, 3, 3)
 CHEM 302AB Organic Chemistry Laboratory (2, 2)
 CHEM 360 Writing for Chemists (3)
 CHEM 362 Biomedical Microanalysis (4)
 CHEM 411 Fundamentals of Physical Chemistry (4)
 CHEM 435 Introduction to Biochemistry (4)

Electives in Chemistry (7 units):

May include a maximum of 3 units of CHEM 499.

Bachelor of Science Degree in Biochemistry

The Bachelor of Science degree in Biochemistry is designed to fit the needs of those who plan to either complete their formal education with the bachelor's degree and obtain positions in scientific and industrial laboratories or do graduate study in biochemistry. A total of 198 units is required for the degree.

Requirements for the Major (119 units)

Lower Division Required Courses (65 units):

*CHEM 101 General Chemistry I (5)
 *CHEM 122, 123 Principles of Chemistry (5, 5)
 BIOL 101, 102 Principles of Biology I, II (5, 5)
 MATH 206-209 Calculus I-IV (4 each)
 MICR 200AB General Microbiology (5, 3)
 PHYS 201-204 General Physics (4 each)

*CHEM 101-103 plus 201 may be taken in lieu of 101-122-123

Upper Division Required Courses (43 units):

CHEM 301ABC Organic Chemistry (3, 3, 3)
 CHEM 302AB Organic Chemistry Laboratory (2, 2)
 CHEM 360 Writing for Chemists (3)
 CHEM 401 Physical Chemistry I (4)
 CHEM 402 or 403 Physical Chemistry II or III (4)
 CHEM 431ABC Biochemistry (3, 3, 3)

CHEM 432AB Biochemistry Laboratory (2, 2)
 PHYS 443AB Biophysics (3, 3)

Electives in Biology (select 11 units with adviser approval):

Bachelor of Science Degree in Chemistry

The Bachelor of Science degree in Chemistry, which requires 198 quarter units, is designed to fit the needs of those who plan to do graduate work or complete their formal education with the bachelor's degree, which is accredited by the American Chemical Society.

Requirements for the Major (115–117 units)

Lower Division Required Courses (61–63 units):

*CHEM 101 General Chemistry I (5)
 *CHEM 122, 123 Principles of Chemistry (5, 5)
 CHEM 170 Microcomputers in Chemistry (2) or
 CS 290 Introduction to FORTRAN Programming (2) or
 MATH 255 Introduction to Matrix Theory (4)
 MATH 206–209 Calculus I–IV (4 each)
 MATH 215 Differential Equations (4) or
 **MATH 401 Differential Equations (4)
 PHYS 201–206 General Physics (4 each)

*CHEM 101–103 plus 201 may be taken in lieu of 101–122–123

** upper division credit

Upper Division Required Courses (54 units):

CHEM 301ABC Organic Chemistry (3, 3, 3)
 CHEM 302ABC Organic Chemistry Laboratory (2, 2, 2)
 CHEM 318 Introduction to Inorganic Chemistry (3)
 CHEM 360 Writing for Chemists (3)
 CHEM 401–403 Physical Chemistry I–III (4, 4, 4)
 CHEM 412AB Physical Chemistry Laboratory (3, 3)
 CHEM 418 Inorganic Chemistry (3)
 CHEM 462 Instrumental Analysis (6)

Electives in Chemistry (select 6 units with adviser approval):

The Credential Program

The Department of Chemistry and Biochemistry participates in the interdisciplinary Bachelor of Science degree program in Physical Science, which has been approved for examination waiver for the Single Subject credential in Physical Science. That program is described later in this chapter of the catalog. In addition, holders of a Single Subject credential issued by the state of California may complete the supplementary authorization program described below.

Supplementary Authorization for Single Subject Teaching Credential (31–33 units)

Holders of a Single Subject teaching credential issued by the state of California may supplement that credential with an authorization in Chemistry for teaching chemistry at any grade level through grade 12 or in classes organized primarily for adults by completing the following program with a grade of C or higher in each course. For other requirements governing issuance of this authorization, consult the School of Education.

Complete or demonstrate proficiency in each of the following courses (31–33 units):

CHEM 101–103 General Chemistry I–III (5, 5, 5)
 CHEM 201 Quantitative Analysis (5)
 CHEM 301ABC Organic Chemistry (3, 3, 3)

Select one from following:

CHEM 302A Organic Chemistry Laboratory (2)

CHEM 318 Introduction to Inorganic Chemistry (3)
 CHEM 435 Introduction to Biochemistry (4)

Courses in Chemistry (CHEM)

†There is a special fee associated with registering for laboratory classes that carry this designation. Details appear in the Schedule of Classes.

Subcollegiate Course

095 Language of Chemistry (4)

Prerequisite: One year of high school algebra. Development of basic skills for further training in chemistry; introduction to stoichiometry; meaning of chemical equations and their algebraic interpretation; physical background of fundamental chemical concepts. Not acceptable as prerequisite for CHEM 102 or 152. Lecture 3 hours, recitation 1 hour. Graded A,B,C/NC. No credit toward baccalaureate.

A grade of C or higher is required in all prerequisite courses.

Lower Division Courses

†101 General Chemistry I (5)

Prerequisite: High school chemistry and physics; two years of high school algebra; satisfactory performance on mathematics placement examination given during registration period. Physical concepts, stoichiometry, structure of atom, periodic table, chemical bonding. Lecture 3 hours, recitation 1 hour, laboratory 3 hours
CAN 101+102+103 = CAN CHEM SEQ A

†102 General Chemistry II (5)

Prerequisite: CHEM 101. Structure of molecules, states of matter, acids and bases, equilibrium, oxidation-reduction, electrochemistry, coordination compounds. Lecture 3 hours, recitation 1 hour, laboratory 3 hours.
CAN 101+102+103 = CAN CHEM SEQ A

†103 General Chemistry III (5)

Prerequisite: CHEM 102. Introduction to science of thermodynamics and its applications in chemistry, chemical kinetics, spectroscopy and special topics in general chemistry. Lecture 3 hours, recitation 1 hour, laboratory 3 hours.
CAN 101+102+103 = CAN CHEM SEQ A

†122, 123 Principles of Chemistry (5, 5)

Prerequisites: Superior performance in CHEM 101; MATH 206. Introduction to fundamental chemical principles, with emphasis in laboratory on quantitative work. Lecture 3 hours, recitation 1 hour, laboratory 3 hours.

†151 Fundamentals of Chemistry I (5)

Prerequisites: One year of high school algebra, satisfactory performance on mathematics placement examination given during registration period. Introductory course in fundamental laws and theories of general chemistry. Lecture 3 hours, recitation 1 hour, laboratory 3 hours. No credit toward Chemistry or Physics major.

†152 Fundamentals of Chemistry II (Organic) (5)

Prerequisite: CHEM 151. Introduction to organic chemistry. Lecture 3 hours, recitation 1 hour, laboratory 3 hours. No credit toward Chemistry or Physics major.

†154L,P Selected Topics in Chemistry (1–4)

Topics of current interest as announced in Schedule of Classes. No credit toward Chemistry or Biochemistry major.

158 Chemistry and Survival (4)

Chemical dependence of life processes related to human survival.

†159 Chemistry and Survival Laboratory (1)

Corequisite: CHEM 158. Introductory chemistry laboratory course with special emphasis on practical examples using simple natural product starting materials.

160 Maladies and Molecules (4)

Selected aspects of the chemical foundations, molecular transmission, and palliation of infectious, inheritable, and environmental diseases at an introductory level requiring no initial knowledge of chemistry.

170 Microcomputers in Chemistry (2)

Prerequisite or corequisite: CHEM 102 or 122. Use of microcomputer as productivity and computational tool in chemistry and biochemistry; emphasis on application of existing software to chemical/biochemical problems.

196 Honors Proseminar (1)

Prerequisite: Acceptance into department honors program. Study of recent developments in chemistry and biochemistry. May be repeated to maximum of 6 units; only 1 unit may apply on major requirements. Graded CR/NC.

†201 Quantitative Analysis (5)

Prerequisite: CHEM 103. Principles and techniques of analytical chemistry, including stoichiometry, equilibrium (pH and redox), electrochemistry, spectroscopy, and separations. Lecture 3 hours, laboratory 6 hours.

254L.P. Special Topics in Chemistry (1-4)

Prerequisites: As needed for specific topic. Current topics of interest in chemistry and related disciplines, as announced in *Schedule of Classes*. May be repeated to maximum of 8 units.

Upper Division Courses**301ABC Organic Chemistry (3, 3, 3)**

Prerequisite: CHEM 123 or 201 (201 may be taken concurrently with 301A); corequisites: for 301B, CHEM 302A; for 301C, CHEM 302B. Properties and reactions of aliphatic and aromatic compounds, emphasis on fundamental principles and reaction mechanisms.

†302ABC Organic Chemistry Laboratory (2, 2, 2)

Prerequisite: CHEM 123 or 201.

302A. Corequisite: CHEM 301B. Fundamentals of organic laboratory analysis, with emphasis on spectroscopic methods. Recitation-laboratory 6 hours.

302B. Corequisite: CHEM 301C. Fundamental laboratory techniques of organic chemistry and organic synthesis. Recitation-laboratory 6 hours.

302C. Application of organic laboratory techniques to selected organic syntheses. Recitation-laboratory 6 hours.

316 Scientific Glass Blowing (2)

Introductory course in glass blowing, including hands-on fabrication and repair of apparatus, theory and science of glass, and principles of laboratory techniques.

318 Introduction to Inorganic Chemistry (3)

Prerequisite: CHEM 123 or 201. Introduction to the study of the elements; atomic structure, bonding, ionic solids, solutions, and nonmetals.

350N Evolution of Life (4) (also listed as BIOL 350N)

Prerequisite: GE natural science requirement. Biochemical origins of life from the newly formed planet Earth through the evolution of higher groups of both plants and animals. *No credit toward Biology or Chemistry major.*

†353 Nutritional Aspects of Biochemistry (5)

Prerequisite: CHEM 152. Introduction to biochemistry with particular emphasis on nutrition and its effect on metabolism. Lecture 3 hours, laboratory 3 hours, recitation 1 hour.

354L.P. Special Topics in Chemistry (1-5)

Prerequisites: As needed for specific topic. Current topics of special interest in chemistry and related disciplines as announced in *Schedule of Classes*. May be repeated for credit as subject matter changes.

358N Science and Controversy (4)

(also listed as BIOL 358N, CS 358N, and PHYS 358N)

Prerequisite: GE natural science requirement. Scientific background of issues that affect public welfare, such as genetic technology, chemical pesticides, and energy production and utilization. *No credit toward Biology, Chemistry, Computer Science, or Physics major.*

360 Writing for Chemists (3)

Prerequisites: Passing score on Writing Proficiency Exam; CHEM 123 or 201. Introduction to writing for chemists and biochemists. Intensive practice in writing abstracts, reports, reviews, and other forms of scientific writing.

362 Biomedical Microanalysis (4)

Prerequisite: CHEM 123 or 201. Fundamentals of chemical microanalysis and instrumentation for analysis of substances of biomedical importance. Lecture 3 hours, recitation 1 hour. *No credit toward B.S. degree in Chemistry.*

380N Ancient and Modern Science (4)

(also listed as HIST 380N)

Prerequisite: GE natural science requirement. Systematic analysis of ancient scientific thought as science and its relationship to modern science. *No credit toward Biochemistry or Chemistry major.*

396 Honors Studies in Chemistry (1-5)

Prerequisites: Participation in Chemistry Honors Program; CHEM 301ABC; consent of an instructor to serve as research adviser; and approval of department honors adviser. Independent research in chemistry and biochemistry. Regular consultation with research adviser; written thesis required. Students must enroll for total of 5 units before submitting thesis and receiving grade.

401 Physical Chemistry I (4)

Prerequisites: CHEM 123, MATH 209, PHYS 204. Kinetic theory of gases, thermodynamics, and chemical statistics.

402 Physical Chemistry II (4)

Prerequisite: CHEM 401. Thermodynamics of solutions of non-electrolytes and electrolytes, phase equilibria, chemical kinetics, surface chemistry, and macromolecules.

403 Physical Chemistry III (4)

Prerequisites: MATH 215 or 401; PHYS 206 recommended (may be taken concurrently). Molecular structure and spectroscopy. Fundamentals of quantum chemistry; applications to the chemical bond, spectroscopy, and the solid state.

411 Fundamentals of Physical Chemistry (4)

Prerequisites: CHEM 123, MATH 208, PHYS 123 or 203. Survey of physical chemistry including thermodynamics, kinetics, quantum chemistry, and spectroscopy. *No credit toward B.S. degree in Chemistry or Biochemistry; no credit if taken after CHEM 401.*

†412AB Physical Chemistry Laboratory (3, 3)

Prerequisite: CHEM 401 or 403. Experiments to illustrate principles and techniques of various subjects of physical chemistry. Lecture 1 hour, laboratory 6 hours.

414 Chemical Thermodynamics (4)

Prerequisite: CHEM 401. Development of classical equilibrium thermodynamics from first principles, with emphasis on systems of chemical interest; theories of nonelectrolyte and electrolyte solutions, introduction to nonequilibrium thermodynamics or statistical thermodynamics.

418 Inorganic Chemistry (3)

Prerequisites: CHEM 318, 402. Selected topics in inorganic chemistry, including physical inorganic chemistry, coordination chemistry, and inorganic polymers.

420 Advanced Organic Chemistry I (4)

Prerequisites: CHEM 301C, 401 or 403. Theoretical aspects of organic chemistry emphasizing reaction mechanisms.

425 Polymer Chemistry (4)

Prerequisites: CHEM 301C MATH 209; suggested corequisite: CHEM 401. Preparation, mechanisms, and properties of synthetic macromolecules: step and chain polymerization, copolymerization, kinetics, morphology and physical characterization of polymers.

431ABC Biochemistry (3, 3, 3)

Prerequisites: CHEM 301C, 302B; Physics majors in the Biophysics option admitted by special permission. Corequisite for 431B: CHEM 432A. Lectures on chemistry and metabolism of carbohydrates, proteins, lipids, vitamins, hormones, and related phenomena in animals, plants, and microorganisms.

†432AB Biochemistry Laboratory (2, 2)

Prerequisite: 431A; corequisite for 432A: CHEM 431B. Recitation and laboratory experiments designed to illustrate chemical behavior of substances of biochemical importance. Recitation-laboratory 6 hours.

†433 Clinical Biochemistry (3)

Prerequisites: CHEM 431AB, 432A; prerequisite or corequisite: CHEM 431C. Lecture and laboratory study of chemistry of blood, urine, and other body fluids. Lecture 1 hour, laboratory 6 hours.

435 Introduction to Biochemistry (4)

Prerequisite: CHEM 301C. Introduction to principles of biochemistry. *No credit if taken after CHEM 431A.*

440 Industrial Chemistry (4)

Prerequisites: CHEM 301C, 402. Survey of major industrial chemical processes.

454L.P. Special Topics in Advanced Chemistry (1-4)

Prerequisites: As needed for specific topic. Current topics of special interest in advanced chemistry and related disciplines, as announced in *Schedule of Classes*. May be repeated to maximum of 8 units.

†462 Instrumental Analysis (6)

Prerequisite: CHEM 402. Theories, applications, and recent technological developments of chemical instrumentation with emphasis on electrochemical, spectral, chromatographic, and magnetic resonance methods. Lecture 3 hours, laboratory 9 hours.

480 History of Chemistry (4)

Prerequisites: CHEM 103, 301C. Development of chemical knowledge from chemical arts of antiquity through alchemy to twentieth century, emphasizing contributions to fundamental theory by Lavoisier, Dalton, Kekule, Van't Hoff, Rutherford.

499 Undergraduate Directed Study (1-5)

Prerequisites: 2.5 grade point average in chemistry courses or one advanced laboratory course elective, consent of an instructor to act as sponsor, ability to assume responsibility for independent work and to prepare written and oral reports. Independent research project selected in conference with sponsor before registration; progress meetings held regularly. May be repeated to maximum of 9 units.

CHICANO STUDIES

School of Natural and Social Sciences

DEPARTMENT OFFICE

King Hall C3095
Phone: (213) 343-2190

Chicano Studies is an intensive investigation of the second largest American ethnic group. The department's approach is multidisciplinary with specific offerings in history, culture, language, literature, arts, and politics of the Chicano community. The curriculum seeks not only to acquaint students with a breadth of knowledge about Chicanos, but also to expose them to theoretical perspectives specific to this area of study.

Chicano Studies provides preparation appropriate for careers in teaching, human services, public policy, law, medicine, the business profession, and for graduate study and research.

The vital presence and increasing significance of the Chicano community in Los Angeles and southern California allows unique research opportunities for students of Chicano Studies.

The Faculty

Professors: Francisco E. Balderrama (Chair), Roberto Cantú, Louis R. Negrete, Héctor Soto-Pérez.

Bachelor of Arts Degree in Mexican-American Studies

The program in Chicano Studies includes a Bachelor of Arts degree in Mexican-American Studies and a minor in Mexican-American Studies for students who are majoring in other fields.

The Bachelor of Arts degree is available in two options. Option I, the General Program, is intended for students interested in a liberal arts education; Option II is designed specifically for students who are interested in the Multiple Subject credential.

Requirements for the Major (60-125 units)

Option I, the General Program, requires a total of 60 units, of which 16 are in lower division and 44 are in upper division courses. Option II, for the Multiple Subject credential, consists of a total of 118-125 units that includes courses in general education (lower division), Chicano Studies, and related areas.

• Option I: General Program (60 units)

Lower Division Required Courses (8 units):

CHS 111 Introduction to Chicano Studies (4)
CHS 205 Composition in Chicano Studies (4)

Electives (select 8 units from following with adviser approval):

CHS 110, 150, 157, 200ABC, 201, 230, 250, 257*, 258*

* maximum 3 units in 257 and/or 258

Upper Division Required Courses (12 units):

CHS 403 Contemporary Chicano Literature (4)
CHS 410 Chicano Psychology (4)
CHS 444 History of the Chicano People (4)

Electives (select 32 units from following):

Community Dimension (12 units):

CHS 405, 406, 430, 445, 470

Culture Dimension (12 units):

CHS 311, 400, 420, 440, 446

Mexican Dimension (8 units):

CHS/HIST 466, 467; CHS 468

• Option II: Multiple Subject Credential (118-125 units)

BLOCK I: ENGLISH, COMMUNICATION (32 units)

CHS 403 ENGL 190, 250
ENGL 308 or 406 ENGL 401, 430
SPCH 150, 176

BLOCK II: MATHEMATICS AND SCIENCE (26-29 units)

MATH 100 (4) or 120AB (4-2)

Courses must include both a physical and a biological science, each with lab, selected from the following:

Biological with Lab

BIOL 155, 156 MICR 151

Physical with Lab

ASTR 151 with 152 CHEM 158 with 159
GEOL 150 with 151 or 152 GEOL 155 with 156 or 157
PHYS 150

Nonlab courses may be selected from:

ANTH 260/BIOL 165
GEOG 160 GEOL 158
PHYS 155 PSY 170

BLOCK III: SOCIAL SCIENCES (32 units)

CHS 111, 410, 444, 470 HIST 202A or 202B
POLS 150 PSY 150
SOC 202

BLOCK IV: HUMANITIES (28-32 units)

ART 101A or 101B or 101C; 400; 446
CHS 440 MUS 150, 400
SPAN 100A or 100B or 100C or 105 or 205AB

To meet credential requirement:

HS 456 PE 420

GENERAL EDUCATION UPPER DIVISION THEME

Select one general education upper division theme, in consultation with an adviser, and complete one course in each of three areas within that theme. Theme courses are not part of the major but are included in credential requirements.

Minor in Chicano Studies

Requirements for the Minor (32 units)

Lower Division Required Courses (16 units):

CHS 110, 111, 201 and lower division Chicano Studies elective course.

Upper Division Required Courses (8 units):

CHS 403, 444

Electives (select 8 upper division units with adviser approval):

The Credential Program

The Bachelor of Arts degree in Mexican-American Studies with Option II is intended for examination waiver for the Multiple Subject credential. The department shares partial responsibility for the Bilingual/Crosscultural Specialist credential. For detailed information about these credentials, consult advisers in the department and in the School of Education. Refer to the *School of Education* chapters of this catalog for regulations governing all credential programs.

Courses in Chicano Studies (CHS)

Lower Division Courses

100 Introduction to College Environment (4) (also listed as PAS 100)

Introduction to institution of higher education and its particular relationship to minority/Third World students. Course is designed especially for EOP students. Graded CR/NC.

110 Introduction to Pre-Cortesian Cultures of Mexico (4)

Introductory course examining the cultural, economic, and historical development of pre-Cortesian Mexico from the Olmec civilization to the fall of the Aztec empire.

111 Introduction to Chicano Studies (4)

Critical study of disciplines and methodologies of particular significance to Chicano Studies.

150 Chicano and Contemporary Politics (4)

Internal barrio politics and external efforts to manipulate that system, with focus on Chicanos.

157 Beginning Mexican Folk Music (2)

Introduction to traditional Chicano and Mexican folk music. Beginning instruction on culturally traditional musical instruments, including guitar, guitarron, vihuela, violin, and trumpet. May be repeated to maximum of 6 units. Graded CR/NC.

200ABC Spanish for Chicanos (4, 4, 4)

Recommended prerequisite: knowledge and use of Spanish as spoken in Southwestern U.S. Phonetics, grammar, and structure of local dialectal forms compared with standard Spanish; cultural and esthetic values of Spanish literature of Southwestern U.S.

201 Mexican Literature in Translation (4)

Selected major works of Mexican literature in translation.

205 Composition in Chicano Studies (4)

Prerequisites: ENGL 190; CHS 100 recommended. Principles and techniques of effective English composition essential to writing in a Chicano Studies context; emphasis on individual student practice. Graded CR/NC.

230 Latinas in Modern Society (4)

The changing social, economic, and political role of Latina women in the U.S.

250 The Chicano Experience in Film (4)

A survey and critical evaluation of the portrayal in film of Chicano life experiences.

257 Folk Music Ensemble of Mexico (2)

Prerequisites: Knowledge of music preferred but not necessary, instructor consent. Ensemble performance of Mexican folk music, study of techniques and regional styles. Activity 4 hours. May be repeated to maximum of 6 units.

258 Folk Dances of Mexico (1)

Study and practice of step patterns and regional dance styles of Mexico. Activity 3 hours. May be repeated to maximum of 6 units.

Upper Division Courses

311 Chicano Cultural History (4)

Prerequisite: CHS 111. Development and nature of Mexican and Chicano culture, emphasizing especially significant historical movements and their contribution to understanding current cultural problems.

395 Community Service in Chicano Studies (1-3)

Prerequisites: Eight units of approved CHS courses; approval by departmental faculty adviser in consultation with EPIC director; acceptance by community agency. Participation in work of community agency or activity utilizing professional and/or vocational skills in service to community. Graded CR/NC. Credit toward B.A. degree limited to 6 units.

400 Pre-Columbian Literature of Mexico (4)

Prerequisite: CHS 111. Literary works of Mayan, Nahua, and other pre-Columbian peoples of Mexico, with emphasis on structural and esthetic elements, history of thought, and world view.

403 Contemporary Chicano Literature (4)

Prerequisite: CHS 111. Selected literary works by Chicano authors.

405 The Mexican People as Immigrants (4)

Prerequisite: CHS 111. Socioeconomic and political forces that shaped U.S. immigration policies and practices in relation to the Mexican.

406 Hispanic Communities in U.S. Society (4)

Prerequisite: CHS 111. The Chicano experience studied from the comparative perspective of other Latin Americans in the U.S.: Cubans, Puerto Ricans, Central, and South Americans.

410 Chicano Psychology (4)

Prerequisite: PSY 150. Chicano community psychology; focus on relationships among individuals and families, groups, complex organizations; social problems and collective behavior.

420 Mexican and Chicano Folklore (4)

Prerequisite: CHS 111. Mexican and Chicano folklore as a reflection of the cultural, sociopolitical, and historical development of the Chicano community.

430 Chicano Political Behavior (4)

Prerequisite: CHS 111. Socioeconomic and political factors that provide formative framework for unique political behavior patterns characteristically existing in the Chicano community.

440 Development of Spanish Language in Southwestern U.S. (4)

Prerequisite: SPAN 200C. Conducted in Spanish. Origin, development, and present characteristics of Spanish language as used in Southwestern U.S.; emphasizes linguistic contributions of various antecedent and contemporary cultures in this area.

444 History of the Chicano People (4)

Prerequisite: HIST 202A or 202B. Historical development of the Chicano people from settlement until the present, with emphasis on period since 1848.

445 History of the Chicano in Los Angeles (4)

Prerequisite: CHS 111. Historical survey of the Los Angeles Chicano community from settlement until the present.

446 Folkloric Dance: Living History of Mexico and the Southwest (4)

Prerequisites: CHS 111. Folkloric dance as it reflects historical and ethnic experiences of people in Mexico and Southwestern U.S.

450 Research About Community Problems (4)

Prerequisites: CHS 111, ENGL 190, passing WPE score, senior standing. Research that emphasizes special issues of Mexican/Latino communities in Southern California and the nation; includes writing research papers that integrate previous course work in a culminating project.

466 Mexico (4) (also listed as HIST 466)

Prerequisite: Upper division standing. Development of Mexican people and nation since time of aborigines; social, political, and economic development with particular attention to more recent period.

467 Modern Mexico and the Chicano People (4)
(also listed as HIST 467)

Prerequisites: CHS 111; recommended: CHS/HIST 466. History of modern Mexico and its impact upon the Chicano people from separation from Mexico in 1848 to the present.

468 U.S.-Mexico Borderlands (4)

Prerequisite: CHS 111. Urban and regional development of the U.S.-Mexico border area with particular emphasis on its impact on the Chicano community.

470 Educational Institutions of the Barrios (4)

Prerequisite: Upper division or graduate standing. Analysis and evaluation of typical and special issues in the education of Chicano/Latino students.

490 Special Studies (1-4)

Prerequisites: Upper division or graduate standing, permission of instructor. Intensive study of selected areas in Chicano Studies. May be repeated to maximum of 8 units.

499 Undergraduate Directed Study (1-4)

Prerequisites: Eight units in CHS; 2.75 grade point average, upper division or graduate standing; full-time faculty member to serve as sponsor; recommendation of department chairperson. Project selected in conference with sponsor, progress meetings held regularly, and final report submitted. May be repeated to maximum of 8 units.

Certificate Program in Cartography and Air Photo Interpretation

The Department of Geography and Urban Analysis, in cooperation with the departments of Art, Civil Engineering, and Technology, offers this credit certificate program which provides a practical approach to the design, layout, and graphics needed in cartographic production, and the training needed to read, digest, and apply information obtainable from aerial photographs. A total of 22 units in the following courses is required for the certificate. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Prerequisites:

Select two from following:

- CIS 294 Business Computer Systems (4)
- CE 202 Plane Surveying (4)
- CS 290 Introduction to FORTRAN Programming (2)

Requirements for the Certificate (22 units)

Core Courses (16 units):

- GEOG 405 Cartography (4)
- GEOG 465 Air Photo Interpretation (4)
- GEOG 466 Remote Sensing of Environment (4)
- GEOG 471 Advanced Cartography (4)

Technique Course (3 units):

- TECH 431 Lithography I (3)

Graphic Arts Course (3 units):

- ART 312 Rendering: An Introduction (3) or
- ART 333 Color (3) or
- TECH 312 Technical Illustration (3)

Certificate Program in Urban Land Use and Property Analysis

The Department of Geography and Urban Analysis, in cooperation with the Department of Finance and Law, offers this credit certificate program which is designed for students and professionals seeking employment with public service or private business in urban communities. The program provides technical and analytical training for evaluating current problems confronting the urban community. A total of 25-28 units in the following courses is required for the certificate. Refer to the *Undergraduate Study* chapter of this catalog for general regulations governing all certificate programs.

Prerequisite Course (4 units):

- FIN 338 Real Estate Principles (4)

Requirements for the Certificate (25-28 units)

Required Courses (25-28 units):

- GEOG 453 Locational Analysis (4)
- GEOG 476 Urban Areas (4)
- GEOG 499 Undergraduate Directed Study (1-4)
- FIN 432 Real Estate Management (4)
- FIN 438 Real Estate Valuation (4)
- FIN 439 Real Estate Finance (4)
- FIN 493 Real Estate Investment (4)

The Credential Program

The Bachelor of Arts degree in Geography has not been submitted for approval for examination waiver for the Single Subject credential in Social Sciences. However, holders of a Single Subject creden-

tial issued by the state of California may complete the supplementary authorization program described below.

Supplementary Authorization for Single Subject Teaching Credential (33 units)

Holders of a *Single Subject* teaching credential issued by the state of California may supplement that credential with an authorization in *Geography* for teaching geography at any grade level through grade 12 or in classes organized primarily for adults by completing the following program with a grade of C or higher in each course. For other requirements governing issuance of this authorization, consult the School of Education.

Complete or demonstrate proficiency in each of the following courses (33 units):

- GEOG 150 Human Geography (4)
- GEOG 160 Physical Geography (4)
- GEOG 210 Map Reading and Interpretation (4)
- GEOG 410 Weather and Climate or
- GEOG 415 Perspectives on Environment (4)
- GEOG 421 United States (4)
- GEOG 431 California (4)
- GEOG 441 World Resources (4) or
- GEOG 481 Political Geography (4)
- GEOG 460 Field Geography (5)

Courses in Geography (GEOG)

Lower Division Courses

GEOG 101 Earth Science (4) (also listed as GEOL 101)

Nature of the earth's land, water, and atmosphere with emphasis on dynamic processes in the earth's crust and atmosphere that have interacted to form the world's physical environments.

150 Human Geography (4)

Areal studies of peoples of world and their settlement characteristics: evaluation of origins, dispersals, and contemporary distributions of representative ways that humans live on earth.

CAN GEOG 4

160 Physical Geography (4)

Natural environment of humans, nature, distribution, and relationships of climate, landforms, vegetation, hydrography, and soils.

CAN GEOG 2

210 Map Reading and Interpretation (4)

Prerequisites: GEOG 150, 160. Nature of maps and their interpretation. Lecture 2 hours, laboratory 4 hours.

Upper Division Courses

Unless otherwise stated, the prerequisite for all 400-level GEOG courses is GEOG 150 or 160 or 370.

495 Senior Thesis (4)

Prerequisites: ENGL 190, passing WPE score, senior standing. Advanced principles of geographic writing and research leading to a senior thesis.

358 Technology and Environment (4)

(also listed as ENGR 358)

Prerequisite: GE natural science requirement. Problems of resource scarcity and environmental impact of technology, past, present, and future; relationships leading to an understanding of an increasingly complex global system.

370 World Regions (4)

Major physical regions of world and their occupational development by humans.

402 Geomorphology (4)

Prerequisites: GEOG 160; 210 or GEOL 150. Identification and interpretation of landforms. Local field trip.

405 Cartography (4)

Prerequisite: GEOG 210. Design and drafting of maps. Lecture 3 hours, laboratory 3 hours.

410 Weather and Climate (4)

Atmospheric behavior and how it produces our day-to-day weather; weather phenomena: severe storms, floods, droughts, atmospheric optics; processes involved in forecasting.

415 Perspectives on Environment (4)

Environmental interactions in subsistence and urban-industrial societies; impact of human activities on environment: modification of vegetation, hydrology, and landforms, accelerated soil erosion, climatic change; environmental perception; awareness of and adjustment to natural hazards.

421 United States (4)

Identification, interpretation, and synthesis of regional phenomena within the U.S. characterizing its physical and cultural landscape.

423 Europe (4)

Analysis of physical and cultural features of Europe.

424 South and Southeast Asia (4)

Analysis of human, cultural, and physical features of South and Southeast Asia; emphasis on roles of Asian nations and peoples in world relationships.

425 Japan (4)

Interpretation of population and economic problems, sociocultural patterns, and physical features of the land.

427 Mexico and Central America (4)

Nature of the land and characteristics of human settlement features in Mexico and Central America.

428 South America (4)

Character of physical and cultural environment in countries of South America.

430 China (4)

Physical and economic regional geography of China and its inner-Asian frontiers, including study of its demography, industrial and agricultural development, transportation, and energy infrastructure.

431 California (4)

Physical environments of California and human settlement features, past and present.

432 Metropolitan Los Angeles (4)

Investigation of the physical and cultural geographic characteristics that have contributed to Los Angeles' dynamic urban growth and its dominance as the primate city within the region.

433 Third World Environments and Their Technological Developments (4)

Prerequisite: GE natural science requirement. The physical environments of Third World countries of the Humid Tropics, Wet and Dry Tropics, Hot and Dry Realms, and Highland Tropics and their associated problems of technological development.

434 Pacific Asian Physical Environments and Technological Developments (4)

Physical environments of Pacific Asian countries and their associated problems in technological development and resource utilization.

441 World Resources (4)

Spatial distribution of world's renewable and nonrenewable resources; interrelationships between population growth, resource utilization, and environment.

442 Population (4)

Spatial analysis of demographic variables with emphasis on environmental, social, and economic factors influencing population distribution and mobility; population growth in relation to resource utilization.

446 U.S. Ethnic Communities (4)

Spatial structure and organization of selected ethnic communities in the U.S. and their interrelationships with American composite cultural environment.

453 Locational Analysis (4)

Location and spatial distribution of economic activities; development and applicability of various locational models in geography; agricultural, industrial, central place, intracity, social gravity, and spatial interaction models; emphasis on development of dynamic geographic models pertaining to regional planning. Lecture 3 hours, laboratory 2 hours.

460 Field Geography (5)

Prerequisite: GEOG 150, 160; 210 or 370. Field identification and interpretation of natural and man-made features, and methods used therein. Lecture 2 hours, field work 6 hours. May be repeated once for credit if one enrollment is in program at off-campus field center.

465 Air Photo Interpretation (4)

Prerequisite: GEOG 210. Interpretation of natural and cultural landscapes as revealed in aerial photographs. Lecture 2 hours, laboratory 4 hours.

466 Remote Sensing of Environment (4)

Prerequisite: GEOG 465. Analysis of natural and cultural features of earth's environment using photographic, infrared, and microwave imagery. Lecture 2 hours, laboratory 4 hours.

467 Transportation (4)

Modes of movement of people, products, and ideas; their impacts on spatial patterns and landscapes.

471 Advanced Cartography (4)

Prerequisite: GEOG 405. Advanced methods of cartographic rendering, including reproduction, negative scribing, color separation, terrain rendering, and plastic shading. Lecture 3 hours, laboratory 3 hours.

475 Settlement (4)

Human manner of settling new lands and resettling old lands, with special emphasis on form and function of resulting settlements.

476 Urban Areas (4)

Analysis of distribution of world's cities, and investigation of function and form of representative urban areas.

477 Urban Issues (4)

Presentation of issues relating to physical, technological, and economic characteristics and functions of urban areas. Lecture 3 hours, laboratory 3 hours. (field trips and directed urban encounter).

481 Political Geography (4)

Physical and cultural phenomena that relate to problems and policies of world's states.

496 Special Topics (1-4)

Prerequisites: As needed for specific topic. May be taken concurrently with GEOG 497. Specialized systematic and regional topics

in geography as announced in *Schedule of Classes*. Lecture 1-4 hours. May be repeated as subject matter changes.

497 Special Topics (1-4)

Prerequisites: As needed for specific topic. May be taken concurrently with GEOG 496. Special topics of interest to students in geography as announced in *Schedule of Classes*. Activity 2-8 hours. May be repeated for credit as subject matter changes.

499 Undergraduate Directed Study (1-4)

Prerequisites: Instructor consent to act as sponsor; ability to do independent work and to prepare written and oral reports. Project selected in conference with sponsor before registration; progress meetings held regularly. May be repeated to maximum of 8 units as subject matter changes.

Courses in Urban Analysis (URBA)

Lower Division Course

101 The Urban World (4)

Worldwide issues relating to the physical, technological, economic, political, and sociological characteristics of urban areas.

Upper Division Courses

400 Proseminar: Urban Analysis (4)

Prerequisite: Completion of all other requirements for Urban Analysis option. Analysis of specific urban problems and potential solutions from an interdisciplinary perspective. May be repeated as subject matter changes.

401 Senior Project (4)

Prerequisites: Completion of all other requirements for Urban Analysis option, prior approval of project by advisory committee. May be taken concurrently with URBA 400. Interdisciplinary group project; identification of specific urban problems, application of special skills in assembling information, proposing and initiating implementation of solution. May be repeated once for credit.

454 Selected Topics in Urban Analysis (1-6)

Current topics of special interest in urban studies and related fields as announced in *Schedule of Classes*. May be repeated for credit as subject matter changes.

499 Undergraduate Directed Study (1-4)

Prerequisites: Consent of an instructor to act as sponsor, approval of coordinator. Project selected in conference with sponsor before registration; progress meetings held regularly; final report submitted. May be repeated for credit.

GEOLOGICAL SCIENCES

School of Natural and Social Sciences

DEPARTMENT OFFICE

Physical Sciences 216
Phone: (213) 343-2400

The Department of Geological Sciences offers the Bachelor of Science degree in Geology, the Bachelor of Arts degree in Earth Sciences, the Master of Science degree, a minor for students majoring in other fields, and Physical Science waiver and supplementary authorization programs for earth and physical science teachers. The Master of Science degree program is described in the *Graduate Programs* section.

Programs in geology develop a comprehensive study of earth materials, structures, and processes. Courses to serve both general and professional interests are offered.

The Faculty

Emeriti: Ivan P. Colburn, James F. Richmond, Martin L. Stout.

Professors: Alan Andrew Colville, Terry E. Davis, Perry L. Ehlig, Richard W. Hurst, Robert F. Meade, Gary A. Novak (*Chair*), Robert J. Stull.

Undergraduate Degrees

Two baccalaureate programs are offered. The Bachelor of Science degree program provides in-depth study for professional work in engineering geology, hydrogeology, petroleum geology, and environmental and analytical geochemistry or graduate study. The Bachelor of Arts degree program has a liberal arts emphasis for students who are preparing for science teaching or those who wish a liberal arts education. Both degree programs interact with the Southern California Ocean Studies Institute (SCOSI) which is explained in detail under *Consortia* in the first chapter of this catalog.

Bachelor of Arts Degree in Earth Sciences

The Bachelor of Arts degree, which requires 186 units, is designed for students who desire a liberal arts education with a major in Earth Sciences. This degree is not intended for those who are pursuing a professional career in geology, but rather for individuals who wish to be high school earth science teachers, park rangers, environmentalists, or other physical science naturalists. Completion of the B. A. degree in Earth Sciences plus other courses specified below satisfies the state requirement for examination waiver for the Single Subject credential in Physical Sciences. The complete waiver program is listed later in this chapter in the *Physics* section. Refer to the *School of Education* chapters in this catalog and consult the School of Education for additional information about credentials.

Requirements for the Major (115 units)

A total of 115 units in geology, related physical sciences, and mathematics is required for the Bachelor of Arts major in Earth Sciences. Seventy-five units are in lower division and 40 are in upper division courses.

Lower Division Required Courses (61 units):

ASTR 151 Principles of Astronomy (3)
ASTR 152 Principles of Astronomy Laboratory (1)
CHEM 101, 102, 103 General Chemistry I, II, III (5, 5, 5)
GEOL 150 General Geology (3)
GEOL 151 Physical Geology Field Laboratory (2)

GEOL 152 General Geology Laboratory (1)
GEOL 201 Elementary Mineralogy (6)
GEOL 203 Introductory Petrology (2)
GEOL 252 Historical Geology (4)
GEOL 272 Computers in Geology (4)
MATH 103 Algebra and Trigonometry (4)
MATH 206 Calculus I (4)
PHYS 101-103 Physics (4, 4, 4) or
PHYS 201*, 202*, 203* General Physics (4, 4, 4)

Electives (select at least 14 units from following):

GEOL 155*, 156*, 157, 158* BIOL 168
CHEM 152*, 201* MATH 207*, 208*
PHYS 204*, 205*

Upper Division Required Courses (16 units):

GEOL/PHYS 350N Evolution of Universe and Earth (4)
GEOL 360 Geological Mapping (4)
GEOL 420N Geology of the National Parks (4)
GEOG 410 Weather and Climate (4)

Select at least 24 units from following:

BIOL 361N
GEOG 402, 415
GEOL 321, 370, 401A, 402, 484, 499*

* Required for Single Subject credential in Physical Science

Bachelor of Science Degree in Geology

The Bachelor of Science degree in Geology requires a total of 192 quarter units and is designed for students who plan a professional geological career in government and industry or graduate study in geology and related fields.

Requirements for the Major (124 units)

A total of 124 units of geology, related physical sciences, and mathematics is required for the Bachelor of Science degree major. Fifty-five units are in lower division courses and 69 are in upper division courses in geology and related fields.

Lower Division Required Courses (55 units):

GEOL 150 General Geology (3)
GEOL 152 General Geology Laboratory (1)
GEOL 201 Elementary Mineralogy (6)
GEOL 203 Introductory Petrology (2)
GEOL 252 Historical Geology (4)
GEOL 272 Computers in Geology (4)
CHEM 101-103 General Chemistry I-III (5, 5, 5)
MATH 206, 207 Calculus I, II (4, 4)
PHYS 101-103 Physics (4, 4, 4)

Upper Division Required Courses (45 units):

GEOL 360 Geological Mapping (4)
GEOL 370 Geochemistry (4)
GEOL 400 Optical Mineralogy (5)
GEOL 401A Igneous Petrology (3)
GEOL 401B Igneous Petrology Laboratory (2)
GEOL 402 Sedimentary Petrology (4)
GEOL 403 Metamorphic Petrology (4)
GEOL 410 Structural Geology (5)

- GEOL 430 Stratigraphy (6)
 GEOL 460A Summer Field Geology I (5)
 GEOL 460B Report for Field Geology I (3)

Electives (select 24 units from following with adviser approval):

- GEOL 321, 424-426, 431-434, 451-453, 470-473,
 480-485, 490, 491, 497, 499

In addition, students may select up to 4 units of upper division biology, chemistry, computer science, engineering, mathematics, and physics courses with adviser approval. Students are advised to consult the *Schedule of Classes* for special topics courses (GEOL 490 and 491) which may be used to satisfy the geology elective requirements.

Minor in Geology

This program is designed for students majoring in other fields who wish to broaden their experience in science or prepare for careers such as teaching, public service, or law. The minor requires 35 units in geology and related fields. Consultation with a department adviser is recommended. Students with majors in related physical sciences may substitute other courses with approval of a Geological Sciences adviser. Completion of the minor in Geological Sciences also satisfies requirements for the Supplementary Authorization in Earth Sciences for holders of a Single Subject teaching credential.

Requirements for the Minor (35 units)

Lower Division Required Courses (23 units):

- GEOL 150, 152, 155, 156, 158, 201, 252

Upper Division Required Course (12 units):

- GEOL 321, 420 GEOG 410

The Credential Program

The Bachelor of Arts degree in Earth Sciences has been approved by the Commission on Teacher Credentialing for examination waiver for the Single Subject credential in Physical Science. The Department of Geological Sciences also participates in the Bachelor of Science degree program in Physical Science, described later in this chapter, which is also approved for examination waiver by the commission. An additional supplementary authorization for the Single Subject credential is described just above this paragraph. Interested students should consult advisers in both the Department of Geological Sciences and the School of Education. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

Supplementary Authorization for Single Subject Teaching Credential (39 units)

Holders of a *Single Subject* teaching credential issued by the state of California may supplement that credential with an authorization in Earth Sciences for teaching earth sciences at any grade level through grade 12 or in classes organized primarily for adults by completing the following program with a grade of C or higher in each course. For other requirements governing issuance of this authorization, consult the School of Education.

Complete or demonstrate proficiency in each of the following courses (39 units):

- GEOL 150 General Geology (3)
 GEOL 152 General Geology Laboratory (1)
 GEOL 155 Oceanography (3)
 GEOL 156 Oceanography Field Laboratory (2)
 GEOL 158 Geology and Society (4)

- GEOL 201 Mineralogy (6)
 GEOL 252 Historical Geology (4)
 GEOL 321 Geology of Southern California (4)
 GEOL 420 Geology of the National Parks (4)
 ASTR 151 Principles of Astronomy (3)
 ASTR 152 Principles of Astronomy: Laboratory (1)
 GEOG 410 Weather and Climate (4)

Courses in Geology (GEOL)

†There is a special fee associated with registering for laboratory classes that carry this designation. Details appear in the *Schedule of Classes*.

Lower Division Courses

GEOL 101 Earth Science (4) (also listed as GEOG 101)

Nature of the earth's land, water, and atmosphere with emphasis on dynamic processes in the earth's crust and atmosphere that have interacted to form the world's physical environments.

150 General Physical Geology (3)

Corequisite: GEOL 151 or 152. Earth materials and processes including minerals and rocks, erosion, internal structure, plate tectonics, volcanism, earthquakes, and geologic evolution of the land surface. Lecture 3 hours. **GEOL 150+152 = CAN GEOL 2**

151 Physical Geology Field Laboratory (2)

Field interpretation of rocks, minerals, and geologic structures of southwestern U.S.; field trips scheduled for weekends or quarter breaks. Proseminar 1 hour, field trips 3 hours. May be repeated once for credit if different areas are studied.

152 General Geology Laboratory (1)

Corequisite: GEOL 150. Earth materials (minerals and rocks), interpretation of geologic features (especially California) on topographic and geologic maps; seismological (earthquake) problems. Laboratory 3 hours. **GEOL 150+152 = CAN GEOL 2**

155 Oceanography (3)

Corequisite: GEOL 156 or 157. Marine geology and oceanography. Physicochemical processes and geological features of oceans; role of oceans in earth history; interactions of oceans, biosphere, and atmosphere; and natural resource potential.

