Model Structural Systems

Paul Fratessa, professor and department chair of Architectural Engineering, discusses structural concepts. The students framed a structural system in model scale according to a schematic design.

Photos by Josef Kasparowitz. Courtesy of the College of Architecture and Environmental Design

College of

Architecture

& Environmental Design

College of
Architecture and Environmental Design

Architecture and Environmental Design Bldg. (05)
Room 212
(805) 756-1321

Martin J. Harms, Dean
K. Richard Zweifel, Associate Dean

ACADEMIC PROGRAMS

Architectural Engineering	*BS*
Architecture	*BArch, MS*
City and Regional Planning	*BS, MCRP*
Construction Management	*BS, Minor*
Landscape Architecture	*BLA*
Transportation Planning	*MCRP/MS Engineering*

The five undergraduate programs, listed above, have a common objective: the betterment of the human physical environment. These programs endeavor to give the student a set of social values, a technical background, and training which result in creative expressions that are effective both professionally and personally.

The masters programs are designed for students interested in advanced professional studies. The joint MCRP/MS Engineering with a specialization in Transportation Planning is an interdisciplinary program. It is a cooperative effort between the Colleges of Engineering and Architecture and Environmental Design.

The well-equipped college facilities include design laboratories, grading galleries, soils laboratory, stress laboratory, construction shop, project yard, instructional resource center, computer laboratories, multi-media laboratory, and photo presentation laboratory. An outlying area of 12 acres known as the "Canyon" is available for extensive experimental construction.

The location of the campus between the great population centers of San Francisco and Los Angeles is ideal for environmental studies ranging from rural to large metropolitan complexes. An active visiting lecturer program joins with faculty in all departments in providing excellent student instruction. Field trips are arranged to various parts of the state as required work. Additionally, the college offers several opportunities through departmentally sponsored programs for directed foreign study. Students also regularly participate in the California State University's International Programs in Denmark and Italy.

Departments are members of their respective professional or educators associations: the Association of Collegiate Schools of Architecture, the Council of Educators in Landscape Architecture, the Association of Collegiate Schools of Planning, and the Associated Schools of Construction Management. Likewise, students maintain active chapters of the professional organizations of the American Institute of Architects, the American Society of Landscape Architects, the Associated General Contractors, the Structural Engineers Association of California, the American Planning Association, and the National Society of Architectural Engineers.

The college's Design and Construction Institute is available for students and faculty to pursue advanced professional and interprofessional studies as applied investigations and community service. The Institute has several research and service units including: Barrier-Free Design, Computer-Aided Design, Earthquake-Resistant Building Systems, Geographic Information System Technology, Small Town and Rural Planning Issues and Community Service.

Students interested in pursuing one of the five undergraduate program offerings within the college should familiarize themselves with the appropriate curriculum flow chart, available through the University Admissions Office and the Student Services Coordinator, Architecture and Environmental Design Bldg. (05), Room 212. Special attention is directed to the strict sequencing of courses and prerequisite requirements. Students who plan to transfer from a California community college should schedule classes to maximize transfer units. Reference should be made to the "Articulation Agreement" located in the community college counseling center.

All student work submitted for course credit becomes college property and will be returned only at the discretion of the instructor.

Architectural Engineering

Department Office
Engineering West (21), Room 110
(805) 756-1314

Department Head, Paul F. Fratessa

Mark Berrio
Michael R. Botwin
Pamalee Brady
Jacob Feldman
Abraham C. Lynn
Clayton Pharaoh
Satwant S. Rihal
David Weggel

ACADEMIC PROGRAMS

BS Architectural Engineering

The program in Architectural Engineering leads to the Bachelor of Science degree and has its major emphasis in the structural engineering of buildings. Students are encouraged to develop aptitudes in science and mathematics for creative engineering accomplishments. Graduates of this program will generally seek professional registration as structural engineers. The Architectural Engineering program is accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

The main focus of the architectural engineering program at Cal Poly is to prepare graduates for practice in professional engineering. Thus, a "learn by doing" philosophy is emphasized in the curriculum by the large number of design-centered laboratories, integrating design throughout the curriculum, and the senior project capstone design experience.

In the required senior design project, which is completed in a one-quarter capstone course, students demonstrate their understanding of engineering knowledge and their ability to apply that knowledge creatively to practical problems.

The curriculum prepares the student to enter the field of architectural engineering, structural engineering, and the technically oriented aspects of architecturally related fields. In addition, students are prepared to pursue graduate studies in the fields of architectural engineering, civil engineering, structural engineering, structural mechanics, and foundation engineering.

BS ARCHITECTURAL ENGINEERING

❑ *60 units upper division* ❑ *GWR*
❑ *2.0 GPA* ❑ *USCP*
** = Satisfies General Education requirement*

Note: All ARCE majors must obtain a grade of C- or better in every ARCE course taken.

MAJOR COURSES

ARCE 221 Elementary Structures	3
ARCE 222 Mechanics of Structural Members I	3
ARCE 223 Mechanics of Structural Members II	4
ARCE 225 Dynamics *or* ME 212 Engineering Dynamics	3
ARCE 227 Structural Analysis I	2
ARCE 257 Structural CAD for Building Design	2
ARCE 302 Structural Analysis II	3
ARCE 303 Steel Design	3
ARCE 304 Timber Design	3
ARCE 305 Masonry Design	2
ARCE 306 Matrix Analysis of Structures	3
ARCE 351, 352, 353 Structural Computing Analysis I, II, III	1,1,1
ARCE 371 Structural Systems Laboratory	3
ARCE 372 Steel Structures Design Laboratory	3
ARCE 403 Advanced Steel Structures Lab *or* ARCE 447 Adv Reinforced Concrete Lab	3
ARCE 412 Dynamics of Framed Structures	3
ARCE 421 Soil Mechanics	3
ARCE 422 Foundation Design *and* ARCE 444 Reinforced Concrete Lab	3,3
ARCE 445 Prestressed Concrete Design Lab *or* ARCE 446 Advanced Structural Systems Lab	3
ARCE 451 Timber/Masonry Structures Design Lab	3
ARCE 452 Concrete Structures Design Laboratory	3
ARCE 453 Senior Project Laboratory	3
ARCE 481 Structural Experimental Laboratory	1
ARCE 483 Seismic Analysis and Design	4
Approved technical electives	2
	74

SUPPORT COURSES

ARCH 106 Materials of Construction	3
ARCH 111 Intro to Drawing and Perspective	3
ARCH 221, 222 Architectural Design Fundamentals	3,3
ARCH 231 Architectural Practice	3
ARCH 317/ARCH 318/ARCH 319 (C3)*	3,3
CHEM 124 General Chem/Engr Discipline (B1a)*	4

