

ENVIRONMENTAL STUDIES AND PLANNING

DEPARTMENT OFFICE

Rachel Carson Hall 18
(707) 664-2306
www.sonoma.edu/ensp/

DEPARTMENT CHAIR

Laura A. Watt

ADMINISTRATIVE COORDINATOR

Karen Targett

Faculty

Caroline Christian / Conservation and Restoration -Track 1
Thomas Jacobson / Planning and ENSP minors
Daniel Soto / Energy Management and Design
Laura A. Watt / Conservation and Restoration - Track 2, and
Water Resources Management

Programs Offered

Bachelor of Arts in Environmental Studies
Energy Management and Design

Conservation and Restoration

Planning Concentration

Water Resources Management

Bachelor of Science in Environmental Studies
Energy Management and Design

Water Resources Management

Minor in Environmental Studies and Planning

Double Major with Economics

For over forty years, beginning in 1972, ENSP has offered a distinctive undergraduate program of interdisciplinary study aimed at the analysis, management, and solution of environmental problems and issues. Students and faculty work together across disciplines to develop a thorough understanding of environmental sustainability in all its dimensions. Specifically, the program combines a core education in ecology, physical science, social sciences, and the humanities with targeted coursework in an area of expertise, including energy, conservation, water, education, and planning. This involves integrating knowledge from multiple disciplines to understand the functioning of environmental systems and the nature of human impact upon these systems at local, regional, and global scales. The department's goals are to prepare students for careers in the environmental professions, graduate studies, and positive action in their own lives, and to broadly promote ecological literacy in order to help maintain and enhance the quality of human and natural environments.

Each student chooses a study plan, which has one or more assigned advisors who specialize in that area of interest. Students and faculty work together to plan a course of study that will provide the best possible preparation for personal and professional fulfillment. Students enjoy small class sizes and personalized teaching by distinguished and dedicated professors. ENSP faculty are committed to enhancing both the quality of education and the environment.

Many students pursue a double major, or a major and minor, in conjunction with traditional disciplines to prepare for specific careers related to the environment. All students must complete a senior project or internship.

Admission Requirements

When applying to Sonoma State University, a student may declare a major in Environmental Studies and Planning. Students will be admitted to the major only if they meet departmental academic requirements which is currently a minimum GPA of 2.75. A student considering this major should make an appointment to see a faculty member for academic advising.

Financial Aid and Scholarships

Students seeking financial aid to assist them in their studies should contact the financial aid office. Several scholarships are provided specifically for ENSP students through the University scholarship program; please refer to the Scholarships section of this catalog.

Advisory Plans for the Freshman and Sophomore Years

In fulfilling their general education requirements, students who intend to major in Environmental Studies and Planning should select courses that will also meet the prerequisites for their intended study plans. Required and recommended prerequisites for each study plan are listed below.

A broad-based program of lower-division work in the liberal arts and sciences is generally sufficient to meet the requirements for the B.A. degree. This program should include at least one course in biology; one in geology, chemistry, or physics; one in philosophy; and two or more in the social sciences, including a course in introductory economics. Additional coursework is required for certain study plans.

Required Courses

All ENSP majors are required to complete:
ENSP 201 Environmental Forum (1)

In addition, in consultation with an advisor, students must complete one of the four study plans described below. At least 24 units of ENSP course work are required for the B.A. and B.S. degrees. Courses required for the major must be taken for a traditional letter grade, except for courses that are only offered Cr/NC.

Bachelor of Arts in Environmental Studies

(See page 139-140 for sample four-year programs.)

Degree Requirements	Units
General education (50, 13-18 units in major)	32-37
Major requirements	36-53
General electives	30-52
Total units needed for graduation	120

Bachelor of Science in Environmental Studies

(See page 141 for sample four-year programs.)

A bachelor of science degree is available for students in the Energy Management and Design and Water Resources Management plans.

Degree Requirements	Units
General education (50, 9-12 in major)	38-41
Science support courses	29-31
Major requirements	22-35
General electives	13-31
Total units needed for graduation	120

The following natural science support courses are required for the B.S. degree, in addition to the specific requirements for Energy Management and Design and Water Resources Management.

CHEM 115A* General Chemistry	5
CHEM 115B* General Chemistry	5
MATH 161* Calculus I	4
MATH 211S Calculus II	2
MATH 165* Elementary Statistics	4
PHYS 210A* General Physics (Algebra/Trig or Calculus-based)	3-4
PHYS 210B General Physics	3-4
Total units science support courses	29-31

* Courses that meet general education requirements.

Study Plans

In consultation with an advisor, students must complete one of the four study plans outlined below. Details of each plan, including specific courses and options, are available from the office of the Department of Environmental Studies and Planning, or on our web page.

Energy Management and Design (B.A. and B.S. degree options)

This program is designed to prepare students for careers or for graduate studies in the fields of residential and commercial energy management, energy-efficient architecture and design, energy planning in industry and government, renewable energy applications, and other energy-related businesses.