†156 Oceanography Field Laboratory (2)

Field and laboratory interpretation of samples collected by students during cruise on an oceanographic research vessel. Interpretation of shoreline features. Field trips on weekends. Proseminar 1 hour, field trips 3 hours.

157 Oceanography Laboratory (1)

Corequisite: GEOL 155. Laboratory studies of selected topics in oceanography including analysis of maps, seawater and sediment samples, wave and current patterns, and coastal geomorphology. Laboratory 3 hours.

158 Geology and Society (4)

Social reactions to earthquakes, landslides, subsidence, floods, and volcanism; geological problems in water, mineral, and energy resource development. *No credit toward Geology major.*

201 Elementary Mineralogy (6)

Prerequisites: CHEM 101, MATH 102. Nature of crystalline state, description and projection of crystals, general study of the seven crystal systems; crystal chemistry of nonsilicate minerals. Lecture 3 hours, laboratory 9 hours.

203 Introductory Petrology (2)

Prerequisite: GEOL 201. Elementary methods of rock and rock-forming mineral description, identification, and interpretation involv-

ing igneous, sedimentary and metamorphic rocks. Lecture 1 hour, laboratory 3 hours.

252 Historical Geology (4)

Prerequisite: GEOL 150, 155, or 158. Plate tectonic evolution of continents, oceans, and mountain systems and geologic history of earth; introduction to stratigraphy and development of ancient life. Lecture 2 hours, laboratory 6 hours. **CAN GEOL 4**

272 Computers in Geology (4)

Prerequisites: GEOL 201, MATH 103. Microcomputer applications in geology; geotechnical report writing with a word processor, elementary statistics and spreadsheet techniques, computer-aided drawing of geological maps and diagrams; integration of text and graphics into reports. Lecture 2 hours, laboratory 6 hours.

Upper Division Courses

321 Geology of Southern California (4)

Prerequisites: GEOL 150, 151 or 152. Geologic provinces of southern California including geologic history, structure, rock types, and landforms. Field laboratory on weekends. Lecture 2 hours, laboratory 6 hours.

350N Evolution of Universe and Earth (4)

(also listed as PHYS 350N)

Prerequisite: GE natural science requirement. Origin and evolution of the universe, elements, stars, sun, the Earth, and life upon it.

360 Geological Mapping (4)

Prerequisites: GEOL 203, 252, 272. Topographic map construction and reading. Brunton and tape traverse for construction of cross sections, stratigraphic columns, and geologic maps; methods of field note taking and geologic report writing. Laboratory and field trips 12 hours.

370 Geochemistry (4)

Prerequisites: GEOL 202, 272; prerequisite or corequisite: MATH 206. Interpretation of geological phase diagrams, trace element distribution, isotope tracers, radiometric dating systems, light stable isotopes, aqueous solutions in ore deposits, Eh-ph controls on mineral equilibrium during weathering, and diagenesis.

400 Optical Mineralogy (5)

Optical properties of crystals in polarized light, determination of minerals in thin sections, and immersion oils with the petrographic microscope. Lecture 2 hours, laboratory 9 hours.

401A Igneous Petrology (3)

Prerequisites: GEOL 360, 370. Origin, occurrence, and characterization of igneous rocks; their mineralogy, petrology, geochemistry, and plate tectonics setting.

401B Igneous Laboratory and Field Methods (2)

Prerequisite: GEOL 400; corequisite: GEOL 401A. Laboratory and field study of origin and physical character of igneous rocks. Laboratory and field trips 6 hours.

402 Sedimentary Petrology (4)

Prerequisites: GEOL 370, 410. Analysis of sediments and sedimentary rocks involving their description, classification, and origin. Principles of sedimentation, recognition of environments of deposition. Lecture 2 hours, laboratory and field trips 6 hours.

403 Metamorphic Petrology (4)

Prerequisites: GEOL 360, 401AB, 402. Origin, occurrence, characterizations of igneous rocks; laboratory emphasis on petrographic description and field studies. Lecture 2 hours, laboratory and field trips 6 hours.

410 Structural Geology (5)

Prerequisites: GEOL 360; MATH 206; prerequisite or corequisite: PHYS 101. Theory of rock deformation, structural features of sedimentary, igneous, and metamorphic rocks; deformation of the earth's crust, applied practice in laboratory methods dealing with geologic problems in three dimensions. Lecture 3 hours, laboratory 6 hours.

420N Geology of the National Parks (4)

Geologic history of the U.S. national parks and monuments, emphasizing the process of rock formation, structure, stratigraphy, geomorphology, and paleogeography.

424 Low Temperature Geochemistry (4)

Prerequisite: GEOL 370. Low temperature minerals and their formation; diagenetic reactions; low grade metamorphism; role of fluids in mineral paragenesis.

425 Isotope Geology (4)

Prerequisite: GEOL 370. Applications of Rb/Sr, U/Pb, Sm/Nd isotopes to study of igneous, metamorphic, and sedimentary rocks. Lecture 2 hours, laboratory 6 hours, (arranged).

426 Astrogeology (4)

Prerequisite: GEOL 401. Terrestrial planets; meteorites, the moon, asteroids, comets; remote sensing of the Giant Planets; origin of the solar system.

430 Stratigraphy (6)

Prerequisite: GEOL 402. Paleogeography and reconstruction of ancient environments of sedimentary basins through application of structural, petrologic, stratigraphic, and paleontologic principles; stratigraphic analysis of economic deposits; report writing and field note taking; stratigraphic section measurements and analysis. Lecture 4 hours, laboratory and field trips 6 hours.

431 Invertebrate Paleontology (5)

Prerequisite: GEOL 252. Characteristics and evolution of important fossils in invertebrate animals and fundamentals of stratigraphical paleontology. Lecture 3 hours, laboratory 6 hours.

432 Biostratigraphy (4)

Prerequisite: GEOL 430. Principles of biostratigraphy illustrated through study of important groups of microfossils. Lecture 3 hours, laboratory 3 hours.

433 Quaternary Geology (4)

Prerequisite: GEOL 252. History of the earth during and since Ice Ages; causes, mechanisms, and global physical and biological effects of glaciation.

434 Volcanology (4)

Prerequisites: GEOL 360, 370. Tectonic setting; petrogenesis; interpretation of volcanic rocks.

436 Petroleum Geology (4)

Prerequisites: GEOL 410, 430. Geological occurrence of petroleum including structures, accumulation mechanisms, nature of reservoir rocks, nature of petroleum fluid; evaluation and exploration of methods.

451 Geology of Industrial Rocks and Minerals (4)

Prerequisites: GEOL 360, 370. Sedimentary geochemical cycles and economic aspects of sedimentary deposits and utilization of common rock materials. Lecture 3 hours, laboratory and/or field trips 3 hours.

452 Economic Geology of Metallic Deposits (4)

Prerequisites: GEOL 360, 370. Geochemistry of ore formation occurrence and distribution of metallic deposits, laboratory ex-

amination of ore suites. Lecture 3 hours, laboratory and/or field trips 3 hours.

453 Exploration and Mining Geology (4)

Prerequisites: GEOL 401, 451 and 452 recommended. Geologic, economic, and engineering factors; collection and analysis of geological, geochemical, and geophysical data; written and graphic presentations; planning and carrying out mining programs. Lecture 2 hours, laboratory 6 hours.

460A Summer Field Geology I (5)

Prerequisites: GEOL 403, 410, 430; corequisite: GEOL 460B. First seven weeks of quarter: five weeks in a field camp, off campus, investigating area of sedimentary, metamorphic, and igneous rocks and geologic structure; sixth and seventh weeks on campus preparing maps and reports.

460B Report for Field Geology I (3)

Corequisite: GEOL 460A. Preparation of geologic map, cross sections and report about entire area covered by class in GEOL 460A.

470 X-Ray Crystallography (4)

Prerequisite: GEOL 202. Analysis of crystal structure and chemistry by x-ray powder diffraction methods; laboratory problems applicable to mineralogy, petrology, metallurgy, and inorganic chemistry; introduction to single crystal methods. Lecture 2 hours, laboratory 6 hours.

471 Analytical Geochemistry (4)

Prerequisite: CHEM 201, GEOL 401, or PHYS 206. Intended for upper division students in chemistry, geology, or physics interested in quantitative x-ray fluorescence spectrographic analysis of rocks and minerals. Laboratory problems include evaluation of samples collected from mapped area and statistical summary of results. Lecture 2 hours, laboratory 6 hours.

472 Data Analysis in Geology (4)

Prerequisites: GEOL 272, MATH 206. Application of timesharing computer systems, BASIC programming combined with statistics and geometric methods for treatment of geologic data and solution of typical problems. Lecture 2 hours, laboratory 6 hours.

473 Clay Mineralogy (4)

Prerequisite: GEOL 370. Crystal structures, classification, origin, occurrence, and physicochemical properties of clay minerals; identification by x-ray diffraction and DTA techniques.

480 Principles of Geophysics (4)

Prerequisites: PHYS 103 or 203; MATH 207; GEOL 150 recommended. Internal physics of the earth, interpretation of data and theories concerning the geodetic, tectonic, isostatic, thermal, seismic, gravity, magnetic, radioactive, and electrical phenomena of the earth.

481 Engineering Geology (4)

Prerequisite: GEOL 460AB. Analysis of geologic factors affecting engineering projects; includes mechanical properties of rocks and soils, landslides, slope stability, subsidence, groundwater, erosion and silting, and earthquake effects.

482 Field Methods in Engineering Geology (2)

Prerequisite or corequisite: GEOL 481. Field application of engineering geologic techniques and methods. Laboratory 6 hours.

483 Photogeology (4)

Prerequisite: GEOL 360. Use of aerial photographs to interpret geological structures and lithologies shown on topographic maps; analysis of photos for engineering projects. Lecture 3 hours, laboratory 3 hours.

484 Hydrogeology (4)

Prerequisites: Senior standing in Geology; MATH 207 recommended. Occurrence, movement, quality of ground-water emphasizing geologic factors; investigation, development, and management. One one-day field trip required.

485 Groundwater Management and Models (4)

Prerequisite: GEOL 484. Mathematical models as tools of groundwater management; case histories of various levels of groundwater management; laboratory includes verification and prediction using finite difference model on computer systems. Lecture 3 hours, laboratory 3 hours including one field trip.

490 Special Topics in Modern Geology (2-4)

Prerequisites: Upper division or graduate standing; other prerequisites may be stated in departmental announcement. Current developments in modern geology, such as volcanology, hydrogeology, clay mineralogy, or plate tectonics. May be repeated as subject matter changes.

491 Special Laboratory Topics in Modern Geology (1-3)

Corequisite: GEOL 490 when appropriate; see *Schedule of Classes* for specific requirement. Experimental techniques in modern geology. May be repeated as subject matter changes.

497 Senior Problem (3)

Prerequisites: Senior standing in Geology, prior instructor consent to act as sponsor. Individual study of an applied geologic field or laboratory problem; progress reports, final oral and written report required.

499 Undergraduate Directed Study (1-3)

Prerequisites: Consent of an instructor to act as sponsor, ability to assume responsibility for independent work and to prepare written and oral reports. Project selected in conference with sponsor before registration; progress meetings held regularly.

HISTORY

School of Natural and Social Sciences

DEPARTMENT OFFICE

King Hall C4066

Phone: (213) 343-2020

The Department of History provides opportunities to study the development and interaction of the world's cultures. In addition to a broad curriculum in local, national, and world history, the department offers a wide variety of special topics courses. The program thus contributes to the attainment of intellectual and cultural objectives of a liberal education appropriate to careers in law, journalism, business, government service, librarianship, and teaching, or to advanced study.

The department offers the Bachelor of Arts and Master of Arts degrees in History, and a minor in History for students majoring in other areas. The undergraduate programs are described below, and the graduate program is described in the *Graduate Programs* section. The department also participates in the interdisciplinary Bachelor of Arts degree program in Social Science. This program is described under the area of Social Science.

The Department of History administers a minor in Religious Studies designed to explore the forms and traditions of religion that have appeared in human culture.

The Faculty

Emeriti: Butrus Abd al-Malik, Robert C. Catran, Seymour L. Chapin, Louis C. DeArmond, Emmett A. Greenwalt, Edward O. Guerrant, Milton W. Meyer, Earl H. Phillips, Kent L. Steckmesser.

Professors: John M. Allswang, Francisco Balderrama, Hugh S. Bonar, Jr., Richard Dean Burns (*Chair*), Stanley M. Burstein, Daniel Crecelius, Donald O. Dewey, Eugene R. Fingerhut, Timothy Fox Harding, Udo Heyn, Vicente F. R. Pilapil, Kenneth J. Pratt, Neil Rabinov, Martin J. Schiesl, Arthur L. Smith, Jr.

Associate Professors: Carole Srole, Lamont Yeakey, Yuen-Sang (Philip) Leung.

Assistant Professor: Arnold Pincus.

Bachelor of Arts Degree

The Bachelor of Arts degree program in History is designed to provide an understanding of societal development in all aspects of experience and environment and of the relevance of the past to the present. The program permits pursuit of a wide range of interests within the purview of historical methodology. Students should confer in advance with a history adviser to select the courses and program appropriate to their goals.

Requirements for the Major (80 units)

The major requires 80 units, including a required core of 24 lower division and 40 upper division units plus 16 units of electives.

Foreign Language Competence

History majors are urged to develop competence in at least one foreign language.

Lower Division Required Courses (24 units):

HIST 110ABC World Civilization I-III (4, 4, 4)

HIST 190 Introduction to History (4)

HIST 202AB United States Civilization (4, 4)

Upper Division Required Courses (24 units)

Select 8 units each from groups A, B, and C for a total of 24 units:

Group A Western Civilization/Europe

History of Science: HIST 380, 400ABC, 402

Ancient: HIST 311, 410-413

Europe (*Chronological*): HIST 421-430

Europe (*Topical*): HIST 350, 431-447

Group B The United States

U.S. (*Chronological*): 470-475

U.S. (*Topical*): 458, 459, 476-489

Group C The Non-Western World

Africa: 414AB-416

Asia: 490AB, 494ABC, 495AB, 496

Latin America: 461-466

Middle East: 419, 420, 491, 492

Special Studies (12 units):

Select three HIST 450 courses, one appropriate to each group above (A, B, C).

Historiography (4 units):

HIST 493

Electives (16 units):

Select any 400-level courses in history; 451-453 and 499 may be included. With prior departmental approval, a maximum of 8 units may be taken in fields outside history.

Minor in History

The minor in History is available for students majoring in other fields. The 36-unit program includes a sequence of courses with the same general objectives as the History major, and may be of particular value to students majoring in business, engineering, the sciences, and fine or applied arts.

Requirements for the Minor (36 units)

Lower Division Required Courses (20 units):

HIST 110ABC, 202AB

Upper Division Required Courses (12 units):

Select one course each from groups A, B, and C listed under required upper division courses in the Bachelor of Arts degree in History.

Elective (4 units):

Select any 400-level course in history.

Minor in Religious Studies

To complete the minor in Religious Studies, students must complete a total of 32 units from the courses listed below, with adviser approval. Core requirements total four courses (16 units); electives, required in Religious Studies and at least two of the three areas offered, constitute the remainder of the program (16 units).

Prior approval must be obtained for enrollment in special topics and directed study courses. Each student will submit a study program for approval to the director of the Religious Studies program. A maximum of eight units from a student's major may be applied on the minor.

Requirements for the Minor (32 units)

Core requirements (16 units):

- RELS 200 Introduction to Religious Studies (4)
 PHIL 238 Comparative Religions (4)
 RELS 300 Judaism, Christianity, Islam (4)
 RELS 350 Religions in the U.S. (4)

Electives (16 units):

- ART/RELS 450 Art, Religion, and Technology (4)
 RELS 410 Asian Religions (4)
 RELS 425 Themes of Adult Life in Religions (4)
 RELS 435 Religion and Sex Roles (4)
 RELS 454 Special Topics in Religious Studies (4)
 RELS 461 Religion and the Nuclear Age (4)
 RELS 499 Undergraduate Directed Study (4)

Select courses from at least two of the following three areas, with adviser approval.

Area I. Anthropology, Art, Literature, Mythology, Sociology

- ANTH 437 ART 406, 416, 450, 454, 499*
 ENGL 258, 482, 491*, 499* SOC 445, 454*, 499*

* when applicable

Area II. History

- HIST 401, 419, 450*, 451, 490A, 490A, 494A, 495A, 499*
 JAPN 310

* when applicable

Area III. Philosophy

- PHIL 311, 354*, 418, 431, 435, 445, 452, 495*, 499

* when applicable

Courses in History (HIST)

Lower Division Courses

110ABC World Civilization I, II, III (4, 4, 4)

110A Comparative examination of the ancient world's classical civilizations from 4500 B.C. to 500 A.D.

110B Comparative examination of world civilizations from 500 to 1700 A.D. Great Medieval civilizations; interaction of Western civilization with other medieval civilizations.

110C Dominance of Western civilization since 1700: science, technology, industrialism, urbanization, and nationalism. Resistance and reaction in the 20th century.

HIST 110ABC = CAN HIST SEQ A

150 Asian-American History (4)

Asian experience in America from 1850 to present. Emphasis on historical experience of Chinese, Japanese, Filipino, and Korean immigrant groups.

190 Introduction to History (4)

Introduction to historical research and writing; ideas, methods, and practical experience in investigating historical problems.

202A United States Civilization (4)

Development of U.S. from earliest colonial settlement through Civil War. **HIST 202A = CAN HIST B**

202B United States Civilization (4)

Political, economic, social, and cultural development of U.S. from Civil War to present. **HIST 202B = CAN HIST 10**

253 Caribbean History (4) (also listed as PAS 253)

Caribbean history and development, including history of indigenous peoples, European colonialism, slavery, resistance, and independence. Includes Spanish-, English-, French-, and Dutch-speaking Caribbean islands.

Upper Division Courses

Upper division standing is prerequisite to all 400-level history courses, unless otherwise noted.

311 Classical Civilization and the Modern World (4)

History of classical civilization and its legacy. Origin of the classical tradition, its social, political, and cultural manifestations, and its transmission to the modern world.

350 Evolution and the Modern World (4)

(also listed as ART 350, ENGL 350, and PHIL 350)

Prerequisite: GE humanities requirement. History of the idea of evolution from antiquity to the present and its impact on the culture of the 20th century.

380 Ancient and Modern Science (4)

(also listed as CHEM 380N)

Prerequisite: GE natural science requirement. Systematic analysis of ancient scientific thought as science and its relationship to modern science.

392 Editing and Publishing Perspectives (1-4)

Prerequisite: instructor consent. Techniques and practice in editing and producing a scholarly journal of research and review. May be repeated to maximum of 6 units.

400A History of Science: Antiquity to Renaissance (4)

Development of science in its relation to main current of Western civilization from classical antiquity to the Renaissance.

400B History of Science: Renaissance to 1800 (4)

Development of science in its relation to main currents of Western civilization from about 1400 to time of French Revolution.

400C History of Science: 19th and 20th Centuries (4)

Development of science in its relation to the main currents of Western civilization since 1800.

401 Science, Religion, and Culture in World History (4)

Prerequisites: GE natural and social science requirements; RELS 200 or PHIL 238. Interaction of science, religion, and culture in several great civilizations during specific periods of history.

402 History of Astronomy (4)

Emergence and development of astronomical concepts and problems from earliest time to present.

410 Ancient Near East: 4000-323 B.C. (4)

Extensive study of earliest civilizations—Egyptian, Mesopotamian, Syrian, Persian, and Hebrew—and their historical legacy to Western world.

411 History of Ancient Greece (4)

Political and cultural study of Ancient Greece from Minoan-Mycenaean period to end of 5th century.

412A Early Rome, The Republic (4)

Internal and external development of the Roman republic from 8th Century B.C. to the death of Julius Caesar, 44 B.C.

412B The Roman Empire (4)

Roman history from the death of Julius Caesar, 44 B.C., to the fall of the city, 410 A.D.

413 Greek History: The Alexandrian Age (4)

Political, social, and religious developments from conquest of Alexander to rule of Islam: a history of Hellenistic, Roman, and early Byzantine rule in Near East.

414A Traditional Sub-Saharan Africa (4)

African continent south of the Sahara, earliest times to latter half of 18th century, with emphasis on political development.

414B Modern Sub-Saharan Africa (4)

Partition of Africa in 19th century, systems of European administration, reaction to colonial rule, birth of nationalism, social, economic, and political changes to 1945.

415 Contemporary Sub-Saharan Africa (4)

Post-World War II independence revolutions in black Africa; resistance to change in southern Africa; contemporary political, social, and economic problems of Africa south of the Sahara.

416 The Republic of South Africa (4)

South Africa, 17th century to present, emphasizing economic growth, development of political and social attitudes, and entrenchment of white rule.

419 Classical Age of Islamic Civilization, 600–1258 (4)

Rise of Islam, the Caliphate, the Crusades, the Turkish and Mongol invasions.

420 Great Medieval Islamic Empires, 1258–1798 (4)

Dissolution of Arab Empire; Mamluk rule in Egypt; Il-Khanid, Timurid and Safavid Persia; rise of Ottoman Empire; Middle East culture and society on the eve of Westernization.

421 The Early Middle Ages (4)

Europe from fall of Roman Empire to 13th century: political, social, economic, and religious development of medieval Europe.

422 The Later Middle Ages (4)

Emergence of modern Europe and the period's cultural contributions to modern era.

423 Renaissance and Reformation (4)

Changes that shaped the course of early modern Europe to 1600, with emphasis on nature of period's leading phenomena, the Renaissance and the Reformation.

424 Seventeenth Century Europe (4)

Culmination of Wars of Religion, beginning of Age of Reason, and nature of absolutism in period from 1600 to 1715.

425 Eighteenth Century Europe (4)

The Ancient Regime and the Enlightenment to the French Revolution.

426 French Revolution and Napoleon (4)

History of Europe during period of French Revolution and Napoleon.

429 Europe: 1914 to Present (4)

Political, economic, cultural, and diplomatic history of Europe, World War I to present.

430 Europe: 1815–1914 (4)

European nationalism, industrial growth, imperialism, and the politics of power.

431 History of Modern Germany (4)

History of modern Germany, with emphasis upon 20th century.

437 Social History of Europe (4)

Changes in social institutions (family, church, polity), relationships (sex, class, race, ethnicity), and processes (mobility, control, disorder) from the Ancient Regime to present.

438 Economic History of Europe (4)

Europe's economic ideologies and institutions, with emphasis on economic problems, development, welfare, and reform, from the Industrial Revolution to present.

439 Intellectual History of Europe (4)

Thought, belief, and opinion in Europe, with emphasis on principal thinkers and ideas as they relate to contemporaneous historical values from the Enlightenment to present.

440 Early Modern England (4)

History of England from 14th century to 1688, with emphasis upon constitutional, social, political, and economic development.

441 British History from 1688 to 1865 (4)

Historical development of Britain from Glorious Revolution to death of Palmerston.

442 Great Britain since 1865 (4)

Historical development of Great Britain from 1865 to present.

443 The British Empire (4)

Political and economic development of British Empire since late 18th century, with major consideration to expansion of colonial empire and evolution of modern empire-commonwealth.

444A Spain and Portugal to 1700 (4)

Political and institutional development of Spain and Portugal from antiquity to War of Spanish Succession.

444B Spain and Portugal since 1700 (4)

Political and institutional development of Spain and Portugal from 1700 to present.

445 Foundations of the Russian Empire (4)

Political, economic, social, and cultural history of Russia from earliest times to accession of Alexander I in 1801.

446 Imperial Russia: 1801–1917 (4)

History of Russia from accession of Alexander I to end of Romanov dynasty in 1917.

447 The Soviet Union (4)

Background and history of revolutions of 1917 and subsequent historical development of Soviet Union.

450 Special Studies in History (4)

Different theme or episode in history examined thoroughly each quarter in the manner of an undergraduate seminar. Individual readings, written and oral reports, and discussion. May be repeated for credit as topic changes.

451 Special Lectures in History (2–4)

Lectures on special historical topics not regularly given by department. May be repeated for credit as topic changes.

452 Studies in World at War, 1939–1945 (4)

Selected topics in the history of World War II. May be repeated for credit as topic changes.

453 Studies in War and Peace (4)

Selected topics in history of human conflict, from security and deterrence to arms control, disarmament, pacifism, and other alternatives to war. May be repeated for credit as topic changes.

456 History of Emotions (4)

Prerequisite: GE social science requirement. Analysis of historical changes in emotions: survey of private emotions (e.g., marriage,

childbearing, sexuality), institutional emotions (e.g., self-identity), and public emotions (e.g., charisma, patriotism).

458 History of the American Environment (4)

Prerequisite: GE American Institutions requirement. The relationship between people and land in America from colonial times to the present; the evolution of laws, technology, and public attitudes concerning the environment.

459 Society and the Nuclear Genie (4)

(also listed as POLS 459)

Prerequisite: GE social science requirement. Development of atomic energy and its consequences for society, from the Manhattan Project to the present. Strategic role of scientists in such development and in public policy making about atomic energy.

461 Latin America: Colonial Period (4)

Prehistory of the Americas south of the U.S.; European background, period of conquest, and colonial development to time of wars for independence.

462 Latin America: 1810-1914 (4)

Struggle for independence and social, political, and economic development of Latin American nations during 19th and early 20th centuries.

463 Latin America: 1914 to Present (4)

Social, political, and economic development of Latin American nations since beginning of World War I.

465 Brazil (4)

Brazilian history from Portuguese occupation of eastern South America through colonial period, independent empire, and the republic to present time.

466 Mexico (4) (also listed as CHS 466)

Development of Mexican people and nation since time of aborigines; social, political, and economic development, with particular attention to more recent period.

467 Modern Mexico and the Chicano People (4)

(also listed as CHS 467)

Prerequisites: CHS 111; recommended: CHS/HIST 466. History of modern Mexico and its impact upon the Chicano people from separation from Mexico in 1848 to the present.

470 The Colonial Heritage: The United States, 1607-1763 (4)

Transfer of Old World institutions to British North America. Development of colonial society to end of French and Indian War.

471 Era of Revolution: The United States, 1763-1815 (4)

Causes and nature of American Revolution and development of the new nation through end of War of 1812.

472 Democracy, Dissent, and Disunion: The United States, 1815-1877 (4)

Political democracy; nationalism and sectionalism; slavery and reform; the Civil War and Reconstruction.

474 Industrialism and National Expansion: The United States, 1877-1929 (4)

Industrialization, urbanization, and foreign expansion; the Progressive Era, World War I, the 1920s.

475 National Transformation and International Power: The United States, 1929 to Present (4)

Domestic and international development since 1929; the U.S. as a society and in the greater world in the present day.

476 Economic History of United States (4)

American economic development, industrialization, national legislation in industry and commerce.

477 United States Social History (4)

The social structure; social relations of American individuals, families, and groups; colonial period to the present.

478 United States Diplomatic History (4)

Foreign relations of U.S. with emphasis on 20th century.

479 Constitutional History of United States (4)

U.S. Constitution and American constitutionalism from colonial times to present.

480 Ethnicity and Immigration in American History (4)

Role of national, racial, and religious minority groups, and of immigration, in American history.

481 Special Topics in the U.S. West (4)

Special topics lectures about history of the West, e.g., the Westward Movement, the urban West, Southwestern history, and women in the West. May be repeated for credit as topic changes.

483 Rise of Urban America (4)

Development of the American city from mid-19th century to present. Process of urban growth, structure of urban institutions, and consequences of industrialization.

484 Civil War and Reconstruction (4)

Forces that split the Union; slavery, war, and the position of blacks; Reconstruction and its failures.

485 U.S. Women to 1877 (4)

Social, intellectual, economic, and political experiences of U.S. women from pre-conquest to 1877.

486 U.S. Women, 1877 to the Present (4)

Social, intellectual, economic, and political experiences of U.S. women, 1877 to present.

487 History of U.S. Work and Working People (4)

Transformation of work and social and political relations of workers in the U.S. from 1600 to the present.

488 California (4)

Political, economic, and cultural history of California from Spanish times to present.

487 History of U.S. Work and Working People (4)

Transformation of work and social and political relations of workers in the U.S. from 1600 to the present.

489 Los Angeles (4)

Development of Los Angeles and its metropolitan areas from pueblo times to present.

490A Traditional India (4)

Indian civilization from earliest times to 1757.

490B Modern India and Pakistan (4)

Rise of British power, its political, economic, and social impact; reaction to British rule; rise of nationalism and reformist movements; social, political, and economic development since 1947.

491 The Middle East and the West, 1768-1919 (4)

Cultural and political impact of West, dissolution of Ottoman Empire, reformist movements and nationalism in Middle East, birth of modern state system.

492 Nationalism, Revolution, and War in Middle East, 1919-Present (4)

Rise of modern independent states in Middle East; survey of political, social, and economic developments in Middle Eastern states, with particular emphasis on attempts to create stable democratic regimes.

493 Historiography (4)

Prerequisites: HIST 190, passing WPE score. Historical writing; practical experience in historical composition.

494A Traditional China (4)

Chinese civilization from earliest times to 1500.

494B Modern China (4)

Social, political, and economic development of mainland China from 1500 to 1949.

494C People's Republic of China (4)

Political, economic, social, and foreign relations issues of Communist China since 1949.

495A Traditional Japan (4)

Japanese civilization from earliest times through traditional eras until 1868.

495B Modern Japan (4)

Social, political, and economic development of Japan since 1868.

496 History of Southeast Asia (4)

History and civilization of Southeast Asia with emphasis on political, social, and economic developments since 1800.

499 Undergraduate Directed Study (1-4)

Prerequisite: Consent of an instructor to act as sponsor. Project selected in conference with sponsor before registration; progress meetings held regularly; and a final report submitted. May be repeated to maximum of 8 units as topic changes.

Courses in Religious Studies (RELS)**Lower Division Course****200 Introduction to Religious Studies (4)**

Methods and concepts in religious studies; multidisciplinary approaches to the study of ancient and contemporary religious phenomena in literate and illiterate cultures.

Upper Division Courses**300 Judaism, Christianity, Islam (4)**

Origin and development of Judaism, Christianity, and Islam; comprehensive study of ideas, beliefs, and practices in the three religions.

350 Religions in the United States (4)

Principal figures, groups, issues, and trends in theological-historical perspective in the U.S.

410 Asian Religions (4)

Prerequisite: RELS 200 or PHIL 238. Comparative analysis of Asian religions; history, rituals, religious experiences, beliefs, ethics, religious institutions, and interrelationships with culture.

425 Themes of Adult Life in Religion (4)

Prerequisite: RELS 200 or PHIL 238. The role of religion in different stages and dimensions of adult life in major world religions.

435 Religion and Sex Roles (4)

Prerequisite: RELS 200 or PHIL 238. Images of the roles of men and women and images of God in the major religions of the world; religious views of sexuality and asceticism.

450 Art, Religion, and Technology (4)

(also listed as ART 450)

Prerequisite: RELS 200 or PHIL 238 or ART 101A, 101B, or 101C. Relations among art, religion, and technology in selected periods of history in major cultures of the world.

454 Special Topics in Religious Studies (4)

Topics of special interest as announced in *Schedule of Classes*. May be repeated for credit as subject matter changes.

461 Religion and the Nuclear Age (4)

Prerequisites: GE natural science requirement; RELS 200 or PHIL 238. Implications and challenges of nuclear weapons, nuclear power, and modern concepts of physics for the religions of the world.

499 Undergraduate Directed Study (1-4)

Prerequisites: RELS 200, instructor consent to act as sponsor. Project selected with instructor before registration; progress meetings held regularly; final report. May be repeated for credit with different topic.

LATIN AMERICAN STUDIES

School of Natural and Social Sciences

PROGRAM OFFICE

Library North B552

Phone: (213) 343-2180

Latin American Studies is an interdisciplinary program that combines subject matter from several academic disciplines to give the student a broad background encompassing the historical, social, cultural, and geographic aspects of the region. It offers students interested in Latin America the opportunity to pursue a major in this field of study leading to the Bachelor of Arts and Master of Arts degrees. The undergraduate program is described below, and the graduate program is described in the *Graduate Programs* section.

Program Coordinator: Marjorie Bray.

The Faculty

Instruction for the Latin American Studies program is provided by members of the faculty from cooperating disciplines in the schools of Natural and Social Sciences, Arts and Letters, Business and Economics, and Education.

Bachelor of Arts Degree

The Bachelor of Arts degree program in Latin American Studies affords the student a wide range of career opportunities in the U.S. and abroad. The growth of the Latin population in the U.S. has produced an increasing need for trained persons with a knowledge of the region to work in government, teaching, business, and other fields.

Requirements for the Major (72-129 units)

The major requires 72-129 units depending on the option selected. The required language competence may be demonstrated by examination.

• General Option (72 or 76 units)

Lower Division Required Courses (24 or 32 units)

ANTH 250 Cultural Anthropology (4)

GEOG 150 Human Geography (4)

LAS 150 Latin America in the World Context (4)

PORT 100AB Elementary Portuguese (4, 4)

(or SPAN 300A or 315 listed below)

SPAN 200ABC Intermediate Spanish (4, 4, 4)

Upper Division Required Courses (24 or 28 units)

ANTH 404 Peoples of South America (4)

ANTH 408 Peasant Cultures of Middle America (4)

GEOG 427 Mexico and Central America (4)

GEOG 428 South America (4)

LAS 497 Proseminar: Methodology, Research Writing

Selected Topics about Latin America (4)

POLS 451 Latin American Politics (4)

SPAN 300A Composition and Grammar (4) or

SPAN 315 Spanish-American Civilization (4)

(or PORT 100AB listed above)

Select 8 units in history:

HIST 461 Latin America: Colonial Period (4)

HIST 462 Latin America: 1810-1914 (4)

HIST 463 Latin America: 1914-Present (4)

HIST 465 Brazil (4) CHS/HIST 466 Mexico (4)

Elective Courses (12 units):

Four units may be selected from 499 courses in anthropology, Chicano studies, geography, history, Latin American studies, philosophy, political science, or Spanish. Select from following courses, with adviser approval.

*ANTH 454L	ART 446
BCST/LAS 434	CHS 311, 400, 406, 430, 444, 468
CHS/HIST 466, 467	ECON 460
GEOG 433, *496, *497	
HIST 444AB, *450, *451, 461, 462, 463, 465	
LAS 424, 435, 450	LAS/PAS 442, 460
MUS 458	PAS 423
PAS/POLS 456	PHIL 433
*POLS 454	SOC 442
SPAN 300AB, 315, 411, 413, 417, 419, 421, 429, *454, *459, *460, 475, 483, 485	

*when topic is Latin America

• Multiple Subject Credential Option (127-129 units)

BLOCK I. ENGLISH, COMMUNICATION (32 units)

General Education Requirements (16 units):

ENGL 190, 250 SPCH 150, 176

Major Requirements (16 units):

ENGL 308 or 360 or 406

Select 12 units from following:

ENGL 401, 403, 405, 410, 430, 450

SPCH 489†, 490, 494

† if not used to meet GE upper division theme requirement

BLOCK II. MATHEMATICS AND SCIENCE (24-26 units)

General Education (16-18 units):

MATH 100 or 102 (4 units)

Select 4-5 units from following:

BIOL 155, 156 MICR 151

Select 4-5 units from following:

ASTR 151 with 152 CHEM 158 with 159

GEOG 150 with 151 or 152 GEOL 155 with 156 or 157

PHYS 150

Select 4 additional units from following to bring total units in this block to 16-18:

ANTH 260 BIOL 165

GEOG 160 GEOL 158

PHYS 155

Major Requirements (8 units):

MATH 120 (4 units)

Select 4 units from following with attention to prerequisites:

ANTH 260 BIOL 165, 361N

GEOG 160, †433 PSY 170

† if not used to meet GE upper division theme requirement

Another course may be selected, with adviser approval, from astronomy, biology, chemistry, geology, mathematics, microbiology, and physics courses.

BLOCK III. SOCIAL SCIENCES (40 units)

American Institutions Requirements (8 units)

HIST 202A or 202B POLS 150

General Education Requirements (12 units):

ANTH 250 or CHS 111 or GEOG 150
LAS 150 PSY 150

Major Requirements (20 units):

No more than 2 courses from the same department may be included (excluding LAS 497). Select courses with LAS adviser approval.

LAS 497 (4 units) plus

CHS 311 (4), CHS/HIST 466 (4), and 8 units from list below or CHS/HIST 467 (4), GEOG 427 (4), and 8 units from list below or CHS 444 (4) and 12 units from list below.

Select 8 or 12 units as indicated above; include at least one CHS course.

ANTH 404, 408	BCST/LAS 434
CHS 405, 406, 410, 430, 468, 470	
CHS/HIST 466, 467	GEOG 427, 428
HIST 461, 462, 463, 465	LAS 424, 450 **, 499
†LAS/PAS 460	PAS/POLS 456
POLS 451	

** may be repeated to total of 8 units

† if not used to meet GE upper division theme requirement

BLOCK IV. HUMANITIES (28 units)

General Education Requirements (8 units):

#ART 400 *SPAN 200A or 205A

#meets GE humanities (C2) requirement

Major Requirements (20 units):

CHS 440 MUS 400
* SPAN 200BC or 205B

* Native Spanish speakers may take 205AB

Select 4 or 8 units from following to bring total units in major requirements to 20:

ART 446	CHS 201, 257, 258, 446
†LAS 435	MUS 458
PHIL 433	SPAN 315, 411, 413, 421

† if not used to meet GE upper division theme requirement

Additional major requirement (3 units):

§PE 420

§ meets GE Lifelong Understanding requirement (1 unit waived)

To meet credential requirement

HS 456

GENERAL EDUCATION UPPER DIVISION THEME (12 units)

Select one general education upper division theme and complete one course in each of the three areas within that theme. Theme courses are not part of the major but are included in credential requirements.

Minor in Latin American Studies

The minor in Latin American Studies is designed to provide students not majoring in Latin American Studies with a concentration of courses that will impart a knowledge of the field and enhance their career opportunities and general knowledge in a focused manner. The minor requires a total of 32 units, 12 in required courses and 20 in electives.

Requirements for the Minor (32 units)

Required Courses (12 units):

LAS 150 Latin America in the World Context (4)
LAS 497 Proseminar: Methodology, Research Writing
Selected Topics about Latin America (4)
SPAN 200C** Intermediate Spanish (4)

** requirement may be met by examination and unit requirement met with course selected from elective list

Electives (select 20 units from following, with courses from at least three fields)

ANTH 404, 408, *454L	ART 446
BCST/LAS 434	CHS 311, 400, 406, 430, 444, 468
CHS/HIST 466, 467	ECON 460#
GEOG 427, 428, 433#, 496*, 497*	
HIST 450*, 451*, 461, 462, 463, 465	
LAS 424, 435, 450, 499	LAS/PAS 442#, 460#
MUS 458	PAS 423
PAS/POLS 456	PHIL 433
POLS 451, *454	SOC 442
SPAN 300AB, 315, 411, 413, 417, 419, 421, 429, 454*, 459*, 460*, 475, 483, 485	

* when topic is Latin America

no more than two of these courses

The Credential Program

The B.A. degree in Latin American Studies (credential option) has been approved by the Commission on Teacher Credentialing for examination waiver for the Multiple Subject credential and helps students prepare for the cultural and language examinations for the Multiple Subject credential with Bilingual Emphasis. Interested students should consult advisers in the Latin American Studies office and the School of Education. Refer to the undergraduate School of Education chapter of this catalog for regulations governing all teaching credential programs.

Courses in Latin American Studies (LAS)

Lower Division Courses

150 Latin America in the World Context (4)

An interdisciplinary introductory survey of the history, society, peoples, politics, geography, and artistic culture of Latin America with emphasis on its relation to the rest of the world.

Upper Division Courses

395 Community Service in Latin American Studies (1-4)

Prerequisites: Approval by departmental faculty adviser, acceptance by a community agency. Participation as a volunteer in work of a community agency or activity utilizing professional and/or vocational skills in service to community. Graded CR/NC. May be repeated to maximum of 9 units.

424 The United States and Latin America (4)

Examination and analysis of relations between the U.S. and Latin American nations; the inter-American system.

434 Latin American Radio Documentary Production (4)*(also listed as BCST 434)*

Recommended prerequisites: BCST 320 or 2 upper division Latin American content courses in history, political science, or Latin American studies. Analysis of political, economic, and cultural issues in Latin America, utilizing primary sources; production of research in the form of broadcasting tapes.

435 Race and Culture in Latin America (4)

Prerequisite: Upper division standing. The role of race in Latin America as expressed in culture and the arts.

442 Cultural Impact of Third World Development (4)*(also listed as PAS 442)*

The development process in the Third World as it affects and is affected by art and intellectual life.

450 Special Studies in Latin American Studies (1-4)

Prerequisites: Upper division standing, others as needed for specific topic. Selected topics in Latin American Studies differ each quarter; examined in manner of undergraduate seminar: individual readings; written/oral reports, discussion. Repeatable to maximum of 12 units as subject matter changes.

460 Dynamics of Social Change in the Third World (4)*(also listed as PAS 460)*

Processes and development of social change in the Third World and their relevance to the U.S.

497 Proseminar: Methodology, Research Writing Selected Topics about Latin American Problems (4)

Prerequisites: LAS 150, ENGL 190, passing WPE score, reading ability in Spanish or Portuguese. Senior level interdisciplinary examination of approaches to Latin American Studies; preparation of research paper about topic selected in consultation with instructor.

499 Undergraduate Directed Study (1-4)

Prerequisite: Instructor consent to act as sponsor. Project selected in conference with sponsor before registration, progress meetings held regularly, and final report submitted. May be repeated for credit.



MATHEMATICS AND COMPUTER SCIENCE

School of Natural and Social Sciences

DEPARTMENT OFFICE

Simpson Tower F206
Phone: (213) 343-2150

The Department of Mathematics and Computer Science offers undergraduate programs leading to the Bachelor of Arts and Bachelor of Science in Mathematics, both with several options, and a Bachelor of Science degree in Computer Science with two options. Programs in the department allow preparation for graduate study and professional careers in a variety of directions.

The Master of Science degree program in Mathematics is described in the *Graduate Programs* section.

The Faculty

Emeriti: Charles L. Clark, Robert J. Diamond, Evelyn B. Granville.

Professors: Russell J. Abbott, Butrus G. Basmaji, Gerald Beer, Wayne W. Bishop, Marshall Louis Cates (*Chair*), Paul L. Chabot, Derek K. Chang, John H. DeHardt, Grant A. Fraser, Harry S. Hayashi, Richard Katz, Donald I. Kiel, Raymond B. Kilgrove, Grigori Kolesnik, June A. Lester, Rina Ling, Hrushikesh N. Mhaskar, Jagdish Prasad, Pudukkottai Subramanian, Stewart M. Venit, Andrei Verona.

Associate Professors: Vladimir N. Akis, Carl E. Gordon, Michael J. Hoffman, Nandlal Jhunjhunwala, Ilias G. Kastanas, Robert L. Meyer, Gordon L. Nipp, Robert K. Tamaki, Nguyen Uy.

Assistant Professors: Richard W. Chamberlain, R. Sekhar Pamula, Behzad Parviz, Rodolfo G. Tamez.

Bachelor's Degrees

Two baccalaureates in mathematics and one in computer science are offered. A major in computer science prepares students for employment in computer-related positions in industry and government. A major in mathematics prepares students to teach in secondary schools, work as research assistants in industry and government, or enter graduate school to prepare for positions in higher education, industry, and government.

The Bachelor of Arts or Bachelor of Science degree may be obtained in four years if adequate preparation has been secured in high school, e.g., algebra (2 years), geometry, trigonometry. Students who have not had this preparation or whose command of these subjects is weak may be advised to strengthen their knowledge before attempting college mathematics.

For each degree a minimum *C* (2.0) grade point average is required in all upper division courses included in the major.

Bachelor of Science Degree in Computer Science

The objective of the Bachelor of Science degree in Computer Science is to prepare qualified students for employment in industry in the area of computer science, primarily in positions such as applications programmer, systems programmer, and systems analyst. A total of 198 units is required for the degree, including 108 units in the major.

Requirements for the Major (108 units)

Lower Division Required Courses (56 units):

- CS 201 Introduction to Programming (4)
- CS 202 Programming with Data Structures (4)

- CS 240 Computer Organization and Assembly Language (4)
- CS 291 FORTRAN Programming (4) or
- CS 292 C Programming (4) or
- CS 293 Ada Programming (4)
- EE 244 Digital Engineering (4)
- MATH 206-209 Calculus I-IV (4 each)
- MATH 255 Introduction to Matrix Theory (4)
- MATH 274 Introduction to Statistics (4)
- PHYS 201-203 General Physics (4, 4, 4)

Upper Division Required Courses (28 units):

- CS 340 Assembly Language and Systems Programming (4)
- CS 412 Data Structures (4)
- CS 432 Programming Languages (4)
- CS 437 Software Engineering (4)
- CS 440 Introduction to Operating Systems (4)
- CS 444 Computer Architecture (4)
- MATH 384 Discrete Structures (4)

Electives/Option

Electives (24 units):

Students may select one of the 24-unit options. If no option is selected, select 24 units from the elective block.

• Scientific Programming Option (24 units)

Required Courses (12 units):

- MATH 215 Differential Equations (4)
- MATH 470 Numerical Analysis I (4)
- MATH 471 Numerical Analysis II (4)

Electives (12 units):

Select 12 units from courses listed in the elective block.

• Systems Programming Option (24 units)

Required Courses (16 units):

- CS 442 Advanced Operating Systems (4)
- CS 486 Grammars, Languages, and Automata (4)
- CS 488 Compilers (4)
- EE 347 Computer Logic Design (4)

Electives (8 units):

Select 8 units from the courses listed in the elective block.