CM 433 Economic Analysis for Engineers *or* IME 314 Engineering Economics (3)	2
CSC 231 Fortran for Engineering Students *or* CSC 234 C and UNIX (3) (F1)*	2
CSC 342 Numerical Analysis I *or* approved equivalent	3
EDES 101 Introduction to Architecture and Environmental Design	2
EDES 113 Graphic Analysis and Communication Skills for Designers	3
EE 201 Electrical Circuit Theory	3
GEOL 201 Physical Geology (Area B)*	3
MATH 141 Calculus I (B2)*	4
MATH 142 Calculus II (B2)*	4
MATH 143 Calculus III (Area B)*	4
MATH 241 Calculus IV (Area B)*	4
MATH 242 Differential Equations (Area B)*	4
MATH 318/STAT 312/GEOL 205 (Area B)*	3
ME 302 Thermodynamics	3
ME 341 Fluid Mechanics	3
PHYS 131 General Physics (Area B)*	4
PHYS 132, 133 General Physics (Area B)*	4,4
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GENERAL EDUCATION (GE) **43**

72 units required; 29 units are in Support.

→See page 79 for complete GE course listing.

→Minimum of 3 GE courses required at the 300-400 level.

Area A Communication (minimum 11 units)

Take one course from A1, A2, A3:

A1 Expository Writing
A2 Critical Thinking
A3 Speech

If less than 11 units, take one course from A4

A4 Argumentative Writing

Area B Science and Mathematics (minimum 2 units)

24 units are in Support.

Take one course from B1b:

B1a Physical Sciences *see Support
B1b Life Sciences elective
B2 Mathematics and/or Statistics *see Support
Area B * see Support

Area C Arts and Humanities (minimum 12 units)

3 units are in Support.

Take one course from each Area C category:

C1 Literature
C1 Philosophy
C2 Fine/Performing Arts
C3 Lit/Phil/Arts (300-400 level) *see Support

If less than 15 units, take one course from C1, C2, C3

Area D Social, Political, Economic Inst. (min 15 units)

No more than one course in any Area D category.

Take one course from D1a and one from D1b

D1a HIST 202 (USCP) *or* HIST 204 *or* LS 211
D1b POLS 110 *or* LS 212

Take three courses from D2, D3, D4a, D4b

D2 History (300-400 level)
D3 Economics
D4a Social Institutions
D4b Social Institutions (300-400 level)

Area E Life Understanding (minimum 3 units)

No more than one course in any Area E category.

Take one course from E1 or E2

E1 PSY 201/PSY 202
E2 Self Development

Area F Technology

2 units are in Support.

F1 Computer Literacy *see Support

ELECTIVES **0**

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Recommended Sequence: Major and Support Courses

The following is a guide for scheduling Major and Support Courses. By following this sequence, students should meet prerequisites for Major coursework. Courses are not always offered during the quarter indicated. Please consult with your academic adviser and the current Class Schedule.

1st Year		
Fall	*Winter*	*Spring*
ARCH 111	ARCH 106	EDES 113
EDES 101	MATH 142	MATH 143
MATH 141	PHYS 131	PHYS 132
2nd Year		
Fall	*Winter*	*Spring*
ARCE 221	ARCE 222	ARCE 223
ARCH 221	ARCH 222	ARCE 227
MATH 241	MATH 242	ARCE 257
PHYS 133	CSC 231	ARCE 351
	ARCE 225/ME 212	ARCH 231
3rd Year		
Fall	*Winter*	*Spring*
ARCE 302	ARCE 303	ARCE 304
ARCE 352	ARCE 306	ARCE 305
ARCE 371	ARCE 353	ARCE 372
ARCE 421		ARCE 412
CSC 342		ARCE 422
4th Year		
Fall	*Winter*	*Spring*
ARCE 444	ARCE 403 or 447	ARCE 453
ARCE 451	ARCE 452	ARCE 445 or 446
ARCE 483	ARCE 481	
	CM 433	

Architecture

Department Office
Arch. & Environmental Design Bldg. (05), Rm 212
(805) 756-1316 FAX (805) 756-1500

Director, Gilbert D. Cooke
Associate Director, Allan R. Cooper

Joseph C. Amanzio
Sharad D. Atre
James R. Bagnall
William R. Benedict
David A. Brodie
Arthur J. Chapman
M. Polly Cooper
John F. Cotton
M. Bilgi Denel
Serim Denel
Donna P. Duerk
Thomas Fowler, IV
Merrill C. Gaines
Bruno Giberti
Donald P. Grant
Terry C. Hargrave
George Hasslein
Patrick D. Hill
George K. Ikenoyama
Laura E. Joines-Novotny
Brian B. Kesner
Kenneth M. Kohlen
Sandra D. Lakeman
John H. Lange
Karen Lange
Larry H. Loh
David Lord
Michael Lucas
Margot McDonald
Sandra D. Miller
Daniel L. Panetta
Jens G. Pohl
Don E. Swearingen
Howard Weisenthal
Christopher Yip

ACADEMIC PROGRAMS

B.Arch. Architecture
MS Architecture

The objective of the five-year Bachelor of Architecture degree program is to develop design and related skills necessary for entry into the professional field of architecture. Preparation for architecture spans several disciplines and requires a range of aptitudes. As the architect has a responsibility for solving problems of the built environment involving people, an understanding and sensitivity to human needs is required. Therefore, programs in architecture are broad in nature. With careful selection of elective work, areas of specialization can be included.

The Bachelor of Architecture degree is accredited by the National Architectural Accrediting Board.

> "In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit US professional degree programs in architecture, recognizes two types of degrees: the Bachelor of Architecture and the Master of Architecture. A program may be granted a five-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards.
>
> Masters degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree."

OFF-CAMPUS ARCHITECTURE PROGRAMS

CSU International Programs. There are two organized studio programs for Architecture majors, one in Copenhagen, Denmark, and one in Florence, Italy. The concept of the studio organization is similar to Cal Poly. Credit for major design courses, some professional electives, some general education courses and free electives are handled through approved overseas study centers. Architecture majors in their fourth year of study overseas are required to complete ARCH 407 Environmental Control Systems, and ARCH 441, 442 Professional Practice, upon return to the Cal Poly campus.

Applications for the International Programs are due February 1 of each year. The applicants are notified prior to the beginning of Spring Quarter as to the results of the Screening Committee's recommendations.

London Study Program. The Architecture Department participates in the London Study Program. Students and faculty live in London and use it as the site of design problems and as the base location for field trips. It is possible to get credit for fourth year Design, Practice and GE Areas C and D. Arrangements can be made for special studies for technical elective credit.

San Francisco Urban Design Internship Program offers fourth year students the opportunity to live and study in San Francisco for one quarter (Fall or Spring). Each class utilizes real projects with the participation of talented, award-winning architectural offices and urban designers to introduce students to urban design and architectural practice in one of the world's most urbane cities.