ELECTIVE BLOCK

- CIS 383 Advanced COBOL (4)
- CIS 482 Basic Information Systems Design (4)
- CS 422 Principles of Data Base Systems (4)
- CS 450 Computer Graphics (4)
- CS 454 Topics in Advanced Computer Science (4)
- CS 460 Artificial Intelligence (4)
- MATH 474 Theory of Probability (4)
- MATH 475 Introduction to Mathematical Statistics (4)

Bachelor of Arts Degree in Mathematics

The Bachelor of Arts degree curriculum of 186 units prepares students for positions in government and for graduate work in mathematics.

Requirements for the Major (78-80 units)*Lower Division Required Courses (30-32 units):*

CS 201 Introduction to Programming (4) or
 CS 290 Introduction to FORTRAN Programming (2)
 MATH 206-209 Calculus I-IV (4 each)
 MATH 255 Introduction to Matrix Theory (4)
 PHYS 201-202 General Physics (4, 4)

Electives in Related Areas (8 units):

Select from among the following or other appropriate courses with approval of adviser and attention to prerequisites:

BIOL 302, 408	CE 202
CHEM 122, 123, 401, 403, 414	CIS 294
ECON 309, 310, 391, 403, 409, 413, 414	
EE 332	ENGR 201, 204, 209, 490
GEOL 472	ME 306, 326A, 403, 408
MGMT 306, 496	PHIL 250, 404, 405
PHYS 203-205, 410AB, 427, 428, 432A	

Upper Division Required Courses (12 units):

MATH 325 Mathematical Notation and Proof (4)
 MATH 455 Modern Algebra I (4)
 MATH 465 Advanced Calculus I (4)

Electives/Option*Electives (28 units):*

Students may select one of the following 28-unit options. If no option is selected, choose 8 units from MATH 403, 420, 430, 435, 446, 456 or 457, 463, 466 or 467, 470 or 471, and 474, and 20 units from upper division CS and MATH courses (excluding MATH 342), including at least 8 units of MATH.

Each option consists of 28 units of related courses selected from upper division electives; however, an option is not required.

• Option in Pure Mathematics (28 units)

This option prepares students for graduate work in mathematics.

Required Courses (16 units):

MATH 456 Modern Algebra II (4)
 MATH 463 Introduction to Complex Analysis (4)
 MATH 466 Advanced Calculus II (4)
 MATH 467 Advanced Calculus III (4)

Electives (12 units):

Select courses in mathematics with adviser approval. The following are strongly recommended:

MATH 435, 457

• Single Subject Teaching Option (28 units)

This option is intended for students who are interested in teaching mathematics. Students should consult the School of Education for credential requirements. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

Required Courses (16 units):

MATH 320 Selected Topics in History of Mathematics (4)
 MATH 430 Modern Geometry (4)
 MATH 446 Theory of Numbers (4)
 MATH 474 Theory of Probability (4)

Electives (12 units):

Select computer science and mathematics courses with adviser approval. Students with a strong interest in computer science should consider completing the minor in Computer Science.

Bachelor of Science Degree in Mathematics

The Bachelor of Science degree curriculum of 198 units is designed to prepare students for positions in business, industry, or government, as well as for graduate work in mathematics.

Requirements for the Major (98-100 units)*Lower Division Required Courses (46-48 units):*

CS 201 Introduction to Programming (4) or
 CS 290 Introduction to FORTRAN Programming (2)
 MATH 206-209 Calculus I-IV (4 each)
 MATH 215 Differential Equations (4)
 MATH 255 Introduction to Matrix Theory (4)
 PHYS 201-205 General Physics (4 each)

Electives (8 units):

Select from lower division natural science or engineering courses.

Upper Division Required Courses (12 units):

MATH 325 Mathematical Notation and Proof (4)
 MATH 455 Modern Algebra I (4)
 MATH 465 Advanced Calculus I (4)

Electives Options*Electives (32 units):*

Select upper division computer science and mathematics courses excluding MATH 342. With departmental approval, a maximum of 8 units may be replaced by upper division courses in other fields. Students may also select one of the options below. If no option is selected, at least 16 units in mathematics must be included.

At least 8 units from MATH 403, 420, 430, 435, 446, 456 or 457, 463, 466 or 467, 470 or 471, and 474 must be included.

Students may select one or more of the following 32-unit options. Each option consists of several related courses selected from upper division electives; however, an option is not required.

• Option in Applied Mathematics (32 units)

This option prepares students for graduate work in applied mathematics.

Required Courses (20 units):

MATH 403 Partial Differential Equations (4)
 MATH 410 Vector Analysis (4) or
 MATH 467 Advanced Calculus III (4)
 MATH 463 Introduction to Complex Analysis (4)
 ** MATH 470 Numerical Analysis I (4) or
 ** MATH 471 Numerical Analysis II (4)
 MATH 472 Linear Programming (4)

** CS 291 is prerequisite to this course

Electives (12 units):

Select mathematics or computer science courses with approval of adviser. The following are strongly recommended:

MATH 411 Tensor Analysis (4)
 MATH 457 Linear Algebra (4)

• Single Subject Teaching Option (32 units)

This option is intended for students who are interested in teaching mathematics. Students should consult the School of Education for credential requirements. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

Required Courses (16 units):

MATH 320 Selected Topics in History of Mathematics (4)

- MATH 430 Modern Geometry (4)
 MATH 446 Theory of Numbers (4)
 MATH 474 Theory of Probability (4)

Electives (16 units):

Select computer science and mathematics courses with approval of adviser. Students with a strong interest in computer science should consider completing the minor in Computer Science.

Minor in Computer Science

A Computer Science minor, available for students majoring in other fields, consists of 36 units; 12 are upper division. Students majoring in fields that require the same courses as those required for the minor in Computer Science must take only those courses in the minor program that are not incorporated into their major.

Requirements for the Minor (36 units)

Required Courses (24 units):

- CS 201 Introduction to Programming (4)
 CS 202 Programming with Data Structures (4)
 CS 240 Computer Organization and Assembly Language (4)
 MATH 206 Calculus I: Differentiation (4)
 MATH 207 Calculus II: Integration (4)
 MATH 255 Introduction to Matrix Theory (4)

Electives (12 units):

Select either 12 units of upper division computer science courses or 8 units of upper division computer science courses and one of MATH 384, 470, 471.

Minor in Mathematics

The Mathematics minor, available for students majoring in other fields, consists of 32 units, of which 12 are upper division. Students majoring in fields that require the same courses as those required for the minor in Mathematics need take only those courses in the minor program that are not incorporated into their major.

Requirements for the Minor (32 units)

Lower Division Required Courses (20 units):

- MATH 206-209 Calculus I-IV (4 each)
 MATH 255 Introduction to Matrix Theory (4)

Upper Division Electives (12 units)

Select three upper division mathematics courses, other than 342, with adviser approval.

The Credential Program

The Bachelor of Arts and Bachelor of Science degree programs in Mathematics with the credential option have been approved by the Commission on Teacher Credentialing for examination waiver for the Single Subject credential in Mathematics. Students should consult advisers in the department and the School of Education.

Students who are seeking a Single Subject credential in Mathematics must pass the appropriate subject examination (National Teachers Examination) or complete an approved waiver program of course work such as that listed below. Those who are majoring in mathematics follow the Single Subject Teaching Option, which incorporates the courses listed below. Others who have earned or are pursuing a baccalaureate in another discipline may qualify for the Single Subject credential in Mathematics by completing the waiver program described below. Refer to the undergraduate School of Education chapter of this catalog for regulations governing all teaching credential programs.

Waiver Program for Single Subject Credential in Mathematics

It is assumed that students entering this program have completed two courses in algebra and one in trigonometry.

Required Courses (46 units):

- CS 290 Introduction to FORTRAN Programming (2)
 MATH 206-209 Calculus I-IV (4 each)
 MATH 255 Introduction to Matrix Theory (4)
 MATH 320 Selected Topics in History of Mathematics (4)
 MATH 325 Mathematical Notation and Proof (4)
 MATH 384 Discrete Structures (4) or
 MATH 455 Modern Algebra I (4)
 MATH 430 Modern Geometry (4)
 MATH 446 Theory of Numbers (4)
 MATH 474 Theory of Probability (4)

Electives (minimum 15 units):

- BIOL 302, 315, 408 CE 202
 CHEM 101, 122, 123, 401-403, 414
 CIS 228, 283, 294 CS 202, 240, 291, 330
 ECON 209, 309, 310, 391, 403, 409, 410, 413, 414
 EE 244, 345 ENGR 201, 204, 209
 MATH 215, 384 or 455 **, 420, 456, 457, 465, 466, 470, 472, 475
 ME 306, 326A
 PHIL 250, 404-406
 PHYS 121-123, 201-206, 410AB, 427, 428, 432AB, 488

** whichever not included in core requirements above

Supplementary Authorization for Single or Multiple Subject Teaching Credential (30-32 units)

Holders of a Single Subject or Multiple Subject teaching credential issued by the state of California may supplement that credential with an authorization in Mathematics for teaching mathematics at any grade level through grade 9 by completing the following program with a grade of C or higher in each course. For other requirements governing issuance of this authorization, consult the School of Education.

Complete or demonstrate proficiency in each of the following courses (30-32 units):

Required Courses (16 units):

- MATH 102 College Algebra (4)
 MATH 103 Algebra and Trigonometry (4)
 MATH 206 Calculus I (4)
 MATH 207 Calculus II (4)

Select three from following (12 units):

- MATH 208 Calculus III (4)
 MATH 255 Introduction to Matrix Theory (4)
 MATH 274 Introduction to Statistics (4)
 MATH 320 Selected Topics in History of Mathematics (4)
 MATH 325 Mathematical Notation and Proof (4)
 MATH 384 Discrete Structures (4)
 * MATH 430 Modern Geometry (4)
 ** MATH 474 Theory of Probability (4)

Select one from following (2 or 4 units):

- CS 190 BASIC Programming (2)
 CS 201 Introduction to Programming (4)
 CS 290 Introduction to FORTRAN Programming (2)

*prerequisite: MATH 208

**prerequisites: MATH 208 and 209

Courses in Computer Science (CS)**Lower Division Courses****160 Introduction to Computers (3)**

Prerequisite: GE mathematics requirement. History of computers; hardware, software including data base systems, word processors, spreadsheets, programming languages; social and ethical implications. Lecture 2 hours, laboratory 3 hours.

190 BASIC Programming (2)

Prerequisite: One year of high school algebra. Introduction to computer programming using BASIC language. Applications will assume a minimal mathematics background. Does not fulfill mathematics major requirement. Lecture 1 hour, laboratory 3 hours.

201 Introduction to Programming (4)

Prerequisite: MATH 103. Algorithm development and computer programming using Pascal; designing, coding, debugging, and documenting programs.

202 Programming with Data Structures (4)

Prerequisite: CS 201. Advanced programming techniques; utilizing Pascal; elementary data structures such as linked lists, stacks, queues, and trees; searching and sorting algorithms.

240 Computer Organization and Assembly Language (4)

Prerequisite: CS 201. Representation of information; introduction to computer organization; assembly language; introduction to system software.

284 Data Structure for Business Applications (4)

Prerequisite: MATH 102. Sets and set operations; relations and functions; data structure and access methods. No credit for computer science majors.

290 Introduction to FORTRAN Programming (2)

Prerequisite: MATH 206. Elementary computer programming using FORTRAN language. Lecture 1 hour, laboratory 3 hours. No credit toward Computer Science major.

291 FORTRAN Programming (4)

Prerequisite: CS 202; corequisite: MATH 255. Programming in FORTRAN with emphasis on scientific programming applications.

292 C Programming (4)

Prerequisite: CS 202; corequisite: MATH 255. The C programming language; UNIX operating system; scientific programming applications; systems programming.

293 Ada Programming (4)

Prerequisite: CS 202; corequisite: MATH 255. The Ada programming language; scientific applications programming in Ada; using Ada as a program design language.

Upper Division Courses**340 Assembly Language and Systems Programming (4)**

Prerequisite: CS 240. Assembly language; addressing techniques; subroutines; macros; system input/output; interrupts and traps; assemblers; linkers; loaders; macroprocessors.

344 Combinatorial Logic and Design of Sequential Circuits (4)

Prerequisite: Upper division standing in computer science. Boolean algebra and design of combinational circuits; sequential logic and design of finite state machines; introduction to automata theory.

350 Object Oriented Programming (4)

Prerequisites: CS 202; CS 292 or 293. Data abstraction; software development of interacting objects that embody their own

operations; inheritance of object types; implementation in current programming languages.

358N Science and Controversy (4)

(also listed as BIOL 358N, CHEM 358N, PHYS 358N)

Prerequisite: GE natural science requirement. Scientific background of issues that affect public welfare, such as genetic technology, chemical pesticides, energy production and utilization, and artificial intelligence. No credit toward Biology, Chemistry, Computer Science, Mathematics, or Physics major.

360 Symbolic Programming (4)

Prerequisite: CS 202. Programs that operate primarily on symbols and structured combination of symbols; recursion and backtracking; logic variables and unification; interpreters and other metaprograms.

CS 370 Parallel and Distributed Programming (4)

Prerequisite: CS 202. Parallel programming techniques; abstract models of hardware and operating systems to support parallel processing; applications; running parallel programs.

CS 386 Introduction to Automata Theory (4)

Prerequisites: CS 202, MATH 255, PHIL 250. Formal approach to automata theory; finite state machines, regular expressions, regular languages; develops mathematical foundation for computer science.

412 Data Structures and Algorithms (4)

Prerequisites: CS 202, 350, 360, 370, 386. Abstract data types and their use in constructing algorithms for manipulating lists, trees, and graphs; analysis of algorithms for searching, sorting, and data structure manipulation.

422 Principles of Data Base Systems (4)

Prerequisite: CS 412. Data base system architecture; hierarchical, network, and relational data base systems; query facilities; data base security and integrity.

432 Programming Languages (4)

Prerequisites: CS 340, 350, 360, 370, 386. Survey of selected computer languages; emphasis on underlying structure and types of problems for each language.

434 Declarative and Visual Programming (4)

Prerequisites: CS 350, 360, 370, 386. Software specification, design, and development in declarative and visual terms; Horn clauses, rewrite rules, constraints; data-flow diagrams, state transition graphs, networks, menu and control hierarchies; forms-oriented programs.

437 Software Engineering (4)

Prerequisite: CS 412. Methodologies and tools for the specification, design, development, testing, evaluation, and maintenance of software systems.

440 Introduction to Operating Systems (4)

Prerequisite: CS 340, 350, 360, 370. Resource, memory, and process management; concurrent processing; networking; distributed systems.

442 Advanced Operating Systems (4)

Prerequisite: CS 440. Asynchronous concurrent processes; mutual exclusion and deadlocks; virtual storage organization and management; multiprocessing; auxiliary storage management; performance measurement; operating systems security.

444 Computer Architecture (4)

Prerequisites: CS 440; EE 244. Integrated study of computer hardware, firmware, systems software, and applications software.

CS 447 Computer Networks (4)

Prerequisites: CS 444, MATH 274. Overview of principles and concepts in computer networks and distributed systems; network structures, topology, architecture, and related software.

450 Computer Graphics (4)

Prerequisites: CS 412, MATH 255. Graphic input and display devices; graphics packages; two- and three-dimensional transformations; clipping and windowing; perspective; hidden-line and hidden-surface algorithms.

454 Topics in Advanced Computer Science (1-4)

Prerequisites: As needed for specific topic. Current topics of special interest to students in computer science, as announced in *Schedule of Classes*. May be repeated for credit.

460 Artificial Intelligence (4)

Prerequisite: CS 412. Knowledge representation, problem solving strategies and search algorithms; applications from such areas as theorem proving, expert systems, natural language processing, robotics, and pattern recognition.

CS 461 Machine Learning (4)

Prerequisite: CS 412. Means that enable computers to perform tasks for which they were not explicitly programmed; learning paradigms include inductive generalization for examples, genetic algorithms, and connectionist systems such as neural nets.

486 Grammars, Languages, and Automata (4)

Prerequisite: CS 386. Languages and automata, especially context-free and regular languages and their associated automata; applications to compilers; Turing machines and computability.

488 Compilers (4)

Prerequisites: CS 412, 432, 486. Compiler construction; lexical analysis, including regular languages and finite-state acceptors; syntactic analysis, including parsing techniques and grammars; code generation and optimization.

499 Undergraduate Directed Study (1-4)

Prerequisite: Consent of an instructor to act as sponsor. Project selected in conference with sponsor before registration, progress meetings held regularly, and a final report submitted. May be repeated for credit.

Courses in Mathematics (MATH)

* All prerequisites for the following MATH courses must have been completed within the past year: MATH 091, 100, 102, 103, 120, 206, and 242.

Subcollegiate Courses**081 Intensive Learning Experience I (4)**

Covers first two-thirds of MATH 090. Properties of ordinary arithmetic, integers, rational numbers, real numbers, linear equations. Graded CR/NC. Open only to students with ELM score below 360. No credit toward baccalaureate.

082 Intensive Learning Experience II (4)

Prerequisite: MATH 081. Covers last third of MATH 090 and first third of MATH 091. Linear equations, inequalities, system of equations, basic geometry, polynomials and functions. Open only to students with ELM score below 360. Graded A,B,C/NC. No credit toward baccalaureate.

083 Intensive Learning Experience III (4)

Prerequisite: MATH 082. Covers last two-thirds of MATH 091. Fractional expressions and equations, exponents, quadratic equations, exponentials and logarithms. Graded A,B,C/NC. Open only

to students with ELM score below 360. No credit toward baccalaureate.

090 Preparatory Mathematics (4)

For students who are not prepared for college level mathematics. Fundamentals of arithmetic including percentages and decimals; introductory algebra including linear equations, quadratic equations, graphing; basic geometric formulas. Graded A,B,C/NC. Students with credit or two NC grades for this course may not enroll again. No credit toward baccalaureate.

091 Intermediate Algebra (4)

*Prerequisite: MATH 090 or passing score on (or exemption from) ELM or satisfactory score on placement examination. Fundamental skills necessary for mathematics beyond arithmetic; basic topics in algebra, including multiplication, division, and factorization of polynomials; solutions of equations and systems of equations, functions, exponents, and logarithms. Graded A,B,C/NC. Students with credit or two NC grades for this course may not enroll again. No credit toward baccalaureate.

Lower Division Courses**100 Introduction to College Mathematics (4)**

*Prerequisites: Passing score on (or exemption from) ELM; MATH 091 or satisfactory score on placement examination. Introduction to mathematical methods and reasoning, including: logic, combinatorics and probability, modular arithmetic, descriptive statistics, geometric topics, algorithms, elementary number theory, and sequences. No credit toward mathematics or computer science majors.

102 College Algebra (4)

*Prerequisites: Passing score on (or exemption from) ELM; MATH 091 with minimum C grade or satisfactory score on placement examination. Logarithmic and exponential functions; polynomial equations; permutations, combinations, and probability; sequences and series; matrices and determinants; mathematical induction.

103 Algebra and Trigonometry (4)

*Prerequisites: Passing score on (or exemption from) ELM; MATH 102 with minimum C grade or satisfactory score on placement examination. Trigonometric functions, identities, and equations; solution of triangles; inverse trigonometric functions; complex numbers, DeMoivre's Theorem; parametric equations; polar coordinates.

120 Mathematics for Elementary School Teachers (4)

*Prerequisite: MATH 120A with minimum C grade. Selected topics from elementary geometry, units of measurement, areas, volumes, approximate numbers, square roots.

206 Calculus I: Differentiation (4)

*Prerequisites: Passing score on (or exemption from) ELM; MATH 102 and 103, each with a minimum C grade or satisfactory score on placement examination. Functions, graphs, conics, limits, continuity and derivatives, anti-differentiation, and applications. **MATH 206+207+208 = CAN MATH SEQ B**
MATH 206+207+208+209 = CAN MATH SEQ C

207 Calculus II: Integration (4)

Prerequisite: MATH 206 with minimum C grade. The definite integral, Fundamental Theorem of the Calculus, transcendental functions, methods of integration, applications to physics and biology. **MATH 206+207+208 = CAN MATH SEQ B**
MATH 206+207+208+209 = CAN MATH SEQ C

208 Calculus III: Sequences, Series, and Coordinate Systems (4)

Prerequisite: MATH 207 with minimum C grade. Limits of sequences and series, indeterminate forms, Taylor Series, plane coordinate systems, and change of coordinates.

MATH 206+207+208 = CAN MATH SEQ B

MATH 206+207+208+209 = CAN MATH SEQ C

209 Calculus IV: Several Variables (4)

Prerequisite: MATH 208 with minimum C grade. Three-dimensional analytic geometry, partial differentiation, multiple integration, spherical and cylindrical coordinate systems, improper integrals.

MATH 206+207+208+209 = CAN MATH SEQ C

215 Differential Equations (4)

Prerequisite: MATH 209. Ordinary differential equations with concentration on methods of finding solutions; applications in science and engineering.

230 Calculus for Biological Sciences (4)

Prerequisite: MATH 206. Integration, ordinary differential equations, difference equations, partial differentiation, applications to problems arising in biological sciences.

242 Mathematics for Business and Economics Majors (4)

*Prerequisites: Passing score on (or exemption from) ELM; MATH 102 with minimum C grade or satisfactory score on placement examination. Differential calculus with applications; introduction to integral calculus.

254 Selected Topics in Mathematics (1-6)

Prerequisites: As needed for specific topic. Current topics of interest to students in mathematics, as announced in *Schedule of Classes*. May be repeated for credit.

255 Introduction to Matrix Theory (4)

Prerequisite: MATH 207. Vector spaces, linear transformations, linear equations, matrices, determinants, eigenvectors and eigenvalues, canonical forms. **CAN MATH 26**

274 Introduction to Statistics (4)

Prerequisite: MATH 091. Statistical terms; interpretation of statistical data with and without use of probability, random sampling, confidence limits, and hypothesis tests.

Upper Division Courses**320 Selected Topics in History of Mathematics (4)**

Prerequisite or corequisite: MATH 207. Traces development of fundamental concepts and techniques in fields of algebra, geometry, trigonometry, and calculus.

325 Mathematical Notation and Proof (4)

Prerequisite: MATH 206. Elementary set theory and number theory with emphasis on notation and types of proof. Axiomatic method, equivalence relations, ϵ - δ arguments.

342 Advanced Mathematical Analysis for Business and Economics Majors (4)

Prerequisite: MATH 242. Advanced topics from integral and differential calculus; matrix theory; arithmetic and geometric progressions and mathematics of finance; difference equations.

384 Discrete Structures (4)

Prerequisite: MATH 255. Basic definitions and examples in logic, set theory, algebraic structures, and graph theory.

401 Differential Equations (4)

Prerequisites: MATH 209, 255, 325. Ordinary differential equations with concentration on properties of solutions, including exist-

ence and uniqueness. Emphasis on theory as opposed to applications.

402A Advanced Mathematics I for Engineers and Physicists (4)

Prerequisite: MATH 215 or 401. Vector analysis to include line and surface integrals, orthogonal curvilinear coordinates, complex variables to include contour integration and conformal mapping. Laplace transformation.

402B Advanced Mathematics II for Engineers and Physicists (4)

Prerequisite: MATH 402A. Implicit functions and Jacobians, infinite series and integrals, differentiation of integrals; Taylor series for several variables; Fourier series and boundary value problems, special functions (Bessel, Legendre, error, elliptic), calculus of variations.

403 Partial Differential Equations (4)

Prerequisite: MATH 215 or 401. Orthogonal sets of functions. Fourier series and integrals, with applications to the equations of mathematical physics; first order equations, Cauchy's method of characteristics.

410 Vector Analysis (4)

Prerequisite: MATH 209. Vector algebra and calculus, vector fields, gradient, divergence, curl, divergence theorem, Stokes' theorem, applications to geometry and mathematical physics.

411 Tensor Analysis (4)

Prerequisite: MATH 410. Contravariant and covariant vectors and tensors, tensor algebra, Riemannian geometry, the metric tensor, geodesics, Christoffel symbols, derivatives of tensors, physical components of tensors. Applications to mechanics and differential geometry.

420 Mathematical Logic (4)

Prerequisite: MATH 325. The statement calculus, the predicate calculus, mathematical structures, and the deduction of valid consequences; the completeness theorem.

430 Modern Geometry (4)

Prerequisite: MATH 208. Topics selected from advanced Euclidean geometry, non-Euclidean geometry, projective geometry. May be repeated once for credit with approval of instructor as subject matter changes.

435 Topology (4)

Prerequisite: MATH 325. Introduction to point set topology, including continuity, product spaces, compactness, Tyconoff theorem, connectedness, metric spaces, and Urysohn lemma.

446 Theory of Numbers (4)

Prerequisites: MATH 325, upper division standing. Divisibility, Euclidean algorithm, prime numbers, fundamental theorem of arithmetic, distribution of primes, congruences, Fermat-Euler and Wilson theorems, residues and quadratic reciprocity law. Bernoulli numbers, quadratic forms, Diophantine equations.

454 Selected Topics in Advanced Mathematics (1-6)

Prerequisites: As needed for specific topic. Current topics of interest to students in mathematics, as announced in *Schedule of Classes*. May be repeated for credit.

455 Modern Algebra I (4)

Prerequisites: MATH 255, 325. Groups and rings, including normal subgroups, quotient groups, ideals, quotient rings, group and ring homomorphisms, and isomorphisms.

456 Modern Algebra II (4)

Prerequisite: MATH 455. Additional topics in groups and rings, field extensions, modules.

457 Linear Algebra (4)

Prerequisite: MATH 455. Vector spaces over arbitrary fields, special types of linear transformations, eigenvalues and eigenvectors, canonical forms, scalar product spaces.

463 Introduction to Complex Analysis (4)

Prerequisite: MATH 465. Complex variables, analytic functions, complex integration, conformal mapping, applications.

465 Advanced Calculus I (4)

Prerequisites: MATH 209, 325. Real number system; topology of \mathbb{R}^n including compactness and completeness; sequences and series, including limit inferior and limit superior and continuity.

466 Advanced Calculus II (4)

Prerequisite: MATH 465. Differentiation and integration of function of a real variable; sequences of functions.

467 Advanced Calculus III (4)

Prerequisites: MATH 255, 465. Functions of several variables; partial derivatives; generalized chain rule; inverse and implicit function theorems; line and surface integrals.

470 Numerical Analysis I (4)

Prerequisites: CS 291, MATH 208, facility in high-level programming language. Errors in floating point representation, nonlinear equations, systems of linear equations, polynomial interpolation, numerical integration and differentiation.

471 Numerical Analysis II (4)

Prerequisites: MATH 215, 470. Numerical solution of ordinary and partial differential equations, spline and least square approximation, fast Fourier transform.

472 Linear Programming (4)

Prerequisite: MATH 255. Geometric solutions, simplex method, the transportation problem, elementary game theory.

474 Theory of Probability (4)

Prerequisite: MATH 209. General probability spaces, random variables, joint distributions, random sampling, law of large numbers, normal, gamma, and binomial distribution.

475 Introduction to Mathematical Statistics (4)

Prerequisite: MATH 474. Estimation and tests of hypothesis, decision theory and Bayes solutions.

499 Undergraduate Directed Study (1-4)

Prerequisite: Consent of an instructor to act as a sponsor. Project selected in conference with sponsor before registration; progress meetings held regularly, and a final report submitted. May be repeated for credit.

MICROBIOLOGY

School of Natural and Social Sciences

DEPARTMENT OFFICE
Biological Sciences 140
Phone: (213) 343-2030

The Department of Microbiology offers the Bachelor of Arts degree in Microbiology and the Bachelor of Science degree in Medical Technology. Students pursuing degrees in Microbiology or Medical Technology may qualify for entrance to medical or dental schools by including appropriate elective courses in their program. The department also offers the Master of Science degree in Microbiology, described in the *Graduate Programs* section.

The Faculty

Emeritus: Joseph T. Seto.

Professor: Rosemaria Marshall.

Associate Professors: Kenneth L. Anderson (*Chair*), Richard W. Fleming.

Assistant Professor: Nancy L. McQueen.

Bachelor of Arts Degree in Microbiology

The Bachelor of Arts degree with a Microbiology major provides basic training in microbiology and such related fields as chemistry to qualify students for graduate study in the field or various types of federal employment; civil service employment, particularly as a public health microbiologist; microbiological work in such industrial fields as the pharmaceuticals, brewing, industrial fermentations, and the dairy industry; work as a hospital microbiologist; or research technician positions in various university research projects.

Requirements for the Major (116 units)

A total of 186 units is required, of which 116 units are in the major. Students planning to become public health microbiologists are advised to include BIOL 103 and 485 in their program.

Lower Division Required Courses (58 units):

MICR 200AB General Microbiology (5, 3)
BIOL 101, 102 Principles of Biology I, II (5, 5)
CHEM 101-103 General Chemistry I-III (5, 5, 5)
CHEM 201 Quantitative Analysis (5)
MATH 102 College Algebra (4)
MATH 103 Algebra and Trigonometry (4)
PHYS 101-103 Physics (4, 4, 4)

Upper Division Required Courses (58 units):

MICR 301 General Medical Microbiology (4)
MICR 302 Pathogenic Bacteriology (5)
MICR 304 Immunology and Serology (5)
MICR 331 Structure and Function of Bacteria (3)
MICR 340 Microbial Genetics (3)
MICR 401 General Virology (3)
MICR 412 Epidemiology (4)
MICR 430 Bacterial Physiology (3)
MICR 433 Bacterial Physiology Laboratory (2)
CHEM 301ABC Organic Chemistry (3, 3, 3)
CHEM 302AB Organic Chemistry Laboratory (2, 2)
CHEM 431ABC Biochemistry (3, 3, 3)
CHEM 432AB Biochemistry Laboratory (2, 2)

Bachelor of Science Degree in Medical Technology

The Bachelor of Science degree program with a major in Medical Technology provides opportunities for students to obtain academic instruction needed to qualify graduates for positions as registered medical technologists.

The program has been approved for training of medical laboratory technologists. Upon completion of this major, plus the required training in a hospital laboratory, students are eligible to take the examination to become a Registered Medical Technologist. This certification generally is required for employment in hospitals, public health laboratories, and certain private, state, and federal research laboratories.

Requirements for the Major (124-132 units)

A total of 196 units is required for the degree, of which 124-132 units are in the major.

Lower Division Required Courses (61 units):

MICR 200AB General Microbiology (5, 3)
BIOL 101-103 Principles of Biology I-III (5, 5, 3)
CHEM 101-103 General Chemistry I-III (5, 5, 5)
CHEM 201 Quantitative Analysis (5)
MATH 102 College Algebra (4)
MATH 103 Algebra and Trigonometry (4)
PHYS 101-103 Physics (4, 4, 4)

Upper Division Required Courses (51 units):

MICR 301 General Medical Microbiology (4)
MICR 302 Pathogenic Bacteriology (5)
MICR 304 Immunology and Serology (5)
MICR 320 Hematology (3)
MICR 340 Microbial Genetics (3)
BIOL 485 Medical Parasitology (4)
CHEM 301ABC Organic Chemistry (3, 3, 3)
CHEM 302AB Organic Chemistry Laboratory (2, 2)
CHEM 431ABC Biochemistry (3, 3, 3)
CHEM 432A Biochemistry Laboratory (2)
CHEM 433 Clinical Biochemistry (3)

Electives (select 12-20 units from following with adviser approval):

MICR 331, 401-403, 412, 420, 430, 433, 460
BIOL 200AB, 302, 315 CS 190, 290

Minor in Microbiology

The Department of Microbiology offers a minor in Microbiology for students majoring in other fields. The minor consists of a 22-unit core and 8 units of electives. The purpose of this minor is to allow students from a variety of related majors the opportunity to focus a portion of their baccalaureate course work on microbiology in order to qualify them for postbaccalaureate positions requiring such knowledge. Chemistry 101, 301AB, and 302AB are prerequisite to several of the courses in the minor. Interested students are urged to consult with a microbiology faculty member for advisement before beginning the minor.

Requirements for the Minor (30 units)**Required Core (22 units)**

- BIOL 102 Principles of Biology II (5)
 CHEM 102 General Chemistry II (5)
 MICR 200AB General Microbiology (5, 3)
 MICR 301 General Medical Microbiology (4)

Electives (select 8 units from following)

MICR 302, 304, 331, 340, 401, 402, 412, 430, 433

Courses in Microbiology (MICR)**Lower Division Courses****151 Introductory Microbiology (5)**

Concepts stressing microorganisms; topics address medical, environmental, industrial, and public health; laboratory application of selected procedures. *No credit if taken after any other college microbiology course.* Lecture 4 hours, laboratory 3 hours.

200AB General Microbiology (5, 3)

Prerequisites: BIOL 102 or 200B; CHEM 102 or 152. Basic principles of microbiology. Emphasizes nature, distribution, physiological activities of microorganisms; applied microbiology; medical aspects. For majors in microbiology and related subjects.

200A: lecture 3 hours, laboratory 6 hours.

200B: lecture 2 hours, laboratory 3 hours.

201 Microbiology for Health Related Sciences (4)

Prerequisites: BIOL 102 or 200B; CHEM 102 or 152. *Basic function and structure of microorganisms; host-parasite relationships, infectious diseases, immunology and serology, epidemiology, antimicrobial agents, and chemotherapy.* Lecture 4 hours.

202 Microbiology Laboratory for Health Related Sciences (2)

Corequisite: MICR 201. Laboratory methods used in studying microorganisms; aseptic techniques, environmental influences on microorganisms, microbial interrelationships; water microbiology and sanitation; immunology and infectious disease diagnosis. Laboratory 6 hours.

Upper Division Courses**301 General Medical Microbiology (4)**

Prerequisite: MICR 200AB with grades of C or higher. Host-parasite-drug interactions; isolation, culture, and identification of human normal flora. Lecture 2 hours, laboratory 6 hours.

302 Pathogenic Bacteriology (5)

Prerequisite: MICR 301 with grade of C or higher. Bacteriology and pathology of infectious bacterial diseases of humans; diagnostic procedures for identification of major pathogens. Lecture 3 hours, laboratory 6 hours.

304 Immunology and Serology (5)

Prerequisites: MICR 302, CHEM 301A, 302A, each with a grade of C or higher. Immune response, cellular and humoral, induction of immunity, detection of antibodies, principal serologic methods evaluation of immune response; three sections: fundamental immunology, serology, and clinical immunology. Lecture 3 hours, laboratory 6 hours.

305 Microbiological Methods for Public Health (3)

Prerequisite: MICR 302. Standard laboratory methods for examination of water, sewage, milk, and foods; air sampling procedures. Lecture 2 hours, laboratory 3 hours.

320 Hematology (3)

Prerequisite: MICR 200AB. Identifying normal and pathological blood cells; experience in doing indices, differentials, and blood groupings. Lecture 2 hours, laboratory 3 hours.

331 Structure and Function of Bacteria (3)

Prerequisites: MICR 200AB; CHEM 301A; prerequisite or corequisite: 302A. Function of bacteria, emphasis on structure and growth.

340 Microbial Genetics (3)

Prerequisite: Grade of C or higher in MICR 200A. Principles of microbial genetics with emphasis on genetic exchange, genetic manipulation, and applications with environmentally, industrially, and medically significant organisms.

363 Microbiological Detectives (4)

Prerequisite: GE natural science requirement. The creative process in microbiology past and present. Individual microbiological detectives and their discoveries, both experimental and theoretical; current inquiry into the nature of involvement of microorganisms in the human experience.

401 General Virology (3)

Prerequisite: MICR 340 or BIOL 325 plus 330. Basic principles of virology; emphasizes properties, classification, multiplication, genetics, and viral-host interactions of bacterial, animal, and plant viruses.

402 Virology Laboratory (2)

Prerequisite: MICR 302. Methods of isolation, cultivation, and identification of animal and bacterial viruses; introduction to cloning of viral genes. Laboratory 6 hours.

403 Pathogenic Fungi (3)

Prerequisite: MICR 301. Morphology, physiology, and principles of pathogenicity of fungi that cause disease in humans and animals. Lecture 2 hours, laboratory 3 hours.

406 Methods in Clinical Microbiology (3)

Prerequisite: MICR 301. Methods and techniques of clinical microbiology; selection and evaluation of appropriate procedures for specific tests; licensure and regulations requirements. New developments contributing to advances will be stressed. May be repeated to total of 9 units.

407 Laboratory Methods in Clinical Microbiology (2)

Prerequisite: MICR 301. Methods and techniques currently used in clinical laboratories for rapid processing of specimens for microbiology content or evaluation of immunochemical components. Six hours/week. May be repeated to maximum of 6 units.

412 Introduction to Epidemiology (4)

Prerequisite: MICR 200AB. Epidemiology of communicable diseases including modes of transportation and methods of control of communicable disease.

420 Immunohematology (4)

Prerequisites: MICR 304, 320. Grouping of red blood cells with applications in clinical forensic medicine; emphasis on basic blood group systems and associated diseases. Practical application of identification of various blood group antigens and antibodies. Lecture 2 hours, laboratory 6 hours.

430 Bacterial Physiology (3)

Prerequisites: MICR 331, CHEM 431A, 432A; corequisites: CHEM 431B, 432B. Bacterial physiology with emphasis on biochemical events related to cellular differentiation and basic bacterial biochemical pathways.

433 Bacterial Physiology Laboratory (2)

Corequisite: MICR 430. Experimental work to accompany MICR 430. Laboratory 6 hours.

454L Special Topics in Microbiology (1-4 each)

Prerequisites: Upper division standing, others as needed for specific topics. Topics of current interest in microbiology, as announced in *Schedule of Classes*. May be repeated to maximum of 8 units.

460 Immunochemistry (2)

Prerequisites: MICR 304, CHEM 431B. The combining site and forces involved in antigen-antibody interaction, purification of antibodies and antigens, assembling of synthetic antigens; qualitative and quantitative precipitation and complement fixation procedures. Lecture 2 hours.

499 Undergraduate Directed Study (1-4)

Prerequisite: Consent of an instructor to act as sponsor. Project selected in conference with sponsor before registration, progress meetings held regularly, and a final report submitted. May be repeated for credit.

PAN-AFRICAN STUDIES

School of Natural and Social Sciences

DEPARTMENT OFFICE

King Hall C3095

Phone: (213) 343-2290

Pan-African Studies, as an interdisciplinary field of study, encompasses the systematic investigation of the history, culture, political economy, literature, arts, and languages of peoples of African descent and their contribution to world civilization. It reflects the experiences of a significant portion of the world's population and constitutes the cumulative results of several thousand years of intellectual history and development.

Interdisciplinary programs in Pan-African Studies prepare students for professional careers in teaching, public service, international relations, social work, law, and community development. The department has established an internship program that places students in local government offices to increase their exposure to and knowledge of local affairs. The Bachelor of Arts degree in Afro-American Studies is described below. In collaboration with the School of Education, Pan-African Studies shares responsibility for the Afro-American option in the Bilingual/Crosscultural Specialist credential and the Master of Arts degree in Urban Education. Both programs are described in the *Graduate Programs* (School of Education) section.

The Faculty

Professor: Aida Takla O'Reilly (Chair).

Associate Professors: Cynthia Hamilton, Lamont Yeakey.

Assistant Professor: Jonathan Nkem Nwomono.

Bachelor of Arts Degree in Afro-American Studies

Three options are offered in this major. The first two focus on different geographical regions of the world, and the third is designed specifically for students interested in examination waiver for the Multiple Subject credential.

Requirements for the Major (76-123 units)

Options I and II combine core and elective programs of 76 units. *Option I* has a core of 60 units and 16 units of electives; *Option II* has a core of 52 units and 24 units of electives. *Option III* requires 123 units in a prescribed pattern of courses in general education and Pan-African Studies and related fields.

• Option I: Afro-American Studies (76 units)

Option I provides systematic study and research in Afro-American history, culture, and political economy to prepare students for graduate work and for careers in teaching, social work, law, community development, business, and related public service fields.

Lower Division Required Courses (20 units):

PAS 101, 250AB, 251AB

Upper Division Required Courses (40 units):

PAS 400, 402, 403, 412, 414, 420, 440, 441, 495
ENGL 308 or 406

Electives (select 16 units in PAS and related fields)

(related fields limited to two courses)

PAS 260, 401, 404, 410, 416, 421, 422, 424, 425,
432, 482, 484, 486, 490

CHS 430

LAS/PAS 460

SOC 460

GEOG 446

MUS 452

SPCH 489

• Option II: African, Caribbean, and Afro/Latin American Studies (76 units)

This option combines an integrative multidisciplinary course of concentrated study and research focused on the history, cultures, political economy, international relations, and development of Africa, the Caribbean, and Afro/Latin America. Emphasis on the development of research and technical skills is stressed to prepare students for graduate study and for professional careers in public service, international relations and business, overseas employment, and research and technical assistance programs.

Lower Division Required Courses (20 units)

PAS 101, 250AB, 251A or 251B

HIST/PAS 253

Upper Division Required Courses (40 units):

ECON 460 or ECON/POLS 426

ENGL 308 or 406

PAS 403, 414, 416, 480, 495

LAS/PAS 442, 460

PAS/POLS 456

Electives (16 units):

Select four courses from the following fields:

PAS 260, 402, 410, 412, 416, 441, 432, 482, 484, 486

FIN 431

HIST 414AB, 415, 416, 463, 465

HS 463

MKT 457

GEOG 427, 433

LAS 424

POLS 451, 453

Select one course from:

ANTH 413

LAS 435

PAS 125, 423, 428

ART 481

MUS 458

SPCH 489

• Option III: Multiple Subject Credential (123 units)

This option is intended to qualify students for examination waiver for the Multiple Subject credential.

BLOCK I: ENGLISH, COMMUNICATION (40 units)

General education requirements (16 units)

ENGL 190, 250

SPCH 150

PHIL 160 or POLS 155 or

SPCH 176

Major requirements (24 units):

ENGL 308 or 406

PAS 422, 425

ENGL 430

SPCH 489, 490

BLOCK II: MATHEMATICS AND SCIENCE (24 units)

General education requirements (12 units):

MATH 100

Select 4 units each from GE blocks B1 and B2.

Major requirements (12 units):

Select three courses from GE block B3 to meet major requirement.

BLOCK III: SOCIAL SCIENCES (28 units)

General education requirements (12 units):

HIST 202A or 202B POLS 150

Select one from the following:

ANTH 250	CHS 111
GEOG 150	PAS 101
SOC 201	SOCS 180

Major requirements (16 units):

Select two from following:

PAS 250A or 250B; 251A or 251B; HIST/PAS 253

Select two from following:

LAS/PAS 460
PAS 400-404, 412-420, 432, 440, 480

BLOCK IV: HUMANITIES (27 units)

General education requirements (8 units):

Select GE humanities courses: one from block C2 and one from block C3 or C4.

Major requirements (19 units):

ART 400 and 481	MUS 400
PE 420	

Select one course from PAS 421, 423, 424, and 428.

GENERAL EDUCATION UPPER DIVISION THEME (12 units)

Select one general education upper division theme and complete one course in each of the three areas within that theme. Theme courses are not part of the major but are included in credential requirements.

Minor in Pan-African StudiesThe Department of Pan-African Studies offers a minor with options in *Afro-American Political Economy and Development* and *Pan-African Fine Arts*. The minor consists of a combined core and elective program of 24 units.**Requirements for the Minor (24 units)**

Lower Division (4 units)

PAS 101

Upper Division Options (20 units)

In addition to the lower division requirement above, each student must select one of the two option programs below.

• Option I: Afro-American Political Economy and Development

Select five courses from following:

PAS 401-403, 410, 412, 416, 440, 441, 480, 482, 484, 486, 490
LAS/PAS 442, 460 PAS/POLS 456

• Option II: Pan-African Fine Arts

Select five courses from following:

PAS 410, 420-425, 428, 482, 484, 486, 490

The Credential Program

The Bachelor of Arts degree in Afro-American Studies with the Multiple Subject credential option is intended for examination waiver for the Multiple Subject credential. In addition, the Department of Pan-African Studies shares partial responsibility for the Bilingual/Crosscultural Specialist credential. For detailed information regarding these credentials, students should consult advisers

in the department and in the School of Education. Refer to the *School of Education* chapters of this catalog for regulations governing all credential programs.**Courses in Pan-African Studies (PAS)****Lower Division Courses****100 Introduction to College Environment (4)**
(also listed as CHS 100)

Introduction to institution of higher education and its particular relationship to minority/Third World students. This course is designed especially for EOP students. Graded CR/NC.

101 Introduction to Pan-African Studies (4)
A general overview of Pan-African studies.**125 Elementary Conversational African Language (4)**

Methodical presentation of structure of particular African language through hearing, speaking, reading, and writing the language. May be repeated to maximum of 12 units as language offered changes.

250AB African History (4, 4)

Major themes of African history from origin of black peoples and traditional African civilization to institutional realities of Africa today.

251AB Afro-American History (4, 4)

History of Afro-Americans in the U.S.

253 Caribbean History (4) (also listed as HIST 253)

Caribbean history and development including history of indigenous peoples, European colonialism, slavery, resistance, and independence. Includes Spanish-, English-, French-, and Dutch-speaking Caribbean islands.

254 Special Topics in Pan-African Studies (1-4)Prerequisite: As needed for specific topic. Current topics of special interest to students in Pan-African Studies, as announced in *Schedule of Classes*. May be repeated to maximum of 8 units as subject matter changes.**260 Third World Images in Film (4)**

Historical and contemporary portrayals of peoples of African, Asian, and Latin descent in film. Emphasis on foreign and American full-length documentary and story films.