Unique in its involvement of architectural students in public policy, this program won the American Institute of Architects Urban Design Award of Excellence in 1993. The two internships – architectural and urban design – provide the students with mentors, state-of-the-art knowledge, and access to outstanding architectural offices and professional resources. The case study method is used to observe and analyze practice issues in the participating architectural firms.

Washington Alexandria Architecture Consortium. The Consortium is organized to offer a challenging and stimulating one-year option. The Center functions as an extension of the College of Architecture of Virginia Polytechnic Institute and State University (VPI) in the Washington DC Metropolitan Area. This is a unique home for the Architecture Consortium, which is comprised of several universities including Cal Poly.

The Consortium seeks to explore and expand design pedagogues and design processes, establish collaboration with national and international institutions for new environmental strategies, and undertake demonstration projects seeking innovative architecture solutions. Orientation meetings are scheduled each Winter Quarter.

BACHELOR OF ARCHITECTURE

❑ *60 units upper division* ❑ *GWR*
❑ *2.0 GPA* ❑ *USCP*
** = Satisfies General Education requirement*

MAJOR COURSES

ARCH 101 Survey of Architectural Ed and Practice	2
ARCH 106 Materials of Construction	3
ARCH 111, 112, 113 (3)(3)(3) & ARCH 260 (4) *or* ARCH 131, 132, 133 (4)(4)(4) & ARCH 260 (1)	13
ARCH 207 Environmental Control Systems I	4
ARCH 231 Architectural Practice and Laboratory	3
ARCH 251, 252, 253 Arch. Design Fund. I, II, III	5,5,5
ARCH 307 Environmental Control Systems II	4
ARCH 317, 318, 319 History of Architecture	3,3,3
ARCH 341, 342 Architectural Practice	4,4
ARCH 351, 352, 353 Architectural Design	5,5,5
ARCH 407 Environmental Control Systems III	4
ARCH 420 Seminar in Architectural History	3
ARCH 441, 442 Professional Practice	3,3
ARCH 451, 452, 453 Architectural Design	5,5,5
ARCH 481 Senior Arch Design Project *or* [1] ARCH 521 Graduate Arch Design Project	5,5,5
ARCH 492 Senior Design Thesis *or* [1] ARCH 592 Graduate Design Thesis	3
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SUPPORT COURSES

ARCE 221 Elementary Structures	3
ARCE 222 Mechanics of Structural Members I	3
ARCE 226 Structural Systems for Architects	3
ARCE 321 Timber Design	3
ARCE 322 Steel Design	3
ARCE 323 Concrete and Masonry Design	3
EDES 101 Intro to Architecture and Envl Design	2
MATH 141 Calculus I (B2)*	4
MATH 142 Calculus II (B2)*	4
PHYS 131 General Physics (B1a)*	4
PHYS 132 General Physics (Area B)*	4
Upper division electives	9
CAED prefix professional electives	9
Environment-behavior adviser approved elective	3
Urban context adviser approved elective	3
	15

GENERAL EDUCATION (GE) **56**

72 units required;16 of these units are in Major/Support..
→See page 79 for complete GE course listing.
→Minimum of 3 GE courses required at the 300-400 level.

Area A Communication (minimum 11 units)
Take one course from A1, A2, A3:
A1 Expository Writing
A2 Critical Thinking
A3 Speech
If less than 11 units, take one course from A4
A4 Argumentative Writing

Area B Science and Mathematics (minimum 2 units)
16 units are in Support. Take one course from B1b:
B1a Physical Sciences *see Support
B1b Life Sciences elective
B2 Mathematics and/or Statistics *see Support
Area B * see Support

Area C Arts and Humanities (minimum 15 units)
Take one course from each Area C category:
C1 Literature
C1 Philosophy
C2 Fine/Performing Arts
C3 Lit/Phil/Arts (300-400 level)
If less than 15 units, take one course from C1, C2, C3

Area D Social, Political, Economic Inst. (min 15 units)
No more than one course in any Area D category.
Take one course from D1a and one from D1b
D1a HIST 202 (USCP) *or* HIST 204 *or* LS 211
D1b POLS 110 *or* LS 212
Take three courses from D2, D3, D4a, D4b
D2 History (300-400 level)
D3 Economics
D4a Social Institutions
D4b Social Institutions (300-400 level)

Area E Life Understanding (minimum 3 units)
No more than one course in any Area E category.
Take one course from E1 or E2
E1 PSY 201/PSY 202
E2 Self Development

Area F Technology (minimum 2 units)
F1 Computer Literacy

Additional GE Courses (minimum 8 units)
To complete 72-unit requirement, select additional courses from Areas A, C, D, E. No more than one additional course per area.

ELECTIVES **10**

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[1] Option for students intending to pursue a graduate degree.

Recommended Sequence: Major and Support Courses
The following is a guide for scheduling Major and Support Courses. By following this sequence, students should meet prerequisites for Major coursework. Courses are not always offered during the quarter indicated. Please consult with your academic adviser and the current Class Schedule.

1st Year		
Fall	*Winter*	*Spring*
EDES 101	ARCH 106	ARCH 101
ARCH 111/131*	ARCH 112/132*	ARCH 113/133*
MATH 141	MATH 142	PHYS 132
	PHYS 131	
2nd Year		
Fall	*Winter*	*Spring*
ARCH 250/260	ARCH 231	ARCH 207
ARCH 251	ARCH 252	ARCH 253
ARCE 221	ARCE 222	ARCE 226
3rd Year		
Fall	*Winter*	*Spring*
ARCH 341	ARCH 307	ARCH 342
ARCH 351	ARCH 352	ARCH 353
ARCH 317	ARCH 318	ARCH 319
ARCE 321	ARCE 322	ARCE 323
4th Year		
Fall	*Winter*	*Spring*
ARCH 407	ARCH 441	ARCH 442
ARCH 451	ARCH 452	ARCH 453
ARCH 420	Electives	Prof Electives
		Urban Context Electives
5th Year		
Fall	*Winter*	*Spring*
ARCH 481/521	ARCH 481/521	ARCH 481/521
ARCH 492/592	CAED Prof Electives	CAED Prof Electives
Upper Div Free Electives	Upper Div Free Electives	Upper Div Free Electives

**Select one series: either ARCH 111, 112, 113 or ARCH 131, 132, 133.

ARCHITECTURAL MANAGEMENT TRACK

This program is available only to those students who are enrolled in Cal Poly's College of Architecture program. Students who fulfill all the requirements will first receive the Bachelor of Architecture and then the MBA. During the fifth year of the architecture program, students who have been admitted to this program are allowed to take GSB courses as outlined below. By April 15th of the 4th year, students must formally apply for admission to the MBA program. Acceptance to the MBA program is conditional upon the successful completion of the fifth year.