Upper Division Courses**395 Service in Black Community (1-4)**

Prerequisites: Approval by department faculty adviser in consultation with EPIC Director, acceptance by community agency. Participation in work of community agency or activity utilizing professional and/or vocational skills in service to community. Graded CR/NC. Credit toward baccalaureate limited to 4 units.

400 The Social Psychology of Afro-Americans (4)

Prerequisite: PAS 101 or PSY 150. Social and psychological determinants of Afro-American behavior; emphasis on attitude and identity formation and interpersonal/intercultural relations.

401 Education and Afro-Americans (4)

Prerequisite: PAS 101. Documented studies of the black child in various American school systems; investigation of primary factors in significantly lower performance ratings of black children.

402 Black Political Economy (4)

American capitalism and its formative influence on the life of Afro-Americans; emphasis on the organization of production and distribution, social relations, and economic inequality.

403 Afro-American Social Thought (4)

Recommended prerequisite: SOC 201. Historical and analytical consideration of contributions of Afro-American social thought to development and analysis of the black protest.

404 The Black Family (4)

Structure, functions, lineal analysis of Afro-American family and its African origin; condition of black family during slavery, Reconstruction, post-Reconstruction, wars, the Great Depression, economic boom and recession, and black revolution.

410 Black Political Reality (4)

Prerequisite: PAS 101. U.S. black political development, Reconstruction to present; evolution of U.S. black political activity.

412 Third World Women and Development (4)

Prerequisites: Upper division standing; ANTH 250 recommended. The status and role of Third World women in societal development with primary emphasis on Black women in developing countries.

414 Geography of Black Community (4)

Prerequisite: PAS 101. Locational experience of black people and their environmental relationship to economic and political institutions of the American nation.

415 Pan Africanism and World Politics (4)

Prerequisite: PAS 101. The interplay of Pan-Africanism as a cultural and sociopolitical movement in world politics.

420 Afro-American Culture (4)

Prerequisite: PAS 101. Exploration of existence of Africanisms, retentions, and syncretisms in the New World and their relationship to contemporary events and society.

421 History of Afro-American Music (4)

Prerequisite: PAS 101. Historical and stylistic development of black music from ancient Africa to present. Assessment of black musicians who have shaped musical climate of America.

422 Themes in Black Literature (4)

Prerequisite: PAS 101. Analysis and discussion of representative works of black authors from eighteenth century to present.

423 Caribbean Literature (4)

Early imitative Caribbean literature, its evolution into authentic original and individual expression of self; contemporary Caribbean writers, emphasis upon poetry, novels, and plays of Aime Cesaire.

424 Black Music Industry (4)

Creative and business aspects of black music industry. Role of blacks in creation of original American musical forms, in establishing music publishing industry, and in founding ASCAP.

425 Black Dialect (4)

Prerequisite: PAS 101. Historical development and understanding of black dialect from its African past to Afro-American idiom.

426 African Literature (4) (also listed as ENGL 426)

Prerequisite: ENGL 250. African literature and its cultural background. Intensive study of writers in English and others in translation. Critical compositions and reports required.

427 Institutional Racism: Black Response in Literature (4)

Prerequisite: ENGL 250. Examination of institutional racism in the U.S. through analysis of folk tales, poetry, prose, short stories, novels, newspapers, and other materials.

428 Proseminar: Influence of Afro-American on Franco-African Literature (4)

Exploration of concept of negritude as authentic original literary movement, factors that influence it, and reactions it created.

432 Comparative Systems of Slavery in Western Hemisphere (4)

Prerequisite: PAS 101. Discussion and study of comparative systems of slavery in the western hemisphere with a critical analysis of effects of European imperialism, reaction to colonial rule, and birth of Nationalism.

440 Community Power Structure Analysis (4)

Prerequisite: PAS 101. Study of the key institutions that compose the power structure in the Afro-American community.

441 Community Power Structure Field Research (4)

Prerequisite: PAS 101; PAS 440 recommended. Supervised intensive study and field research in selected black and other Third World communities.

442 Cultural Impact of Third World Development (4)

(also listed as LAS 442)

The development process in the Third World as it affects and is affected by art and intellectual life.

456 Politics of the Caribbean and Central America (4)

(also listed as POLS 456)

Prerequisite: POLS 150. Political development and dependency in the Caribbean and Central America.

460 Dynamics of Social Change in the Third World (4)

(also listed as LAS 460)

Processes and development of social change in the Third World and their relevance to the U.S.

480 Education and Development in Africa (4)

Prerequisite: Upper division standing. Study of the educational systems in Africa with emphasis on the social, economic, and political factors influencing educational objectives and strategies.

482 Black Participation in Electoral/Arena (4)

Effect of urban restructuring on blacks and other poor minorities in cities and how physical changes transformed political participation.

484 Black Participation: Problems and Cases (4)

Black participation in electoral policies with emphasis on relationship between grass roots activism and public policy development, selected guest speakers constitute the core of this course.

486 Urban Participation: Field and Cases (4)

Prerequisite: PAS 482 or 484. Placement in local government agency or other research facility to correspond with students' PAS 482 and/or 484 research project specified by field supervisor with faculty adviser approval.

490 Special Topics in Pan-African Studies (4)

Prerequisite: Instructor consent. Presentation and discussion of academic papers relating to given topic; lectures aimed at critical analysis and appraisal. May be repeated once for credit.

495 Senior Thesis (4)

Prerequisites: ENGL 190, LBS 360, passing WPE score, senior standing. Individual project/senior thesis involving research techniques in Pan African Studies, including problem identification, hypothesis formulation, design and data gathering and analysis.

499 Undergraduate Directed Study (1-4)

Prerequisites: Minimum of 8 units in Pan-African Studies, 3.0 grade point average, senior or graduate standing, consent of full-time faculty member to serve as sponsor, and recommendation of department chairperson. Term project selected in conference with sponsor, progress meetings held regularly, final report required. May be repeated to maximum of 8 units.

PHYSICAL SCIENCE

School of Natural and Social Sciences

PROGRAM OFFICE

Department of Physics and Astronomy
Physical Sciences 315
(213) 343-2100

The interdisciplinary program in Physical Science offers a bachelor's degree program that includes preparation for the Single Subject credential in Physical Science for teaching in secondary schools and has been approved by the Commission on Teacher Credentialing for examination waiver for that credential.

Program Coordinator: Robert H. Carr.

The Faculty

Instruction is provided by the faculties of all physical science departments, i.e., Chemistry and Biochemistry, Geological Sciences, and Physics and Astronomy, as well as the Department of Mathematics and Computer Science and the Department of Geography and Urban Analysis. Advisement information is available from the Physical Science Coordinator.

Bachelor of Science Degree in Physical Science

The Bachelor of Science degree in Physical Science, which requires a total of 198 units, is designed primarily for students who are seeking a Single Subject teaching credential in Physical Science. Students may study one of the three subjects beyond the minimal depth of the waiver program or, with appropriate choice of electives, may gain the foundation necessary for direct employment or for graduate study in various interdisciplinary areas or in the health sciences field.

High school preparation is recommended in physics, chemistry, geometry, trigonometry, and algebra (two years).

Students must earn a grade of C or higher in all courses used to meet major requirements. At least one course in each of the three physical sciences must be taken in residence at Cal State L.A.

Requirements for the Major (113–114 units)

Lower Division Required Courses (73 units):

- ASTR 151 Principles of Astronomy (3)
- ASTR 152 Principles of Astronomy Laboratory (1)
- CHEM 101–103 General Chemistry, (5, 5, 5)
- CHEM 201 Quantitative Analysis (5)
- GEOL 150 General Geology (3)
- GEOL 152 General Geology Laboratory (1)
- GEOL 155 Oceanography (3)
- GEOL 158 Geology in Society (4)
- GEOL 201 Elementary Mineralogy (6)
- MATH 206–208 Calculus I–III (4, 4, 4)
- PHYS 201–206 General Physics (4 each)

Upper Division Required Courses (6 units):

- GEOL 321 Geology of Southern California (4)

Select one from following (2 units):

- CHEM 499 Undergraduate Directed Study (2) or
- GEOL 499 Undergraduate Directed Study (2) or
- PHYS 499 Undergraduate Directed Study (2)

Area of Emphasis/Electives (minimum 34 units):

With adviser approval, select 34 or 35 units of electives. Normally these courses will be taken as an emphasis in one of the following three areas.

Chemistry Emphasis (34 or 35 units)

Required Courses (19 units):

- CHEM 301ABC Organic Chemistry (3, 3, 3)
- CHEM 302A Organic Chemistry Laboratory (2)
- MATH 209 Calculus IV (4)
- PHYS 206 General Physics (4)

Select four courses from following (15 or 16 units):

- CHEM 318 Introduction to Inorganic Chemistry (3)
- CHEM 362 Biomedical Microanalysis (4)
- CHEM 411 Fundamentals of Physical Chemistry (4)
- CHEM 435 Introduction to Biochemistry (4)
- CHEM 480 History of Chemistry (4)

Geology Emphasis (35 units)

- CHEM 152 Fundamentals of Chemistry (Organic) (5)
- GEOG 402 Geomorphology (4)
- GEOG 410 Weather and Climate (4)
- GEOL 151 Physical Geology Field Laboratory (2)
- GEOL 156 Oceanography Field Laboratory (2)
- GEOL 203 Introductory Petrology (2)
- GEOL 252 Historical Geology (4)
- GEOL 360 Geological Mapping (4)
- GEOL 402 Sedimentary Petrology (4)
- GEOL 420N Geology of the National Parks (4)

Physics Emphasis (35 units)

Required Courses (27 units):

- CHEM 301ABC Organic Chemistry (3, 3, 3)
- CHEM 302A Organic Chemistry Laboratory (2)
- MATH 209 Calculus IV (4)
- MATH 215 Differential Equations (4)
- PHYS 206 General Physics (4)
- PHYS 427 Thermodynamics (4)

Select two courses from following (8 units):

- ASTR/PHYS 411 Introduction to Astrophysics (3)
- PHYS 312 Basic Electronics (4)
- PHYS 431 Modern Optics (4)
- PHYS 433 Solid State Physics I (4)
- PHYS 444 Nuclear Physics (4)

The Credential Program

The Bachelor of Science degree in Physical Science has been approved by the Commission on Teacher Credentialing for examination waiver for the Single Subject credential in Physical Science. Interested students should consult advisers in the Department of Physics and Astronomy, which administers the program, and in the School of Education. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

PHYSICS AND ASTRONOMY

School of Natural and Social Sciences

DEPARTMENT OFFICE

Physical Sciences 315
Phone: (213) 343-2100

The Department of Physics and Astronomy offers undergraduate and graduate programs in physics, with opportunities for professional preparation in a variety of directions, including nuclear physics, condensed matter physics, astronomy, and biophysics.

Undergraduate programs include two leading to the Bachelor of Science degree, one leading to the Bachelor of Arts degree, and a minor in physics for students majoring in other fields. The Bachelor of Science curricula include the general program without specialization and an option in Biophysics. The department also offers courses in astronomy that may be included as electives in a baccalaureate program and participates in the interdisciplinary Bachelor of Science degree program in Physical Science.

The Master of Science degree is described in the *Graduate Programs* section.

The Faculty

Emeriti: Bruce Dayton, Fernando B. Morinigo, Lester Hirsch, Donald E. Hudson, Ross D. F. Thompson, Hubert C. Winkler.

Professors: Konrad A. Aniol, Roland L. Carpenter, Robert H. Carr, Berken Chang, Harold L. Cohen, Charles C. Coleman, Martin B. Epstein, Perry S. Ganas, David T. Gregorich, Demetrius J. Margaziotis, Frieda A. Stahl, William A. Taylor, John C. Woolum, Fleur B. Yano (*Chair*).

Associate Professors: Radi A. Al-Jishi, Edward H. Rezayi.

Departmental Honors Program

The Department of Physics and Astronomy offers an Honors Program for qualified students. Students may apply in their junior year after completing PHYS 201-206. Candidates must maintain a B (3.0) grade point average both in their major and overall. Honors students have the option of taking up to three 500-level courses for undergraduate credit toward the bachelor's degree. They also may substitute major courses for required general education courses. Completion of the honors program requires 3 units of independent, research-oriented study (PHYS 396) and presentation of the work in a colloquium. *Graduation with Honors in Physics* is conferred upon those students whom the faculty of the department deem worthy after presentation of the colloquium. Diplomas and transcripts of Honors Program graduates are designated: "Graduated with Departmental Honors in Physics."

Bachelor of Arts Degree in Physics

The Bachelor of Arts degree in Physics provides a program appropriate for students interested in such careers as teaching, public service, business, or science journalism. This program does not include the advanced study needed by students who wish to prepare for careers as physicists, but provides the breadth needed for many other innovative and challenging occupations.

Requirements for the Major (95 units)

The major includes 95 units, 59 in lower division and 36 in upper division courses, with a total of 186 units required for the degree. Students must earn a grade of C or higher in all courses used to meet major requirements.

Lower Division Required Courses (59 units):

PHYS 201-206 General Physics (4 each)
CHEM 101 General Chemistry I (5)
CHEM 122, 123 Principles of Chemistry (5, 5)
MATH 206-209 Calculus I-IV (4 each)
MATH 215 Differential Equations (4)

Upper Division Electives (select 22-32 units from following):

PHYS 311, 312, 410A, 411, 427, 431, 444, 470, 471, 491, 492

Additional Electives (select 4-14 units with adviser approval)

Bachelor of Science Degree in Physics

The Bachelor of Science degree, which requires a total of 198 units, may be used as preparation for graduate work or as a qualifying degree for professional employment. Selection of electives in astronomy provides substantial background for students planning graduate study in that field.

Programs in physics are built on a foundation of high school studies in mathematics and physical sciences. For completion of a Bachelor of Science degree program in 12 quarters, high school preparation is recommended in physics, chemistry, geometry, trigonometry, and algebra (two years).

In planning their university programs, students who wish to prepare for graduate study in physics are advised to include 12 units of French, German, or Russian, a portion of which will earn general education credit. Student participation in research is strongly encouraged.

• General Program

Requirements for the Major (125 units)

The major consists of 125 units in physics and related fields, of which 59 are in lower division and 66 in upper division courses. Students must earn a grade of C or higher in all courses used to meet major requirements.

Lower Division Required Courses (59 units)

PHYS 201-206 General Physics (4 each)
CHEM 101 General Chemistry I (5)
CHEM 122, 123 Principles of Chemistry (5, 5)
MATH 206-209 Calculus I-IV (4 each)
MATH 215 Differential Equations (4)

Upper Division Required Courses (46 units)

PHYS 312 Basic Electronics (4)
PHYS 313 Digital Electronics (4)
PHYS 410AB Mathematical Methods of Physics (4, 4)
PHYS 425AB Introduction to Theoretical Physics (4, 4)
PHYS 426AB Electricity and Magnetism (3, 3)
PHYS 427 Thermodynamics (4)
PHYS 432AB Introductory Quantum Mechanics (3, 3)
PHYS 470-471 Advanced Physics Laboratory I, II (3, 3)

Electives (20 units):

Select with adviser approval; at least 12 units must be in physics.

• Option in Biophysics

The Bachelor of Science degree in Physics, Biophysics option, may be used as preparation for graduate work in biophysics or as a degree for professional employment.

Requirements for the Major (123 units)

The major with this option consists of 123 units in physics, biology, and related fields, of which 77 are in lower division and 46 in upper division courses. Students must earn a grade of C or higher in all courses used to meet major and option requirements.

Lower Division Required Courses (77 units)

PHYS 201–206 General Physics (4 each)
 BIOL 101, 102 Principles of Biology I, II (5, 5)
 CHEM 101 General Chemistry I (5)
 CHEM 122, 123 Principles of Chemistry (5, 5)
 MATH 206–209 Calculus I–IV (4 each)
 MATH 215 Differential Equations (4)
 MICR 200AB General Microbiology (5, 3)

Upper Division Required Courses (40 units)

PHYS 312 Basic Electronics (4)
 PHYS 410A Mathematical Methods of Physics (4)
 PHYS 432A Introductory Quantum Mechanics (3)
 PHYS 443AB Biophysics (3, 3)
 CHEM 301ABC Organic Chemistry (3, 3, 3)
 CHEM 401 Physical Chemistry I (4)
 CHEM 402 or 403 Physical Chemistry II or III (4)
 CHEM 431AB Biochemistry (3, 3)

Electives (6 units)

Select courses in physics or chemistry, with adviser approval.

Minor in Physics

A Physics minor, available for students majoring in other fields, requires 60 units in physics and mathematics, of which 44 are in lower division and 16 in upper division courses. Students majoring in fields that require the same courses as those required for the Physics minor need take only those courses in the minor that are not incorporated into their major.

Requirements for the Minor (60 units)

Lower Division Required Courses (44 units)

PHYS 201–206 General Physics (4 each)
 MATH 206–209 Calculus I–IV (4 each)
 MATH 215 Differential Equations (4)

Upper Division Electives (16 units)

Select physics courses with adviser approval.

The Credential Program

The Department of Physics and Astronomy administers the interdisciplinary Bachelor of Science degree in Physical Science which is approved by the Commission on Teacher Credentialing for examination waiver for the Single Subject credential in Physical Science. The program is described earlier in this chapter. In addition, the department offers the *supplementary authorization in physics*, described below, for holders of a Single Subject teaching credential in another field. Interested students should contact advisers in both the department and the School of Education. Refer to the undergraduate *School of Education* chapter for regulations governing all credential programs.

Supplementary Authorization for Single Subject Teaching Credential (32 units)

Holders of a *Single Subject* teaching credential issued by the state of California may supplement that credential with an authorization in physics for teaching physics at any grade level through grade 12 or in classes organized primarily for adults by completing the following program with a grade of C or higher in each course. For other requirements governing issuance of this authorization, consult the School of Education.

Complete or demonstrate proficiency in the following (32 units):

PHYS 201–206 General Physics (4 each)
 MATH 206 Calculus I (Calculus and Analytic Geometry) (4)
 MATH 207 Calculus II (4)

In addition to the above courses, an astronomy course—such as ASTR 151 or 152—is strongly recommended.

Courses in Astronomy (ASTR)

Lower Division Courses

151 Principles of Astronomy (3)

Recommended corequisite: ASTR 152. Nonmathematical survey of modern astronomy, primarily for nonmajors in science. Properties and evolution of solar system, stars, and universe.

152 Principles of Astronomy: Laboratory (1)

Prerequisite or corequisite: ASTR 151. Laboratory and field trips designed to complement ASTR 151 lecture. Laboratory 3 hours.

160 Black Holes and the Universe (3)

Prerequisite: ASTR 151. Nonmathematical review of black holes and the universe. Concepts of space, time, and gravitation developed. Course develops an intuitive grasp of Einstein's theory of relativity.

Upper Division Courses

311 Elements of Modern Astronomy (3) (See PHYS 311 for course description.)

411 Introduction to Astrophysics (3) (See PHYS 411 for course description.)

488 Modern Topics in General Relativity (3) (See PHYS 488 for course description.)

Courses in Physics (PHYS)

Lower Division Courses

101–103 Physics (4 each)

Fundamental treatment of physics without use of calculus. Required for biological science majors; recommended for behavioral science majors. Biologists planning graduate work may find the 201–206 or 121–123 series in physics with calculus better suited to their needs. Lecture 3 hours, laboratory 3 hours for each course.
PHYS 101–103 = CAN PHYS SEQ A

101: Prerequisite: Knowledge of elementary algebra and trigonometry. Mechanics of particles, rigid bodies; gravity; simple harmonic motion.

102: Prerequisite: PHYS 101. Waves, sound, fluids; thermal physics, kinetic theory, electrostatics.

103: Prerequisite: PHYS 102. Electricity and magnetism, light and optics, relativity, quanta, atoms, nuclei, and fundamental particles.

121–123 Physics (with Calculus) (4 each)

Alternative series to PHYS 101–103; same topics presented with use of calculus. Recommended for biological science majors.

Lecture 3 hours, laboratory 3 hours in common sections with 101, 102, 103.

121: Prerequisite: MATH 206. Mechanics of particles, rigid bodies, and fluids; gravity; simple harmonic motion.

122: Prerequisites: PHYS 121, MATH 207. Waves, sound, thermal physics, kinetic theory, electrostatics.

123: Prerequisite: PHYS 122; MATH 208 recommended. Electricity and magnetism; light and optics; relativity; quanta; atoms; nuclei; and fundamental particles.

150 Principles of Physics (4)

Prerequisite: Ability to use simple algebraic equations. Introductory course, not for science or engineering majors. Basic concepts of mechanics, sound, heat, electricity, light, relativity, atomic and nuclear structure. Lecture 3 hours, laboratory 3 hours.

154L.P Selected Topics in Physics (1-6)

Prerequisite: Specific prerequisites announced in *Schedule of Classes*. Topics of current interest in physics and astronomy, as announced in *Schedule of Classes*; relevance of physics in solving problems of modern technological society.

155 Nature of Physical World (4)

Primarily for nonmajors in science. Concepts of physics illustrated through everyday phenomena. Topics include mechanical forces, fluids, heat, waves, nuclear theory, radiation, and energy in operation of living and nonliving systems.

201-206 General Physics (4 each)

Two-year sequence for physical science and engineering majors, using calculus. Lecture 3 hours, laboratory 3 hours for each course. **PHYS 201+202+203+204 = CAN PHYS SEQ B**

201: Prerequisites: High school physics or permission of department; MATH 206 (may be taken concurrently). Vectors, mechanics of particles and rigid bodies, basic conservation laws of mechanics.

202: Prerequisites: PHYS 201; prerequisite or corequisite: MATH 207. Mechanical vibrations and sound, elementary thermodynamics.

203: Prerequisites: PHYS 202; prerequisite or corequisite: MATH 208. Elementary field theory, basic electricity and magnetism, DC and AC circuits.

204: Prerequisites: PHYS 203; prerequisite or corequisite: MATH 209. Continuation of electricity and magnetism including oscillations and waves; geometrical and physical optics.

205: Prerequisites: PHYS 204; prerequisite or corequisite: MATH 209. Topics in modern physics including special relativity, elementary quantum physics, atomic theory, Schrödinger's equation.

206: Prerequisite: PHYS 205. Continuation of modern physics including optical and x-ray spectra, electron physics, solid-state physics, nuclear and particle physics.

Upper Division Courses

311 Elements of Modern Astronomy (3)

(also listed as ASTR 311)

Prerequisite: PHYS 205. Survey of modern astronomy, designed for students majoring in physical sciences, engineering, or mathematics.

312 Basic Electronics (4)

Prerequisite: PHYS 204. AC and DC circuits, solid-state circuits and devices, feedback, operational amplifiers. Lecture 3 hours, laboratory 3 hours.

313 Digital Electronics (4)

Prerequisite: PHYS 312. Design and use of pulse circuits and digital logic circuits. Fundamentals of computer design and computer programming. Lecture 3 hours, laboratory 3 hours.

333 Applied Modern Physics (4)

Prerequisites: MATH 215, PHYS 204. Selected topics in modern physics of solids including special relativity, wave mechanics, photons, phonons, applications to lasers, semiconductors, and other devices.

350N Evolution of Universe and Earth (4)

(also listed as GEOL 350N)

Prerequisite: GE natural science requirement. Origin and evolution of the universe, elements, stars, sun, the Earth, and life upon it.

351N Introductory Medical Physics and Instrumentation (4)

Prerequisite: CHEM 151. Elementary electricity, heat, sound, wave motion, as applied to examples in human physiological phenomena and in biomedical instruments. Physical principles and operation of transducers, amplifiers, recorders, and selected biomedical instruments. Lecture 3 hours, laboratory 3 hours.

358N Science and Controversy (4)

(also listed as BIOL 358N, CS 358N, and CHEM 358N)

Prerequisite: GE natural science requirement. Scientific background of issues that affect public welfare, such as genetic technology, chemical pesticides, energy production and utilization, and artificial intelligence. No credit toward Biology, Chemistry, Computer Science, or Physics major.

363 The Creative Process in Physics (4)

Prerequisite: GE natural science requirement. The creative process in physics past and present. Individual achievements from Galileo to modern times, both experimental and theoretical; examination of how large scientific groups work; implications for future research.

396 Honors Studies in Physics (3)

Prerequisite: Admission to departmental honors program. Study leading to colloquium presentation required for conferral of Bachelor of Science degree with *Departmental Honors in Physics*.

410AB Mathematical Methods of Physics (4, 4)

Prerequisites: PHYS 204; MATH 215 or 401. Vector calculus, integration, series, complex variables, special functions, boundary value problems, calculus of variations. Emphasis on mathematical solution of problems in physics.

411 Introduction to Astrophysics (3)

(also listed as ASTR 411)

Prerequisites: PHYS 206; PHYS 311 recommended. Celestial mechanics, stellar interiors, atmospheres, and evolution; introductory cosmology.

412 Laboratory Applications of Minicomputers and Microcomputers (4)

Prerequisite: PHYS 313 strongly recommended. The use of minicomputers and microcomputers in physics laboratories and research. Fundamentals of data acquisition, interfacing, and data display. Lecture 2 hours, laboratory 6 hours.

425AB Introduction to Theoretical Physics (4, 4)

Prerequisites: PHYS 205, 410A. Application of mathematics to solutions of problems in physics with emphasis on general area of mechanics; Newtonian, Lagrangian, and Hamiltonian mechanics, field theory, special relativity.

426AB Electricity and Magnetism (3, 3)

Prerequisites: PHYS 205, 410A. Theoretical electricity and magnetism; properties of electric and magnetic fields, electromagnetic waves; emphasis on mathematical solution of problems.

427 Thermodynamics (4)

Prerequisites: PHYS 205, MATH 215. Introduction to thermodynamics and statistical physics; emphasis on mathematical solution of problems.

428 Statistical Physics (3)

Prerequisite: PHYS 427. Introduction to statistical mechanics, transport phenomena, fluctuations; emphasis on mathematical solution of problems.

431 Modern Optics (4)

Prerequisites or corequisites: PHYS 205, 410AB; recommended corequisite: PHYS 471. Introduction to modern optics; geometric optics by matrix methods, partial polarization, coherence, diffraction, quantum optics, and developments in laser technology.

432AB Introductory Quantum Mechanics (3, 3)

Prerequisites: PHYS 206, 410A. Introduction to quantum mechanics with applications; emphasis on mathematical solution of problems.

432A: Fundamentals of wave mechanics, wave packets, and the uncertainty principle. Schrödinger's equation, operators and eigenfunctions, one-dimensional problems.

432B: Central potentials, spectroscopy, spin and angular momentum, symmetry and conservation laws.

433 Solid State Physics I (4)

Prerequisites: PHYS 206; 427 recommended. Crystal structure, thermal and electrical behavior of insulators, metals, and semiconductors; band theory.

434 Solid State Physics II (4)

Prerequisites: PHYS 432A; 427, 433 recommended. Fermi surface, transport theory, superconductivity, magnetic resonance, optical properties, superfluidity, ion implantation.

443AB Biophysics (3, 3)

Prerequisites: Lower division biophysics or biochemistry program; CHEM 401 or PHYS 427.

443A: Physical aspects of living state. Lecture 3 hours.

443B: Theory and practice of physical methods used in measurement of biological processes. Lecture 2 hours, laboratory 3 hours.

444 Nuclear Physics (4)

Prerequisite: PHYS 206. Nuclear phenomenology, alpha, beta, and gamma decays; nuclear reactions, nuclear energy, radiation detectors; radioactivity.

452 Atomic Nucleus—Center of Controversy (4)

Prerequisite: GE natural science requirement. Introduction to principles of radioactivity, fission, fusion, biological effects of radiation; application of nuclear energy to modern technology.

470 Advanced Physics Laboratory I (3)

Prerequisites: PHYS 206, 312. Instrumentation, techniques, and analytical evaluation involved in current experimental practice; basic experiments in vacuum techniques, and in classical, solid-state, and nuclear physics. Lecture 1 hour, laboratory 6 hours.

471 Advanced Physics Laboratory II (3)

Prerequisite: PHYS 470. Further advanced laboratory experience in contemporary fields. Experiments in nuclear physics, solid-state physics, cryogenics, optics, laser physics, spectroscopy, and related topics, as selected by instructor. Lecture 1 hour, laboratory 6 hours. May be repeated to maximum of 9 units.

488 Modern Topics in General Relativity (3)

(also listed as ASTR 488)

Prerequisites: PHYS 410AB, 425AB strongly recommended. Introduction to basic ideas of general relativity; physics of spacetime, relativistic stars, gravitational collapse and black holes, gravitational waves, testing of general relativity.

491 Topics in Contemporary Experimental Physics (3)

Prerequisites: Upper division or graduate standing in Physics; others as listed in department announcement. Each section of course is a lecture series designed to present current developments in research; laboratory program may be included. Specific topics listed in *Schedule of Classes* and in department. May be repeated for credit.

492 Topics in Contemporary Theoretical Physics (3)

Prerequisites: Upper division or graduate standing in Physics; others as listed in department announcement. Each section of course is a lecture series designed to present current developments in theory. Specific topic listed in *Schedule of Classes* and in department. May be repeated for credit.

497 Undergraduate Research (1-4)

Prerequisite: Consent of faculty sponsor prior to registration. Laboratory work organized on a project basis open to a limited number of qualified physics majors each year. Emphasis on developing experimental ability and initiative of the student. May be repeated for credit.

499 Undergraduate Directed Study (1-4)

Prerequisites: Consent of faculty sponsor before registration and ability to work independently. Includes regular conferences with sponsor and preparation of a report. May be repeated for credit.

POLITICAL SCIENCE

School of Natural and Social Sciences

DEPARTMENT OFFICE

Engineering and Technology A523

Phone: (213) 343-2230

The Department of Political Science offers undergraduate and graduate degree programs to prepare students for professional careers in public service, law, international relations, and teaching, and for more effective civic participation. The undergraduate program is described below. The Master of Arts degree in Political Science and the Master of Science degree in Public Administration are described in the *Graduate Programs* section.

The Faculty

Emeriti: Robert Bascom Callahan, John L. Houk, Thomas McEnroe, Arthur J. Misner, Thomas A. Rusch, Ake Sandler, Robert H. Simmons, Virgil H. Stevens.

Professors: J. Theodore Anagnoson (*Chair*), Donald W. Bray, Eugene P. Dvorin, Edward M. Goldberg, Stanley D. Hopper, Byran O. Jackson, Edward S. Malecki, Jr., Dennis M. Ray, Benjamin W. Smith, Donald W. Urquidi, Kenneth A. Wagner.

Associate Professor: James A. Regalado.

Assistant Professors: Nadine Sue Koch, Stephen K. Ma.

Bachelor of Arts Degree

Five options are offered in the Bachelor of Arts degree in Political Science, each adapted to a different objective as follows:

- The *American Politics* option provides a focus for students with interests in urban, local, and citizen politics outside the realm of government service and allows development of a theoretical framework for those interests.
- The *General Political Science Option* is a general program of undergraduate preparation for active participation in public life or for graduate study.
- The *Prelegal Option* provides undergraduate preparation for entrance into a graduate school of law.
- The *Public Administration Option* provides undergraduate preparation for career government service or positions in non-profit organizations. This option may be coordinated with a public service internship (*see Cooperative Education*).
- The *World Politics Option* prepares students for careers that involve foreign affairs and international relations.

The department also participates in the interdisciplinary Bachelor of Arts degree in Social Science, described under Social Science.

Requirements for the Major (85-101 units)

Major requirements combine a core program of 41 units taken by all students with an elected option program of lower and upper division courses in political science and related fields. Total unit requirements vary with the options.

Core Requirements (41 units):

Lower Division Required Courses (17 units):

- POLS 202 Principles of Political Science (4)
 POLS 203 Proseminar: Political Science (4)
 POLS 281 Quantitative Methods in Political Science (5)
 CIS/SOCS 280 The Computer World (4)

Upper Division Required Courses (24 units):

Required Course (4 units):

POLS 490 Special Studies in Political Science (4)

Select one course in five of following fields, with adviser approval, for a total of 20 units:

American Government and Politics	POLS 400, 415, 417, 418
Comparative Government	POLS 421, 450, 451, 452, 453, 455
International Relations	POLS 425, 427
Political Philosophy	POLS 410, 411, 413
Public Administration	POLS 460
Public Law	POLS 440-442, 445, 446
Public Policy	POLS 430

NOTE: Courses taken to satisfy upper division core requirements may not be used in options unless indicated.

Options

The following courses are required in addition to the core courses described above.

• American Politics Option (44 units)

Lower Division Electives (12 units):

- CHS 150 Chicano and Contemporary Politics (4)
 ECON 201, 202 Principles of Economics (4, 4)
 HIST 202AB United States Civilization (4)

Upper Division Required Courses (32 units):

With adviser approval, select 24 units from following, with at least one course in each group:

- Political Behavior and Structure* POLS 415, 418, 483, 485, 487
Public Law POLS 440, 441, 442
Public Policy POLS 400, 407, 417, 430, 432, 436
State and Local Government POLS 403, 404, 405, 406

Up to 8 units in above categories may be chosen from the following:

- CHS 430 PAS 410, 440, 482

Upper Division Proseminars (8 units)

- POLS 491 Proseminar: American Government and Politics (4)

Select one from following with adviser approval:

- POLS 492, 494, 496

NOTE: The following courses may be used to satisfy upper division core requirements:

POLS 400, 415, 417, 418	American government and politics
POLS 440, 441, 442	public law
POLS 430	public policy

If so used, each of the above courses will reduce the total units in the option by four.

• General Political Science Option (44 units)

Lower Division Electives (12 units):

Select 12 units of a foreign language or 12 units from following:

- ECON 202 Principles of Economics II (4)

HIST 110ABC World Civilization I-III (4 each)*(limit of 8 units from HIST)***Upper Division Proseminars (8 units):**

Select two courses from POLS 491, 492, 494, and 496 with adviser approval.

Electives (24 units):

Select six courses in political science or related fields with adviser approval (related fields limited to two courses).

• Prelegal Option (60 units)

Required for this option are 20 units of lower division courses and 40 units of upper division courses. Transfer students must have their Prelegal Option program approved before beginning upper division courses; lower division students, as soon as possible after admission.

Lower Division Required Courses (24 units):

ECON 201, 202 HIST 202AB
SPCH 176

Upper Division Required Courses (20 units):

POLS 440, 441, 442, 494 HIST 479

Select a 4-unit upper division ENGL course, with adviser approval.

Electives (select 16 units with adviser approval):

Select two from following group:

POLS 400, 403-405, 415, 417, 418, 430, 476

Select one from each of following pairs:

POLS 445 or 446 POLS 491 or 496

Note: POLS 440 may be used to satisfy the upper division core requirement in the field of public law, and, if so used, will reduce the total units in this option by four.

• Public Administration Option (48 units)**Lower Division Required Course (4 units):**

ACCT 202 or ECON 201

Upper Division Required Courses (36 units):

POLS 403 or 404
POLS 405, 430, 460, 466, 472, 479
One course selected from POLS 491, 492, 494
POLS 496

Electives (select 8 units from following with adviser approval)

POLS 416, 417, 439, 461, 463, 464, 468, 470, 473-477, 480, 481
ECON 433

Courses in anthropology, biology, Chicano Studies, criminal justice, geography, history, Pan-African Studies, psychology, recreation, and sociology may be selected as electives with adviser approval. Students with particular interests in international public administration may use the following courses as electives with adviser approval:

POLS 421, 427, one of 451-456.

NOTE: POLS 430 and 460 may be used to satisfy upper division core requirements in public administration and, if so, will reduce the total units in this option by eight.

• World Politics Option (52 units)**Lower Division Required Courses (12 units):**

International cultural foundations requirement:

Select 12 units, with adviser approval, in the language, geography, anthropology, history, or arts of a specific foreign culture.

Upper Division Required Courses (20 units):

POLS 421, 425, 426, 427, 492

Electives (20 units):

Select four courses from POLS 450-456 **

Select one proseminar: POLS 491, 494, or 496

**may be repeated to a maximum of 8 units as topic varies.

NOTE: POLS 425 or 427, as well as one course from POLS 450-456, may be used to satisfy upper division core requirements in world politics and, if so, will reduce total units in option by eight.

Minors in Political Science

The Department of Political Science offers four minor programs for students majoring in other fields. The *General* minor requires 32 units and may interest to majors in such related fields as history, economics, geography, sociology, anthropology, or English. The *Prelaw* minor, which requires 20 units, is available to students who may be interested in attending law school. The minor in *Public Administration* requires 20 units and is designed for students who may be interested in government service at the local, state, or federal level. The *World Politics* minor requires 20 units and is designed for students whose career or personal interests would be enhanced by a study of international relations and comparative government. All students are expected to complete POLS 150 before beginning one of the minor programs in political science.

General Minor**Requirements for the Minor (32 units)****Lower Division Required Courses (12 units):**

POLS 200 California State and Local Government (4) or
POLS 403 State and Local Government (4)
(upper division credit)

POLS 202 Principles of Political Science (4)
CIS/SOCS 280 The Computer World (4)

Upper Division Required Courses (20 units):

Select 5 additional POLS courses with adviser approval to fulfill goal for which minor was chosen.

Prelaw Minor**Requirements for the Minor (20 units)****Required Courses (12 units):**

POLS 440 Judicial Process (4)
POLS 441 American Constitutional Law: Federalism (4)
POLS 494 Proseminar: Legal Process (4)

Electives (8 units)

POLS 442 POLS 445 or 446

NOTE: Specific courses should be chosen in consultation with a prelaw adviser.

Public Administration Minor**Requirements for the Minor (20 units)****Required Courses (8 units):**

POLS 460 Foundations of Public Administration (4)
POLS 496 Proseminar: Public Administration (4)

Electives (12 units):

Select one from following: POLS 403 or 405

Select two from following: POLS 461, 463, 466, 472

NOTE: Specific courses should be chosen in consultation with a public administration adviser.

World Politics Minor**Requirements for the Minor (20 units)**

Required Course (4 units):

POLS 250 World Politics (4)

Select two from following: POLS 425, 426, 427

*Select two from following: POLS 450-456

*POLS 450-455 may be repeated to a maximum of 8 units as topic varies

The Credential Program

The Bachelor of Arts degree in Social Science, administered by the Department of Political Science, has been approved for examination waiver by the Commission on Teacher Credentialing. The program is listed under *Social Science*. In addition, the department offers two supplementary authorizations for persons who hold a Single Subject teaching credential in another field. These programs are described below.

Supplementary Authorizations for Single Subject Teaching Credential**Comparative Political Systems/International Relations (32 units)**

Holders of a *Single Subject teaching credential* issued by the state of California may supplement that credential with an authorization in political science for teaching comparative political systems/international relations at any grade level through grade 12 or in classes organized primarily for adults by completing the following program with a grade of C or higher in each course. For other credential requirements, consult the School of Education.

Complete or demonstrate proficiency in each of the following courses (32 units):

Required Courses (16 units):

POLS 150 Government and American Society (4)

POLS 155 Critical Analysis of Political Communication (4)

POLS 202 Principles of Political Science (4)

POLS 400 Power and Policy in Washington: Congress and the President (4)

Electives (16 units):

Select two from following (8 units): POLS 421, 425, 426, 427

Select one from following: POLS 446, 450, 455

Select one from following: POLS 451, 452, 453, 456

U.S. Government and Civics (32 units)

Holders of a *Single Subject teaching credential* issued by the state of California may supplement that credential with an authorization in political science for teaching U.S. government and civics at any grade level through grade 12 or in classes organized primarily for adults by completing the following program with a grade of C or higher in each course. For other credential requirements, consult the School of Education.

Complete or demonstrate proficiency in each of the following courses (32 units):

Required Courses (16 units):

POLS 150 Government and American Society (4)

POLS 155 Critical Analysis of Political Communication (4)

POLS 200 California State and Local Government (4)

POLS 400 Power and Policy in Washington: Congress and the President (4)

Electives (16 units):

Select one from following (4 units): POLS 405 or 441

Select one from following (4 units): POLS 404, 417, 430

Select one from following (4 units): POLS 413, 418, 440

Select one from following (4 units): POLS 250 or 425

Courses in Political Science (POLS)**Lower Division Courses****150 Government and American Society (4)**

American political system with emphasis on role and function of government in social context of a democratic political system. Satisfies U.S. Constitution and California state and local government requirements. Not open to students who have completed an introductory college course in U.S. government, **CAN GOVT 2**

155 Critical Analysis of Political Communication (4)

Critical analysis of ideological messages, political biases, and manipulative devices in newspapers, magazines, television, textbooks, government publications, and scholarly writings; evaluation of credibility of news and information sources.

200 California State and Local Government (4)

Functions and structure of California state and local government units, current aspects of governmental process and problems in State. Satisfies California state and local government requirement.

202 Principles of Political Science (4)

Comparative government and politics, international relations.

203 Proseminar: Political Science (4)

Prerequisites: POLS 150, ENGL 190. Analysis of oral and written political arguments. Special projects in directed research. May be taken concurrently with POLS 202.

250 World Politics (4)

Theories, principles, and practice of international relations; examination of role of nationalism, diplomacy, war alliances, international law, and organizations in current international problems.

254 Special Topics in Political Science (1-4)

Current topics of special interest in political science and related disciplines, as announced in *Schedule of Classes*. May be repeated to maximum of 8 units.

281 Quantitative Methods in Political Science (5)

Prerequisite: POLS 150; MATH 091 or satisfactory performance on mathematics placement examination given during registration. Descriptive and inferential statistics; emphasis on practical applications in political science. Distributions on a single variable, associations between two variables, tests of hypotheses; bivariate computer analysis, including individual projects. Lecture 4 hours, laboratory 2 hours.

Upper Division Courses

POLS 150 is prerequisite to all upper division POLS courses except 426, 459, and 474.

395 Community Service in Political Science (1-4)

Prerequisites: prior approval of Political Science adviser in consultation with EPIC director, acceptance by community agency.

Participation in work of community agency or activity utilizing professional or vocational skills in service to community. Credit not applicable toward political science major. May be repeated to maximum of 9 units. Graded CR/NC.

400 Power and Policy in Washington: Congress and the President (4)

Structure, functioning, and interaction of Congress and the presidency.

403 State and Local Government (4)

Nature of state politics, analysis of legislative, judicial, and administrative organization and process; local government in metropolitan areas; all with reference to California.

404 Urban Government and Politics (4)

Problems of political influence, public policy, intergovernmental relations, and formal structure in American urban areas.

405 Intergovernmental Relations in the U.S. (4)

Introduction to American intergovernmental relations: American Federalism; national-state, state-state, and state-local relationships; powers and limitations of American governments.

406 Los Angeles City Politics (4)

Los Angeles within federal system; structures and functions; charter examination; policy issues; dominant individuals; social classes; minority influence; political coalitions; public vs. private sector relations and conflict.

407 Community and Citizen Politics (4)

Theories of citizen participation, community politics; grass roots political behavior; community organizing; knowing your community politically; power distribution; interest group and class cleavages; community political representation.

410 Classical Political Theory (4)

Exposition and critical analysis of ideas of major political thinkers from Plato to seventeenth century.

411 Modern Political Theory (4)

Studies in character of contemporary normative political theory; systematic political theories of Liberalism, Conservatism, Nationalism, Marxism, Communism, Fascism, Socialism, Democracy, and Irrationalism.

413 American Political Thought (4)

American political ideas from Puritan period to present.

415 Political Sociology (4) (also listed as SOC 415)

Prerequisite: POLS 150 or SOC 201. Social factors underlying democracy and totalitarianism, social movements and revolutions, conflict/conflict resolution, voting behavior, political socialization.

416 Political Chief Executives (4)

The president, the governor, and the mayor; politics of elected and appointed executives.

417 Public Policy and the Economy (4)

Prerequisite: POLS 250; also recommended, ECON 202. Interrelationships between public policy and economic affairs.

418 U.S. Political Parties, Campaigns, and Elections (4)

Role of political parties in campaigns and elections; role of the media, consultants, pollsters, and parties in recruiting, nominating, and electing candidates.

421 Comparative Politics (4)

Approaches, theories, and current research in comparative politics.

425 U.S. Foreign Policy in a Changing World (4)

Theory and practice of contemporary American foreign policy.

426 International Political Economy (4)

(also listed as ECON 426)

Prerequisites: Four units each in POLS and ECON. Interaction of politics and economics in the international arena.

427 International Relations (4)

Theories and practice of international politics.

430 Public Policy Analysis (4)

Public policy analysis: nature of public problems, issue definition, implementation, program impact and evaluation analysis.

432 Minority Politics in the U.S. (4)

Overview of ethnic politics in U.S. from both historical and contemporary perspectives; American Indian, Asian, black, and Hispanic political movements in U.S.

436 The Politics of Organized Labor (4)

Organized labor in American politics; union structures; special interest and class perspectives; political action; current problems; changing needs; labor laws and reforms.

439 Policy Evaluation (4)

Recommended prerequisite: POLS 281. Introduction to policy evaluation including research design, qualitative and quantitative evaluation, and real world problems of goals and "usability."

440 Judicial Process (4)

Judicial process as function of American government; survey of schools of legal thought, role of legal theory in functioning of courts.

441 American Constitutional Law: Federalism (4)

Recommended prerequisites for POLS majors in prelaw option: POLS 440, HIST 479. Role of Supreme Court in American government; judicial review; relationship between national and state governments, especially in areas of commerce and taxation; relationship between executive, legislative, and judicial branches of government.

442 American Constitutional Law: Civil Rights (4)

Recommended prerequisite for POLS majors in prelaw option: POLS 440. The constitutional rights of persons arising from the First and Fourteenth Amendments; freedom of speech, press, religion, assembly, and petition; equal protection of the laws and discrimination.

445 Judicial Behavior (4)

Recommended prerequisite for POLS majors in prelaw option: POLS 440. Contemporary approaches to study of judicial behavior, including judicial role, decision making, small group analysis, socialization, and analysis of judicial voting behavior.