MBA, Architectural Management Track

GSB Core (three 12-unit classes)..... 36
The MBA program is currently undergoing change and core classes are being offered on an experimental basis. For more information, contact Director of Graduate Management Programs.
ARCH 521 Graduate Architectural Design Project or adviser approved elective..... 5,5,5
GSB 562 Seminar in General Management and Strategy 4
GSB electives 36
Select at least one course from:
GSB 578, 587; BUS 410, 446; ECON 401; AGB 563
GSB or ARCH electives 8
8

MASTER OF SCIENCE IN ARCHITECTURE

The Master of Science in Architecture is a post-professional degree in the broad field of architecture with an emphasis on professional practice or environmental design. Common core studies aim to establish a central professional focus for advanced study and research, while specialization and directed electives provide for the development of in-depth study chosen by candidates.

Professional Practice Specialization. Designed for applicants holding an accredited architecture degree wishing to pursue advanced studies with a strong professional practice orientation.

Environmental Design Specialization. Designed for applicants holding a degree in one of the several cognate environmental design disciplines, engineering, or computer science, wishing to pursue advanced studies with a strong inter-professional orientation. This is a post-professional specialized degree in the inter-professional field of environmental design, with special reference to its three primary contributory disciplines of Architecture, City and Regional Planning, and Landscape Architecture. The common core curriculum aims to establish a central focus for advanced study and research, while sub-core studies and directed electives provide for the development of in-depth study in one of the contributory disciplines of Architecture, City and Regional Planning, Architectural Engineering, Landscape Architecture and Construction Management.

Graduate Study Areas. The graduate study topics are challenging. Each is of critical importance to the architecture, engineering, and construction industry. The knowledge and experience students bring to the program are fully employed. At the same time new practices and new knowledge are acquired. These study areas are:

* *Computer-Aided Design.* Focusing on the development and utilization of computer systems in the architectural process, with particular emphasis on design information representation and management, the development and utilization of knowledge bases, and expert design assistants. Students are encouraged to participate in the research projects undertaken by the CAD Research Center of the College of Architecture and Environmental Design.

* *Architectural Science.* Focusing on the increasingly complex performance and technical aspects of architectural design and the knowledge and skills needed when designers deal with the challenges associated with such topics as energy responsive architecture acoustics, lighting, and wind-effects phenomena.

* *Facility Management.* Stresses the practice of coordinating the physical workplace with the people and work of an organization. It integrates the principles of business administration, architecture, and behavioral and engineering sciences. Facility management is concerned with the design, construction, maintenance, and management of physical environments. Facility managers usually work as generalists managing teams of specialists such as architects, interior architects, interior designers, engineers, construction personnel, communication technicians, and so on.

* *Part-Time Executive Masters.* Oriented to full-time employed, mid-career professionals in the architecture, engineering and construction industry. Although the degree is in architecture, emphasis is placed on the development of core business skills rarely covered in professional education programs, including marketing, client relations, leadership and strategic management.

CURRICULUM FOR MS ARCHITECTURE

Core Curriculum..... 36
- ARCH 519 Theory of Architecture (3)
- ARCH 551 Architectural Design (15)
- ARCH 561 Advanced Design (9)
- ARCH 598 Master's Design Project (9) *or*
  ARCH 599 Master's Thesis (9)

Directed Electives..... 9
- A minimum of 6 units of adviser approved elective courses will be included in a student's formal program of study.

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For further information contact the Graduate Program Coordinator, Department of Architecture, College of Architecture and Environmental Design, Cal Poly, San Luis Obispo, CA 93407.

City and Regional Planning

Department Office
Dexter Bldg. (34), Room 251
(805) 756-1315

Department Head, William J. Siembieda

W. David Conn
Linda C. Dalton
Linda L. Day
David T. Dubbink
Richard Lee
Amer A. Moustafa
Paul Wack

ACADEMIC PROGRAMS

BS City and Regional Planning
MCRP Master of City and Regional Planning
MCRP/MS Transportation Planning

The profession of city and regional planning is primarily involved in helping people and communities manage growth and change in their physical, social and economic environments. The focus is on understanding how cities and towns (human settlements) function and how to make them better places for people to live and to prosper. Planning has its roots in engineering, architecture, landscape architecture, law, social welfare and government reform. The practice of city and regional planning is both science and art. It involves technical competence, creativity, hard-headed pragmatism and the ability to develop a vision of the future and to build on that vision. Planners today combine design, quantitative and people skills to assist communities and society. Both the undergraduate (BSCRP) and the graduate (MCRP) programs are accredited by the national Planning Accreditation Board.

The degree programs prepare students for professional careers in the design of human settlements in harmony with the natural environment and the needs of society. Practicing planners work in public agencies and private consulting firms, preparing comprehensive plans for projects, neighborhoods, cities, and entire regions. They deal with the use of land, housing, transportation, public facilities, and open space. In addition, they are responsible for finding the means to make their plans become a reality by budgeting for public projects and programs and by reviewing and regulating private development.

The curriculum leading to the Bachelor of Science in City and Regional Planning provides a broad, interdisciplinary education as well as competency in physical planning with a specialization in urban and regional design. The Master of City and Regional Planning degree builds on a general undergraduate preparation in the humanities, architecture/lanscape architecture, social sciences or natural sciences, and offers two areas of emphasis: land use planning and environmental planning.

BS CITY AND REGIONAL PLANNING

❑ *60 units upper division* ❑ *GWR*
❑ *2.0 GPA* ❑ *USCP*
** = Satisfies General Education requirement*

MAJOR COURSES

CRP 101 Introduction to the Profession of City and Regional Planning	1
CRP 111 Introduction to Drawing and Perspective	3
CRP 112 Basic Graphics	3
CRP 201, 202 Environmental Design Fundamentals	3,3
CRP 203 Applied Design and Planning Fundamental	3
CRP 211 Introduction to Urbanization	3
CRP 212 Introduction to Urban Planning	3
CRP 213 Population and Housing Studies	3
CRP 214 Land Use and Transportation Studies	3
CRP 216 Computer Applications for Planning	3
CRP 314 Planning Theory	3
CRP 315 Economic and Fiscal Analy for Planning	3
CRP 347, 348 Urban and Regional Design	3,3
CRP 351, 352, 353 Community Planning Lab	4,4,4
CRP 409 Planning Internship	2
CRP 420 Land Use Law	4
CRP 430 Planning Administration	3
CRP 451, 452 Regional and Env Planning Lab	4,4
CRP 460 Undergraduate Seminar	2
CRP 461, CRP 462 Senior Project	2,2
Adviser approved electives	13
	91

SUPPORT COURSES

ECON 211 Principles of Economics (D3)*	3
ECON 212 Principles of Economics	3
EDES 101 Introduction to Architecture and Environmental Design	2
FNR 306 Natural Resources Ecology and Habitat Management	4
GEOL 201 Physical Geology (B1a)*	3
LA 213 Site and Terrain Analysis	4
MATH 118 Pre-Calculus Algebra (B2)*	4
BUS 387/POLS 453/PSY 302	4
POLS 472/471/452	4
STAT 221 Intro to Probability & Statistics (B2)*	5
	36

GENERAL EDUCATION (GE) **57**

72 units required; 15 of these units are in Major/Support.

→See page 79 for complete GE course listing.

→Minimum of 3 GE courses required at the 300-400 level.

Area A Communication (minimum 11 units)

Take one course from A1, A2, A3:

A1 Expository Writing
A2 Critical Thinking
A3 Speech

If less than 11 units, take one course from A4

A4 Argumentative Writing

Area B Science and Mathematics (minimum 3 units)

12 units are in Support.

Take one course from B1b:

B1a Physical Sciences *see Support
B1b Life Sciences elective with lab
B2 Mathematics and/or Statistics *see Support

Area C Arts and Humanities (minimum 15 units)

Take one course from each Area C category:

C1 Literature
C1 Philosophy
C2 Fine/Performing Arts
C3 Lit/Phil/Arts (300-400 level)

If less than 15 units, take one course from C1, C2, C3

Area D Social, Political, Economic Inst. (min 12 units)

3 units are in Support.

No more than one course in any Area D category.

Take one course from D1a and one from D1b

D1a HIST 202 (USCP) *or* HIST 204 *or* LS 211
D1b POLS 110 *or* LS 212

Take two courses from D2, D4a, D4b

D2 History (300-400 level)
D3 Economics *see Support
D4a Social Institutions
D4b Social Institutions (300-400 level)

Area E Life Understanding (minimum 3 units)

No more than one course in any Area E category.

Take one course from E1 or E2

E1 PSY 201/PSY 202
E2 Self Development

Area F Technology (minimum 2 units)

F1 Computer Literacy

Additional GE Courses (minimum 11 units)

To complete 72-unit requirement, select additional courses from Areas A, B, C, D, E. No more than one additional course per area.

ELECTIVES **9**

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Recommended Sequence: Major and Support Courses

The following is a guide for scheduling Major and Support Courses. By following this sequence, students should meet prerequisites for Major coursework. Courses are not always offered during the quarter indicated. Please consult with your academic adviser and the current Class Schedule.

1st Year		
Fall	*Winter*	*Spring*
EDES 101	CRP 111	CRP 112
CRP 101	CRP 212	GEOL 201
CRP 211	MATH 118	F1 elective
2nd Year		
Fall	*Winter*	*Spring*
CRP 201	CRP 202	CRP 203
STAT 221	CRP 213	CRP 214
ECON 211	ECON 212	CRP 216
LA 213		FNR 306
3rd Year		
Fall	*Winter*	*Spring*
CRP 347		CRP 348
CRP 315	CRP 314	
CRP 351	CRP 352	CRP 353
CRP electives	CRP electives	CRP electives
		POLS 472 or 471 or 452
Summer: CRP 409		
4th Year		
Fall	*Winter*	*Spring*
CRP 460	CRP 461	CRP 462
CRP 451	CRP 452	
CRP 420	CRP 430	CRP electives
BUS 387 or POLS 453 or PSY 302		

MASTER OF CITY & REGIONAL PLANNING

General Characteristics
The Master of City and Regional Planning degree program (MCRP) is professionally oriented and is open to students with high standards of academic achievement who wish to pursue careers in city and regional planning. It is structured to prepare graduates with competence to function in a general context of planning, as well as in a particular area of emphasis. The MCRP core courses cover planning theory, methods, law, formulation and implementation of plans and policies.

Two principal areas of study are emphasized: urban land planning, focused on comprehensive physical planning and urban design; and environmental planning, focused on natural systems and development impacts. In addition, skills building in all aspects of planning communications (visual, verbal, written) is stressed. The City and Regional Planning Department jointly offers the MCRP degree with the Master of Science in Engineering with a specialization in transportation planning (see page 155).

The master's program is structured to meet the needs of those who have earned baccalaureate degrees in a variety of disciplines including, but not limited to, economics, geography, architecture, landscape architecture, civil engineering, political science, environmental or urban studies, natural resources management, and ecology. The program is six quarters (two years) in duration and consists of 72 approved units (not including courses necessary to compensate for deficiencies). Because of the sequencing of courses, students admitted to the program are generally expected to begin their studies in the fall quarter. Students with prerequisite coursework deficiencies and those with backgrounds allowing waivers of first-year core courses may be admitted in other quarters. The degree culminates in a thesis (CRP 599), or synthesis course (CRP 597) and comprehensive exam.

The MCRP Program offers students an opportunity to develop close working relationships with the planning faculty. Self-directed study, tailored to the student's interests and needs, is also encouraged.

Prerequisites
Students entering the MCRP Program are expected to bring with them a background in certain basic subject areas or to make up deficiencies in these basic subject areas after admission. These include the following Cal Poly courses or their equivalents:

STAT 221 Introduction to Probability and Statistics
CSC 110 Computers and Computer App Windows

Applicants for admission to the Master of City and Regional Planning program are expected to:

1. Have earned a bachelor's degree from an accredited university or college,
2. Have attained a grade point average of 3.0 in last 90 units of undergraduate work,
3. Provide the CRP Graduate Review Committee with the results of the Graduate Record Examination Aptitude Test (required only if grade point average is slightly below the 3.0 requirement),
4. Give indications of motivation, maturity, and high standards of academic involvement through work and references (three letters required) and submission of a project or paper demonstrating writing ability,
5. Provide a statement (maximum of 300 words) addressing your understanding of and areas of interest in city and regional planning, your career objectives, and your educational objectives.

Applicants lacking prerequisites or other background requirements for classified standing requirements may be admitted on a conditionally classified basis, depending on the results of an individual analysis of their applications.