446 Comparative Legal Systems (4)

Recommended prerequisite for POLS majors in prelaw option: POLS 440. Survey and systematic analysis of selected legal systems and functional relationships with social systems; emphasis on social context of legal systems and comparative approach to their study.

450 European Politics (4)

Course content varies, focusing on contemporary politics in selected European countries. May be repeated to maximum of 8 units as topic varies.

451 Latin American Politics (4)

Course content varies, focusing on contemporary politics of selected Latin American countries. May be repeated to maximum of 8 units as topic varies.

- 452 Politics of Asia (4)**
Course content varies, focusing on contemporary politics in selected Asian countries. May be repeated to maximum of 8 units as topic varies.
- 453 Politics of Africa and the Mid-East (4)**
Course content varies, focusing on contemporary politics of selected African and Middle Eastern nations. May be repeated to maximum of 8 units as topic varies.
- 454 Selected Topics in Comparative Politics (1-4)**
Selected topics in comparative government, as announced in *Schedule of Classes*. May be repeated to maximum of 8 units as topic varies.
- 455 Comparative Communist Political Systems and Movements (4)**
Course content varies, politics of selected socialist countries and communist movements. May be repeated to maximum of 8 units as topic varies.
- 456 Politics of the Caribbean and Central America (4)**
(also listed as PAS 456)
Political development and dependency in the Caribbean and Central America.
- 458 Environmental Policy and Politics (4)**
Prerequisite: HIST 202A or 202B. Survey of global environmental concerns and public policies; U.S. governmental policies, politics, and policy information process in world perspective.
- 459 Society and the Nuclear Genie (4)**
(also listed as HIST 459)
Prerequisites: Upper division standing, GE social science requirement. Development of atomic energy and its consequences for society, from the Manhattan Project to the present. Strategic role of scientists in such development and in public policy making about atomic energy.
- 460 Foundations of Public Administration (4)**
Politics of administrative power; methods of controlling bureaucracy; changing agency environments; dynamics and processes of public management; government as a career.
- 461 Dynamics of Urban Administration (4)**
Politics of governing urban U.S.; problems caused by multiple governmental and administrative bodies, overlapping jurisdictions, tax revolts; existing system's capabilities to respond to those problems.
- 463 Public Personnel Administration (4)**
Recommended prerequisite: POLS 460. Merit system concept growth, civil service development; recruitment procedures and examinations, position classification, salary structures, retirement plans, inservice training, supervision, employee organizations.
- 464 Public Sector Labor Relations (4)**
Recommended prerequisite: POLS 460. Collective bargaining development in governmental jurisdictions, emphasizing California; legal and practical differences between public and private sectors, bargaining legislation, operations, negotiations, and impasse resolution.
- 466 Public Financial Administration (4)**
Recommended prerequisites: courses in accounting and statistics. Role of financial administration and budgeting in determination of governmental policy, administrative planning and management, control of government operations, intergovernmental relations, and relation to private economy.
- 468 Administration of Human Resource Programs (4)**
Recommended prerequisite: POLS 460. Program details and administrative issues of selected income maintenance programs, including Social Security, workers compensation, public assistance, Medicare, Medicaid, food stamps, unemployment insurance, and state disability insurance.
- 470 Public Relations in Government (4)**
Recommended prerequisite: POLS 460. Public relations as a staff function; roles of information officer, public service features, public information counters; agency case histories.
- 472 Organization and Management (4)**
Recommended prerequisite: POLS 460. Organization structure, human factors in organization, dynamics of organizational change, internal adaptability to external environment; problems, limitations, and trends in governmental organization and management.
- 473 Systems Design in Government (4)**
Recommended prerequisites: POLS 460, 472. Conceptualization, design, analysis implementation of man-machine systems in government; information processing automation, retrieval, communication; theories of computers, operations research; related concepts.
- 474 Organization Behavior and Development (4)**
(also listed as PSY 452)
Prerequisite: PSY 442. Application of behavioral science findings to organizations; psychological methods used by various change agents, types and uses of organization development practices.
- 475 Comparative Administrative Systems (4)**
Recommended prerequisite: POLS 460. Theories of comparative administrative systems analysis and application to selected administrative systems in U.S. and foreign countries; emphasizes relationships between administrative institutions and environment.
- 476 Administrative Law (4)**
Recommended prerequisites: POLS 440, 460. Process in administrative adjudication, regulation, and rule-making; duties and liabilities of public officers, appeal procedures, trends in regulation.
- 477 Urban Planning and the Political Process (4)**
Recommended prerequisites: POLS 403 or 404, 460. Inter-relationship of planning at state and local levels within context of political and legal decisions; economic, social, legal, cultural, and esthetic problems; concepts of physical urban planning.
- 479 Computers in the Public Sector (4)**
Prerequisites: CIS/SOCS 280 or CS 190; also recommended: POLS 460. Public sector computing and applications; governmental issues regarding computing.
- 480 Advanced Quantitative Methods in Political Science and Public Administration (4)**
Prerequisite: POLS 281. Application of quantitative methods to government data, experimental and nonexperimental research design, sampling, scale and index construction, multivariate statistics and computer analysis, individual projects.
- 481 Managerial Computing in the Public Sector (4)**
Prerequisite: POLS 479. Managerial computing in the public sector, including project management, data base management systems, budget analysis using spreadsheets and other managerial tools.
- 483 Public Opinion and Polling (4)**
Elections as a means of expressing public opinion; mass media role in forming and reflecting public opinion; modern techniques for measuring public opinion.

485 Politics and the Media (4)

Relationships between government and the media; news-gathering techniques, journalist/government relations, role of media in presidential campaign politics.

487 Political Socialization (4)

How people acquire political information, values, orientations, and behavioral predispositions; the socialization process throughout the individual's life cycle; emphasis on subcultural and gender differences.

490 Special Studies in Political Science (4)

Intensive study of selected areas and special problems in political science. May be repeated as subject matter changes.

491 Proseminar: American Government and Politics (4)

Prerequisite: Passing WPE score; for all POLS majors: POLS 203. Individual and group research and writing projects in American politics and theory.

492 Proseminar: International Relations and Comparative Politics (4)

Prerequisite: Passing WPE score; for all POLS majors: POLS 203. Individual and group research and writing projects in international relations and comparative politics.

494 Proseminar: Legal Process (4)

Prerequisite: Passing WPE score; for POLS majors: POLS 203. Individual and group research and writing projects in public law.

496 Proseminar: Public Administration (4)

Prerequisites: Passing WPE score; for all POLS majors: POLS 203. Individual and group research and writing projects in public administration.

499 Undergraduate Directed Study (1-4)

Prerequisite: Department approval. Project selected in conference with sponsor before registration; progress meetings held regularly. May be repeated to maximum of 8 units.

PSYCHOLOGY

School of Natural and Social Sciences

DEPARTMENT OFFICE

King Hall C3104
Phone: (213) 343-2250

Psychology is the scientific study of the behavior and mental and emotional processes, of human beings, as well as the behavior of animals. The field also encompasses the methods, procedures, and instruments necessary for the study of these processes.

Psychology majors do volunteer work or are employed at various levels of the job market, including community organizations, social service agencies, county and state civil service, business and industrial companies, personnel and public relations firms, hospitals, research centers, the professions, and many others.

The Department of Psychology offers programs leading to Bachelor of Arts, Master of Science, and Master of Arts degrees. The graduate degrees are described in the *Graduate Programs* section.

The Faculty

Emeriti: Richard G. Cannicott, Solomon Diamond, Herbert Goldenberg, John Haralson, Patricia M. Hodges, R. D. Hutchinson, John Leiman, Robert T. Lewis, Herbert Moskowitz, Joseph Gerard Phelan, Ann M. Richardson, Leonard I. Schneider, Bernard J. Somers, Alice C. Thompson, Howard E. Wilkening.

Professors: Burton L. Alperson, Nancy Cobb, Annette Ehrlich, David Fitzpatrick, Michael G. Gaston, Herbert Goldberg, Harold J. Gottlieb, Thomas M. Graham, Estelle H. Gregory, Vernon Kiker, Jr., Seymour Levitan, Z. Barry Lowenkron, Irwin Lublin, David R. Perrott, Jean S. Phinney, Michael Roffe, Judith E. Stevens-Long, David J. Weiss.

Associate Professors: Stuart P. Fischhoff, Jean P. LaCour, Anson J. Levine, Sidney Roth, Mary J. Rotheram, Jerry Tate, Michael Louis Wapner (Chair).

Assistant Professors: Desdemona Cardoza, Gloria J. Romero.

Bachelor of Arts Degree

The Bachelor of Arts degree in Psychology is intended to prepare students for graduate professional training as psychologists while offering opportunity for specialized training in such areas as counseling and industrial psychology.

Students are encouraged to consider obtaining a double major to enhance their preparation for employment or graduate work. Interested students should see the department chair.

Advisement

Students must select an adviser by the end of their first year on campus; premed students must see a Health Science adviser (in Biological Sciences 243) before registering for any courses.

Requirements for the Major (74-76 units)

The major requires a core of 56 units in psychology, 14 lower division and 42 upper division, plus 18-20 units of electives, selected with adviser assistance. For Psychology majors, PSY 150, 170, and 202 are prerequisite to enrollment in upper division psychology courses.

Core Requirements (56 units)

Lower Division Required Courses (14 units):

- PSY 150 Introductory Psychology (4)
- PSY 170 Introductory Physiological Psychology (4)
- PSY 171 Laboratory Demonstration in Physiological Psychology (1)
- PSY 202 Descriptive Statistics in Psychology (5)

Psychology majors are urged to develop competence in one modern foreign language.

Upper Division Required Courses (42 units):

- PSY 302 Statistical Methods in Psychology (5)
- PSY 304AB Experimental Psychology (6, 6)
- PSY 308 Theories and Systems in Psychology (4)
- PSY 463 Psychological Research Colloquia (1)

Select five from following with at least two from each group for a total of 20 units.

Group I

- PSY 410A Abnormal Psychology (4)
- PSY 412A Psychology of Human Development: Childhood and Adolescence (4)
- PSY 418A Personality: Theory and Research (4)
- PSY 422 Social Psychology (4)
- PSY 423 Motivation and Emotion (4)

Group II

- PSY 401 Physiological Psychology (4)
- PSY 408 Animal Psychology (4)
- **PSY 421 Psychology of Learning: Basic Processes (4) or
- PSY 424 Cognitive Psychology (4)
- PSY 425 Sensation and Perception (4)

** Students who take courses in the behavior analysis elective area must take PSY 421 in the core or as an elective

Electives (18-20 units)

Select 18-20 units of additional courses from upper division PSY course offerings. Students who wish to focus their study in a particular area may wish to select most or all of their electives in one of the following categories.

I. Behavior Analysis

COUN 406 PSY 417, 428

II. Clinical Psychology

PSY 326, 405, 406, 410B, 428, 436A, 438, 445, 464, 485

III. Developmental Psychology

PSY 326, 406, 412B, 433, 462, 485

IV. General Psychology

PSY 416, *463 (two-unit limit)

*in addition to one unit taken in the core

V. Industrial/Organizational Psychology

PSY 431, 440, 442, 446, 485

VI. Social Psychology

PSY 440, 441, 488

VII. Theory and Methods

PSY 404, 409, 411, 414, 417, 429, 431, 440

Minor in Psychology

The Psychology minor, available to students majoring in other fields, requires 39 units of lower and upper division psychology courses.

Requirements for the Minor (39 units)**Lower Division Required Courses (13 units):**

- PSY 150 Introductory Psychology (4)
 PSY 170 Physiological Psychology (4)
 PSY 202 Descriptive Statistics in Psychology (5)

Upper Division Required Courses (15 units):

- PSY 302 Statistical Methods in Psychology (5)
 PSY 304A Experimental Psychology (6)
 PSY 308 Theories and Systems in Psychology (4)

Electives (select 11 units with adviser assistance)

Courses in Psychology (PSY)**Lower Division Courses****150 Introductory Psychology (4)**

Psychological perspectives on human behavior; principles and methods of psychology as a science; introduction to major topic areas of psychology. *CAN PSY 2*

160 Psychology of Developing Person (4)

Principles of life-span development from psychological perspective. Salient physiological, social, and psychological factors relevant to understanding development of the integrated person.

170 Introductory Physiological Psychology (4)

Relationship between behavior and its physical and biological antecedents; includes biological context of behavior, physiological determinants, sensory activity, perception, learning, arousal, and reaction.

171 Laboratory Demonstration in Physiological Psychology (1)

Prerequisite or corequisite: PSY 170. Laboratory procedures for physiological psychology; introduction to instruments used, organisms studied, and processes investigated. Required of majors; optional for others.

202 Descriptive Statistics in Psychology (5)

Prerequisites: PSY 150, GE critical thinking and math requirements. Basic numerical and graphical methods in psychology; statistical notation, data presentation, measures of central tendency, dispersion and covariation, probability; utilization of personal computers in statistics. Lecture 4 hours, laboratory 3 hours.

270 Introductory Comparative Psychology (4)

Prerequisite: BIOL 155. A comparison across species that traces the development of behavior from an evolutionary standpoint. Learning cognition, social behavior, nervous systems, and hormonal systems are among the topics to be covered.

Upper Division Courses

PSY 150 and GE blocks A and B are prerequisite to all upper division psychology courses.

302 Statistical Methods in Psychology (5)

Prerequisite: PSY 202. Binomial and other probability distributions; covariance and correlation, regression; confidence intervals

and hypotheses testing; t, f, and Chi Square distributions. Lecture 4 hours, laboratory 3 hours.

304AB Experimental Psychology (6, 6)

Prerequisites: ENGL 190, PSY 302. Introduction to research experimental design, library research, laboratory techniques for gathering/analyzing empirical data, preparing technical manuscripts in (a) psychophysics, scaling and perception, and (b) cognition memory, learning, motivation, and emotion. Lecture 4 hours, recitation 1 hour, laboratory 3 hours.

307 Physiology and Psychology of Violence and Aggression (4) (also listed as NURS 307)

Prerequisites: PSY 150, GE blocks A and B. Biological and psychobehavioral approaches to violent individuals; analysis of and research support for understanding violence drawn from natural, medical, and behavioral sciences.

308 Theories and Systems in Psychology (4)

Critical survey of "schools" era of psychology: structuralism, functionalism, Gestalt school, behaviorism, psychoanalysis, and others, emphasizing their impact upon contemporary psychology.

323 Psychology of Emotion (4)

Prerequisites: PSY 150; BIOL 155 or 165 or PSY 270. Development of feelings and emotions as viewed from the perspectives of psychology, learning, cognition, psycho-dynamics and ethology; effects of drugs, behavioral, and surgical interventions.

326 Psychological Factors in Marriage (4)

Individual and interpersonal adjustment to marital events and issues in a changing environment, including: courtship, communication, sexual behavior, parenting, postparenting, separation, divorce, remarriage.

354 Selected Topics in Psychology (4)

Prerequisites: As needed for specific topic. Current topics of special interest to students in psychology, as announced in *Schedule of Classes*. May be repeated for credit.

395 Field Experience in Psychology (1-4)

Prerequisite: Department chair approval. Opportunity through observation and participation to study psychological principles in naturally occurring behavioral situations; may involve animals in nonlaboratory situations or human beings in community, clinical, or other institutional settings. May be repeated to maximum of 8 units. Graded CR/NC.

401 Physiological Psychology (4)

Prerequisite: PSY 170. Relationship between integrated behavior and physiological processes; theories that relate psychology and physiology.

403 The Psychosocial Dynamics of Child Maltreatment and Family Violence (4) (also listed as COUN 403)

Psychosocial factors in child maltreatment and family violence: developmental considerations, assessment, interventions, legal and ethical issues, research findings, and community resources.

404 Advanced Experimental Psychology (2)

Prerequisite: PSY 304B. Offered in multiple sections with content of each section correlated with content of a specific course in the 400 series: consideration of advanced problems of research design and experimental techniques. Emphasis on individual projects. 6 hours laboratory. May be repeated for credit.

405 Group Methods for Psychological Intervention (4)

Prerequisite: Upper division standing. Traditional and contemporary theories and techniques employing group methods for psychotherapy, facilitation of personal growth, and modification of social systems.

406 Mental Retardation (4)

Nature and causes of mental retardation; physiological and psychological characteristics; problems of social control, including education, social adjustment, institutionalization, and community responsibility.

408 Animal Psychology (4)

Prerequisite: Background in scientific methodology strongly recommended. Natural behaviors and learning in animals, from single cell to apes; emphasis on evolution of behavior and survival in the natural environment. Topics include social behavior, development, mating, and parental behavior.

409 Computer Techniques for Psychology (4)

Prerequisite: PSY 302. Available systems; introduction to programming, use and modification of library programs for analysis of psychological data; special techniques for subject-computer interaction in psychological research. No prior computer experience assumed.

410AB Abnormal Psychology (4, 4)

410A: Definition, history of abnormality; perspectives on maladaptive behavior, research, classification, assessment, diagnosis, legal issues and clinical procedures, coping with maladaptive stress, personality disorders, anxiety disorders, substance abuse and dependence.

410B: Prerequisite: PSY 410A. Clinical perspectives, research and treatment considerations with schizophrenia, affective disorders, psychophysiological disorders, maladaptive behaviors of childhood, organic brain syndromes, and mental retardation.

411 Research Methodology in Psychology (4)

Prerequisite: PSY 302. Logic of research methodology and statistical analysis; evaluation of adequacy of research strategies; interpretation of results.

412AB Psychology of Human Development: Childhood and Adolescence (4, 4)

412A: Theory and empirical literature pertaining to infancy and early childhood.

412B: Theory and empirical literature pertaining to middle and late childhood, adolescence, and young adulthood.

414 Analysis of Variance (4)

Prerequisite: PSY 302. Various analysis-of-variance models in analysis and interpretation of psychological data.

416 History of Psychology (4)

Prerequisites: One year of college psychology; PSY 308 recommended for psychology majors. Consideration of historical development of psychology from its origins in ancient philosophy and science to end of nineteenth century.

417 Single Case Research Design (4)

Prerequisite: PSY 304B. Basic types of single case experimental designs including withdrawal, reversal, multiple baseline, and multiple-baseline designs; methods of observation, measurement, recording behavior; assessing reliability of observations.

418AB Personality: Theory and Research (4, 4)

Biological and cultural determinants of personality; dimensions of personality, description and evaluation of major theories, research issues and methods.

419 Psychology of Sex Roles (4)

Prerequisites: GE critical thinking requirement, introductory social science course. Psychological, social, and physiological determinants of sex difference in behavior; emphasis on development of sex role identity and interpersonal interactions.

420 Psychology of Communications (4)

Psychological aspects of interchange of human thoughts and concepts; methods of studying communications; relationships between communications and personal adjustment, industrial problems, leadership, mass media.

421 Psychology of Learning: Basic Processes (4)

Prerequisite: PSY 304B. Principles of classical and instrumental conditioning; emphasis on experimental findings, with consideration of theoretical formulations that apply to forms of learning.

422 Social Psychology (4)

Introduction to major theories of social psychology with special emphasis on such topics as aggression, liking and loving, altruism, prejudice, and attitude theory and measurement. *No credit toward Sociology major or minors.*

423 Motivation and Emotion (4)

Prerequisites: PSY 170, 304AB. Critical examination of drives, needs, preferences, desires, feelings and emotions from experimental and theoretical perspectives.

424 Cognitive Psychology (4)

Prerequisite: PSY 304A. Theories and experimental literature with respect to the nature of memory and cognition.

425 Sensation and Perception (4)

Prerequisites: PSY 170, 304AB. Examination of theories and experimental literature with respect to variables that determine the organism's ability to respond differentially to sense data.

426 Family Therapy Dynamics and Perspectives (4)

Prerequisite: PSY 410A or 418A. Historical evolution of concepts and theoretical perspectives in family processes; treatment approaches; significant issues in family life.

427 Family Therapy Techniques: Strategies for Change (4)

Prerequisites: PSY 426, instructor consent. Marital and family transactions in context of structured models of relationship exchanges; general systems theory and analyses applied to marital and family problem-solving.

428 Introduction to Analysis of Behavior (4)

Basic phenomena of behavior analysis; applications for understanding human behavior, therapy, analysis of cognition, and verbal, social, and abnormal behavior; consideration of ethics involved in controlling human behavior.

429 Multiple Regression/Correlation Analysis (MRCA) (5)

Prerequisite: PSY 302; also recommended: PSY 414. Correlation and partial correlation; regressing a dependent variable on single and multiple variable factors; applications to experimental and nonexperimental research designs.

431 Survey of Psychological Tests (5)

Prerequisite: PSY 202. Theoretical issues in individual differences; introduction to a variety of group and individual psychological tests and assessment techniques; role of tests in clinical evaluation; problems of reliability, validity, and interpretation. Lecture 3 hours, laboratory 3 hours.

433 Psychology of Cognitive Development (4)

Prerequisite: PSY 412A. Evolution of cognitive processes from simple organisms to adult human beings. Piaget's theory; development of dialectic operations; perceptual and language development and apprehension of reality; relationship of social development to cognitive development.

436AB Counseling and Psychotherapy: Theories, Methods, and Issues (4, 4)

436A: Prerequisites: Senior or graduate standing; PSY 410AB or 418AB. Theories of counseling and psychotherapy; systems approaches to individual, marital, and family dynamics; introduction to clinical interviewing techniques.

436B: Prerequisite: PSY 436A. Current issues in counseling and psychotherapy; application of systems/communication models to individual, marital, and family therapy; student participation in intensive evaluation of therapeutic techniques.

438 Introduction to Clinical Psychology (4)

Prerequisite: PSY 410A or 410B. Current trends and methods of clinical psychology; designed primarily for students considering careers in area. Problems of assessment, psychotherapy, research, and community involvement.

440 Theory and Measurement of Attitudes and Opinions (4)

Prerequisite: PSY 422. Conceptualization and measurement of attitudes, beliefs, and opinions. Theories of belief systems, attitude formation and change; implications of research findings. Individual and/or class research projects.

441 Psychology of Small Group Behavior (4)

Prerequisite: PSY 422. Historical development and theoretical implications of research in small group structure and process. Emphasis on cohesiveness, conformity, leadership and power, intergroup and intragroup conflict and cooperation.

442 Industrial and Organizational Psychology (4)

Interaction of employees and their organizations. Individuals and their motivation to work; groups, communication in industrial organizations; human factors research; psychological principles applied to personnel problems; psychology of work.

445 Community Psychology (4)

Principles of social and clinical psychology; role of psychologists in analysis of social systems; community organization, social planning, and community change; methodology and basic concepts of community mental health.

446 Employment and Personnel Psychology (4)

Prerequisite: PSY 302. Psychological principles of individual differences applied to problems of developing recruitment, selection, and testing programs; supervisory training and executive development; measurement of employee attitudes and morale; job evaluation and motivation.

447 Human Performance in Man-Machine Systems (4)

Survey of basic research on human performance; processing of discrete and continuous information; decision-making, vigilance, environmental effects on human performance.

448 Psychology of Labor-Management Relations (4)

Prerequisite: PSY 422 or 442. Perceptual and motivational factors influencing behavior of workers, executives, union officers. Psychological factors in strikes; principles relevant to union-management cooperation.

450 Health Psychology (4)

Psychological principles applied to field of health care; evaluation of research in effectiveness of treatment models and techniques.

452 Organization Behavior and Development (4)

(also listed as POLS 474)

Prerequisite: PSY 442. Applying findings of behavioral science to organizations; psychological methods used by various change agents; types and uses of organization development practices.

454 Special Topics in Psychology (1-6)

Prerequisites: As needed for specific topic. Current topics of special interest to students in psychology, as announced in *Schedule of Classes*. May be repeated as subject matter changes.

462 Psychology of Human Development: Maturity and Aging (4)

Prerequisites: Upper division standing; PSY 412AB recommended. Psychological factors in behavior during middle and later years, including physical and mental health problems, role changes, successful adjustment patterns, and family and community relationships in successive adult age groups.

463 Psychological Research Colloquia (1)

Prerequisite: Upper division standing. Presentation of a cross section of current research in the field of psychology. May be repeated to maximum of 3 units. Graded CR/NC.

464 Psychology and the Law (4)

Laws pertaining to psychology; rights and responsibilities of mental health providers; conflicts between legal and ethical practice of psychology; current legislative issues.

485 Directed Field Experience in Community Clinical Psychology (4)

Prerequisites: PSY 410A or 410B; 412A or 412B; 422 or 462; agency acceptance. Application of psychological principles (interviewing, counseling) in supervised settings: service agencies, mental health centers, halfway houses, etc. Lecture, problem solving meetings, self and agency evaluation reports. May be repeated to maximum of 8 units. Graded CR/NC.

488 Gender Differences (4) (also listed as BIOL 488N)

Prerequisite: BIOL 155. Biological and psychological differences between the sexes. Topics include genetic sexual determination, sexual differentiation, role of hormones in physiology and behavior, experimental methodology, psychological differences in ability and personality. No credit toward Biology major.

499 Undergraduate Directed Study (1-4)

Prerequisite: Instructor consent to act as sponsor. Project selected in conference with sponsor before registration; progress meetings held regularly, and a final report submitted. May be repeated for credit. Graded CR/NC.

SOCIAL SCIENCE

School of Natural and Social Sciences

PROGRAM OFFICE

Engineering and Technology A523

Phone: (213) 343-2230

The interdisciplinary program in Social Science offers a foundation for general and comparative study of societies and human events.

Program Coordinator: Benjamin W. Smith.

The Faculty

Instruction is provided by the faculties of all social science departments. Advisement information is available from the Social Science Coordinator.

Bachelor of Arts Degree

The Bachelor of Arts degree in Social Science provides the basis for a liberal arts education with major emphasis in social science. Students who graduate with this major will fulfill requirements for examination waiver for the Single Subject credential in Social Science. The major requires completion of 80 units, 32-40 in lower division courses and 40-48 in upper division courses. Early consultation with the Social Science coordinator is advised.

Requirements for the Major (80 units)

REQUIRED CORE (60 units)

Lower Division Required Courses (24 units):

- GEOG 150 Human Geography (4)
 HIST 110C World Civilization III (4)
 HIST 202AB United States Civilization (4, 4)
 POLS 150 Government and American Society (4)
 PSY 150 Introductory Psychology (4)

Upper Division Required Courses (36 units):

U.S. History (4 units)

Select one from following:

- HIST 458, 471, 472, 474-484

California History (4 units)

- HIST 488

U.S. Government (8 units)

Select two from following:

- POLS 403, 405, 413, 418, 425, 441, 442

World History (8 units)

Select one course from each area:

Western Civilization and Europe

- HIST 410, 411, 412AB, 423-426, 429, 430, 437-439

The Non-Western World

- HIST 414AB, 415, 419, 420, 461-463, 466, 490B,
 491, 492, 494ABC, 495AB, 496

World Geography (8 units)

Required course (4 units):

- GEOG 370

Select one from following (4 units):

- GEOG 441, 442, 475-477, 481

U.S. Government or World Geography (4 units)

Select one additional U.S. government or world geography course from those listed above.

BREADTH REQUIREMENTS (20 units)

Required courses (8 units):

- ANTH 250 Cultural Anthropology (4)
 SOCS 180 Race and Ethnicity in American Society (4)

Electives (12 units):

Select three courses from at least two of the following three areas. All are 4-unit courses.

Race, Sex, and Ethnicity

- | | |
|----------|------------------------|
| ANTH 438 | CHS 444 |
| GEOG 446 | PAS 400, 402, 403, 412 |
| PSY 419 | SOC 441, 460 |

Politics and Economics

- | | |
|------------------------------|----------|
| ECON 201, 202 | PHIL 410 |
| POLS 404, 410, 411, 427, 455 | |

Social Structure and Behavior

- | | |
|-------------------------|-----------------------------|
| ANTH 430, 432, 435 | POLS/SOC 415 |
| PSY 308, 418A, 420, 422 | SOC 422, 430, 442, 445, 448 |

The Credential Program

The Bachelor of Arts degree in Social Science has been approved by the Commission on Teacher Credentialing for examination waiver for the Single Subject credential in Social Science. Interested students should consult advisers in the Department of Political Science, which administers the program, and in the School of Education. Refer to the undergraduate *School of Education* chapter of this catalog for regulations governing all teaching credential programs.

Courses in Social Science (SOCS)

Lower Division Courses

180 Race and Ethnicity in American Society (4)

An interdisciplinary examination of ethnic and racial groups in the U.S. Emphasis on intergroup relations; social thought, conflict, consensus, and cooperation; group responses to oppression; and dependence and interdependence in intergroup relations.

280 The Computer World (4) (also listed as CIS 280)

Basic information about computers and data base systems; terminology, technology, practical application, social implications.

Upper Division Course

499 Undergraduate Directed Study (1-4)

Prerequisites: Consent of an instructor to act as sponsor; ability to assume responsibility for independent work and to prepare written and oral reports. Project selected in conference with sponsor before registration; progress meetings held regularly.

414 Contemporary Sociological Theory (4)

Functionalism, conflict sociology, interactionism, critical-radical sociologies, systems analysis, and phenomenological perspective.

415 Political Sociology (4) (also listed as POLS 415)

Prerequisite: POLS 150 or SOC 201. Social factors underlying democracy and totalitarianism, social movements and revolutions, conflict and conflict resolution, voting behavior, and political socialization.

416 Crowd Behavior and Social Movements (4)

Analysis of crowd types, formation, and dynamics, including mobs, riots, panics, mass hysteria, rumors, fads, and fashion. Development, tactics, ideologies, and effects of social movements, cults, and rebellions.

420 Small Groups (4)

Small group processes in industry, the family, schools, peer and colleague groups; reference-group behavior, relation to larger social systems, group structure and communication, development of research techniques.

421 Social Sources of Human Sexuality (4)

Effects of social environment on emergence, justification, and maintenance of sexual attitudes and behavior; social factors influencing sexual behavior; changing sociosexual mores and behavioral patterns, and emerging sexual life styles.

422 Social Psychology (4)

Inquiry into social-psychological dimensions of group behavior, emphasizing interactive processes involved in communication, group behavior, perception, attitude formation, motivation, socialization, and evolution of self-concept.

424 Mass Communications and Public Opinion (4)

Sociological analysis of print and electronic mass media of communications; examination of their functions, sociocultural evolution, organizational/occupational bases, cultural content, audiences; consideration of individual, collective effects on public opinion.

425 Medical Sociology (4)

Role of the hospital and socialization process on professional development of personnel in the healing professions; social epidemiology of physical and mental disorders.

426 Deviant Behavior (4)

Basic theoretical orientations to social and personal disorganization resulting from role conflict, social conflict, normlessness, or alienation; individual and social deviance related to group processes and structures.

427 Society and Mental Illness (4)

Lay and professional ideas about mental illness in historical and crosscultural perspective; organizational treatment of the mentally ill; identity, stigma, and adaptations.

430 Urban Sociology (4)

Urban community and urbanization as contemporary social process; consideration of urban areas, institutions, values, and problems; social and demographic characteristics, urban and suburban change and planning.

432 Science, Technology, and Social Character (4)

Effects of scientific and technological development upon social life and culture, especially family, work and leisure, modes of thinking and feeling. Differences among social classes, ethnic groups, women and men.

434 Social Aspects of Population Trends (4)

Population facts, changes, problems, and policies; population dynamics, especially births, deaths, and migration; national action programs; world coverage, with emphasis on the U.S.

435 Asian Societies (4)

Comparative analysis of Asian societies; population, social thought, institutions, stratification, education, industrialization, and urbanization in Asia focusing on China, Japan, Korea, and southeast Asia.

440 Marriage and the Family (4)

The family as a social institution; historical and crosscultural perspectives, social change as it affects marriage and family life. Analysis of American courtship and marriage patterns, psychodynamics of family life.

441 Sociology of Sex Roles (4)

Institutional analysis of sex role differences; implications of differential socialization of sexes; access to educational and occupational opportunities; differences in legal status; movements for equality.

442 Social Change (4)

Classical and contemporary theories of sources and consequences of social change; revolutions and alternative routes to modern world; issues in historical sociology; change and social contexts of creative achievements in arts and sciences.

443 Alternative Family Life Styles (4)

Social change in man and woman relationships, including single life styles, nontraditional marriage and family forms, communes, and utopian societies; evaluation of benefits and costs to individuals and society.

445 Sociology of Religion (4)

Social bases of religion, religious institutions, and their modern organizational life; comparative analysis and theories of religious behavior; religious institutions, their representatives, religious conflict, and public law.

447 Sociology of Occupations and Professions (4)

Analysis of the social world of work; occupational trends and mobility; occupations, education, and minorities; nature of professions and professional processes and structures; study of selected occupations and professions.

448 Social Class and Inequality (4)

Examination of sociological theory and research bearing on social stratification; social differentiation; class position, class interests, correlates of social class; trends in occupational mobility, comparison of stratification systems.

450 Sociology of Aging (4)

Aging as a social process; emphasis on sociological theories of aging and social problems of the aged; nature of aging process, work, retirement, family relationships, housing, income maintenance; societal response to aged.

452 Life Span Transitions: The Retirement Years (4)

Critical evaluation of issues involved in planning for retirement; changing place of work and retirement in value system; anticipatory behavior, patterns and modes of adjustment, maladjustment, proposals and issues.

453 Social Aspects of Death and Bereavement (4)

Concepts and theories of dying; meaning of death and its implications for dying persons, survivors, and professionals who attend them.

454 Selected Topics in Sociology (1-6)

Current topics of special interest in sociology, as announced in *Schedule of Classes*. May be repeated for credit.

460 Race and Ethnic Relations (4)

Structure and change of minorities in society; theories and research: historical, contemporary, and comparative; processes of adjustment: patterns of immigration, prejudice, discrimination, assimilation, pluralism, conflict, and social movements.

480 Criminology (4)

Criminal law, crime, and deviance. Social and psychological factors in criminal behavior, criminal law, and criminal justice; prevention and control; trends in theory and correctional procedures.

482 Juvenile Delinquency (4)

Extent and distribution of delinquency, with emphasis on the local area; meaning, implications, and treatment of delinquent behavior; personal and environmental conditioning factors: delinquency and the rights of children.

483 Violence in American Society (4)

Forms of violence in American Society (e.g., criminal, domestic, revolutionary, official, sexual) examined through a critical review of social scientific literature; assessment of causes, consequences, and possibilities for control.

484 Corrections (4)

Survey of procedures used in processing the offender, from arrest, through trial, to prison and probation; contemporary theories of criminality and rehabilitation applied to the social evaluation of these procedures.

486 Probation and Parole (4) (also listed as SW 486)

Prerequisite: SOC 480 or 482. History, philosophy, legal bases, and procedures governing investigation, treatment, and supervision of adjudged juvenile offenders and adult violators placed on probation and parole.

490 Advanced Research Methods (4)

Prerequisites: SOC 390, 410. Advanced research techniques in sociology, including design of experiments, sample surveys and panel studies, scaling, multivariate and computer data analysis procedures. Individual projects; laboratory. With instructor consent, one unit of SOC 499 may be taken concurrently.

491 Quantitative Research Methods in Sociology (4)

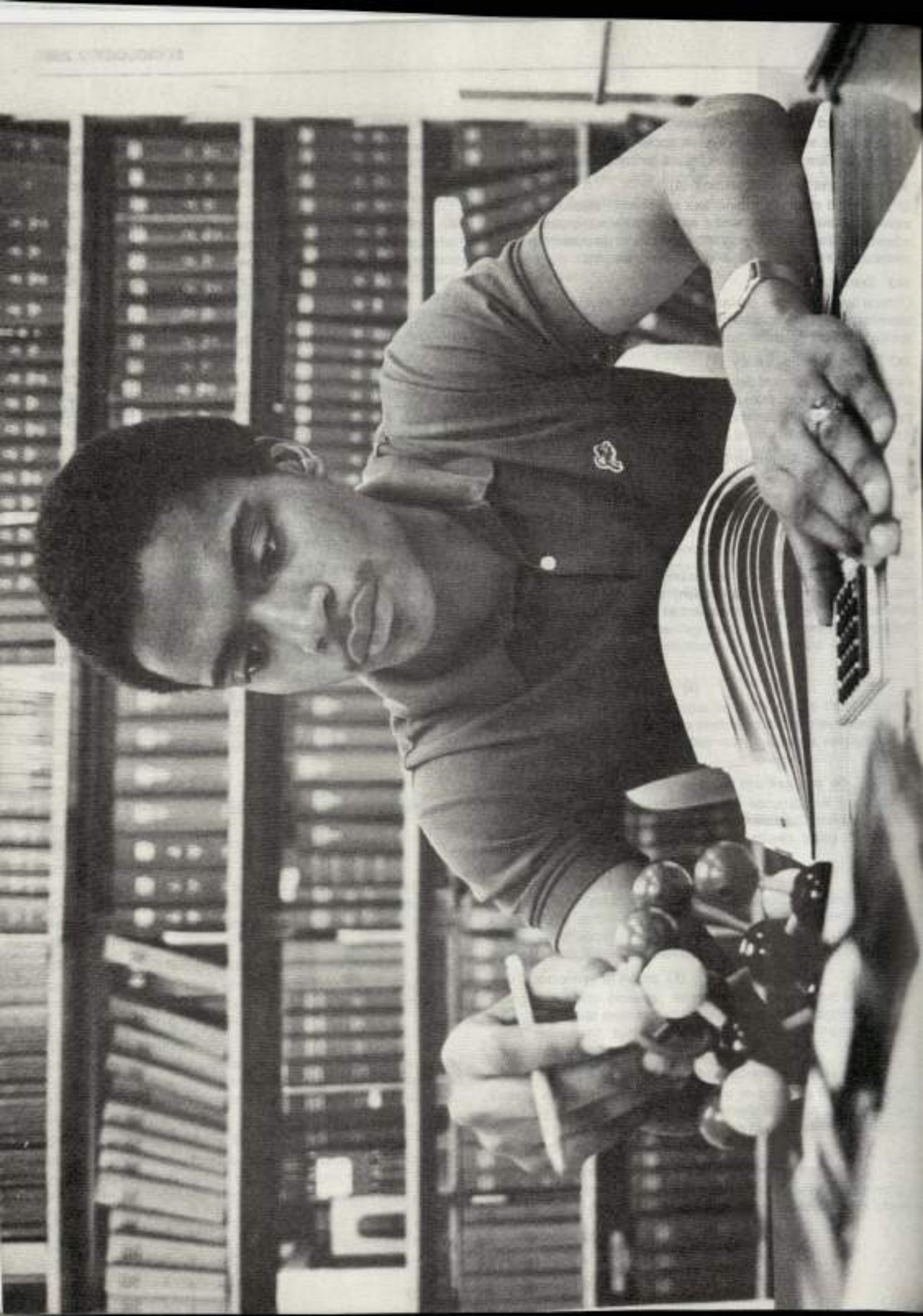
Prerequisite: SOC 390. Qualitative research techniques in sociological research: research in field settings; problems of participant observation and interviewing; document analysis; typology construction; qualitative data interpretation and presentation.

497 Sociology Proseminar (4)

Prerequisite: Sixteen upper division SOC units. Comprehensive survey and analysis of selected areas of sociological and social welfare inquiry, as announced in *Schedule of Classes*. Recommended for majors planning or beginning graduate study. May be repeated once for credit. With instructor consent, one unit of SOC 499 may be taken concurrently.

499 Undergraduate Directed Study (1-4)

Prerequisites: Senior standing, 2.75 overall grade point average, consent of a faculty sponsor, approval of proposed project prior to registration, and ability to assume responsibility for independent research and analysis. Regular discussion of progress with sponsor before presentation of final written report. May be repeated for credit.



UNIVERSITY PROGRAMS

Division of Intercollegiate Athletics

University (UNIV) Courses

Credit for Prior Experiential Learning (CPEL)

Cooperative Education

General Education Honors Program

Special Topics

INTERCOLLEGIATE ATHLETICS

Division of Intercollegiate Athletics

INTERCOLLEGIATE ATHLETICS OFFICE

Physical Education 102

Phone: (213) 343-3080

SPORTS INFORMATION OFFICE

Physical Education 212A

Phone: (213) 343-3198

FAX: (213) 343-3199

Director of Intercollegiate Athletics: Carol M. Dunn.

Associate Director: David Thomas.

Intercollegiate Athletics Board Chair: Fleur Yano.

Sports Information Director: John Czimbai.

Coaches

Gudrun Armanski	Women's Track and Field
Frances S. Buckless	Women's Basketball
Tina Mochizuki	Men's Tennis
Leonardo Cuellar	Men's Soccer
Henry Dyer	Men's Basketball
John O. Herbold II	Men's Baseball
Greg Ryan	Women's Cross Country
John Turek	Men's Cross Country and Track and Field
Mark Massey	Women's Volleyball
Michael F. Moode	Men's and Women's Swimming and Diving
Tina Mochizuki	Women's Tennis

Intercollegiate athletics constitute an integral part of the total program of activities at Cal State L.A. and involve participation by faculty, students, and administration. Major fiscal support for the athletics program is provided through allocation of student activities fees. Coaching and programming of sports are provided by the Division of Intercollegiate Athletics. In addition to coaching responsibilities, members of the division may also be faculty members in academic departments or divisions within the university. The Intercollegiate Athletics Board (IAB) works closely with the Director of Intercollegiate Athletics. The IAB is comprised of faculty, students, administrators, alumni, and a University Development Board designee.

Cal State L.A. is a member of the National Collegiate Athletic Association (NCAA) and the California Collegiate Athletic Association (CCAA). The intercollegiate athletics program fields teams in men's baseball, basketball, cross country, diving, soccer, swimming, tennis, indoor and outdoor track and field. Women's teams compete in basketball, cross country, swimming, tennis, indoor and outdoor track and field, and volleyball.

Normal Progress for Student Athletes

Minimum academic progress for student athletes is defined as completion of the minimum 186 quarter units required for a bachelor's degree within five academic years.

In order to be eligible for competition in intercollegiate athletics, student athletes must earn units in courses acceptable toward a specific degree program according to the following schedule:

Year	Quarter	Units Earned
1	1	12
	2	24
	3	36
2	4	48
	5	60
	6	72
3	7	84
	8	97
	9	110
4	10	122
	11	134
	12	147
5	13	160
	14	173
	15	186

This schedule permits the student athlete to enroll on a part-time basis one quarter each academic year to correct unit deficiencies.

Student athletes must formally declare a major by the beginning of their seventh quarter of collegiate enrollment.

Student athletes who transfer from other collegiate institutions shall be subject to the above minimum academic progress schedule upon enrollment at Cal State L.A. Such transfer students shall commence their progress in this schedule at the rate equal to the total number of full-time quarters in attendance.*

For freshmen and sophomores, no more than one-third (12) of the yearly minimum number of units (36) between seasons of competition may be electives. At least two-thirds (24) of the units must be in general education or major courses. For juniors and seniors, the quarter units earned must be in major and general education courses unless a student athlete's record clearly indicates that the completion of all required (major and general education) courses plus any previous elective courses will result in the student athlete being short of the required number of units for graduation.**

* Full-time attendance is defined by the NCAA as any quarter or semester in which a student athlete is enrolled in 12 or more units on the first day of instruction.

** Although based on the same academic work, the NCAA's units between seasons shall be considered a separate calculation.

Student athletes must maintain a minimum **C** (2.0 on a scale in which **A = 4.0**) grade point average at all times in both their overall collegiate record and their Cal State L. A. work in order to remain eligible for competition.

In the calculation of the required 24 units in major and general education courses, only courses in the primary major and in general education will be included. Although students may elect to take a minor and/or a second major, they are not required to do so. For this reason, courses in the minor and in the second major will be considered electives.

The major code shown on the student athlete's permanent record card (PRC) at Cal State L.A. will be used to determine the student athlete's official major. *** If for some reason that code is incorrect, it is the student athlete's responsibility to correct the code by filing a form 0-2 (*change of objective*) with the Office of Admissions. The student athlete must give a copy of the form 0-2 to the Faculty Athletics Representative before the initial eligibility check. In the absence of such a form, the major code shown on the student athlete's PRC will be used.

A student athlete must meet normal progress in both the current and proposed new major before changing majors. This means that changing majors is not a reason for failing to meet normal progress.

No seventh quarter athlete will be declared eligible unless the Faculty Athletics Representative has received the following:

1. Evidence of the student athlete's formally declared major.
2. A copy of the student athlete's department advisement form signed by the department adviser.

Courses in Athletics (ATHL)

Upper Division Courses

341-343 Intercollegiate Athletics (1-2 each)

Prerequisite: Consent of coach. Only NCAA-eligible student athletes may enroll and participate in these courses. Advanced practice in performance techniques in preparation for intercollegiate competition. A maximum of 10 units of intercollegiate athletic courses may be applied toward a baccalaureate. Graded CR/NC.

341 Series: Individual or Dual Sports (1-2 each)

341C Cross Country (Men's) (Women's) (1)

341N Tennis (Men's) (1)

341T Tennis (Women's) (2)

341F Track and Field (Men's) (Women's) (2)

342 Series: Team Sports

342B Baseball (Men's) (2)

342K Basketball (Men's) (Women's) (2)

342S Soccer (Men's) (2)

342V Volleyball (Women's) (2)

343 Series: Aquatic Sports

343D Diving (Coed) (1)

343W Swimming (Men's) (Women's) (1)

343P Water Polo (Men's) (1)

*** This meets the specific baccalaureate program requirement as mandated by the NCAA.

UNIVERSITY COURSES

University Courses

Courses that are designed University (UNIV) frequently are interdisciplinary in nature. Some—such as UNIV 396, Honors Program Seminar—are limited to certain categories of students. Cooperative Education (UNIV 298, 398, and 498) and CPEL (UNIV 295) courses appear in this catalog under the title UNIV, but appear in the *Schedule of Classes* with the course abbreviations used by the various departments and divisions that offer them.