	Units
Core Courses	54/56
First Year	
CRP 501 Foundations of Cities and Planning (4)	
CRP 510 Planning Theory (4)	
CRP 513 Planning Research Methods (4)	
CRP 514 Computer Applications for MCRP (2)	
CRP 515 Presentation and Communication Techniques for Planners (3)	
CRP 516 Quantitative Methods in Planning (4)	
CRP 518 Policy Analysis for Planners (4)	
CRP 525 Plan Implementation (4)	
CRP 552 Community Planning Laboratory (4)	
Second Year	
CRP 409 Planning Internship (2)	
CRP 420 Land Use Law (4)	
CRP 530 Planning Agency Management (3)	
CRP 553 Project Planning Laboratory (4)	
CRP 554 Regional Planning and Analysis (4)	
CRP 597 Policy, Planning, and Management (4) and comprehensive exam *or* CRP 599 Thesis/Project (6)	
Emphasis Area (select one)	11
Land Use Planning	
CRP 520 Feasibility Studies in Planning (4)	
CRP 548 Principles of City Design (3)	
Urban electives (4)	
Environmental Planning	
CRP 545 Env Planning, Policies and Principles (4)	
Environmental electives (7)	
Adviser approved electives	7/5
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Joint MCRP/MS Engineering with Specialization in TRANSPORTATION PLANNING

The Transportation Planning Specialization is a joint interdisciplinary program between the College of Engineering and the City and Regional Planning Department, College of Architecture and Environmental Design. Participation in the program requires enrollment in both Colleges. Students successfully completing the program will be awarded both the M.C.R.P. and the M.S. in Engineering, each with a Specialization in Transportation Planning.

The major objectives of this joint program are:

(a) To provide an interdisciplinary graduate program which combines elements of transportation planning with city and regional planning to address a need for professionals who have a command of both the technology of transportation planning and the place of transportation within the urban environment. The required master's project is intended to allow the students a period of directed study that will allow them to integrate their work and to apply this to special areas of their choosing.

(b) To provide planners with courses essential to understanding the technologies of transportation planning. To provide engineers with a broad background in urban studies and a knowledge of contemporary environmental issues.

(c) To take advantage of the backgrounds of program participants. The graduate students of both sponsoring departments include both mature professionals returning for advanced degrees and recent graduates with a diversity of specializations.

Prerequisites. Applicants must have satisfactorily completed courses that cover the following or equivalent subject areas:

CE 221 Fundamentals of Transportation Engineering
CE 381 Geotechnical Engineering *or*
GEOL 201 Physical Geology
CSC 231 Fortran for Engineering Students
ECON 211 Principles of Economics
ENGL 218 Professional Writing: Argument/Reports
MATH 143 Calculus
PHYS 131 General Physics
SPC 201 Public Speaking
STAT 321 Statistical Analysis I

Applicants for admission to the joint program with a specialization in Transportation Planning are expected to:

1. Have earned a bachelor's degree from an accredited university or college,
2. Have attained a grade point average of 3.0 in last 90 units of undergraduate work,
3. Provide results of the Graduate Record Examination (GRE) Aptitude Test to the Admissions Committee (required only if grade point average is below the required 3.0),
4. Give indications of motivation, maturity, and high standards of academic involvement through work and references (three letters required) and submission of a project or paper demonstrating writing ability,
5. Provide a statement (maximum of 300 words) addressing their understanding of and areas of interest in planning, career objectives, and educational objectives.

Applicants lacking prerequisites or other background requirements for classified standing may be admitted on a conditionally classified basis, depending on the results of an individual analysis of their applications.

Core Courses..... 72
CE 523 Transportation System Planning (4)
CE 528 Transportation Analysis *or*
CE 525 Airport Planning and Design (4)
CE 571 Selected Advanced Laboratory (3)
CE 574 Computer Applications in C.E. (3)
CE 591 Graduate Seminar (1)
CE 599 *or* CRP 599 Project /Thesis (2,2,2)
CRP 409 Planning Internship (2)
CRP 420 Land Use Law (4)
CRP 435 Transportation Theory (3)
CRP 501 Foundations of Cities and Planning (4)
CRP 510 Planning Theory (4)
CRP 513 Planning Research Methods (4)
CRP 515 Presentation and Communication Techniques for Planners (3)
CRP 516 Quantitative Methods in Planning (4)
CRP 518 Policy Analysis for Planners(4)
CRP 525 Plan Implementation (4)
CRP 530 Planning Agency Management (3)
CRP 552 Urban Planning Laboratory (4)
CRP 553 Project Planning Laboratory (4)
CSC, MATH, STAT or other approved quantitative methods course (3)

Emphasis Area (select one of the following)..... 10
Urban Land Planning Emphasis
CRP 520 Feasibility Studies in Planning (4)
CRP 548 Principles of City Design (3)
Urban Land Planning electives (3)
Regional and Environmental Planning Emphasis
CRP 404 Environmental Law (3) or Env elective
Regional and Environmental Planning electives (7)

Approved CE/ENVE electives: 8
Electives may include: CE 422, 424, 522, 525, 527, 528, 529, 573; ENVE 411, 465

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Construction Management

Department Office
Engineering West (21), Room 116-A
(805) 756-1323

Department Head, James A. Rodger

William C. Epstein
Barbara Jackson
Harold A. Johnston
Carl E. Turnquist
Matthias R. Wall

ACADEMIC PROGRAMS
BS Construction Management
Construction Management Minor

The curriculum in Construction Management leads to the Bachelor of Science degree which is accredited by the American Council for Construction Education. Major emphasis is placed on organizing and managing the construction phase of society's efforts to improve the environment. The constructor is an important member of the building team and requires a professional knowledge of techniques, materials, equipment, job planning and cost control to add to the contributions of the planning and design professions. Graduates of this program can help supply the urgent needs of the construction industry and its related fields.

BS CONSTRUCTION MANAGEMENT

❑ *60 units upper division* ❑ *GWR*
❑ *2.0 GPA* ❑ *USCP*
** = Satisfies General Education requirement*

MAJOR COURSES

CM 211 Construction Contract Documents	4
CM 212 Fundamentals of Construction Mgt	3
CM 321 Concrete Technology	3
CM 331 Construction Cost Control	3
CM 332 Cost Alternatives Evaluation	4
CM 333 Construction Contract Administration	3
CM 341 Residential & Light Commercial Construction Practices	3
CM 342 Commercial, Institutional and Industrial Construction Practices	3
CM 343 Earthwork & Civil Works Constr. Practices	3
CM 352, 353 Bldg Support System Construction Practices	4,4
CM 364 Project Administration	3
CM 431 Mgt. Interdisciplinary Functions in Constr.	3
CM 443 Principles of Construction Management	3
CM 444 Concrete Formwork & Temporary Struct.	3
CM 452 Project Controls	3
CM 454 Building Estimating	3
CM 463 Professional Practice for Senior Construction Project Managers	4
ARCE 221 Elementary Structures	3
ARCE 222 Mechanics of Structural Members I	3
ARCE 226 Structural Systems for Architects	3
ARCH 106 Materials of Construction	3
ARCH 111 Intro to Drawing and Perspective	3
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SUPPORT COURSES

ARCE 421 Soil Mechanics	3
Structural design electives	3,3
Select two of ARCE 321/322/323	
BRAE 237 Engineering Surveying I	2
BUS 207 Business Law	4
BUS 214 Financial Accounting	5
CRP 212 Introduction to Urban Planning	3
ECON 221 Microeconomics	4
ECON 222 Macroeconomics (D3)*	4
EDES 101 Intro to Architecture and Env Design	2
ENGL 310 Corporate Communications	4
GEOL 201 Physical Geology (B1a)*	3
MATH 141 Calculus I (B2)*	4
MATH 142 Calculus II (B2)*	4
PHYS 131 General Physics (B1a)*	4
PHYS 132 General Physics (Area B)*	4
STAT 251, 252 Statistical Inference for Management I, II (Area B)*	4,5
BUS 300–400 level adviser approved elective	4
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GENERAL EDUCATION (GE) **50**

72 units required; 22 of these units are in Major/Support.
→See page 79 for complete GE course listing.
→Minimum of 3 GE courses required at the 300-400 level.