Detailed descriptions of the Credit for Prior Experiential Learning (CPEL), General Education Honors, and Cooperative Education programs will be found in the *Undergraduate Study* chapter of this catalog. Students should note that a limited amount of unit credit is allowed toward the baccalaureate for each of these programs. Policies and regulations differ among various departments, divisions, and schools. Each student should consult the appropriate major department, division, or school for specific procedures and instructions.

University Courses (UNIV)

Subcollegiate Courses

054 Special Topics (1–4)

Prerequisite: Varies with topic. Topics of special interest to wide university audience as announced in *Schedule of Classes*. May be repeated for credit as topic changes. *No credit toward baccalaureate.*

060 Study Group (1)

Corequisite: Associated course. Lecture methods and study skills development including reading comprehension, critical analysis of course content, time and task management notetaking, and test preparation.

Lower Division Courses

154 Special Topics (1–4)

Prerequisite: Varies with topic. Topics of special interest to wide university audience as announced in *Schedule of Classes*. May be repeated for credit as topic changes.

254 Special Topics (2)

Prerequisite: Varies with specific topic. Topics of special interest as announced in *Schedule of Classes*. Graded *CR/NC*.

295 Credit for Prior Experiential Learning (1–4)

Prerequisite: At least 45 units in residence but not more than 165 total units completed. Approval for registration must be obtained through University Undergraduate Studies Office. Preparation of materials and portfolios documenting prior college-level learning acquired in nonacademic settings. Upon successful completion, 1–4 resident units will be awarded. In addition 1–8 units for non-graded, nonresident credit may be awarded for prior learning. These units may be upper or lower division and may apply toward the major with major department approval. Graded *CR/NC*.

298 Preparation for Cooperative Education (2)

Techniques of relating major to internship (work experience) through discipline-based research; documentation of transferable skills through resumes, interviews, and other reporting techniques appropriate to academic concentration; designed to enhance internship performance. Graded *CR/NC*.

Upper Division Courses

354 Special Topics (1–4)

Prerequisite: Varies with topic. Topics of special interest to wide university audience as announced in *Schedule of Classes*. May be repeated for credit as topic changes.

396 Honors Program Seminar (2)

Prerequisite: Limited to students in the GE Honors Program. Critical reading of seminal works affecting human thought and achievement. Topic and instructor(s) vary each quarter. May be repeated to maximum of 4 units.

398 Cooperative Education (1–4)

Prerequisites: Courses appropriate to the work experience; approval by major department Cooperative Education coordinator. Integration of work experience with academic program, individually planned through coordinator. Minimum of 10 hours per week required for each unit. May be repeated to maximum of 12 units; combined units of 398 and 399 may not exceed 12. Graded *CR/NC*.

399 Cooperative Education Honors (1–4)

In addition to prerequisites for UNIV 398, the prerequisites are UNIV 298 and eligibility to participate in a university or departmental honors program. Integration of work experience with academic program, individually planned through coordinator. Minimum of 10 hours per week required for each unit. May be repeated to maximum of 12 units; combined units of 398 and 399 may not exceed 12. Graded *CR/NC*.

454 Special Topics (1–4)

Prerequisite: Varies with topic. Topics of special interest to wide university audience as announced in *Schedule of Classes*. May be repeated for credit as topic changes.

498 Advanced Cooperative Education (1–4)

Prerequisites: Completion of senior level courses appropriate to experience; approval by major department Cooperative Education coordinator. Participation in work experience integrated with academic program; assignments arranged individually in advance through coordinator. Minimum of 10 hours per week required for each unit. Students in departments with graduate Cooperative Education programs may apply maximum of 4 units toward graduate degree program. Graded *CR/NC*.

**GRADUATE AND
POSTBACCALAUREATE STUDY**

GRADUATE AND POSTBACCALAUREATE STUDY

Graduate Degrees and Majors

Master of Arts

Anthropology
Art
Business Education
Child Development
Communicative Disorders
Economics
Education
Educational Administration
English
French
Geography
Health Science
History
Home Economics
Industrial and Technical Studies
Latin American Studies
Mexican-American Studies
Music
Philosophy
Physical Education
Political Science
Psychology
Sociology
Spanish
Special Education
Special Major
Speech Communication
Teaching English to Speakers of Other Languages (TESOL)
Theatre Arts
Urban Education
Vocational Education

Master of Science

Accountancy
Biology
Business Administration
Chemistry
Civil Engineering
Counseling
Criminalistics
Criminal Justice
Electrical Engineering
Geology
Health Care Management
Mathematics
Mechanical Engineering
Microbiology
Nursing
Nutritional Science
Physics
Psychology
Public Administration
Special Major

Master of Business Administration

Master of Fine Arts in Art

Doctor of Philosophy in Special Education

Credentials

Basic Teaching Credentials

MULTIPLE SUBJECT

‡Currently offered with the following undergraduate degrees:

Afro-American Studies, BA
Child Development, BA, Option II
Latin American Studies, BA
Liberal Studies, BA
Mexican American Studies, BA

‡ No students may enroll in the existing Multiple Subject waiver program after September 1, 1991. Students are cautioned that major and credential requirements listed for the above majors will change effective Fall Quarter 1991 and that additional majors approved for Multiple Subject Credential waivers may be available. Those who are currently enrolled in an existing program must complete that program by September 1, 1994. Students should contact Multiple Subject program advisers for further information.

The Multiple Subject credential is also available with a bilingual emphasis in Spanish. Internship credential options are available for the Multiple Subject and Multiple Subject/Bilingual Emphasis credentials.

SINGLE SUBJECT

Authorized Area	Degree Program
Art	Art, BA
Business	Business Education, BS
English	English, BA
English	Speech Communication, BA
Foreign Language	French, BA
Foreign Language	Japanese, BA
Foreign Language	Spanish, BA
Health Science	Health Science, BS
Home Economics	Home Economics, BA
Industrial Arts	Industrial Arts, BA
Life Science	Biology, BS
Mathematics	Mathematics, BA, BS
Music	Music, BA
Physical Education	Physical Education, BS
Physical Science	Earth Sciences, BA
Physical Science	Physical Science, BS
Social Science	Social Science, BA

An internship credential option is available for the Single Subject credential.

SUPPLEMENTARY AUTHORIZATIONS

Holders of a Single Subject or Multiple Subject credential issued by the state of California may add a supplemental authorization to teach in another discipline by completing additional course work. A partial list of supplementary authorizations and the credentials to

which they apply are listed below. Course content of these supplementary authorizations is included in the undergraduate academic department and division listings earlier in this catalog. Interested students should consult the appropriate academic departments and the School of Education for further information.

Supplementary Authorization Area	Credential Type
Basic Mathematics	Multiple or Single Subject
Biology	Single Subject
Chemistry	Single Subject
Comparative Political Systems and International Relations	Single Subject
Earth Sciences	Single Subject
Geography	Single Subject
Physics	Single Subject
U.S. Government and Civics	Single Subject

Information about other supplementary authorizations is available in the School of Education.

Specialist Instruction Credentials

Special Education Specialist Credentials

The following *Specialist* credentials may be earned in combination with the *Single Subject* and *Multiple Subject* credentials:

Communication Handicapped
 Gifted
 Learning Handicapped (*internship available*)
 Physically Handicapped
 Resource Specialist (*internship available*)
 Severely Handicapped (*internship available*)
 Visually Handicapped (*internship available*)

Other Specialist Credentials

Adapted Physical Education
 Language Development
 Reading/Language Arts

Designated Subjects

Adult Education
 Special Subjects
 Vocational Education

Services Credentials

Administrative Services

Preliminary Administrative Services
 Professional Administrative Services

Clinical-Rehabilitative Services

Audiology
 Language, Speech, and Hearing
 Language, Speech, and Hearing—Special Class Authorization
 Orientation and Mobility

Health Services—School Nurse

Library Media Teacher

Pupil Personnel Services

(Includes advanced specializations in School Counseling and in Child Welfare and Attendance Services.)

School Counseling (*internships available*)

Certificate Programs

Accounting
 Advanced Information Systems
 Adult Medical Nurse Practitioner
 Adult Nurse Practitioner
 Alcohol and Drug Problems Specialist
 Applied Behavior Analysis in Educational Settings
 Applied Gerontology
 Biotechnology
 Cartography and Air Photo Interpretation
 Child Maltreatment and Family Violence
 Computer Applications in Schools
 Developmental Counseling
 Electronics Technology
 English as a Second Language (ESL)
 Entrepreneurship
 Fashion Design
 Fashion Merchandising
 Fire Protection Risk Analysis and Reduction
 Fire Service Administration
 Graphic Design
 Industrial Chemistry
 Interior Design
 International Business
 Marketing
 Music Recording Arts
 Neonatal Nursing Care Clinician
 Nurse Midwifery Education
 Obstetrics/Gynecology Nurse Practitioner
 Occupational Safety and Health
 Office Systems
 Professional Employee Counseling
 Rehabilitative/School Audiology
 Retail Professional Development
 Storytelling
 Teaching Critical Thinking
 Teaching Microcomputer Business Applications
 Transportation
 Urban Land Use and Property Analysis
 Voluntary Youth Agency Administration

Rules and regulations governing certificate programs and brief descriptions of these programs appear at the end of this chapter. Specific requirements and course listings appear in the individual academic department and division listings following this chapter.

GRADUATE AND POSTBACCALAUREATE STUDY

General Information

Graduate study has been a major part of the academic commitment of California State University, Los Angeles since its founding. Students engaged in graduate and postbaccalaureate study constitute nearly one third of the total student body.

Cal State L.A. offers Master of Arts and Master of Science degrees, with opportunities for specialization through the selection of options or areas of emphasis within degree programs. Also offered are the Master of Business Administration degree, Master of Fine Arts degree in Art, the Master of Arts and Master of Science degrees with a Special Major, and the Doctor of Philosophy degree in Special Education. The complete list of degrees offered appears at the front of this chapter.

Postbaccalaureate students pursue teaching credentials, certificate programs, and personal enrichment courses.

Objectives of Graduate Study

Cal State L.A.'s graduate programs are coherent patterns of study designed for a level of academic accomplishment substantially beyond that required for the baccalaureate. Graduate programs enable students to progress in their chosen vocations, to assume positions of leadership, and to contribute to the advancement of their professions. Graduate study helps students to develop greater awareness of themselves in relation to other people and cultures, both present and past, and to gain a better understanding of their particular professions. Completion of a master's degree program at Cal State L.A. also prepares students for further graduate study appropriate to their abilities and ambitions.

Desirable Student Qualifications

In order to gain maximum benefit from postbaccalaureate or graduate study students should possess the following:

- Sufficient knowledge and understanding of their chosen field of study to pursue it effectively at an advanced level.
- Basic techniques, skills, and methods necessary for research investigation and other practical applications of knowledge.
- Sufficient maturity and intellectual curiosity to pursue independent study and learning beyond regular assignments.
- Achievements, aptitudes, and abilities at superior levels to ensure scholarly performance considerably above the average.

Responsibility of the Student

Responsibility for meeting all requirements and following all procedures by the published deadlines rests with the student. In extraordinary circumstances exceptions to requirements for graduate study established by departments/divisions, schools, and the university may be granted.

Graduation Requirement in Writing Skills

(Postbaccalaureate Writing Proficiency Requirement)

All CSU students must demonstrate competence in writing skills as a requirement for graduation. All Cal State L.A. postbaccalaureate and graduate students who entered Cal State L.A. summer 1984 or later and who are pursuing a graduate degree or a credential are required to satisfy this requirement in one of the following ways:

- Pass the Writing Proficiency Examination (WPE) required for the Cal State L.A. baccalaureate. Postbaccalaureate students who select this option must register for the WPE (listed as UNIV 400 in the *Schedule of Classes*) no later than the add deadline for the first quarter they are enrolled in a graduate or

credential program. Failure to register for the WPE will void enrollment for that quarter; or

- Postbaccalaureate students who hold an earned doctorate from an accredited college or university where the primary language of instruction is English may substitute such a degree for passing the WPE; or
- Postbaccalaureate students who have passed a writing proficiency examination or a graduation writing assessment examination, in English, at any accredited college or university where the primary language of instruction is English may substitute such a result for passing the WPE at Cal State L.A.

Postbaccalaureate students must satisfy this postbaccalaureate requirement within the first three quarters of their graduate (conditionally classified or classified) or credential program or prior to the completion of 16 units, whichever comes later. Students must satisfy this postbaccalaureate writing requirement within the required time in order to be eligible for continued registration.

Departments and divisions may require of their majors additional discipline-based course work in writing. See a faculty adviser concerning major department or division requirements.

Petitions for certification of the postbaccalaureate writing requirement shall be made at the school level and reported to the Dean of Graduate Studies and Research. A student who has satisfied the postbaccalaureate writing requirement shall continue to be certified with no time limit on such certification.

Postbaccalaureate unclassified students are not required to satisfy this postbaccalaureate writing requirement.

The School of Natural and Social Sciences has a separate Graduate Writing Skills Requirement policy which appears in the front of the graduate programs chapter for that school.

Additional information about the WPE is available in the *Schedule of Classes* and at the Learning Resource Center.

Graduate Degrees and Postbaccalaureate Study

Characteristics of Master's Degrees

California State University, Los Angeles offers the Master of Arts, Master of Science, Master of Business Administration, and Master of Fine Arts degrees. All four degrees require greater depth of study and increased demands on student intellectual or creative capacity than the baccalaureate. Characteristics of the individual degrees are described below.

Specific information about admission requirements, curriculum, and graduation requirements for these programs is listed alphabetically by school and department in the academic department and division descriptions which follow this chapter.

The *Master of Arts (M.A.)* degree provides a broadened cultural background in a recognized disciplinary field or improvement of professional competence.

The *Master of Science (M.S.)* degree provides the opportunity to improve professional competence in areas and approaches involving intense specialization.

The *Master of Business Administration (M.B.A.)* degree provides a program of professional preparation for management positions in business and industry.

The *Master of Fine Arts (M.F.A.)* degree in Art provides specialized training and education for artists and designers in design, computer

graphics, painting and printmaking, sculpture, ceramics, textiles, and metalsmithing.

The *Doctor of Philosophy* (Ph.D.) degree in Special Education, which provides advanced preparation in this diverse professional field, is offered jointly with the University of California, Los Angeles.

Special Major for Master's Degrees

The *Special Major* for the Master of Arts or Master of Science degree is a highly restricted interdisciplinary program for students whose professional or academic objectives are unique and cannot be met by existing master's degree offerings. It consists of an individual program of course offerings from at least two departments/divisions in related disciplines and must provide sharp focus and appropriate coherence.

Teaching Credentials

Teaching, specialist, and services credential programs are available to students who hold the baccalaureate. Students who seek teaching credentials must fulfill admission criteria and program requirements established by the School of Education in accordance with the California Commission on Teacher Credentialing. Students who are admitted into a teaching credential program are referred to as postbaccalaureate classified students. Description of admission criteria and program requirements appear in the undergraduate and graduate *School of Education* chapters.

Credit Certificate Programs

Students with a baccalaureate may enroll in a certificate program to receive specialized instruction and training within a particular field. Students who pursue a certificate must fulfill admission criteria and program requirements established by the departments, divisions, and schools that offer the programs. Postbaccalaureate students who are admitted into certificate programs are referred to as postbaccalaureate unclassified students.

Descriptions of certificate programs that require the baccalaureate for admission appear later in this chapter. Individual admission and program requirements appear in academic department and division listings in the chapters that follow this chapter.

Enrichment Courses

Persons who hold a bachelor's degree may enroll in courses that provide them with personal enrichment. Because such students are not enrolled in specific graduate programs, they are referred to as postbaccalaureate unclassified students. They must fulfill all university eligibility requirements for admission and for continuing student academic standing. Because they are not enrolled in graduate programs, they will not receive a master's degree from Cal State L.A.

Organization of Graduate Study

Graduate study at Cal State L.A. is organized and administered by each of the six schools within the university, with coordination provided by the Dean of Graduate Studies and Research.

This *Graduate Programs* section of this catalog describes the requirements, regulations, and procedures for engaging in graduate study. General university regulations and procedures that apply to both undergraduate and postbaccalaureate or graduate students are explained under *Admission and Procedures and Regulations* earlier in this catalog.

Requirements for admission, advancement to classified graduate standing and candidacy, and graduation described in this section apply to all advanced degree programs. Any additional requirements are stated in the descriptions of the individual programs.

Graduate Studies Directory

OFFICE OF GRADUATE STUDIES AND RESEARCH

Dean of Graduate Studies and Research	Theodore J. Crovello
Administration 714	(213) 343-3820
Associate Dean of Graduate Studies	Costello L. Brown
Administration 714	(213) 343-3820

School Graduate Deans

SCHOOL OF ARTS AND LETTERS

Associate Dean	Robert D. Reeser
Music 232	(213) 343-4004

SCHOOL OF BUSINESS AND ECONOMICS

Associate Dean for Graduate Programs	M. David Oh
Simpson Tower F124	(213) 343-2800

SCHOOL OF EDUCATION

Associate Dean	C. Lamar Mayer
King Hall D2070	(213) 343-4303

SCHOOL OF ENGINEERING AND TECHNOLOGY

Associate Dean	Don M. Maurizio
Engineering and Technology A237	(213) 343-4510

SCHOOL OF HEALTH AND HUMAN SERVICES

Associate Dean	Karen M. Johnson
Fine Arts 132	(213) 343-4602

SCHOOL OF NATURAL AND SOCIAL SCIENCES

Associate Dean	Joseph Bragin
King Hall D1051	(213) 343-2005

Each department and division that offers graduate degree programs and/or credential programs has a principal graduate adviser as well as credential advisers. The names and phone numbers of these advisers appear each quarter in the *Schedule of Classes*. Appointments to see these advisers can be made in their respective department or division offices.

Admission Requirements

General Requirements

The general requirements for admission to postbaccalaureate and graduate study at a California State University campus are established in accordance with university regulations as well as Title 5, Chapter 1, Subchapter 3 of the *California Code of Regulations*. Specifically, students shall fulfill the following requirements:

- have completed a four-year college course of study and hold an acceptable baccalaureate from an institution accredited by a regional accrediting association, or have completed equivalent academic preparation as determined by the appropriate campus authorities.
- be in good academic standing at the last college or university attended
- have attained a grade point average of at least 2.5 (A=4.0) in the last 90 quarter (60 semester) units attempted
- satisfactorily meet the professional, personal, scholastic, and other standards for graduate study, including qualifying examinations, as appropriate campus authorities may prescribe

If you meet the general requirements for graduate and postbaccalaureate studies, you will be considered for admission in one of the four following categories:

- **Postbaccalaureate Unclassified.** To enroll in courses for professional or personal growth, you must be admitted as a postbaccalaureate unclassified student. By meeting the general requirements, you are eligible for admission as a postbaccalaureate unclassified student. Some departments and divisions may restrict enrollment of unclassified students because of heavy enrollment pressure. Admission in this status does not constitute admission to, or assurance of, consideration for admission to any other graduate degree or credential program; or
- **Postbaccalaureate Classified.** To enroll in a credential or certificate program, you will be required to satisfy additional professional, personal, scholastic, and other standards, including qualifying examinations, prescribed by the campus; or
- **Graduate Conditionally Classified.** You may be admitted to a graduate degree program in this category if, in the opinion of appropriate campus authority, you can remedy deficiencies by additional preparation; or
- **Graduate Classified.** To pursue a graduate degree, you will be required to fulfill all of the professional, personal, scholastic, and other standards, including qualifying examinations, prescribed by the campus.

Admission to a California State University campus with postbaccalaureate unclassified standing does not constitute admission to graduate degree curricula. Also, individual schools and departments or divisions may have additional requirements which students must fulfill before they may be accepted into degree, credential, and certificate programs at Cal State L.A.

Most applicants are initially admitted to Cal State L.A. in postbaccalaureate unclassified standing. Those who meet all requirements for any other category may achieve such standing prior to their first quarter of enrollment. Applicants not regularly admissible may petition for admission by special action as described later in this chapter.

Additional general procedures and regulations that apply to all applicants, graduate and undergraduate, are described under the *Admission* chapter near the front of this catalog.

Special Action Admission

In unusual circumstances, a campus may make exceptions to admission criteria and grant admission by special action. For special action admission, applicants who were in good standing at the last college attended but who do not meet the mandated admission requirements may petition for admission by special action if acceptable alternative evidence exists that they possess sufficient academic, professional, and other potential pertinent to their proposed graduate objective. Special action admission may be granted by the appropriate school graduate dean upon recommendation of both the proposed major department or division and school graduate studies committee.

Applicants Lacking Minimum Required Grade Point Average

Students admitted by special action to pursue a master's degree program will be admitted to conditionally classified graduate status and must complete specific prerequisites and a minimum of 14 units of qualifying courses specified by the major department or division and school graduate dean with a minimum *B* (3.0 on a scale in which *A* = 4.0) grade point average, as specified under *Requirements for Classified Graduate Standing* later in this chapter. Students admitted to pursue a nondegree program (e.g., credential,

certificate) must complete special requirements as designated by the major department or division and school graduate dean.

Graduates of Unaccredited Institutions

A degree from an unaccredited college is not recognized for admission in postbaccalaureate or graduate standing. Graduates of such institutions may be admitted in undergraduate standing if course work completed is deemed acceptable and meets undergraduate admission requirements, and may be granted postbaccalaureate or graduate standing upon satisfaction of the following conditions:

- Meet the minimum university, school, and department or division requirements for admission to classified graduate standing in a degree program.
- Complete a minimum of four upper division courses (at least 14 quarter units), specified in advance by the proposed major department or division, with a grade point average of at least *B* (3.0). These courses may not be 500-level, nor may they be used for graduate credit on the master's degree program. After they have completed their faculty-approved list of qualifying courses, students may not add any additional courses, nor may they repeat any of the qualifying courses, in order to raise their grade point average.
- Receive the written recommendation of the department or division in which the degree is sought and of the appropriate school graduate dean.
- Receive the approval of the University Graduate Studies Subcommittee (GSS).

Graduates of Specialized or Professional Schools

Graduates of specialized or professional schools that are professionally accredited are admitted in conditionally classified graduate status. They may be granted classified graduate standing by satisfying the following conditions:

- Meet the minimum university, school, and department or division requirements for admission to classified graduate standing in a degree program.
- Complete a minimum of four upper division qualifying courses (at least 14 quarter units), specified in advance by the proposed major department or division, with a grade point average of at least *B* (3.0). After they have completed their faculty-approved list of qualifying courses, students may not add any additional courses, nor they repeat any of the qualifying courses, in order to raise their grade point average.
- Receive the written recommendation of the department or division in which the degree is sought and of the appropriate school graduate dean.

Additional Admission Requirements

Special Major for the Master's Degree. In addition to meeting minimum university requirements for admission to classified graduate standing, applicants must possess a baccalaureate in an area cognate to the areas of the proposed special major, must have a minimum 2.75 grade point average (*A*=4.0) in the last 90 quarter units attempted, and must meet all school requirements and such department or division requirements as course prerequisites, test scores, and grade point average for the master's degrees of the schools and departments/divisions in which course work for the special major is proposed. Approval of the special major is based upon individual justification. If course work is to be taken in departments/divisions in more than one school, students must make formal written application to the Dean of Graduate Studies and Research. If course work is to be taken in departments/divisions within one school, students are required to make formal written application to the school graduate dean. All applications must include the following:

- A clear and concisely stated rationale for pursuing a special major and an indication of the professional/academic objectives to be achieved. This rationale must include evidence clearly indicating that the special major program could not be accommodated within any existing approved master's degree program on this campus.
- A proposed list of available courses chosen from two or more departments/divisions totalling a minimum of 45 units, of which at least 23 units must be 500-level.
- An indication of whether a comprehensive examination or thesis or project will be used to complete the graduate course of study. If a thesis or project is proposed, a preliminary description of the thesis topic or research project is to be included. If a comprehensive examination is proposed, an indication of the areas in which the student will be examined is to be included.
- The names and areas of specialization of at least two faculty members representative of those who might consent to serve on the advisory committee for such a degree program.

If course work to be taken is offered in more than one school, the Dean of Graduate Studies and Research must also approve the program. The student's program is subject to University graduate procedures and regulations that govern all graduate degree offerings.

International (Visa) Student Admission Requirements

The CSU must assess the academic preparation of international (foreign/visa) students. For this purpose, "foreign students" include those who hold U.S. visas as students, exchange visitors, or in other nonimmigrant classifications.

The CSU uses separate requirements and application filing dates in the admission of international (foreign/visa) students. Verification of English proficiency (see the *Admission* chapter for information about the TOEFL requirement), financial resources, and academic performance are all important considerations for admission. Academic records from foreign institutions must be on file at least eight weeks before registration for the first term and, if not in English, must be accompanied by certified English translations.

Priority in admission is given to residents of California. There is little likelihood of nonresident applicants, including international students, being admitted to either impacted majors or to those with limited openings. Consult individual academic departments/divisions for specific program requirements and limitations.

For admission in postbaccalaureate or graduate standing, international applicants must fulfill the following minimum requirements.

- Possess a baccalaureate, or its equivalent, from an accredited institution.
- Have a minimum 2.5 grade point average (A=4.0) in the last 90 attempted quarter units equal to that required for admission to classified graduate standing.
- Have approval of the academic department or division offering the desired degree program.

International students should contact International Student Services (in the Student Housing Complex) for information about housing, financial assistance, and related matters.

Application Procedures

All applicants for any type of postbaccalaureate status (i.e., graduate degree applicants, those seeking credentials or certificates, and those interested in taking courses for personal or professional growth) must file a complete application as described in the CSU admission booklet 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 completed undergraduate degree requirements and graduated from Cal State L.A. the preceding quarter are also required to complete and submit an application and the \$55 nonrefundable application fee. (Second baccalaureate applicants should apply as undergraduate degree applicants.)

Because applicants to postbaccalaureate programs may be limited to the choice of a single campus on each application, redirection to alternative campuses or later changes of campus choice will be minimal. Postbaccalaureate applicants who wish to be assured of initial consideration by more than one campus are required to submit separate applications (with fees) to each. Applications may be obtained in Administration 101 or from the Graduate Studies Office of any California State University campus; in addition to the sources noted for undergraduate applicants.

The CSU uses separate requirements and application filing dates in the admission of international (foreign visa) students. For these purposes, "foreign students" are residents of a country other than the United States or who hold visas as students, exchange visitors, or in other nonimmigrant classifications.

Some academic departments/divisions require applications to their respective graduate programs in addition to the university admission application and may have earlier deadlines than the university admission application deadline. Applicants should contact individual departments/divisions for further information or refer to individual programs later in this catalog.

Students accepted at Cal State L.A. for postbaccalaureate or graduate study must enroll in the quarter for which application was made. Failure to enroll will result in cancellation of admission; see "Reapplication after Failure to Enroll" in the *Admission* chapter earlier in this catalog.

APPLICATION FILING PERIODS

<i>Terms in 1991-1992</i>	<i>Applications First Accepted</i>	<i>Student Notification Begins</i>
Summer Quarter 1991	Feb. 1, 1991	March 1991
Fall Quarter 1991	Nov. 1, 1990	Dec. 1990
Winter Quarter 1992	June 1, 1991	July 1991
Spring Quarter 1992	Aug. 1, 1991	Sept. 1991

Filing Period Duration

Each campus accepts applications until capacities are reached. Most campuses accept applications up to a month before the opening day of the term. Some campuses will close individual programs as they reach capacity.

Application Filing Periods for International (Visa) Applicants

Application filing periods for international (visa) applicants differ from those for domestic applicants because of additional time required in evaluating records and preparing necessary documents for the Immigration and Naturalization Service (INS). The filing periods are established as follows:

<i>Quarter</i>	<i>Application Filing Period</i>
Fall Quarter	November 1-30
Winter Quarter	June 1-30
Spring Quarter	August 1-31

The Admissions Officer may waive this advance application requirement if circumstances warrant. In addition to the academic requirements outlined below, international students must have

competence in the English language; financial resources adequate to provide for all expenses during their period of study at Cal State L.A., and must be in good health. Those admitted to this country on the basis of acceptance by another college are expected to complete at least one year at that college before applying for admission to Cal State L.A.

Application Acknowledgement

Normally, you may expect to receive an acknowledgment of your application from your first choice campus within two to four weeks of filing the application. A notice that space has been reserved for you will also include a request that you submit the records (transcripts and test scores) necessary for the campus to evaluate your qualifications. You may be assured of admission if the evaluation of your qualifications indicates that you meet admission requirements. Such a notice is not transferable to another term or to another campus.

Transcript Requirements

Applicants with either a degree or credential objective must request that two copies of official transcripts from each college or university previously attended be sent directly to the Admissions Office. Applicants who are required to have one copy of their transcripts sent to an academic department or division as part of their major program application and those applying without a degree or credential objective are required to have only one copy of each transcript sent to the Admissions Office.

All transcripts become Cal State L.A. property and will not be released or copied except for those that applicants request be redirected to another CSU campus. Processing of applications cannot be guaranteed unless all required documents are received during the designated application period. Individuals who do not file an application for admission are advised that transcripts are retained for one year, after which they are destroyed.

Test of English as a Foreign Language (TOEFL) Requirement

All graduate and postbaccalaureate applicants, regardless of citizenship, whose preparatory education was principally in a language other than English must demonstrate competence in English. Those who do not possess a bachelor's degree from a postsecondary institution where English is the principal language of instruction must achieve a minimum score of 550 on the Test of English as a Foreign Language (TOEFL).

In exceptional cases, the Director of Admissions may waive the TOEFL score requirement if recommended by the applicant's proposed major department or division. Variation from the minimum TOEFL score will be considered only for applicants with a B (3.0) grade point average as evaluated by the Admissions Office and whose TOEFL score is not more than ten points below 550.

University Requirements for Master's Degrees

All candidates for master's degrees at Cal State L.A. must complete the following minimum requirements:

Unit Requirement. Completion of at least 45 quarter units in approved courses, of which at least half (23) must be in graduate (500-level) courses. Master's degree programs whose minimum total units are established at more than 45 quarter units must include at least half of those units in courses at the graduate (500) level.

Grade Point Average Requirement. Achievement of a minimum B (3.0) grade point average in all courses on the approved degree program. A grade of C is allowed on the program; however, any grade below C requires that the course be repeated with both grades computed in the grade point average.

Residence Requirement. At least 32 quarter units for the master's degree completed in residence at Cal State L.A.

Postbaccalaureate Writing Proficiency Requirement. Fulfillment of the Postbaccalaureate Writing Proficiency Requirement, as described earlier in this chapter.

Culminating Experience Requirement. A comprehensive examination or a thesis or project as described later in this chapter.

Completion of Program. Completion of the final approved program and any special department or division requirements and the passing of a comprehensive examination within the number of attempts allowed by the department or division and school or the filing of a thesis or project report approved by the candidate's thesis/project committee and cleared by the library.

Time Limitation. No subject, unit, or grade credit will be granted for any course completed more than seven years prior to the date of completion of the master's degree. In extraordinary circumstances students may petition and the school may grant permission to validate such an expired course by an examination given by and with the concurrence of the department or division offering the course. An expired course taken at another institution may not be validated by examination.

Faculty Recommendation. Recommendation for the degree by the faculty.

Advisement. As the first step of registration, all students must obtain department or division approval of the courses selected for each quarter's study program. To assist in the initial advisement and course selection process, newly admitted students need to bring a personal copy of their college transcripts and their evaluation, if received.

Early in their first quarter students should make an appointment with a graduate faculty adviser to plan a complete program of study for the degree, if this cannot be accomplished during the advisement session preceding the initial registration. The approved master's degree program becomes the basis for evaluating the student's eligibility for receiving the degree. Changes in the program of study may be made only with the approval of the student's academic adviser and school graduate dean. Students who have not declared a degree or credential objective (i.e., undecided majors) should seek advisement in the Academic Advisement and Information Center, Administration 127.

Credit for Transfer Work. To receive credit toward a master's degree for acceptable postbaccalaureate work taken at other colleges or universities, students must have official transcripts forwarded to the Admissions Office, and must file a "Request for Records" (Form GS-1) with their major department or division. Cal State L.A. will allow credit for work taken at another college or university only when it appears on the student's official transcript from that institution, is acceptable for master's degree credit at the offering institution, and is deemed appropriate to the student's master's degree program by the major department or division at Cal State L.A. See "Limitations and Exclusions."

- No more than 13 quarter units of acceptable transfer, extension, and/or special session courses may be included on a master's degree program.
- No master's degree credit is allowed for directed teaching, 700- or 800-level courses, courses numbered below 400, or courses taken at another accredited institution that would not be accepted toward a master's degree at that institution.
- Nine quarter units of 500-level or other graduate level courses taken through extension are eligible for master's degree credit.

Classified Graduate Standing

Requirements for Classified Graduate Standing

All students who have declared a master's degree objective are admitted to and remain in conditionally classified standing until the following conditions are met. Classified graduate standing constitutes admission to an authorized graduate degree curriculum and is granted by the school graduate dean upon completion of all requirements listed below and upon the recommendation of the major department or division.

The requirements enumerated below are minimum university requirements. Departments/divisions or schools may utilize additional or more restrictive requirements for admission to classified graduate standing in individual master's degree curricula. The minimum university requirements for admission to classified graduate standing are as follows:

- A minimum 2.5 grade point average computed on the last 90 attempted quarter units of work which shall include all units taken in the quarter in which the 90th unit occurs. This grade point average requirement shall not apply to students who hold an advanced degree from an accredited institution.
- **Exception:** Except for those who hold an advanced degree from an accredited institution, all students admitted by special action must complete a minimum of 14 quarter units of upper division qualifying courses on a formally approved conditional master's degree program with a minimum B (3.0) grade point average with the following conditions:
 - The principal graduate adviser, major department or division, and school graduate dean must approve qualifying courses prior to their completion. Courses graded CR/NC may not be used on the qualifying program.
 - Upon recommendation of the principal graduate adviser and the major department or division, and with the approval of the school graduate dean, qualifying courses may be waived for students whose postbaccalaureate work demonstrates promise of the scholarly ability required for graduate study. To be eligible for recommendation of such a waiver a student must have completed, with a minimum B (3.0) overall grade point average, 14 or more quarter units of upper division or graduate level postbaccalaureate work at an accredited institution that is acceptable toward a master's degree at that institution.
 - Failure to achieve a B (3.0) grade point average in qualifying courses will result in termination of the degree program.
 - Certification by the major department/division to the school graduate dean that all department/division admission requirements, procedures, and prerequisites have been completed.
 - Filing of a conditional master's degree program with the school graduate dean during the student's first quarter of graduate enrollment at Cal State L.A. The conditional program must be approved by the principal graduate adviser and the major department/division. Any change in the conditional program must be approved by the principal graduate adviser, the major department/division, and the school graduate dean prior to completion of courses affected by the change. This includes courses in which a grade of "incomplete" is received.

Admission to Classified Graduate Standing

When the major department or division provides the school graduate dean with the necessary documentation indicating that all requirements for classified graduate standing have been met, the conditional program, if filed, or the master's degree program then submitted will be approved by the school graduate dean and will become the student's official master's degree program. This

graduate program is a statement of academic requirements that students must complete for the master's degree. Students must have an approved master's degree program and must have achieved classified standing before they can be advanced to candidacy.

Other Graduate and Postbaccalaureate Restrictions

Admission to 500-Level Courses. With the following exceptions, classified graduate standing or its equivalent is required for admission to all 500-level courses and for receiving credit toward the master's degree for 500-level courses:

- A classified postbaccalaureate credential candidate may enroll in 500-level courses required in the credential program in which the student has been classified.
- Undergraduate students may, with prior approval and subject to policies governing graduate credit for undergraduate students, enroll in one 500-level course. See "Graduate Credit for Undergraduate Students."
- In highly structured programs the required sequence of some course offerings may make it necessary for students to enroll in 500-level courses prior to their attainment of classified graduate standing if timely progress toward the degree is to be made. Students in such highly structured programs may request department or division, school, and university approval to enroll in a maximum of 9 quarter units of 500-level work prior to attainment of classified graduate standing provided they are otherwise eligible and have obtained the approval of the principal graduate adviser and the instructor prior to enrollment.
- In extraordinary circumstances, and with the prior approval of the principal graduate adviser, the major department or division, and the school graduate dean, conditionally classified students may be given permission to enroll in one 500-level course prior to attainment of classified graduate standing.
- Students may not enroll in a 500-level course for master's degree credit through the Open University (concurrent enrollment) Program administered by the Office of Continuing Education without the prior permission of the department or division offering the course and of the student's major department or division adviser.
- Students who have been formally enrolled in graduate credit certificate programs may enroll in any 500-level courses specified in their programs for which they have fulfilled all course prerequisites.

Courses Completed in Undergraduate Standing. No courses taken as an undergraduate may be included on a master's degree program except as specifically provided for baccalaureate candidates in their final quarter of undergraduate study.

Undergraduate Preparation. No credit toward a master's degree is allowed for course work taken to meet necessary undergraduate preparation for a master's degree program.

Course Additions/Deletions. A course may not be added to or deleted from a master's degree program after it has been taken. Any change in the master's degree program must be approved in advance by the principal graduate adviser, major department or division, and school graduate dean. When such a change has been approved it becomes part of the master's degree program.

Program Change Limitation. No more than 9 quarter units beyond the total number of units approved at the time a student achieves classified graduate standing may be added to a student's master's degree program.

Course Prerequisites and Corequisites Students are responsible for fulfilling prerequisites and corequisites. The instructor and department or division have the authority to waive specific prerequisites and/or corequisites for students who have completed equivalent courses at another institution, who have had equivalent experience (such as work experience), or who possess the needed skills to proceed with the work of the course. Students should consult the instructor before registering to determine whether the course(s) or experience they present will justify waiver of the stated prerequisite(s) and/or corequisite(s).

Qualifying Courses. All qualifying courses that are otherwise eligible may be included in a master's degree program if recommended by the principal graduate adviser and major department or division and approved by the school graduate dean. Approval to include qualifying courses on the master's degree program must be obtained prior to completion of the courses.

Probation and Disqualification

Graduate students are subject to the following probation and disqualification criteria for administrative-academic deficiencies:

Administrative-Academic Probation. Provision has been made by the Office of the Chancellor whereby students may be placed on administrative-academic probation for any of the following reasons:

- Withdrawal from all or a substantial portion of courses for which they registered in two successive quarters or in any three quarters.
- Repeated failure to progress toward a stated degree or program objective when such failure is within their control.
- Failure to comply, after due notice, with a routine academic requirement or regulation.

Notice is given in writing of the conditions for removal from administrative-academic probation, as well as circumstances that would lead to disqualification should probation conditions not be rectified.

Disqualification Regulations

- Classified graduate students whose grade point average in course work on their master's degree program falls below *B* (3.0) will be placed on scholastic probation. Classified graduate students whose grade point average falls below *B* (3.0) in all courses completed subsequent to admission to the program are subject to scholastic probation. If after being placed on scholastic probation they do not raise their average to *B* (3.0) after completion of 16 units or two quarters in residence, whichever comes later, they will be disqualified from pursuing the master's degree program in which they were classified. Classified graduate students whose grade point average falls more than nine grade points below *B* (3.0) will be disqualified from pursuing the master's degree program in which they were classified. If disqualified from a master's degree program, students may be admitted to another program only on the recommendation of the new major department or division concerned and with the approval of the appropriate school graduate dean.
- Conditionally classified graduate students whose grade point average in course work on their master's degree program falls below *B* (3.0) will be placed on scholastic probation. Conditionally classified graduate students whose grade point average falls below *B* (3.0) in all units completed subsequent to becoming conditionally classified are subject to scholastic probation. If after being placed on scholastic probation they do not raise their average to *B* (3.0) after completion of 16 units or two quarters in residence, whichever comes later, or if they fail to achieve a *B* (3.0) in their qualifying courses, they

will be disqualified from the master's degree program in which they were conditionally classified. If disqualified from a master's degree program, conditionally classified students may be admitted to another program only on the recommendation of the new major department or division concerned, with submission of a new list of qualifying courses and the approval of the appropriate school graduate dean.

- Postbaccalaureate unclassified and classified students whose grade point average falls below 2.5 will be placed on scholastic probation. When, on scholastic probation, they do not raise their average to 2.5 after completion of 16 units or two quarters in residence, whichever comes later, they will be disqualified from pursuing course work at Cal State L.A.
- All units earned in the quarter in which the sixteenth unit is completed will be used in computing the grade point average.
- Students disqualified for scholarship deficiency may not enroll in any regular quarter at Cal State L.A. without permission from the appropriate school graduate dean and may be denied admission to other educational programs operated or sponsored by the campus.
- Students enrolled in graduate degree programs, credential programs, and graduate credit certificate programs are not eligible for *Academic Renewal*.
- Academic renewal privileges are limited to undergraduate and postbaccalaureate students who are pursuing a bachelor's degree. These policies and procedures are outlined in the *Procedures and Regulations* section near the front of this catalog.
- Postbaccalaureate students pursuing a second or subsequent baccalaureate are subject to the same probation and disqualification standards as seniors. These are outlined in the *Procedures and Regulations* section near the front of this catalog.

Work Taken Prior to Approval. No more than 13 quarter units of acceptable course work completed prior to approval by the principal graduate adviser, major department or division, and school graduate dean may be included on a master's degree program. This includes acceptable transfer work. Credit for thesis (i.e., 599), research (i.e., 597), or comprehensive examinations (i.e., 596) is not transferable. All other course work included on the master's degree program must be completed after approval by the principal graduate adviser, major department or division, and school graduate dean. This policy shall not apply to students admitted to a master's degree program offered jointly with other educational institutions.

Extension Courses. No graduate credit will be allowed for extension courses that would not be accepted toward a master's degree at the offering institution (e.g., University of California extension courses in the X300 or X400 series) unless specifically approved in advance by the major department or division and school concerned.

Advancement to Candidacy

Advancement to candidacy is a part of the continuing process of review of the student's progress and is not automatic. It is granted by the school graduate dean upon completion of the requirements listed below and upon the recommendation of the major department or division. It is the university prerequisite to enrolling for the thesis, project, or comprehensive examination; individual departments/divisions and schools may have additional requirements.

Advancement to candidacy requires:

- Satisfaction of Postbaccalaureate Writing Proficiency Requirement.
- Classified graduate standing.
- An approved master's degree program on file in the school graduate studies office.
- Completion of a minimum of 16 quarter units of the master's degree program with an overall B (3.0) grade point average or higher.
- Recommendation of the major department or division.
- Approval of the school graduate dean.

Only students who are advanced to candidacy are eligible to enroll for comprehensive examinations (course #596 in their major discipline) or for thesis or project units (course #599 in their discipline).

Culminating Experience

Comprehensive Examinations

Students must fulfill all department or division requirements for the written and/or oral comprehensive examinations. Such requirements include, but are not limited to: the date and time for the comprehensive examinations, length of testing, topics covered, and number of questions for the comprehensive examinations.

Students whose programs require a comprehensive examination must declare to their major department or division, at least one quarter in advance, their intent to take it, obtain department or division permission, and register for the comprehensive examination which carries the course number 596 in their major discipline. Students who are not enrolled in any credit-bearing course during the quarter in which they take the comprehensive examination must pay the comprehensive examination fee (\$10). *Students electing comprehensive examination options are not permitted to enroll in UNIV 900.* Payment of student services, facilities, and associated student fees, or any tuition charges, is not required.

Students should expect to take their comprehensive examinations during the quarter in which they complete all course work on their program or shortly thereafter. Those who do not pass the comprehensive examinations must fulfill any department, division, and/or school requirements for subsequent enrollments in these examinations.

Thesis or Project

Standards for Theses and Project Reports. The thesis and project required for the master's degree require the same levels of performance; they differ only in the nature of the work involved in producing them. The thesis represents independent research or investigative study; the project involves creative work resulting in such end-products as plays, recitals, handbooks, and courses of study.

Students whose programs require a thesis or project must submit the original in final form to the library by the last day of classes in the quarter (i.e., prior to the final examination period).

Research and Thesis Consultation. Students whose graduate programs require a thesis or project must complete the following steps:

- Establish a faculty committee
- Submit the thesis or project proposal to the appropriate department or division or, for special majors, to their thesis committee and fulfill all of their respective requirements
- Fulfill the registration requirements listed below
- Meet the department or division and school requirements for thesis or project defense

- File the title approval page in the department or division and school offices
- Submit the thesis or project to the University Library and fulfill the format requirements listed below. Students are advised to attend a library workshop about required thesis format

The date of submission of the thesis or project will determine in which quarter a student graduates. The deadlines for master's degree theses and projects are listed each quarter in the academic calendar in the *Schedule of Classes*. No extensions of thesis/project filing deadlines will be allowed.

Upon notification of acceptance, the student is responsible for submitting the additional number of copies required. These will be bound upon payment of the fee of \$8 per copy (subject to change) and retained in the library. Theses or projects returned to students by the library for correction and/or revision may upon resubmission be assigned a revised acceptance date by the Office of Graduate Studies and Research.

Graduate students completing research units (597) and thesis or project units (599) required for master's degrees must be regularly enrolled during any quarter in which they use university facilities or consult with faculty.

Students who have exceeded the one calendar year time limitation associated with the SP grading symbol for research units (597) must petition to register in UNIV 900. Petition forms and instructions are available in school graduate studies offices.

Students who have previously enrolled in all allowable research units (597) and are not enrolled in any other credit-bearing courses or thesis or project units (599) but who will use university facilities or consult with faculty must register in UNIV 900.

To maintain residence requirements and continuing student registration privileges, graduate students who are not enrolled in credit-bearing course work must register for UNIV 900 two quarters out of four.