Area A Communication (minimum 11 units)
Take one course from A1, A2, A3:
A1 Expository Writing
A2 Critical Thinking
A3 Speech
If less than 11 units, take one course from A4
A4 Argumentative Writing

Area B Science and Mathematics (minimum 2 units)
18 units are in Support.
Take one course from B1b:
B1a Physical Sciences *see Support
B1b Life Sciences elective
B2 Mathematics and/or Statistics *see Support
Area B * see Support

Area C Arts and Humanities (minimum 15 units)
Take one course from each Area C category:
C1 Literature
C1 Philosophy
C2 Fine/Performing Arts
C3 Lit/Phil/Arts (300-400 level)
If less than 15 units, take one course from C1, C2, C3

Area D Social, Political, Economic Inst. (min 11 units)
4 units are in Support.
No more than one course in any Area D category.
Take one course from D1a and one from D1b
D1a HIST 202 (USCP) *or* HIST 204 *or* LS 211
D1b POLS 110 *or* LS 212
Take two courses from D2, D4a, D4b
D2 History (300-400 level)
D3 Economics *see Support
D4a Social Institutions
D4b Social Institutions (300-400 level)

Area E Life Understanding (minimum 3 units)
No more than one course in any Area E category.
Take one course from E1 or E2
E1 PSY 201/PSY 202
E2 Self Development

Area F Technology (minimum 2 units)
F1 Computer Literacy (ARCH 250/CSC 110 recommended)

Additional GE Courses
To complete 72-unit requirement, select additional courses from Areas A, C, D, E. No more than one additional course per area.

ELECTIVES **0**

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Recommended Sequence: Major and Support Courses
The following is a guide for scheduling Major and Support Courses. By following this sequence, students should meet prerequisites for Major coursework. Courses are not always offered during the quarter indicated. Please consult with your academic adviser and the current Class Schedule.

1st Year		
Fall	*Winter*	*Spring*
EDES 101	ARCH 106	ARCH 111
MATH 141	MATH 142	PHYS 132
	PHYS 131	
2nd Year		
Fall	*Winter*	*Spring*
ARCE 221	BUS 214	CM 212
BRAE 237	ECON 221	CRP 212
BUS 207	STAT 252	ECON 222
STAT 251	CM 211	GEOL 201
3rd Year		
Fall	*Winter*	*Spring*
ARCE 321	ARCE 322	ARCE 323
CM 341	CM 342	CM 343
CM 352	CM 353	CM 364
CM 331	CM 332	CM 333
ENGL 310		CM 321
4th Year		
Fall	*Winter*	*Spring*
ARCE 421	CM 444	CM 445
CM 443	CM 453	CM 454
CM 452	CM 463	ARCE elective
ARCE elective	BUS 300-400 elective	

CONSTRUCTION MANAGEMENT MINOR

The Construction Management Minor provides students an introduction to the body of knowledge expected of persons pursuing careers in the construction industry. This minor will give a student a competitive edge when applying for certain jobs, by providing concepts, tools and skills which will enhance one's progress in a career in one of the professions involved in the built environment.

The Construction Management Minor is recommended for majors in architecture, architectural engineering, civil engineering, mechanical engineering and electrical engineering. Enrollment in the minor is limited, and selection will be made based upon the applicant's performance in his or her major courses.

CM 331 Construction Cost Control	3
CM 332 Cost Alternatives Evaluation	4
CM 333 Construction Contract Administration	3
Select two of the following three courses:	3,3
CM 341 Residential and Light Commercial Construction Practices (3)	
CM 342 Commercial, Institutional and Industrial Construction Practices (3)	
CM 343 Earthwork and Civil Works Construction Practices (3)	
CM 364 Project Administration	3
CM 443 Principles of Construction Management	3
CM 452 Project Controls	3
CM 454 Building Estimating	3
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Landscape Architecture

Department Office
Dexter Bldg.(34), Room 213
(805) 756-1319

Department Head, Walter D. Bremer

Brian A. Aviles
Gary R. Clay
Gary C. Dwyer
Omar Faruque
Alice C. Loh
Gerald L. Smith
Dale A. Sutliff
Walter M. Tryon

Affiliated Faculty:

Thomas J. Rice, Soil Science Department

ACADEMIC PROGRAMS

Bachelor of Landscape Architecture

The profession of landscape architecture is primarily involved with the design, planning, and protection of the natural and developed environments. The program in landscape architecture is accredited by the American Society of Landscape Architects and recognized by the Landscape Architects Technical Committee of the California Board of Architectural Examiners.

An emphasis is placed on a process oriented approach to design and planning while developing an awareness and sensitivity to community and human values as they relate to environmental conditions. Students majoring in landscape architecture will acquire technical competencies and creative design skills through a range of projects which represent the breadth of the profession. Please consult with departmental advisers for details.

Graduates of the program are prepared for positions in private practice, consulting, governmental agencies at the national, state or local levels, industry and construction firms. Graduate study is encouraged for those students interested in pursuing advanced studies or academic positions.

Majors who are in their last two years of study and have at least a 3.2 grade point average may have the opportunity to join Theta Chapter of Sigma Lambda Alpha, the national scholastic honor society for landscape architecture.

CONCENTRATIONS

In addition to the required major courses in landscape architecture, students select one of the following concentrations or individualized course of study based upon their interests and career goals. Note: Students may elect to complete coursework for a minor in place of the concentrations listed below.

Environmental Design. Allows for in-depth study of various foci within the landscape architecture discipline, including current and future design explorations and thinking, design/build, environmental art, design theory, professional practice, etc. Design studios are structured to permit research and application of the concentration focus.

Recreation and Open Space. Roles, relationships, methods and directions of planning and design for recreation and open spaces in various settings and scales, from specific sites to communities, cities and regional systems. Design studios are structured to permit research and application of the concentration focus.

Regional Landscape Assessment. Current and emerging methods for environmental assessment and planning using computer applications and other complementary technologies and approaches. Design studios are structured to permit research and application of the concentration focus.

Individualized Course of Study. Allows for in-depth study in an area specific to individual needs but not addressed in other concentrations. Fifth-year design studios are structured to permit research and application of the concentration focus.

BACHELOR OF LANDSCAPE ARCHITECTURE

❑ *60 units upper division* ❑ *GWR*
❑ *2.0 GPA* ❑ *USCP*
** = Satisfies General Education requirement*

MAJOR COURSES

LA 110 Graphic Comm for Landscape Architects	3
LA 111 Three Dimensional Graphics for Landscape Architects	4
LA 114 Landscape Analysis and Planning	4
LA 201 Survey of Landscape Architecture	2
LA 231 Landscape Architecture Construction	3
LA 251 Fundamentals of Design and Planning in Landscape Architecture	4
LA 252 Fundamentals of Site Planning and Design.	4
LA 253 Applied Design and Planning Fundamentals.	5
LA 300 Internship	3
LA 310 Intro to Computing in Landscape Architecture	2
LA 311 History of Landscape Architecture	4
LA 320 Design Theory for Landscape Architects	3
LA 321 Concepts in Environmental Decision Making	3
LA 323 History of Twentieth Century Landscape Architecture	4
LA 351, 352, 353 Design for Landscape Architects	5,5,6
LA 441, 442 Professional Practice I, II	2,2
LA 451 Regional Landscape Assessment	6
LA 452 Urban Design for Landscape Architects	5
LA 454, 455, 456 Design for Landscape Architects	4,4,4
LA 461 Senior Design Project	5
LA 464 Senior Seminar	1,1,1
LA 401 Research Project	1
Concentration, minor or individualized course of study	18
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SUPPORT COURSES

BRAE 237 Engineering Surveying I	2
BRAE 337 Landscape Irrigation	3
ARCE 311 Structures for Landscape Architects	3
ARCH 317, 318, 319 History of Architecture (C3)*	3
BOT 121 General Botany *or* BIO 129 Natural History: Plant Communities (B1b)*	3/4
BIO 227 Wildlife Conservation Biology (Area B)*	4
BOT 238 Native Plant Materials *or* EHS 381 Native Plants for California Landscapes	3
CM 325 Construction Management Practice	3
CRP 212 Introduction to Urban Planning	3
EDES 101 Intro Architecture & Env Design	2
MATH 118 Pre-Calculus Algebra (B2)*	4
MATH 119 Pre-Calculus Trigonometry (Area B)*	3
EHS 231 Plant Materials	4
EHS 232 Plant Materials	4
SS 121 Introductory Soil Science	4
STAT 217 Applied Statistics/Liberal Arts *or* STAT 218 Appl Statistics/Life Sciences (B2)*	4
	51-16

GENERAL EDUCATION (GE) **51**

72 units required ; 21 units are in Major/Support.
→See page 79 for complete GE course listing.
→Minimum of 3 GE courses required at the 300-400 level.

Area A Communication (minimum 11 units)
Take one course from A1, A2, A3:
A1 Expository Writing
A2 Critical Thinking
A3 Speech
If less than 11 units, take one course from A4
A4 Argumentative Writing

Area B Science and Mathematics (no additional units required)
18 units are in Support.
B1a Physical Sciences *see Support
B1b Life Sciences elective *see Support
B2 Mathematics and/or Statistics *see Support
Area B * see Support

Area C Arts and Humanities (minimum 12 units)
3 units are in Support.
Take one course from each Area C category:
C1 Literature
C1 Philosophy
C2 Fine/Performing Arts
C3 Lit/Phil/Arts (300-400 level) *see Support
If less than 15 units, take one course from C1, C2, C3

Area D Social, Political, Economic Inst. (min 15 units)
No more than one course in any Area D category.
Take one course from D1a and one from D1b
D1a HIST 202 (USCP) *or* HIST 204 *or* LS 211
D1b POLS 110 *or* LS 212
Take three courses from D2, D3, D4a, D4b
D2 History (300-400 level)
D3 Economics
D4a Social Institutions
D4b Social Institutions (300-400 level)

Area E Life Understanding (minimum 3 units)
No more than one course in any Area E category.
Take one course from E1 or E2
E1 PSY 201/PSY 202
E2 Self Development

Area F Technology (minimum 2 units)
F1 Computer Literacy

Additional GE Courses (minimum 8 units)
To complete 72-unit requirement, select additional courses from Areas A, C, D, E. No more than one additional course per area.

ELECTIVES **15-16**

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CONCENTRATION OR INDIVIDUALIZED COURSE OF STUDY (select one)

Environmental Design

LIB 302 Library Resources and Literature Searches	1
LA 483 Special Studies in Landscape Architecture *or* Upper division adviser approved electives	12
Adviser approved electives	5
	18

Recreation and Open Space

LA 363 Recreation and Open Space Planning and Design	3
LA 411 Regional Landscape History	3
LA 481 Visual Resource Management Methods	3
LA 482 Evaluation Methods in Environmental Design	3
Adviser approved electives	6
	18

Regional Landscape Assessment

LA 411 Regional Landscape History	3
LA 481 Visual Resource Management Methods	3
LA 482 Evaluation Methods in Environmental Design	3
CRP 404/FNR 404 Environmental Law	3
Adviser approved electives	6
	18

Individualized Course of Study 18
Students have the option of choosing one of the above concentrations or they may take 18 adviser approved electives.

Recommended Sequence: Major and Support Courses
The following is a guide for scheduling Major and Support Courses. By following this sequence, students should meet prerequisites for Major coursework. Courses are not always offered during the quarter indicated. Please consult with your academic adviser and the current Class Schedule.

1st Year		
Fall	*Winter*	*Spring*
LA 110	LA 111	LA 114
EDES 101	MATH 119	BIO 129/BOT 121
MATH 118		SS 121
2nd Year		
Fall	*Winter*	*Spring*
LA 251	LA 231	LA 253
LA 201	LA 252	LA 310
ARCH 317	LA 311	LA 323
BIO 227	BRAE 237	EHS 231
3rd Year		
Fall	*Winter*	*Spring*
LA 320	LA 441	LA 353
LA 351	LA 352	LA 321
ARCE 31	BRAE 337	CM 325
EHS 232	CRP 212	BOT 238/EHS 381
Summer: LA 300		
4th Year		
Fall	*Winter*	*Spring*
LA 451	LA 452	LA 442
		LA 461
		LA 401
		STAT 217/218
5th Year		
Fall	*Winter*	*Spring*
LA 464	LA 464	LA 464
LA 454	LA 455	LA 456
Major concentration	Major concentration	Major concentration
Major concentration	Major concentration	Major concentration