Required Format: Students who choose to write a thesis must adhere to the following regulations.

- The thesis will be submitted in its entirety.
- When the completed project is in nonbook form, as in the case of exhibitions of works of art, only the project description summary need be submitted. This summary must be filed in the appropriate school graduate studies office with the completed thesis or project approval pages. The end product of the project (e.g., play, manual, recital, painting) will follow whatever form is appropriate to the product and its intended use except that written materials must conform to the standards for thesis and project summaries. If desired by the candidate and the major department or division, other methods of presentation may be used with the approval of the school graduate dean and the University Graduate Studies Subcommittee.
- **Abstracts:** Abstracts shall be submitted with the thesis if required by the major department or division.
- **Thesis or project format:** Each department or division that offers master's degree programs with thesis or project options has on file with the library an approved style manual for theses in its discipline(s). Students must check with their major department or division to determine which style manual is used for their major discipline. A thesis or project description summary must be included and must follow the format of the department or division-approved style manual. Copies of the various style manuals are available in the library or may be purchased at the University Square bookstore.

- **Paper:** The original of the thesis or project shall be typed on 8 1/2 by 11, 16 lb. or 20 lb., 100 percent rag content paper. Paper with blue lines outlining the margins may be used but is not required. Erasable papers are not acceptable. Required copies other than the original may be reproduced.
- **Margins:** The left margin shall measure 1 1/2 inches, the right margin 1 inch, the top and bottom margins 1 1/2 inches except when paper with blue lines is used.
- **Typing:** The thesis or project shall be in clean black type. Pica and elite types are preferred. Script type and type smaller than elite are not acceptable. The typing shall be of superior quality without strikeouts. Errors may be corrected only by clean erasure and retyping. Covering of errors by cement-over process (opaque liquid and others), Ko-Rec-Type, or any other method is not acceptable. The only exception is the use of a typewriter that removes letters magnetically from the paper. Quality of typing is important. A list of thesis typists is available in Library South, 2nd floor. It is advisable to engage a typist as early in the quarter as possible because there is heavy demand for their services.
- **Charts, drawings, maps:** Charts that are drawn (not typed) and drawings may be done either in India ink or with a sharp, dark pencil. If done with a pencil, both the original and the second copy may then be photoduplicated on a good quality paper. Maps or other material or sheets larger than 8 1/2 by 11 inches may be included by folding or reduction in size of print. The library should be consulted about the suitability of either of these two methods.
- **Photographs:** Photographs and other illustrations shall be mounted with a white latex glue or by dry-mount lissue process. Photographs, charts, drawings, or other material reproduced in the thesis that are obtained from copyrighted sources (books or journals) must be acknowledged. This may be done below the illustration or a separate page of acknowledgment may be included after the text. Acknowledgments shall be in the form of a footnote citation.
- **Number of copies to be filed:** The university requires two bound copies of the thesis or project description summary (with the end product whenever practical). Media material shall be submitted in duplicate. The library accepts responsibility for binding two copies (except for the Department of Psychology which requires a third copy). When the thesis or project is submitted to the library (Library South, 2nd floor) directions will be given regarding payment of the bindery fee. An original and a photocopy (or carbon copy) of the thesis will be bound and retained in the library, which makes the copy available for circulation. Students are responsible for photoduplication of the second copy. Any reproduced additional copies that the student desires to have bound are the responsibility of the student.

The thesis adviser in the library will provide assistance regarding matters of format or problems in bibliographic entries. However, the thesis or project must be filed in the library in its final form only after the committee members have signed the title approval pages. The deadline for filing theses or projects is printed in the *Schedule of Classes*. Extensions of these deadlines are not allowed.

Required Approval. Students are required to obtain approval for their thesis or project as described below:

Each copy of the thesis must be accompanied by an original regulation thesis or project approval page obtainable at the school graduate studies office, Office of Graduate Studies and Research, or from the candidate's major department or division. Each page must be signed by a minimum of two thesis or project committee

members and by the department or division chair (the graduate programs coordinator in the School of Natural and Social Sciences). The signatures of the thesis or project committee members signify approval of both the content and form of the thesis or project by the department or division. The year on the title page and on the title approval page must be consistent.

The completed thesis or project must be submitted according to the following procedure:

- The two copies, signed by a minimum of two thesis or project committee members and by the department or division chair, are taken by the student to the Reference Room on the second floor of the library by the thesis and project filing deadline stated each quarter in the *Schedule of Classes*.
- The thesis record card received from the library is taken first to the Cashier's Office, where bindery costs are paid, and then the stamped thesis record card is taken to the Graduation Office, Administration 409.
- The library will examine the thesis or project and recommend either approval or disapproval. If it is approved, the library will notify the Graduation Office; if not approved, the library will notify the student, the major department or division, and the school graduate dean.
- Upon notification of acceptance, the student is responsible for submitting the additional number of copies required. These will be bound upon payment of the fee of \$8 per copy (subject to change) and retained in the library. Theses or projects returned to students by the library for correction and/or revision may upon resubmission be assigned a revised acceptance date by the Office of Graduate Studies and Research.

Foreign Language Reading Examination Fee

Specific academic department and division policies require that graduate students pass the foreign language reading examination. Graduate students who are not registered for courses carrying academic credit during the quarter in which they take the Foreign Language Reading Examination (FL 901) are charged a nonrefundable \$10 fee for taking the examination. Payment of student services, facilities, and associated student fees, or any tuition charges, is not required.

Application for Graduation

Application for graduation (*degree check*) is made on a form available at Administration 101 or 409 or any academic department or division office. Permission to apply for graduation must be granted by the candidate's major department or division before the completed application and required fee are submitted to the Cashier's Office for payment of the fee.

Students are required to file an application by the deadline announced in the *Schedule of Classes*. The application is valid only for the stated quarter. A new application is required of students who do not meet requirements for the stated quarter by the completion deadline announced in the *Schedule of Classes*. Further information appears in the *Undergraduate Study* section of this catalog.

No subject, unit, or grade credit will be granted for any course work completed more than seven years prior to the date of issuance of a student's master's degree. Refer to information earlier in this chapter entitled *Time Limitation* under the heading *University Requirements for Master's Degrees*.

Commencement Exercises

Commencement is held annually at the end of the spring quarter. Students who have completed degree requirements the previous summer, fall, or winter quarter are eligible to participate in the

ceremony along with those who complete their work in the spring quarter. Information bulletins about commencement activities are mailed to the home address of those eligible to participate early in the spring and are available on campus at school, department, and division offices and Administration 101 and 409.

During commencement exercises, degrees are conferred on the candidates by the President of the University. Although each candidate receives a diploma cover during the program, the actual diploma is sent several months later. Within a few weeks after graduation, eligible candidates receive a Letter of Congratulations in the mail and degrees are posted on the permanent academic records.

Requirements for Additional Master's Degrees

- Students who have earned a master's degree at Cal State L.A. and wish to obtain a subsequent master's degree from this university must complete an approved program of at least 45 quarter units including a minimum of 23 quarter units of new work not included on the first degree. With adviser approval, students may include up to 22 units from their first master's degree program on the second master's degree program provided that the courses have been completed within seven years of the award date of the second degree and are otherwise eligible for inclusion.
- Students who have earned a master's degree elsewhere are strongly discouraged from applying for an additional identical degree at Cal State L.A. With extraordinary justification and with approval of the department or division and school concerned, a student may petition the University Graduate Studies Subcommittee for an exception to this policy.
- Students who have earned a master's degree at Cal State L.A. and wish to obtain a subsequent master's degree from this university must complete a minimum of 23 quarter units of new work not included on the first degree program and must satisfy all other requirements for the new degree. Advancement to candidacy for the subsequent degree will be granted only after the first degree has been awarded.
- Students who have earned a master's degree at Cal State L.A. are strongly discouraged from applying for a different option under the same degree. With extraordinary justification and with approval of the department or division and school concerned, a student may petition the University Graduate Studies Subcommittee for an exception to this policy.

Additional Graduate/Postbaccalaureate Student Information

Use of Social Security Number

Applicants are required to include their Social Security account number in designated places on CSU applications for admission pursuant to the authority contained in Title 5, *California Code of Regulations*, Section 41201. The Social Security account number is used as a means of identifying records pertaining to the student, as well as identifying the student for purposes of financial aid eligibility and disbursement and the repayment of financial aid and other debts payable to the institution. Cal State L.A. uses the student's Social Security number as the official means of student identification and refers to the number as the student's Student Identification Number. On most student forms, the name is abbreviated as *S/D*.

Study Load

For full-time enrollment certification by the university, graduate students must carry a study load of 12 weighted units of approved prerequisite, corequisite, or graduate program courses (graduate

level courses have a weighted factor of 1.5). Upon recommendation of a student's major department or division and approval by the school graduate dean, a student enrolled in any of the following courses may be certified as full-time with a study load of fewer than 12 weighted units: 596, 597, 598, 599, 699, and 900. The maximum study load for students working toward a graduate degree is 16 units per quarter. Authorization to enroll in more than 16 units requires a petition approved by the student's department or division chair and the school graduate dean.

The U.S. Immigration and Naturalization Service (INS) requires an F-1 international (visa) graduate student to carry a minimum study load of 8 quarter units of 500-level courses or 12 units of 400-level courses. International students must comply with all university and INS regulations.

Credit by Examination

Graduate students who are in good standing and are enrolled in one or more residence courses may request permission to receive credit for courses by examination. Graduate credit by examination is restricted to eligible 400- and 500-level courses listed in this catalog. It is without unit limit, but does not count as residence credit. Total credit earned for courses and examinations taken in Special Sessions may not exceed the limit established for Special Session study. See "University Requirements for Master's Degrees."

Graduate and Postbaccalaureate Grading System

Grading System	
Graduate	
TRADITIONAL A, B, C, D, F.	Letters A, B, and C indicate passing grades; letters D and F indicate failure.
NONTRADITIONAL CR/NC.	CR, indicating passed with credit, is given for work taken by graduate and postbaccalaureate students, including 400-level courses, that is equivalent to B or better. NC, indicating no credit, is given for work equivalent to C, D, or F, for postbaccalaureate and graduate students. A course in which a postbaccalaureate or graduate student earns a grade below C must be repeated; grades from both the original course and the repeated course are used in computing the grade point average.

Definitions of Administrative Grading Symbols

Marks other than letter grades used to indicate status in courses undertaken have the following meanings:

CR, used to denote *passed with credit* when no letter grade is given, is assigned to a grade of B or better for graduate students. CR grades are not included in the calculation of the grade point average.

NC is used to denote *no credit* when no letter grade is given. NC grades are not included in the calculation of the grade point average.

SP (Satisfactory Progress) is used for courses that extend beyond one academic quarter—and may include enrollment in more than one quarter—to indicate that the student's work in progress has been evaluated as satisfactory to date but that the assignment of a final grade must await the completion of additional work. An SP does not add earned units and does not affect grade point average calculations. Successive enrollments in the course must not exceed the total number of units applicable to the student's educational objective. All work for the course must be completed within one calendar year of the date of first enrollment, except for courses associated with the master's degree thesis (597, 598, 599, 900) and doctoral dissertation (698, 699) in which case the time limit shall be five years, and a final grade is assigned to all segments of the course on the basis of overall quality. An SP that has not been replaced by a final grade within the time limit for the course shall be changed to NC. In extraordinary circumstances, extensions of time to remove SP grades may be granted by the appropriate school graduate dean (for graduate courses).

W (Withdrawal) indicates that a student was permitted to drop a course after the sixth day of instruction with the approval of the instructor and the department/division chair. The W carries no connotation of quality of student performance and is not used in calculating grade point averages.

RD (Report Delayed) may be used when a delay in the reporting of a grade is due to circumstances beyond the control of the student. The symbol will be replaced by a more appropriate grading symbol as soon as possible. An RD is not included in calculations of grade point average.

IN (Incomplete). An *Incomplete* grade is inappropriate for failing students. It is an interim grade designed for students who are passing but who through extenuating circumstances have not been able to complete all or part of the work of the last four weeks of the course. An *Incomplete* grade may be removed by completing the outstanding work within one calendar year following the end of the quarter in which it was assigned unless the time has been extended by the school graduate studies committee for contingencies such as military service or health problems of an incapacitating nature verified by a physician's statement. Any petition for extension of time to remove an incomplete must be filed within one calendar year immediately following the end of the quarter in which it was assigned. When the outstanding work has been completed during the time period allowed, the final grade will be reported to the Records Office. The time limitation prevails whether or not the student maintains continuous attendance. An *Incomplete* that is not removed during the time period allowed will remain on the student's permanent academic record as an I and will be charged as an F in grade point average computations.

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

Probation and Disqualification

Graduate students are subject to the following probation and disqualification criteria for administrative-academic deficiencies:

Administrative-Academic Deficiency. Provision has been made by the Office of the Chancellor whereby students may be placed on administrative-academic probation for any of the following reasons:

- Withdrawal from all or a substantial portion of courses for which they registered in two successive quarters or in any three quarters

- Repeated failure to progress toward a stated degree or program objective when such failure is within their control
- Failure to comply, after due notice, with a routine academic requirement or regulation

Notice is given in writing of the conditions for removal from administrative-academic probation, as well as circumstances that would lead to disqualification should probation conditions not be rectified.

Disqualification Regulations

- Classified graduate students whose grade point average in course work on their master's degree program falls below B (3.0) will be placed on scholastic probation. Classified graduate students whose grade point average falls below B (3.0) in all courses completed subsequent to admission to the program are subject to scholastic probation. If after being placed on scholastic probation they do not raise their average to B (3.0) after completion of 16 units or two quarters in residence, whichever comes later, they will be disqualified from pursuing the master's degree program in which they were classified. Classified graduate students whose grade point average falls more than nine grade points below B (3.0) will be disqualified from pursuing the master's degree program in which they were classified. If disqualified from a master's degree program, students may be admitted to another program only on the recommendation of the new major department or division concerned and with the approval of the appropriate school graduate dean.
- Conditionally classified graduate students whose grade point average in course work on their master's degree program falls below B (3.0) will be placed on scholastic probation. Conditionally classified graduate students whose grade point average falls below B (3.0) in all units completed subsequent to becoming conditionally classified are subject to scholastic probation. If after being placed on scholastic probation they do not raise their average to B (3.0) after completion of 16 units or two quarters in residence, whichever comes later, or if they fail to achieve a B (3.0) in their qualifying courses, they will be disqualified from the master's degree program in which they were conditionally classified. If disqualified from a master's degree program, conditionally classified students may be admitted to another program only on the recommendation of the new major department or division concerned, with submission of a new list of qualifying courses and the approval of the appropriate school graduate dean.
- Postbaccalaureate unclassified and classified students whose grade point average falls below 2.5 will be placed on scholastic probation. If after being placed on scholastic probation they do not raise their average to 2.5 after completion of 16 units or two quarters in residence, whichever comes later, they will be disqualified from pursuing course work at Cal State L.A.
- All units earned in the quarter in which the sixteenth unit is completed will be used in computing the grade point average.
- Students disqualified for scholarship deficiency may not enroll in any regular quarter at Cal State L.A. without permission from the appropriate school graduate dean and may be denied admission to other educational programs operated or sponsored by the campus.
- Students enrolled in graduate degree programs, credential programs, and graduate credit certificate programs are not eligible for *Academic Renewal*.
- Academic renewal privileges are limited to undergraduate and postbaccalaureate students who are pursuing a bachelor's de-

gree. These policies and procedures are outlined in the *Procedures and Regulations* section near the front of this catalog.

- Postbaccalaureate students pursuing a second or subsequent baccalaureate are subject to the same probation and disqualification standards as seniors which are outlined in the *Procedures and Regulations* section near the front of this catalog.

International Programs

Graduate students may be eligible for study abroad under The California State University International Programs. Information about cooperating universities abroad, eligibility requirements, and application procedures appears under *International Programs* in the opening chapter of this catalog.

Scholarships

Scholarships are available for qualified graduate students during the academic year. Most scholarships are awarded to students already in attendance at Cal State L.A., on the basis of academic achievement, campus or community participation, and/or financial need. Some are unique to specific degree programs and are awarded directly by the academic departments/divisions concerned. Students should consult both their academic department or division and the Center for Student Financial Services regarding scholarships. In addition, the Associated Students sponsor graduate research scholarships for which application forms are available in University-Student Union 422. A complete list of currently available scholarships appears in the *Undergraduate Study* chapter of this catalog.

Leaves of Absence

Students may petition for a leave of absence for such reasons as: *professional or academic opportunities*, like travel or study abroad, employment related to educational goals and major fields of study, or participation in field study or research projects; *medical reasons*, including pregnancy, major surgery, or other health-related circumstances; and *financial reasons*, such as the necessity to work for a specified period in order to resume study with adequate resources. Petition forms are available at Administration 101.

Evaluation of petitions for leaves of absence takes into account the student's stated plans and the extent to which a leave would contribute to educational objectives. Students are expected to plan their time of return and their activities during the leave. They must also state why it is critical to remain in continuous residence. In the case of medical or financial leaves, they must state how they plan to remain current with or advance in their academic field.

Graduate students are granted a maximum of 4 quarters, subject to renewal. Continuing students' allowed absence of 2 quarters is included in these maximums.

Petitions must be filed at Administration 101 after action by the department/division chair and school graduate dean no later than 3 weeks before the end of the quarter preceding the proposed leave. Approval entitles students to continuing status for registration purposes provided they return no later than the quarter specified in their petitions. Continuing students returning from leaves are entitled to priority registration privileges and are not required to file an application for readmission.

Classified postbaccalaureate and graduate students retain classified standing. Unclassified postbaccalaureate and conditionally classified graduate students who have approved programs on file in their school graduate studies office are subject to the conditions of those programs. All others are subject to the requirements in effect when they return.

Doctor of Philosophy Degree in Special Education

A doctoral program in Special Education, offered jointly by the University of California, Los Angeles and California State University, Los Angeles, combines the unique resources of the two institutions. The program provides preparation for leadership positions in higher education and the public schools, as well as preparation for a career in scholarly research.

Refer to the graduate *School of Education* chapter for complete information about the doctoral program.

Credential Programs

University programs have been approved for the following credentials and areas of specialization. Complete information appears in the undergraduate and graduate *School of Education* chapters.

Teaching Credentials: Multiple Subject, Multiple Subject/Bilingual Emphasis, Single Subject (preliminary, professional clear internship), Designated Subjects.

Specialist Credentials: Adapted Physical Education, Language Development, Reading, Special Education.

Services Credentials: Preliminary Administrative, Professional Administrative, Administrative Internship, Pupil Personnel, Clinical-Rehabilitative Services, Library Media Teacher, Health Services-School Nurse.

Credit Certificate Programs

Certificate programs are designed to augment university curricula by providing specialized instruction and training within a field. These programs usually require significantly fewer units than a degree major. A graduate level certificate program must contain a minimum of 16 units. Normally, courses in certificate programs will be upper division or graduate level, except for prerequisites. Students may transfer from another institution no more than one quarter of the total units required for a certificate (75% of the course work must be completed at Cal State L.A.). A maximum of one quarter (25%) of the total units required for a certificate may be devoted to internships or independent study, or a combination of both. The minimum grade point average required for completion of a postbaccalaureate certificate program is B (3.0). These grade point average requirements do not pertain to noncredit certificate programs. A *Certificate of Completion* is awarded upon successful completion of the program requirements. Some certificates are offered within degree majors and can be applied toward a baccalaureate or a master's degree; others are offered through the Office of Continuing Education with the certificate being the main goal.

Cal State L.A. offers credit certificate programs at both undergraduate and postbaccalaureate levels. Listed below are certificate programs that are available to postbaccalaureate students, although some are also available to undergraduate students. Individual program and course requirements appear in academic department and division listings in the chapters that follow.

Accounting

Offered by the Department of Accounting, (213) 343-2630, the program is designed to provide an organized series of courses in accounting for students in other majors who wish to qualify to take a professional accounting examination, to meet civil service educational requirements for employment as a professional accountant or auditor, or to acquire the skills needed for employment as a professional accountant in private industry.

Adult Medical Nurse Practitioner

Offered by the Department of Nursing, (213) 343-4700, this program provides training for nurses who desire to expand their role by becoming adult medical nurse practitioners.

Adult Nurse Practitioner

Offered by the Department of Nursing, (213) 343-4700, this program is designed for nurses who desire to expand their area of expertise by becoming adult nurse practitioners. The role of the nurse practitioner has been identified as one that can effectively lower or eliminate certain deficits in the health care delivery system. A positive impact can be made in the areas of distribution and utilization of direct providers of care, cost and efficiency of primary health care delivery, and access and quality in meeting health care needs.

Advanced Information Systems

Offered by the Department of Information Systems, (213) 343-2910, the program is designed to give individuals who are pursuing or have earned a degree in business administration (or have equivalent experience) an introduction to the techniques of information systems design, planning, and management. Applicable toward degrees in business administration.

Advanced Study in Central Office Administration

Offered by the Division of Administration and Counseling in the School of Education, (213) 343-4300, the program is designed to certify competence in central office administration. Applicable toward Administrative Services credentials and master's degree program in educational administration.

Alcohol and Drug Problems Specialist

Offered by the Department of Health Science (213) 343-4740, the program prepares students to work in community agencies involved with alcohol and/or drug related problems. Applicable toward baccalaureate or master's degree in health science and other related fields.

Applied Behavior Analysis in Educational Settings

Offered by the Division of Administration and Counseling in the School of Education (213) 343-4250, the program provides practitioners an opportunity to develop skills for implementing and evaluating applied behavior analysis programs in behavior management, motivation, consultation, and teaching.

Applied Gerontology

Offered by the School of Health and Human Services, (213) 343-4724, this program is designed to enhance the preparation of individuals enrolled in courses or working on health-related disciplines to exercise their effectiveness as practitioners with older populations, particularly ethnic minorities. The program includes instruction about aging in several domains: biological, social/psychological, and policy-social services.

Biotechnology

Offered by the Department of Biology, (213) 343-2050, the program is designed to give graduate biology students the practical knowledge and laboratory skills needed for the application of modern molecular genetic approaches to research problems and for work in the biotechnology industry or in research laboratories that utilize the techniques of gene manipulation. Applicable toward the master's degree in biology.

Cartography and Air Photo Interpretation

Offered by the Department of Geography and Urban Analysis (213) 343-2220, in cooperation with the departments of Art, Civil Engineering, and Technology, the program provides a practical ap-

proach to the design, layout, and graphics needed in cartographic production, and the training needed to read, digest, and apply information obtainable from aerial photographs. Applicable toward degree programs within the cooperating departments.

Child Maltreatment and Family Violence

Offered by the School of Health and Human Services, (213) 343-4600, the program provides individuals from various disciplines with expanded knowledge and formalized education in the area of child abuse and domestic violence, training and field experience in serving this population, and opportunities to qualify for career positions in which multidisciplinary training is required or essential.

Computer Applications in Schools

Offered by the Division of Educational Foundations and Interdivisional Studies in the School of Education, (213) 343-4330, the program is designed to prepare teachers to use computers in their classrooms and to take leadership roles in their schools: teaching computer programming/problem solving; selecting and modifying instructional software; evaluating and selecting hardware; and using computers to manage classrooms and schools. Open to graduate students with K-12 teaching experience only. Applicable toward master's degree programs in education.

Computer Programming

Offered by the Department of Information Systems (213) 343-2910, the program is designed to prepare individuals for entry level computer programmer positions. Courses in COBOL programming are required and other programming languages may be studied as electives. Applicable toward the baccalaureate in business administration. Also available through Continuing Education, (213) 343-4900, for nonmatriculated students.

Developmental Counseling

Offered by the Division of Administration and Counseling in the School of Education, (213) 343-4250, the program provides practitioners experience in developing and implementing programs of psychological education.

Electronics Technology

Offered by the Department of Technology, (213) 343-4550, the program is designed to provide technical knowledge and hands-on skills necessary for employment in electronic manufacturing, electronic field servicing, or electronic design-assisted environment. Applicable toward baccalaureate programs in technology.

English as a Second Language (ESL)

Offered by the Division of Educational Foundations and Interdivisional Studies in the School of Education, (213) 343-4330, the program prepares and qualifies teachers to work in classrooms or other educational settings where students are learning to speak, read, and write English as a second language.

Entrepreneurship

Offered by the Department of Marketing, (213) 343-2960, the program is designed to prepare students and business people for careers in small companies; starting companies, managing small businesses, and working in small businesses. The program includes instruction about how to take a product or service from the idea stage through the introduction and growth stages and/or how to successfully manage the business. A focus may be taken in Retailing, Marketing of Services and Products, Consulting, Accounting, Finance, or Entrepreneurship.

Fashion Design

Offered by the Department of Family Studies and Consumer Sciences, (213) 343-4630, the program provides opportunities for in-

dividuals to expand their knowledge and formalized education in the field of fashion design.

Fashion Merchandising

Offered by the Department of Family Studies and Consumer Sciences, (213) 343-4630, the program provides opportunities for individuals to expand their knowledge and formalized education in the field of fashion merchandising.

Fire Protection Risk Analysis and Reduction

Offered by the Department of Technology, (213) 343-4550, the program offers students and individuals in the insurance industry and in private sector fire protection positions a series of professionally related courses in fire protection and fire safety. The program prepares individuals to serve as fire protection and safety specialists, inspectors, evaluators, and managers. Applicable toward the baccalaureate in fire protection administration and technology.

Fire Service Administration

Offered by the Department of Technology, (213) 343-4550, the program offers fire department personnel who hold an associate degree an opportunity to continue their knowledge and formalized education in the elements of effective modern fire department functioning. Course work covers planning, prevention and disaster administration, public administration, and personnel and budgeting administration. Applicable toward the baccalaureate in fire protection administration and technology.

Graphic Design

Offered by the Department of Art, (213) 343-4010, the program is designed to prepare individuals for career positions in graphics, advertising, illustration, and related media industries. The program includes theory, technical methods, creative concepts, and portfolio development. Applicable toward the baccalaureate in art.

Industrial Chemistry

Offered by the Department of Chemistry and Biochemistry, (213) 343-2300, the program is designed to develop skills in instrumental analysis by providing a broad range of experience with instrumental methods and modern techniques to complement students' theoretical preparation in chemistry. The program is intended to enhance the ability of advanced students to function effectively in industrial and government laboratory positions in chemistry. Some of the courses are applicable toward the master's degree in chemistry.

Interior Design

Offered by the Department of Art, (213) 343-4010, the program is designed to prepare individuals for careers in all phases of interior design. Course work includes theoretical, technical, and conceptual experiences leading to portfolio development and career placement. Applicable toward the baccalaureate in art.

International Business

Offered by the Department of Marketing, (213) 343-2960, in conjunction with the World Trade Education Center, the program prepares students for careers in firms operating on a multinational basis; for careers in import-export, international finance and banking, and international agencies; and for the Commerce Option of the Foreign Service Officer Examination with the federal government, and to provide training for managers of internationally oriented companies. Applicable toward the baccalaureate in business administration. Also available through Continuing Education, (213) 343-4900, for nonmatriculated students.

International Criminal Justice Administration

Offered by the Department of Criminal Justice, (213) 343-4610, the program is designed to prepare criminal justice practitioners from

foreign nations for management and supervisory positions within criminal justice agencies in their own countries. Course work includes theoretical, technical, and conceptual experiences leading to a balanced view of contemporary thinking in the field. Applicable toward baccalaureate in criminal justice.

Marketing

Offered by the Department of Marketing, (213) 343-2960, the program is designed to prepare students in majors other than business for professional careers in marketing in profit or nonprofit organization. Students may select a focus in marketing management, advertising, public relations, marketing research, retailing, direct response marketing, international marketing, transportation, or financial service marketing. Applicable toward degree programs in business administration. Also available through Continuing Education, (213) 343-4900, for nonmatriculated students.

Music Recording Arts

Offered by the Department of Music, (213) 343-4060, the program is designed to provide the artistic and technical skills necessary for employment in the recording industry. Applicable toward degree programs in music, industrial studies, and engineering.

Neonatal Nursing Care Clinician

Offered by the Department of Nursing, (213) 343-4700, the program is designed to equip registered nurses with in-depth knowledge and expanded role abilities to allow them to function as neonatal nursing care clinicians.

Nurse Midwifery Education

Offered by the Department of Nursing, (213) 343-4700, the program is designed to prepare registered nurses to expand their practice roles by becoming Certified Nurse Midwives (C.N.M.), to reduce the existing severe obstetrical care provider shortages that exist in the greater Los Angeles area. Applicable toward the baccalaureate in nursing.

Obstetrics-Gynecology Nurse Practitioner

Offered by the Department of Nursing, (213) 343-4700, this program is designed for nurses who desire to expand their role by becoming nurse practitioners.

Occupational Safety and Health

Offered by the Department of Health Science, (213) 343-4740, the program prepares occupational safety and health professionals to function as generalists in implementing safety and loss control programs in industry or medical institutions. This program was developed in accordance with federal and state legal occupational safety and health acts. Applicable toward degree programs in health science.

Office Systems

Offered by the Department of Office Systems and Business Education, (213) 343-2910, the program is designed to provide academic preparation for supervisory positions over the technology, people, and procedures within the organizational and environmental contents of an organization. Includes study of integrated and stand-alone software, electronic spreadsheets, data base management systems, telecommunications, and graphics. Applicable toward baccalaureate in business education.

Professional Employee Counseling

Offered by the Division of Administration and Counseling in the School of Education, (213) 343-4250, the program is designed to supplement the training of professional counselors by providing specialized information and skills specific to counseling and related programs offered by employers and unions for employees in business, industry, and government. A master's or higher degree in

counseling or a related discipline, or progress toward such a degree, is required for admission to the program.

Rehabilitative/School Audiology

Offered by the Department of Communication Disorders, (213) 343-4690, the program is designed to prepare rehabilitative/school audiologists who do not seek the California credential. Open to graduate students only, this program is comprised of course work that parallels the Clinical-Rehabilitative Services credential in Audiology.

Retail Professional Development

Offered by the Department of Marketing, (213) 343-2960, in conjunction with the Institute of Retail Management, the program is designed to provide the skills required for executive positions in the retail industry and to prepare individuals to become successful entrepreneurs in their own retail business. Available through Continuing Education, (213) 343-4900 for nonmatriculated students.

Storytelling

Offered by the Division of Curriculum and Instruction in the School of Education, (213) 343-4350, the program is designed for persons with an interest in the techniques, theories, and literature associated with the ancient and modern art of storytelling. Especially valuable for teacher use in language arts instruction and for improving communications skills; can also be used effectively by librarians and recreation leaders. Open to all postbaccalaureate students who meet the university requirements for admission to postbaccalaureate standing. Applicable toward some master's degree programs in education and other fields.

Teaching Critical Thinking

Offered by the Department of Philosophy (213) 343-4180, the program is designed for those with an interest in the theory and techniques of teaching critical thinking at college or secondary school levels and is available to students with any major. Open to holders of the baccalaureate who meet the university requirements for admission to postbaccalaureate standing.

Teaching Microcomputer Business Applications

Offered by the Department of Office Systems and Business Education, (213) 343-2880, the program is designed for teachers and trainers in education and industry who are responsible for teaching students and employees widely used microcomputer business applications. Includes study of integrated and stand-alone software, electronic spreadsheets, data base management systems, telecommunications, and graphics. Applicable toward baccalaureate in business education.

Transportation (Commercial)

Offered by the Department of Marketing, (213) 343-2960, the program is designed for individuals intending to pursue a career or enhance their advancement potential in the field of industrial traffic and transportation or carrier operation. Applicable toward the baccalaureate in business administration. Also available through Continuing Education, (213) 343-4900, for nonmatriculated students.

Urban Land Use and Property Analysis

Offered by the Department of Geography and Urban Analysis, (213) 343-2220, in cooperation with the Department of Finance and Law, the program provides students and professionals with technical and analytical training for evaluating current problems confronting the urban community.

Voluntary Youth Agency Administration

Offered by the School of Health and Human Services in conjunction with American Humanics, Inc., (213) 343-4580, the program is designed to prepare professionals for careers in youth agency administration. Applicable toward baccalaureate programs.

UNIVERSITY PROGRAMS

UNIVERSITY COURSES (UNIV)

Graduate Course

599 Thesis or Project for Special Major (1-8)

Prerequisites: Advancement to candidacy, formal approval of topic by advisory committee. Independent study resulting in a thesis or project. Oral examination on thesis required. Open to special majors only.

GRADUATE AND POSTBACCALAUREATE PROGRAMS

School of Arts and Letters

School of Business and Economics

School of Education

School of Engineering and Technology

School of Health and Human Services

School of Natural and Social Sciences



SCHOOL OF ARTS AND LETTERS

Departments within the School

Department of Art

Department of Communication Studies

Department of English

Department of Foreign Languages and Literatures

Department of Music

Department of Philosophy

Department of Theatre Arts and Dance

ART

School of Arts and Letters

DEPARTMENT OFFICE

Fine Arts 326

Phone: (213) 343-4010

FAX: (213) 343-4045

The Master of Arts degree program in Art is designed to produce graduates with advanced professional competence in a specialized area of the visual arts. The degree is intended to prepare teachers for the public schools, community colleges, and four-year institutions; and to train art historians, professional artists, and commercial artists. The program requires that students select and strengthen an area of specialization. The overall objective is to elevate students' ability to conceptualize on a significant level.

The Master of Fine Arts degree program in Art is designed to provide, on a highly selective basis, specialized training and education for artists and designers in design, computer graphics, painting, photography, printmaking, sculpture, ceramics, textiles, and metalsmithing. Career-related training is provided through internships, required field work, and the integration of instruction with professional work experience which is enhanced by the campus' proximity to media and industries, as well as prominent local art museums. The two-year MFA program allows students a chance to work with faculty professionals who help them focus on theoretical, critical, and practical aspects of their area of specialization.

Master of Arts Degree

Admission to the Program

In addition to university requirements for admission to graduate study, applicants must have a baccalaureate in art from an accredited college or university or complete Cal State L.A.'s lower and upper division art major core program or its equivalent.

Art History students must successfully complete 12 units of first-year French or German prior to achieving classified standing.

Classified Graduate Standing

Students must apply to the desired area of specialization—Art Education, Art History, Art Therapy, Design, or Studio Arts.

Approval by a graduate screening committee established by the faculty of the student's option area and completion of any qualifying courses are required for classified graduate standing.

Requirements for the Degree (45 units)

A total of 45 units is required, with 33 units in art and at least 23 in 500-level courses. Consultation with an adviser is essential for program submission and approval.

Required Course (4 units)

ART 531 Research Methodology in Art (4)

Area of Specialization (6–8 units)

Select 6–8 units from one of following areas:

• Art Education

- ** ART 500 Seminar: Art Education (3)
- ART 505 Research in Art Education (3)

• Art History

- ** ART 501 Seminar: Art History (4)

• Art Therapy

- ** ART 520 Seminar: Art Therapy (4)

• Design

- ** ART 503 Graduate Problems in Design (3)
- ** ART 512 Graduate Photography (3)

• Painting, Sculpture, Graphic Arts

- ** ART 504 Graduate Problems in Painting, Sculpture, and Graphic Arts (3)
- ** ART 512 Graduate Photography (3)
- ** ART 544 Graduate Painting and Drawing (3)
- ** ART 574 Graduate Printmaking (3)
- ** ART 584 Graduate Sculpture (3)

** Repeatable course

Electives (7–12 units)

Select 500-level art courses from any area.

Additional Electives (10–17 units)

Select 400- or 500-level art courses from any area.

Electives Outside Art (0–12 units)

Select 400- or 500-level courses from any department.

Comprehensive Examination or Thesis or Project (0, 6 units)

- ‡ ART 596 Comprehensive Examination (0) or
- ART 599 Thesis, Project, or Combination Written Report and Project (6)

‡ Open to Art History students only

Only Art History students may take the comprehensive examination (ART 596). These students should expect to take the examination no earlier than the quarter they complete all course work on their program and must comply with school and departmental requirements. In addition to the examination, they must complete an additional six units in art.

Art History students who do not select the comprehensive examination and students in all other specializations in the major must enroll in ART 599 and successfully complete either a thesis or a project.

Master of Fine Arts Degree

Admission to the Program

In addition to university requirements for admission to graduate study, applicants must have a baccalaureate in art from an accredited college or university or preparation equivalent to the core courses in Cal State L.A.'s baccalaureate in art. Candidates must also have completed 24 quarter units of upper division course work in the area of specialization proposed for the MFA degree and must have a *B* (3.0) or higher grade point average in all upper division art courses. The Department of Art has MFA application periods, during which each applicant's performance is evaluated through personal interview and portfolio presentation. Selection of MFA candidates is based on faculty assessment of their demonstrated talents and on their personal attitudes, commitment, and potential for career success.

Requirements for the Degree (45 or 90 units)

The MFA degree in Art requires a minimum of 90 units of approved course work when starting with a baccalaureate, or 45 units when starting after completion of a Master of Arts degree in Art.

Ninety Unit Program

Required General MFA Subjects (13 units)

- ART 502M MFA Seminar: Visual Arts (3)
- **ART 504M MFA Seminar: Studio Art (3)
- **ART 508M MFA Seminar: Design (3)
- ART 531 Research Methodology in Art (4)

** May be repeated to total of 6 units

Required Art History (12 units)

Select from following

- ART 406, 411, 416, 421, 431, 436, 441, 446, 451,
461, 466, 471, 476, 477, 481, 486, 491, 501

Required Area of Specialization (45 units)

The following repeatable courses must be taken for a total of 27 units.

- ART 595M, 598M, 599M (3 units each)

Select 18 units from one of following areas:

• Design

- ART 503, 508M, 512

• Studio Arts

- ART 502, 504, 504M, 512, 544, 574, 584

Electives (12 units)

Select 400-level courses from the Art Education, Art Therapy, Design, and Studio Arts specializations with adviser assistance.

Electives Outside Art (8 units)

Select 8 units of related upper division or graduate level course work with adviser approval.

Courses in Art (ART)

† There is a special fee associated with registering for this class. Details appear in the Schedule of Classes.

400-level Courses

All 400-level courses may be applied toward master's degree requirements except the following, subject to limits established by the department and approval of the graduate adviser: ART 401, 426, 499

Graduate Courses

Classified graduate standing is required for admission to all 500-level courses.

500 Seminar: Art Education (3)

Prerequisites: Teaching experience, 20 units in art. Opportunities for teachers to evaluate their experiences in light of new techniques and concepts; problems resolved through group interaction; background in subject matter increased through research and experimentation. May be repeated to maximum of 6 units.

501 Seminar: Art History (4)

Prerequisite: Eight units of upper division art history. Research into pertinent topic in art history. Presentation and discussion of research papers. May be repeated to maximum of 8 units.

502 Graduate Problems in Ceramics, Metals, and Textiles (3)

Prerequisite: Eight units of crafts, including 6 in specific area. Individual investigation in specific area of crafts; advanced work in laboratory and research under specialist in field. May be repeated to maximum of 9 units.

502M MFA Seminar: Visual Arts (3)

Prerequisite: Classified standing in MFA program. Critical approach to the visual arts through examination of the roles and works of artists in society. May be repeated to maximum of 9 units.

503 Graduate Problems in Design (3)

Prerequisite: Six units of design. Independent and interdependent library and laboratory research into problems of contemporary design permitting students to pursue special interests in advanced areas. May be repeated to maximum of 9 units.

504 Graduate Problems in Painting, Sculpture, and Graphic Arts (3)

Prerequisite: Eight units in painting, sculpture, and graphic arts option. Independent laboratory development in given approach to painting, sculpture, and graphic arts. Development of individuality and depth in work encouraged; periodic group analysis. May be repeated to maximum of 9 units.

504M MFA Seminar: Studio Art (3)

Prerequisite: Classified standing in MFA program. Philosophical, conceptual, and practical aspects of professional studio arts. May be repeated to maximum of 9 units.

505 Research in Art Education (3)

Prerequisite: ART 415, instructor consent. Investigation of both conceptual and procedural aspects of historical, descriptive, and experimental research relevant to practice of art education.

508M MFA Seminar: Design (3)

Prerequisite: Classified standing in MFA program. Aesthetic, functional, and technical aspects of professional design. May be repeated to maximum of 9 units.

510 Art History in Art Education (3)

Prerequisites: Teaching experience, 20 units of art. Theories and methods for investigation of history of art forms.

† 512 Graduate Photography (3)

Prerequisite: Three upper division photography courses. Intensive study and production work in contemporary photography, current theories, concepts, and techniques. May be repeated to maximum of 12 units.

515 Art Criticism in Art Education (3)

Prerequisites: Teaching experience, 20 units of art including ART 401. Theories and methods for investigation of critical analysis of art forms.

520 Seminar: Art Therapy (4)

Prerequisites: ART 445, 465. Exploration of current practices and issues in art therapy. May be repeated to maximum of 8 units as instructor changes.

530 The Arts in Aesthetic Education (4)

Prerequisite: Nine units of art, instructor consent for nonmajors. Bases of aesthetic responses to visual, literary, performing arts.

531 Research Methodology in Art (4)

Research methodology and requirements related to thesis, project report, and exhibition statement in Department of Art. Required of all master's degree candidates.

540 Case Study and Presentation (4)

Prerequisites: ART 445, 465, PSY 436B. Analysis and application of principles and techniques for evaluating client condition and presenting reports for related mental health professionals.

544 Graduate Painting and Drawing (3)

Prerequisite: Six units of upper division painting and drawing. Studio work in various media, stressing professional competence in techniques and concepts of art. May be repeated to maximum of 9 units. Activity 6 hours.

550 Problems in Clinical Art Therapy (4)

Prerequisites: ART 445, 465, PSY 431, 436B, 438. Current issues and concerns in clinical art therapy practice.

554L Special Topics in Art (1-4)

Prerequisite: Instructor consent (specific prerequisite subject to change, depending upon topic of emphasis or content requirements of the course). Selected topics reflecting current issues, problems, and interests in art. May be repeated for credit to maximum of 9 units as subject matter changes.

554P Special Topics in Art (1-4)

Prerequisite: Instructor consent (specific prerequisite subject to change, depending upon topic of emphasis or content requirements of the course). Selected topics reflecting current issues, problems, and interests in art. May be repeated for credit to maximum of 9 units as subject matter changes.

560 Family Art Therapy (4)

Prerequisites: ART 445, 465, PSY 426, 431, 438, 536. Emphasis on utilization of art therapy theory and techniques especially suited for family groups.

570 Experimental Art Therapy (4)

Prerequisites: ART 445, 465, 470. Research in art therapy leading to new approaches based on principles of concern for creativity and knowledge.

† 574 Graduate Printmaking (3)

Prerequisite: Six units of ART 424 or 474. Work in selection of printmaking media stressing professional competence in techniques and art concepts. May be repeated to maximum of 9 units. Activity 6 hours.

584 Graduate Sculpture (3)

Prerequisite: ART 484. Individual studio work in sculpture building upon undergraduate sculpture experiences. Periodic group presentations and critical analysis. May be repeated to maximum of 18 units. Activity 6 hours.

595 Directed Field Work in Art/Art Therapy (1-4)

Prerequisites: ART 470 plus undergraduate Art major. Supervised experience in art therapy situations. May be repeated to maximum of 8 units.

595M MFA Professional Field Work in Art (1-9)

Prerequisite: Classified standing in MFA program. Supervised field work experience in professional art industry: museums, publications, design, and business. May be repeated to maximum of 9 units.

598 Graduate Directed Study (1-3)

Prerequisite: Instructor consent to act as sponsor. Independent study of advanced topics in the field; regular conferences with sponsor. May be repeated to maximum of 9 units.

598M MFA Directed Study (1-12)

Prerequisite: Instructor consent to act as sponsor. Independent directed study of advanced topics in professional art fields. Regular conferences with sponsor. May be repeated to maximum of 12 units.

599 Thesis, Project, or Combination Written Report and Project (1-6)

Prerequisites: Advancement to candidacy, instructor consent to act as sponsor, departmental approval of topic prior to registration. Independent research resulting in a thesis, project, or combination written report and project. Must be repeated to maximum of 6 units. Graded CR/NC.

599M MFA Project (1-12)

Prerequisite: Advancement to candidacy, instructor consent to act as sponsor, departmental approval of project prior to registration. Independent research resulting in MFA project accompanied by a written abstract. May be repeated to maximum of 12 units. Graded CR/NC.

599T Art Therapy Thesis (1-6)

Prerequisites: Advancement to candidacy, instructor consent to act as sponsor, departmental approval of topic prior to registration. Independent research resulting in thesis. May be repeated to maximum of 12 units. Graded CR/NC.

COMMUNICATION STUDIES

School of Arts and Letters

DEPARTMENT OFFICE

Music 104
Phone: (213) 343-4200

Master of Arts Degree in Speech Communication

Prerequisite to admission are 30 units of undergraduate work in speech communication and related fields, as approved by the department, of which a minimum of 20 units must be in speech communication. A formal conference with an assigned adviser is required for formulation of the master's degree program.

Admission to the Program

In addition to university requirements for admission to graduate study, applicants must have a 2.75 grade point average in the last 90 quarter units.

Graduate students must have appropriate undergraduate preparation, as described above, for the master's degree program. Students are assigned a departmental adviser to assist them in designing a program suited to their individual interests and goals.

Requirements for the Degree (45 units)

A total of 45 units is required, with at least 24 in 500-level courses.

Required Courses (24 units)

Select a minimum of 24 units in 500-level speech communication seminars, with adviser approval.

Electives (17-21 units)

Select 400- or 500-level SPCH courses with adviser approval; a maximum of 8 of these units may be in related fields with approval of adviser and department chair.

Comprehensive Examination or Thesis (0, 4 units)

SPCH 596 Comprehensive Examination (0) or
SPCH 599 Thesis (4)

Students should expect to take the comprehensive examination (SPCH 596) the quarter they complete all course work on their program and must comply with school and departmental requirements. Students will be allowed a maximum of two attempts to complete the comprehensive examinations successfully. Failure to pass the comprehensive examinations, or any portion thereof, will result in disqualification from the program.

A thesis may be substituted for the comprehensive examination, with prior approval of adviser and department chair. Students authorized to submit a thesis must enroll in SPCH 599 for a minimum of 4 units.

Courses in Speech Communication (SPCH)

400-Level Courses

All 400-level courses may be applied toward master's degree requirements except the following, subject to limits established by department and approval of a graduate adviser: SPCH 431, 499

Graduate Courses

Classified graduate standing is required for admission.

530 Seminar: Organizational Communication (4)

Prerequisite: SPCH 430, 350, 450, 463, or 478. Contemporary theoretical and methodological issues or constructs in organizational or interpersonal communication. May be repeated to maximum of 8 units with adviser approval.

540 Seminar: Interpersonal Communication (4)

Prerequisite: SPCH 350, 450, 478, or 487. Contemporary theoretical and methodological issues and constructs in interpersonal communication. May be repeated to maximum of 8 units with adviser approval.

550 Seminar: Communication Theory (4)

Prerequisite: SPCH 450 or 487. Examination of theoretical perspectives, principles of theory building, and new developments in communication research. May be repeated to maximum of 8 units with adviser approval.

560 Seminar: Language and Communication Behavior (4)

Prerequisite: SPCH 450, 461, 463, or 494. Contemporary theories, research perspectives, and subject areas in language and communication behavior. May be repeated to maximum of 8 units with adviser approval.

562 Seminar: Theories of Mass Media (4)

Prerequisite: SPCH 450 or 470 or 482 or MSCM 460. Research and theory in mass media since television; analysis of media situations; messages and ideological effects. May be repeated once with adviser approval.

567 Seminar: Theories of Oral Interpretation (4)

Prerequisite: SPCH 367. Analysis of main theories of art of interpretation, with special emphasis on their bearing on contemporary theory and practice. May be repeated once for credit with adviser approval.

572 Seminar: International Public Discourse (4)

Prerequisites: SPCH 472, 485. Intensive study of major international orators, their ideas, style, rhetorical strategies and roles in social and aesthetic movements and in world history. May be repeated once for credit with adviser approval.

573 Seminar: American Public Address (4)

Prerequisites: SPCH 473A or 473B; 485. Examination and analysis of speeches and debates about selected major issues in American affairs. May be repeated once for credit with adviser approval.

576 Seminar: Argumentation, Discussion, and Debate (4)

Prerequisite: One upper division course in rhetorical theory. Analysis of significant literature, major trends, and theories of argumentation, discussion, and debate; intensive study of relationship of those areas to each other. May be repeated once for credit with adviser approval.

580 Seminar: Rhetorical Theory (4)

Prerequisite: At least one upper division course in rhetoric. Selected studies in philosophy of speech rhetoric and influence of rhetoric on historic and contemporary movements. May be repeated once for credit with adviser approval.

589 Seminar: Intercultural Communication (4)

Prerequisite: SPCH 489. Contemporary theories, research perspectives and significant cultural influences relating to communication between cultures. May be repeated once for credit with adviser approval.

590 Seminar: History of Speech Communication in America (4)

Prerequisite: Instructor consent. Historical movements, contemporary theories, and development of speech communication as a discipline of study; examination of significant literature, scholars, and leaders in the field. May be repeated to maximum of 8 units with adviser approval.

595 Graduate Performance (1-4)

Prerequisite: Consent of graduate adviser. Demonstration of graduate level proficiency in a major performance situation; research or analytical written project directly related to performance. May be repeated to maximum of 4 units.

598 Graduate Directed Study (1-4)

Prerequisite: Instructor consent to act as sponsor. Independent study of advanced topics in the field; regular conferences with sponsor. May be repeated for credit.

599 Thesis (1-4)

Prerequisites: Advancement to candidacy, instructor consent to act as sponsor, departmental approval of topic prior to registration. Independent research resulting in a thesis. May be repeated to maximum of 6 units. Graded CR/NC.

ENGLISH

School of Arts and Letters

DEPARTMENT OFFICE

Engineering and Technology A605

Phone: (213) 343-4140

The Master of Arts degree in English offers opportunities for further study in literature, criticism, and language. Professionally, it can assist teachers in secondary schools in improving their career status and can enable individuals to acquire the community college credential. Academically, it can provide the basis for subsequent doctoral study.

Master of Arts Degree

Admission to the Program

Applicants must have a baccalaureate in English and a 2.75 grade point average in the last 90 quarter units. Students whose major was not English should consult the principal graduate adviser about prerequisites or their equivalents. They must complete a 36-unit program of upper division prerequisites (which may include courses previously taken) prior to beginning their graduate work.

Requirements for the Degree (45 units)

A minimum of 45 units is required, with at least 23 in 500-level courses. Students must have completed course work, at either the undergraduate or graduate level, in major periods of British and American literature. Consult the Department of English for specific requirements and period descriptions.

Students preparing for the M.A. degree in English must complete ENGL 500 prior to enrolling in ENGL 510, 530, 541, 560, 570, 580, 590, and 598. It may be taken concurrently with 510 and 541.

Required Courses (24 units)

ENGL 500 Methodology of Graduate Research in English (4)

ENGL 510 Seminar: Historical Criticism (4)

ENGL 541 Seminar: Contemporary Critical Approaches (4)

With adviser approval, students select 12 additional units from 500-level ENGL courses. At least one course must be in the area of specialization selected for the comprehensive examination or thesis. A detailed listing of areas of specialization is available in the department office.

Electives (16-21 units)

Select from 400- or 500-level ENGL courses with adviser approval; 8 units may be in a related field. A maximum of 5 units in ENGL 598 is applicable toward the degree.

Comprehensive Examination or Thesis (0, 5 units)

ENGL 596 Comprehensive Examination (0) or

ENGL 598 Thesis (5)

Students must successfully complete either the comprehensive examination or a master's degree thesis as the culmination of their program.

Students are expected to have selected an area of specialization (see list available in department office) as reflected in course work in preparation for either the examination or the thesis.

Comprehensive Examination (0 units)

One section of the comprehensive examination will focus specifically on the student's chosen area of specialization and the other portion of the examination will assess the student's general critical skills and ability to elucidate and interpret a designated text.

The comprehensive examination (ENGL 596) may be taken no earlier than the quarter in which all course work for the degree is completed. Students must notify the department one quarter before they intend to take the examination. Advancement to candidacy and approval of the department's graduate studies committee are required prior to taking the examination.

Thesis (5 units)

The thesis option entails writing a master's degree essay about a subject in the student's area of specialization. The thesis option requires approval of a thesis director, advancement to candidacy, formal approval of the thesis proposal by the graduate studies committee, enrollment in 5 units of ENGL 599 (one unit for preparation of the thesis proposal; 4 units for writing the thesis), and an oral defense of the thesis.

Courses in American Studies (AMER)

400-level Courses

All 400-level courses may be applied toward master's degree requirements except the following, subject to limits established by the department and approval of the graduate adviser: AMER 499

Graduate Courses

Classified graduate standing is required for admission.

501 Seminar: Selected Problems in American Civilization (4)

Prerequisite: One course from AMER 401-404 sequence. Selected problems of both historical and contemporary significance whose ramifications in American life merit interdisciplinary considerations. May be repeated to maximum of 12 units.

598 Graduate Directed Study (1-4)

Prerequisites: Instructor consent to act as sponsor, departmental approval. Independent study of advanced topics; regular conferences with sponsor. May be repeated for credit; maximum of 6 units may be applied to master's program.

599 Thesis (1-4)

Prerequisite: Advancement to candidacy, minimum 3.5 grade point average in courses on the master's degree program at the time of advancement to candidacy, departmental approval of thesis proposal. Independent research resulting in a thesis; oral examination about completed thesis may be required. Must be repeated to maximum of 4 units. Graded CR/NC.

Courses in English (ENGL)

400-level Courses

All 400-level ENGL courses may be applied toward master's degree requirements, subject to limits established by the department and approval of the graduate adviser.

Graduate Courses

Classified graduate standing is required for admission.

500 Methodology of Graduate Research in English (4)

Prerequisite or corequisite: ENGL 441. Introduction to bibliography, research techniques, professional essay style, and basic critical approaches.

505 Seminar: Language and Literacy (4)

Prerequisite: ENGL 401. Theories of language structure as they apply to contemporary usage.

506 Seminar: The Writing Process (4)

Writing and editing instructional, administrative, and professional materials. Emphasis on developing English skills needed to teach writing at secondary school or community college level or to perform as staff writer or editor.

507 Seminar: Creative Writing (4)

Prerequisites: ENGL 407 or 408, instructor consent. Creative writing workshop with advanced instruction in composing in specified genre; in-class critiques by students and instructor. May be repeated for credit.

510 Seminar: Historical Criticism (4)

Prerequisite or corequisite: ENGL 500. Variable topic seminar focusing on historical criticism of selected works from periods in British or American literature. May be repeated as subject matter changes.

530 Seminar: Children's Literature and Folk Literature (4)

Prerequisite: ENGL 500. Selected topics in children's literature and folk literature, as announced in *Schedule of Classes*. May be repeated as subject matter changes.

541 Seminar: Contemporary Critical Approaches (4)

Prerequisite or corequisite: ENGL 500. Variable topic seminar focusing on selected contemporary critical approaches to study of English language and literature. May be repeated as subject matter changes.

560 Seminar: British Literature (4)

Prerequisite: ENGL 500. Study of one or more major writers or of selected works in British literature, as announced in *Schedule of Classes*. May be repeated as subject matter changes.

570 Seminar: American Literature (4)

Prerequisite: ENGL 500. Study of one or more major writers or of selected significant works in American literature, as announced in *Schedule of Classes*. May be repeated as subject matter changes.

580 Seminar: World Literature (4)

Prerequisite: ENGL 500. Study of one or more major writers or of selected significant works in world literature, as announced in *Schedule of Classes*. May be repeated as subject matter changes.

590 Seminar: Special Studies in Language in Literature (4)

Prerequisite: ENGL 500. Study of selected genres, intellectual movements, or literary ideas in representative works, as announced in *Schedule of Classes*. May be repeated as subject matter changes.

598 Graduate Directed Study (1-4)

Prerequisites: ENGL 500 (may be taken concurrently), instructor consent to act as sponsor, approval of principal graduate adviser. Independent study of advanced topics in field; regular conferences with sponsor. May be repeated to maximum of 5 units with maximum of 4 units allowed in any quarter. Graded CR/NC.

599 Thesis (1-5)

Prerequisites: Advancement to candidacy, formal approval by department. Independent study resulting in a critical essay. Oral examination about master's essay required. Must be repeated to total of 5 units. Graded CR/NC.

FOREIGN LANGUAGES AND LITERATURES

School of Arts and Letters

DEPARTMENT OFFICE

King Hall D1054
Phone: (213) 343-4230

The Department of Foreign Languages and Literatures offers programs leading to Master of Arts degrees in French and Spanish.

Proficiency Examinations

Foreign language proficiency examinations are administered by the Department of Foreign Languages and Literatures. Students in programs requiring proficiency in a foreign language must enroll in FL 901 or 902, as applicable, in the quarter in which any such examination is to be taken.

Master of Arts Degree in French

The Master of Arts degree in French is designed to enable students to attain a high level of proficiency in the French language and its literature and to employ it skillfully in such pursuits as teaching, writing, translating and communications or as preparation for undertaking doctoral study.

Admission to the Program

In addition to applying to the university, applicants must file a departmental application for admission along with official transcripts of all previous college work. These documents must reach the department early in the quarter preceding that in which course work for the degree is to begin. Applicants who hold a baccalaureate from Cal State L.A. and have not attended another college since graduation must also file a departmental application early in the quarter preceding graduate enrollment. No transcripts are required.

In addition to university requirements for admission to graduate study, applicants must have a Bachelor of Arts degree in French, or equivalent, and a minimum *B* (3.0) grade point average in upper division French courses. Applicants must also satisfy the department Graduate Admissions Committee standards for oral proficiency in French. In addition, beginning Latin is recommended prior to enrollment in FREN 501.

Requirements for the Degree (48 units)

A total of 48 units is required, with at least 23 in 500-level courses.

Required Courses (28 units)

Language and Linguistics (8 units)

- FREN 501 Development of French Language (4)
- FREN 509 Analytical and Interpretive Writing in French (4)

Literature (16 units)

- FREN 450 Selected Topics in French Literary Prose (4) or
- FREN 451 Selected Topics in French Dramatic Literature (4)
- FREN 535 Seminar: French Literary Prose since World War II (4)
- FREN 575 Seminar: French Literature (4, 4)

Culture (4 units)

- FREN 510 Seminar: French Culture (4)

Electives (20 units)

Select French courses below that have not been taken previously.

FREN *401, *403, 405, *412, 450, 451, 461, 471, 575, 598

* Must be taken if not completed in undergraduate status

Comprehensive Examination (0 units)

Students should expect to take the comprehensive examination (FREN 596) the quarter they complete all course work on their program and must comply with school and departmental requirements.

Master of Arts Degree in Spanish

The Master of Arts degree in Spanish is designed to enable students to attain a high level of proficiency in the Spanish language and its literature, and to employ it skillfully in such pursuits as teaching, writing, translating, and communications, or as preparation for doctoral study.

Admission to the Program

In addition to applying to the university, applicants must file a departmental application for admission along with official transcripts of all previous college work. These documents must reach the department early in the quarter preceding that in which course work for the degree is to begin. Applicants who hold a baccalaureate from Cal State L.A. and have not attended another college since graduation must also file a departmental application early in the quarter preceding graduate enrollment. No transcripts are required.

In addition to university requirements for admission to graduate study, applicants must have a Bachelor of Arts degree in Spanish or equivalent, including SPAN 401, a minimum 2.75 grade point average in the last 90 quarter units, and either a minimum score of 500 on the GRE subject exam in Spanish or a *B* (3.0) grade point average in upper division Spanish courses. Applicants are required to demonstrate proficiency in oral and written Spanish in accordance with criteria established by the department.

Requirements for the Degree (45 units)

A total of 45 units is required, with at least 23 in 500-level courses.

Required Courses (12 units)

- SPAN 501 Development of Spanish Language (4)
- SPAN 575 Seminar: Hispanic Literature (4, 4)

Options (12 units)

Select one from following:

Spanish Option

- SPAN 414 Don Quixote de la Mancha (4)
- SPAN 504 Studies in Medieval Literature (4)
- SPAN 540 Seminar: Contemporary Spanish Poetry (4)

Spanish-American Option

- SPAN 483 Contemporary Spanish-American Novel (4)
- SPAN 505 Studies in El Modernismo in Spanish America (4)
- SPAN 545 Seminar: Contemporary Spanish-American Poetry (4)

Electives (select 13 units from following)

SPAN 414, 417, 418, 419, 421, 424, 426, 428, 429, 460, 475, 483, 485, 499, 504, 505, 540, 545, 598

Electives (8 units)

Select courses in Spanish or outside field of concentration, with graduate adviser approval.

Comprehensive Examination (0 units)

The comprehensive examination is regularly scheduled for the Fridays of the sixth and seventh weeks of instruction. Students should expect to take the comprehensive examination (SPAN 596) the quarter they complete all course work on their program and must comply with school and departmental requirements.

Courses in French (FREN)**400-level Courses**

All 400-level courses may be applied toward requirements for the master's degree, subject to limits established by the department and approval of the graduate adviser.

Graduate Courses

Classified graduate standing is required for admission.

501 Development of French Language (4)

Prerequisites: FREN 305, 401; beginning Latin strongly recommended. Scientific analysis of written and spoken French from its inception through its current use in French-speaking world.

509 Analytical and Interpretive Writing in French (4)

Prerequisite: FREN 450 or 451. Original analysis and interpretation of literary or nonliterary texts as well as independent research resulting in report; emphasis on scholarly writing skills.

510 Seminar: French Culture (4)

Prerequisite: FREN 310AB. In-depth study of specific cultural developments including historical events and social, intellectual, and artistic movements in Francophone societies; includes lectures and student research projects.

515 Seminar: Voltaire and Rousseau (4)

Prerequisite: FREN 410. Selected studies in sources, character, and influence of two most prominent figures of French Enlightenment.

535 Seminar: French Literary Prose since World War II (4)

Prerequisites: FREN 411. Studies in outstanding French prose writing and literary movements since World War II.

540 Seminar: French Post-Symbolist Poetry (4)

Prerequisite: FREN 412. Recent French poetic movements such as *fantaisisme*, cubism, surrealism; metaphysical and religious poets; traditional poets, revolutionaries, and poets of other French-speaking countries.

575 Seminar: French Literature (4)

Prerequisite: Undergraduate course(s) relevant to topic being studied. Intensive study of significant works of particular period, genre, or literary tendency from Middle Ages to present. May be repeated, as subject matter changes, to maximum of 12 units.

598 Graduate Directed Study (1-4)

Prerequisite: Instructor consent to act as sponsor. Independent study of advanced topics in field; regular conferences with sponsor. May be repeated for credit.

Courses in Spanish (SPAN)**400-level Courses**

All 400-level courses may be applied toward master's degree requirements except the following, subject to limits established by the department and approval of the graduate adviser: SPAN 400, 401, 408, 410, 413, 454, 459

Graduate Courses

Classified graduate standing is required for admission.

501 Development of Spanish Language (4)

Prerequisite: SPAN 305. Scientific analysis of written and spoken Spanish from its inception through its current use in Hispanic world.

504 Studies in Medieval Literature (4)

Prerequisites: SPAN 408, 410. Principal Spanish literary works dating from twelfth to sixteenth century; their significance in historical development of various genres; their influence on subsequent literary history.

505 Studies in El Modernismo in Spanish America (4)

Prerequisites: SPAN 411, 413. Analysis of representative works of modernist movement writers in Spanish America; their influence on literature of contemporary period. Lectures and reports in Spanish.

510 Sociolinguistic Patterns in Spanish (4)

Prerequisites: SPAN 405, 501. Principles of sociolinguistics and dialectology; sociolinguistic patterns in Hispanic languages; social and geographic language varieties including main features of Spanish in U.S.

540 Seminar: Contemporary Spanish Poetry (4)

Prerequisites: SPAN 408, 410. Intensive study of Spanish poetry of past thirty years.

545 Seminar: Contemporary Spanish-American Poetry (4)

Prerequisites: SPAN 411, 413. Intensive study of Spanish-American poetry of past thirty years.

575 Seminar: Hispanic Literature (4)

Prerequisites: SPAN 408 and 410 or 411 and 413. Intensive study of significant works of selected period in Spanish or Spanish-American literature. May be repeated as subject matter changes.

598 Graduate Directed Study (1-4)

Prerequisite: Instructor consent to act as sponsor. Independent study of advanced topics in field; regular conferences with sponsor. May be repeated for credit.

MUSIC

School of Arts and Letters

DEPARTMENT OFFICE

Music 145

Phone: (213) 343-4060

The Master of Arts degree in Music is offered with two options. One is designed for students seeking a concentration in music composition, musicology, or performance; the other focuses upon music education. Adjustments in either option to meet specific interests and abilities may be made in consultation with graduate advisers.

Master of Arts Degree

Admission to the Program

In addition to university requirements for admission to graduate study, applicants must have a baccalaureate in Music from an accredited college or university. For option II (Music Education), a valid teaching credential or concurrent enrollment in a credential program is required, also.

Requirements for the Degree (45 units)

A total of 45 units is required, with at least 23 in 500-level music courses. Students may choose between two options: *Option I*, Music Composition, Musicology, or Performance, and *Option II*, Music Education.

Six elective units in performance may be applied toward the degree; a maximum of 3 of these units may be in 400-level performance areas. The program concludes with comprehensive examination or a thesis.

Comprehensive Examination or Thesis or Project (0, 4 units)

MUS 596 Comprehensive Examination (0) or

MUS 599 Thesis or Project (4)

Students may take the comprehensive examination (MUS 596) no earlier than the quarter in which all course work is completed, but may take it subsequently. In addition to the examination, students must complete an additional 4 units in music.

An alternative to the comprehensive examination requirement is enrollment in MUS 599, Thesis or Project (4).

Option I: Music Composition, Musicology, or Performance

Required Courses (10 units)

MUS 465 Contemporary Techniques (4)

MUS 497 Research Techniques in Music (2)

Select one from following:

MUS 507 Seminar: Vocal Techniques (4)

MUS 569 Seminar: Composition (4)

MUS 579 Seminar: Musicology (4)

History and Literature (select 12 units from following)

MUS 470-477, 571-575

Performance (select 3 units from following)

MUS 410, 415-426, 435, 445-447, 519, 539, 549

Electives (16 units)

Select 7-12 units in theory, conducting, or psychology of music from following:

MUS 460-462, 466A-469, 483, 501, 560, 580, 581, 598

Select 4-9 units from 400- or 500-level courses in music or other fields, with adviser approval.

Option II: Music Education

Required Courses (14 units)

MUS 465 Contemporary Techniques (4)

MUS 497 Research Techniques in Music (2)

MUS 501 Psychology of Music (4)

MUS 502 Seminar: Music Education (4)

Select one from following (4 units):

MUS 507 Seminar: Vocal Techniques (4)

MUS 508 Seminar: Choral Music (4)

MUS 509 Seminar: Instrumental Music Education (4)

History and Literature (select 12 units from following):

MUS 470-477, 571-575

Advanced Conducting (4 units)

MUS 580 or 581

Performance (select 3 units from following):

MUS 410, 415-426, 435, 445-447, 519, 539, 549

Electives (select 8 units from following):

MUS 403-406, 408, 409, 436, 451-464, 466A-469, 482, 483, 490, 598

Courses from other fields may be included with adviser approval.

Courses in Music (MUS)

400-level Courses

All 400-level courses may be applied toward master's degree requirements except the following, subject to limits established by the department and approval of the graduate adviser. MUS 400, 401

Graduate Courses

Classified graduate standing in Music or equivalent music background is required for admission.

501 Psychology of Music (4)

Prerequisites: MUS 497, introductory course in psychology or educational psychology, at least 30 units in music. Musical personality, perception of musical characteristics, musical taste, and theories of learning applied to music; survey of standardized tests of musical aptitude and achievement.

502 Seminar: Music Education (4)

Prerequisites: MUS 497, baccalaureate with major in music education, at least one year of teaching experience. Evaluation of research and various philosophies, methods, and trends in music education.

507 Seminar: Vocal Techniques (4)

Prerequisite: MUS 406. Seminar and critique on psychophysiological approach to vocal techniques. Designed for experienced teachers, soloists, and choir directors. Individual research and class demonstration.

508 Seminar: Choral Music (4)

Prerequisites: MUS 408, 497. Survey of choral literature with emphasis on stylistic and performance practice considerations.

509 Seminar: Instrumental Music Education (4)

Prerequisites: MUS 407 or 409, 497. Survey and criteria for selection and interpretation of instrumental music.

519 Applied Music: Orchestral Instruments (1)

Prerequisite: Instructor consent. Lessons on campus with approved instructors. May be repeated to maximum of 6 units.

520 Applied Music: Conducting (1)

Prerequisite: Instructor consent. Private instruction in score preparation and conducting technique as applied to specific literature for band, orchestra, choir, or other selected ensembles. May be repeated to maximum of 3 units.

530AB Advanced Style Analysis (4, 4)

Prerequisites: MUS 430, 465. Advanced analytical techniques applied to study of musical styles as related to period, genre, nationalist, and individual composers.

539 Applied Music: Voice (1)

Prerequisite: Instructor consent. Lessons on campus with approved instructors. May be repeated to maximum of 6 units.

545 The Business of Music (3)

Contracts, copyright, licensing, unions, and basic business practices used in the commercial music industry.

546AB Seminar: Commercial Music (2,2)

Prerequisite: MUS 545. Practical, theoretical, and philosophical approaches for achieving success as a professional musician in the commercial music industry; emphasis on discourse with professionals in Los Angeles.

549 Applied Music: Keyboard Instruments (1)

Prerequisite: Instructor consent. Lessons on campus with approved instructors. May be repeated to maximum of 6 units.

560 Advanced Composition (4)

Prerequisite: MUS 460. Free composition in selected vocal and instrumental forms. May be repeated to maximum of 12 units.

568 Seminar: Performance (4)

Prerequisite: 400-level applied music course. Student performance with critiques highlighting stylistic, aesthetic, and practical components that influence musical performance: artist performances (taped or live) and critiques; preparation of graduate recital.

569 Seminar: Composition (4)

Prerequisites: MUS 497, 560. Philosophies and aesthetic theories involved in contemporary music; compositional problems and projects of an advanced nature intended to synthesize previous creative skills and techniques. May be repeated to maximum of 8 units.

570 Music of the Medieval Period (4)

Characteristics of medieval period; analysis of representative works; music in relation to other arts and medieval society.

571 Music of Renaissance Period (4)

Discussion of stylistic characteristics of music of Renaissance; formal, technical, and thematic score analysis of representative works, accompanied by live or recorded performance.

572 Music of Baroque Period (4)

Characteristics of Baroque music; analysis of representative works and performance practices; music in relation to Baroque arts and society.

573 Music of Classic Period (4)

Characteristics of Classic Period; analysis of representative works; music in relation to 18th century arts and society.

574 Music of Romantic Period (4)

Characteristics of Romantic Period; analysis of representative works; music in relation to 19th century arts and society.

575 20th Century Music to 1945 (4)

Characteristics of 20th century music from 1900 to 1945; analysis of representative works; music in relation to early 20th century arts and society.

576 20th Century Music since 1945 (4)

Characteristics of 20th century music from 1945 to present; analysis of representative works; music in relation to avant-garde arts and society.

579 Seminar: Musicology (4)

Prerequisite: MUS 497. Specific musicological problems reported by students and discussed by class. May be repeated to maximum of 12 units.

580 Advanced Choral Conducting (4)

Prerequisite: MUS 480. Analysis of conducting problems of standing choral literature, including both accompanied and unaccompanied music; study of metric relationships, less frequently used conducting patterns, and survey of literature. May be repeated to maximum of 8 units.

581 Advanced Instrumental Conducting (4)

Prerequisite: MUS 481. Analysis and preparation for conducting major works for symphonic band and orchestra. Opportunity to conduct university orchestra or band. May be repeated to maximum of 8 units.

583 Seminar: Conducting (4)

Prerequisites: MUS 480 or 481; 580 or 581, 508, 509, 497. Conducting topics; study of literature, analytical procedures, and rehearsal techniques applicable to choral and instrumental conducting. May be repeated to maximum of 12 units.

598 Graduate Directed Study (1-4)

Prerequisite: Instructor consent to act as sponsor. Independent study of advanced topics in field; regular conferences with sponsor. May be repeated to maximum of 12 units.

599 Thesis or Project (1-4)

Prerequisites: MUS 497, instructor consent to act as sponsor, departmental approval of topic prior to registration. Independent research resulting in a thesis or project. Must be repeated to maximum of 4 units. Graded CR/NC.

PHILOSOPHY

School of Arts and Letters

DEPARTMENT OFFICE

Engineering and Technology A429

Phone: (213) 343-4180

The Master of Arts degree in Philosophy is designed to enrich intellectual development and to prepare students for community college teaching and for further graduate study. In some specific areas of philosophy, opportunities are also available in institutions engaged in basic research.

Master of Arts Degree

Admission to the Program

In addition to university requirements for admission to graduate study, applicants must possess a baccalaureate in philosophy or a baccalaureate with a major in a field other than philosophy supplemented by appropriate preparation in philosophy.

Applicants must consult an adviser in philosophy to determine whether any academic deficiencies exist before admission to the program can be granted.

Requirements for the Degree (45 units)

A total of 45 units is required, with at least 36 in philosophy and 23 in 500-level courses.

Students are required to include the following philosophy courses in their program, if not completed prior to admission to the program.

PHIL 405 Symbolic Logic (4)

PHIL 460 Metaphysics (4)

PHIL 470 Theory of Knowledge (4)

Comprehensive Examinations or Thesis (0 or 6 units)

PHIL 596 Comprehensive Examination (0) or

PHIL 599 Thesis (6)

Comprehensive Examinations

Students should expect to take the comprehensive examinations (PHIL 596) the quarter they complete all course work on their program and must comply with school and departmental requirements. Students are required to pass comprehensive examinations in three of the following four areas: History of philosophy (ancient, modern, and either medieval or recent); metaphysics and theory of knowledge; logic and either philosophy of science or philosophy of language; and ethics and either aesthetics or social and political philosophy.

Students should be guided in selection of courses by their specific needs in preparing for the comprehensive examinations. Electives taken outside philosophy, if any, must be relevant to one of the three areas in which students elect to be examined.

Students who fail to pass one area of the comprehensive examinations will be permitted to take that specific examination again. Students who fail two areas of the comprehensive examinations must take all three examinations again. Students who fail a comprehensive examination in the same area a second time will be disqualified from the program.

Thesis

Completion of the first 24 units of the master's degree program with a minimum 3.6 grade point average, approval of the thesis proposal by the department, enrollment in 6 units of PHIL 599, and an oral examination about the thesis are required for the thesis option. Students who have at any time attempted the comprehensive examination (PHIL 596) are ineligible for this option.

Students who select the thesis option must include seminars in at least three of the four major comprehensive examination areas in their master's degree program.

Certificate Program in Teaching Critical Thinking

The credit certificate program in Teaching Critical Thinking is designed for those with an interest in the theory and techniques of teaching critical thinking at either the college or secondary school level.

In addition to university requirements for admission to graduate study, applicants must have some background in philosophy or another humanistic discipline. In particular, students must be familiar with both sentential and predicate logic. Interested students should consult the program coordinator in the Department of Philosophy. Deficiencies in preparation may be remedied during the first quarters of enrollment in the program.

This certificate program is not equivalent to any program that leads to a teaching credential. A total of 24 units is required, including 16 units in the required core and 8 in electives, with a minimum B (3.0) grade point average. Refer to the *Graduate Study* chapter of this catalog for general regulations governing all certificate programs.

Requirements for the Certificate (24 units)

Required Core Courses (16 units)

PHIL 480 Philosophy of Language (4)

PHIL 485 Philosophy of Science (4)

PHIL 580 Seminar: Critical Thinking—Models and Strategies (4)

PHIL 581 Projects in Teaching Philosophy (4)

Electives (8 units)

In consultation with an adviser, select two 400- or 500-level philosophy courses or seminars or

**SPCH 576 Seminar: Argumentation, Discussion, and Debate (4)

**may be repeated to a total of 8 units

Students who are interested in teaching critical thinking courses in areas other than philosophy may substitute appropriate courses with adviser approval.

Courses in Philosophy (PHIL)

400-level Courses

All 400-level courses may be applied toward master's degree requirements, subject to limits established by the department and approval of the graduate adviser.

Graduate Courses

Classified graduate standing is required for admission.

510 Seminar: History of Philosophy (4)

Advanced study of selected figures and problems in history of philosophy. May be repeated as subject matter changes.

521 Seminar: Logic (4)

Advanced study of selected problems in deductive or inductive logic. May be repeated as subject matter changes.

523 Seminar: Philosophy of Language (4)

Advanced study of selected problems in philosophy of language. May be repeated as subject matter changes.

525 Seminar: Philosophy of Science (4)

Advanced study of selected problems in philosophy of the sciences, including mathematics, natural sciences, psychology, and social sciences. May be repeated as subject matter changes.

531 Seminar: Metaphysics (4)

Advanced study of selected problems in metaphysics. May be repeated as subject matter changes.

532 Seminar: Theory of Knowledge (4)

Advanced study of selected problems in theory of knowledge. May be repeated as subject matter changes.

541 Seminar: Value Theory (4)

Advanced study of selected problems in value theory; may include issues in ethics, social and political philosophy, aesthetics. May be repeated to maximum of 12 units as subject matter changes.

580 Seminar: Critical Thinking—Models and Strategies (4)

Prerequisites: PHIL 480, 485. Theoretical models of critical thinking and pedagogical strategies and materials for teaching different kinds of students.

581 Projects in Teaching Philosophy (4)

Prerequisite: PHIL 580. Planned preparation and critical evaluation of undergraduate philosophy classes, especially critical thinking.

598 Graduate Directed Study (1-4)

Prerequisite: Consent of faculty sponsor before registration. Independent study of advanced topics in field; regular conferences with sponsor. May be repeated for credit.

599 Thesis (1-6)

Prerequisites: minimum 3.6 grade point average in first 24 units of MA program, formal approval by department. Independent research resulting in a thesis. May be repeated to maximum of 6 units. Graded CR/NC. Not open to students with prior enrollment in comprehensive examinations (PHIL 596).

THEATRE ARTS AND DANCE

School of Arts and Letters

DEPARTMENT OFFICE

Theatre 110
Phone: (213) 343-4110

Master of Arts Degree in Theatre Arts

Admission to the Program

In addition to university requirements for admission to graduate study, applicants must hold an acceptable baccalaureate and have a 2.5 grade point average in the last 90 quarter units attempted.

Thirty units of approved undergraduate course work in theatre arts, dance, speech communication, dramatic literature, cinema, or broadcasting, including TA 311, 312, 313, and six units of upper division work in technical theatre, are prerequisite to this program.

Requirements for the Degree (45 units)

All students are required to serve in at least one of the following capacities during their graduate study: as an actor in two or more substantial acting roles; as director of a one-act play or a full-length play; as scenic, lighting, or costume designer of a production; or as assistant to the faculty director for one production. This requirement must be met within framework of regularly sponsored department productions.

A total of 45 units is required, with at least 23 in 500-level courses.

Required Core (20 units)

- TA 511 Seminar: Special Studies in Theatre History (4, 4)
- TA 541 Seminar: Theories of Acting (4)
- TA 566 Seminar: Dramatic Theory (4)
- TA 570 Seminar: Experimental Theatre (4)

Electives (14-17 units)

Select 3 units in one of following:

- TA 595 Graduate Performance (3) or
- TA 598 Graduate Directed Study (3)
(for students who select comprehensive examination)

Select 8 units from following:

- TA 439, 441, 442, 443, 445, 446, 454LP, 480, 461, 462, 463, 471, 472, 476

Select 6 units from following:

- TA 422, 426, 427, 431, 432, 434, 435

Additional electives (8 units)

Select with adviser approval.

Comprehensive Examination or Thesis or Project (0, 3 units)

- **TA 596 Comprehensive Examination (0) or
- TA 599 Thesis or Project (3)

The choice of comprehensive examination or thesis or project is to be made with adviser approval.

** in combination with 3 units of TA 595 and/or 598

Students should expect to take the comprehensive examination (TA 596) the quarter they complete all course work on their program and must comply with school and departmental requirements.

Courses in Theatre Arts (TA)

400-level Courses

All 400-level courses may be applied toward master's degree requirements except the following, subject to limits established by the department and approval of the graduate adviser: TA 499.

Graduate Courses

Classified graduate standing is required for admission.

511 Seminar: Special Studies in Theatre History (4)

Prerequisites: TA 311-313. Significant era or movement in theatre history. Specific subject announced in *Schedule of Classes*. May be repeated once for credit.

541 Seminar: Theories of Acting (4)

Prerequisite: At least one upper division course in acting or directing. Major theories of acting from Diderot to present with special emphasis on origins, esthetics, and psychology of acting.

566 Seminar: Dramatic Theory (4)

Prerequisite: At least one upper division course in dramatic theory or dramatic literature. Backgrounds in theatrical art, analysis of aesthetic principles and content of theatre; selected problems in philosophy of dramatic art.

570 Seminar: Experimental Theatre (4)

Prerequisites: TA 471 plus an upper division course in dramatic literature and/or dramatic theory. Significant theatrical and dramatic theories and developments that have contributed specifically to experimental search for 20th century forms in theatre arts.

572 Seminar: Research in Dance Literature (3)

Research in dance literature; survey of scope of writings in various areas of dance and creative movement; emphasis on current publications. Individual research projects.

577 Seminar: Drama Therapy Techniques (4)

Prerequisite: TA 478. Advanced psychodramatic and projective drama therapy techniques exploring video, photography, puppetry, face-painting, sand play, masks, and other creative media. May be repeated to maximum of 8 units.

578 Seminar: Drama Therapy Assessment and Treatment (4)

Theories of drama therapy, research, assessment, diagnosis, and treatment interventions. May be repeated to maximum of 8 units.

579 Seminar: Case Studies in Drama Therapy (4)

Prerequisites: TA 478, 479. Advanced theories and techniques of drama therapy applied to individual case work. May be repeated to maximum of 8 units.

594 Drama Therapy Field Work/Internship

Prerequisite: TA 478. Independent supervised drama therapy field experience/internship with individuals, groups, and families. May be repeated to maximum of 16 units. Offered: Spring.

595 Graduate Performance (1-4)

Prerequisite: Consent of graduate adviser. Demonstration of graduate level proficiency in a major performance situation; research or analytical written project directly related to performance. May be repeated to maximum of 4 units.

598 Graduate Directed Study (1-4)

Prerequisite: Instructor consent to act as sponsor. Independent study of advanced topics in field; regular conferences with sponsor. May be repeated for credit.

599 Thesis or Project (1-6)

Prerequisites: Advancement to candidacy, instructor consent to act as sponsor, departmental approval of topic prior to registration. Independent research resulting in a thesis or project. May be repeated to maximum of 6 units. Graded CR/NC.

SCHOOL OF BUSINESS AND ECONOMICS

Departments and Programs within the School

Department of Accounting

Department of Economics and Statistics

Department of Finance and Law

Health Care Management Program

Department of Information Systems

Department of Management

Department of Marketing

Department of Office Systems and Business Education

SCHOOL OF BUSINESS AND ECONOMICS

GRADUATE PROGRAMS OFFICE

Simpson Tower F115
Phone: (213) 343-2808

DEPARTMENTS WITHIN THE SCHOOL:

Department of Accounting

DEPARTMENT OFFICE
Simpson Tower F517
Phone: (213) 343-2830

Department of Economics and Statistics

DEPARTMENT OFFICE
Simpson Tower F917
Phone: (213) 343-2930

Department of Finance and Law

DEPARTMENT OFFICE
Simpson Tower F717
Phone: (213) 343-2870

Department of Information Systems

DEPARTMENT OFFICE
Simpson Tower F717
Phone: (213) 343-2983

Department of Management

DEPARTMENT OFFICE
Simpson Tower F717
Phone: (213) 343-2890

Department of Marketing

DEPARTMENT OFFICE
Simpson Tower F917
Phone: (213) 343-2960

Department of Office Systems and Business Education

DEPARTMENT OFFICE
Simpson Tower F517
Phone: (213) 343-2860

The major objective of the School of Business and Economics is to equip men and women with the intellectual tools needed to assume responsible positions in business, industry, education, government, and the managerial aspects of social service organizations. Preparation includes both a basic understanding of the entire social and physical environment of the urban community, of which business and economics are an integral part, and a substantial background in the underlying fields of knowledge dealing specifically with business and economics.

Accreditation

The School of Business and Economics is nationally accredited on both the graduate and undergraduate levels by the American Assembly of Collegiate Schools of Business.

Degrees Offered

The school offers programs leading to master's degrees in six fields.

The Master of Science degree in Accountancy, for holders of a baccalaureate, is designed to provide specific professional preparation in the options of Business Taxation, Financial Accounting, Information Systems, and Management Accounting.

The Master of Science degree in Business Administration, primarily for holders of a baccalaureate in business, provides options designed to meet specific professional objectives in Business Economics, Finance, International Business, Management, Management Information Systems, and Marketing.

The Master of Business Administration (M.B.A.) degree offers professional preparation for management positions in business and industry. It is designed for holders of a baccalaureate in other academic fields as well as in business.

The Master of Arts degree in Business Education has been established to meet the needs of business teachers who wish to extend their formal education for teaching in secondary schools, community colleges, or private business schools.

The Master of Arts degree in Economics provides students the opportunity for advanced study of economic theory and research, in preparation for careers in industry, government, and education, or for further graduate study.

The interdisciplinary Master of Science degree in Health Care Management is designed to prepare people in the health care industry to meet the increasing demands placed on middle- and upper-level managers in large metropolitan health care facilities. The program goal is achieved through interdisciplinary courses primarily in the School of Health and Human Services and the School of Business and Economics.

Credit Certificate Programs Offered

In addition to graduate degree programs, the school also offers several credit certificate programs which, although available for undergraduate students, may also be of interest to graduate and postbaccalaureate students. These programs are included in the undergraduate *School of Business and Economics* chapter. General regulations governing all credit certificate programs are found in the *Undergraduate Study and Graduate and Postbaccalaureate Study* chapters.

Admission to Master's Degree Programs in Business Administration

The school admits graduate students to the MBA, MS in Business Administration, MS in Accountancy, and MA in Business Education degree programs in conditionally classified standing and classifies them when eligible. In addition to university admission requirements, applicants to graduate programs in the School of Business and Economics must satisfy criteria outlined below. The School of Business and Economics examines the academic ability and managerial potential of each candidate, taking into consideration all academic work, Graduate Management Admission Test (GMAT) scores, letters of recommendation, work experience, level of job responsibility, and other relevant factors. Applicants are evaluated on the merits of their own application in comparison with all applicants for the quarter.

Application Procedure for School of Business and Economics

Applicants must submit the following information by the deadlines listed:

- (1) Application to the University for desired quarter of admission;
- (2) Official transcripts, as indicated on application, sent directly to the Office of Admissions (must include verification of bachelor's degree);
- (3) Separate graduate program application sent directly to the School of Business and Economics;
- (4) Scores for Graduate Management Admission Test (GMAT) taken within five years of application date and sent directly to School of Business and Economics; and
- (5) Three letters of recommendation sent directly to School of Business and Economics. References from employers and/or academicians are acceptable.

Applications and Supporting Documents Deadlines

Quarter	Deadline
Fall (September)	June 30**
Winter (January)	September 30
Spring (March)	November 30
Summer (June)	March 1

** Visit applicants' deadline in February 28

Classified Graduate Standing

Classified graduate students are those officially admitted to master's degree programs. Students who hold a baccalaureate in business and who have completed preparatory courses listed below with a minimum C (2.0) grade in each course will be admitted to the program in classified graduate standing. Those without a baccalaureate in business or who have otherwise not fulfilled preparatory course requirements will be admitted in conditionally classified standing.

Students are required to complete the following 52 units of preparatory business and related courses for admission to classified graduate standing for the M.S. degree in Accountancy, the M.S. degree in Business Administration, and the M.B.A. degree.

ACCT 260R, 360R*	CIS 262R
ECON 311R, 369R	FIN 261R, 363R
MATH 242	MGMT 366R, 367R, 368R
MKT 364R	OSBE 361R

* Accounting students substitute ACCT 322 for 360R

Master of Science Degree In Accountancy

The M.S. degree in Accountancy prepares students for a wide range of employment opportunities in public accounting, industry and finance, government and nonprofit organizations, and taxation. The program is designed to produce individuals who are qualified with knowledge and techniques in one or more accounting areas: financial accounting, including auditing; management accounting; business taxation; and information systems; prepared to successfully challenge a professional examination for entry into the selected area; committed to professional and career development beyond their formal education into the highest executive levels of the selected area; capable of becoming leaders exhibiting high standards of ethical conduct within the profession; or prepared for doctoral study or research positions.

Admission to the Program

In addition to completing the basic preparatory business and related courses listed above, applicants must complete 28 quarter units in accounting (320ABC, 321, 322, 420, 424A) and have an approved graduate degree program on file in the Graduate Programs Office.

Requirements for the Degree (45 units)

A total of 45 units is required, with at least 33 in 500-level courses. All programs must be approved by the department.

Required core (26 units):

- ACCT 503 Quantitative Approach to Managerial Decisions (4)
- ACCT 520 Seminar: Management Accounting Theory (3)
- *ACCT 598 Graduate Directed Study (4)
- CIS 504 Management Information Systems (4)
- ECON 502 Economic Analysis and Business Operations (4)
- MGMT 501 Administrative Behavior and Systems Management (4)
- MGMT 594 Policy Integration and Strategy (3)

* students in Information Systems option substitute 4 units of CIS 598

Options (19 units)

Select one of the four options listed below. Elective courses are determined in conference with graduate adviser to meet professional objectives.

• Business Taxation Option (19 units)

Required Courses (12 units):

- ACCT 521 Seminar: Financial Accounting Theory (3)
- ACCT 585 Seminar: Tax Theory and Business Applications (3)
- ACCT 586 Seminar: Tax Research and Practice (3)
- ACCT 587 Seminar: Taxation of Corporations and Shareholders (3)

Electives (select 7 units with at least one 500-level seminar)

• Financial Accounting Option (19 units)

Required Courses (12 units):

- ACCT 521 Seminar: Financial Accounting Theory (3)
- ACCT 522 Seminar: Current Topics in Financial Reporting (3)
- ACCT 523 Seminar: Public Accounting (3)
- ACCT 525 Seminar: International Accounting (3)

Electives (select 7 units with at least one 500-level seminar)

• Information Systems Option (19 units)

Required Courses (12 units):

- ACCT 524 Seminar: Advanced Cost and Managerial Accounting (3)
- CIS 527 Seminar: Computerized Decision Analysis (3)
- CIS 528 Seminar: Current Problems in Business Information Systems (3)
- CIS 584 Seminar: Controlling and Auditing Computer Systems (3)

Electives (select 7 units with at least one 500-level seminar)

• Management Accounting Option (19 units)

Required Courses (12 units)

- ACCT 521 Seminar: Financial Accounting Theory (3)
- ACCT 524 Seminar: Advanced Cost and Managerial Accounting (3)
- ACCT 585 Seminar: Tax Theory and Business Applications (3)
- CIS 527 Seminar: Computerized Decision Analysis (3)