Conservation and Restoration (B.A. degree option)

Track 1, Biological Emphasis, is for students interested in science-based conservation, restoration, conservation planning, land management, and preservation. Students participate in an interdisciplinary curriculum that combines course work in ecology and biology with environmental policy, law, and/or planning. A minor in Biology is strongly encouraged. Track 2, Social Science Emphasis, is for students interested in the human dimensions of conservation and restoration. Coursework focuses on the political, historical, and/or geographic aspects of land and resource conservation, planning, and management, while also covering a solid interdisciplinary foundation of ecological understanding. A minor in Geography is strongly encouraged.

Planning Concentration (City and Regional Planning) (B.A. degree option)

Students in the CSU-approved planning concentration follow a general preprofessional curriculum in planning and may choose to develop a specialization to suit their interests through a program of recommended electives. Focus is on sustainable community planning, including land use, growth management, environmental impact assessment, transportation, and natural resource planning. Graduates may work for a wide variety of governmental agencies, private firms, or non-profits, or may pursue graduate studies in planning or related fields. Students interested in future careers in environmental law typically follow the planning concentration.

Water Resources Management Concentration (B.A. and B.S. degree options)

The Water Resources Management concentration provides excellent preparation for professional careers in the expanding field of water management. Graduates find employment in a wide variety of occupations with industry, private consulting firms, non-profit organizations, or government agencies that provide, conserve, regulate, or manage water resources and systems.

Double Major with Economics

The double major in economics and environmental studies and planning is designed for those students whose particular academic and career interests lie in natural resource economics, economic development planning, and/or energy management. The double major is also designed especially for students who intend to pursue graduate studies in natural resource management, urban planning, law, or related career fields.

Students considering this double major should meet with both their ENSP and ECON advisors to discuss requirements.

Minor in Environmental Studies and Planning

The purpose of the minor in environmental studies and planning is to help students from traditional disciplines apply their expertise to environmental and planning problems and issues. A minimum of 20 units is required. Students considering the ENSP minor should meet with an ENSP advisor to discuss requirements.

Special Resources in ENSP

The department utilizes several valuable learning environments and facilities on and off campus. They include:

The Fairfield Osborn Preserve: A 411-acre field station that provides environmental education programs and opportunities for scientific research. The Preserve is a fifteen-minute drive from campus, atop Sonoma Mountain.

Galbreath Wildlands Preserve: A 3,670 acre preserve nestled in the Coast Range of northern California. The mission of the Preserve is to promote environmental education and research, as well as the effective stewardship of this diverse landscape.

The SSU Botanical and Kenneth M. Stocking Native Plant Garden: A showcase of diverse California plant communities and a quiet place for education and relaxation. Located near the campus lakes, the garden includes a guided trail through woodland, marsh, and riparian ecosystems.

The Environmental Technology Center: A model for sustainable building techniques and technologies, this center includes energy and water-efficient landscaping, “smart building” control technologies, environmentally-sensitive materials, passive solar heating and cooling, and more. It serves as a training facility for building professionals and teachers and as an educational and research site.

The Center for Sustainable Communities: The Center works with cities and counties, special districts, and regional and state government agencies utilizing ENSP faculty, students, and “encore career” professionals on a wide array of projects.

The Classroom Garden: The garden adjacent to the ETC teaches SSU students and members of the public about sustainable landscape practices and how these contribute to biodiversity and environmental health. Through internships, volunteering, and classroom experiences, students gain a sense of place, community, purpose, and an enriched academic experience.

Sample Four-Year Program for Bachelor of Arts in ENSP-Conservation and Restoration (with Biology Minor)

Track I, Biological Emphasis

The course plan below satisfies requirements for minor in the Department of Biology. Waiting to complete the one-year introductory course until transferring to SSU may add one additional semester. Students must complete a total of 120 units to meet university graduation requirements.

* Plan assumes that all lower-division GE courses (50 units) are completed prior to starting junior year, including MATH 165 (Statistics) or equivalent.

**Transfer students must complete a one-year equivalent introductory biology course.

FRESHMAN YEAR: 30 Units

<i>Fall Semester (13-15 Units)</i>	<i>Spring Semester (13-16 Units)</i>
ENSP 200 (D5) (3)	MATH 165 (B4) (4)
GEOG 203 (D2) (4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)

SOPHOMORE YEAR: 29 Units

<i>Fall Semester (11-13 Units)</i>	<i>Spring Semester (14-16 Units)</i>
BIOL 130 (B2) (4)	BIOL 131 (B2) (4)
ENSP 201 (1)	GEOG 201 (B1) (4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)

JUNIOR YEAR: 30 Units

<i>Fall Semester (14-16 Units)</i>	<i>Spring Semester (14-16 Units)</i>
BIOL 333 (4)	ENSP 322 (4)
GEOG 387 (4)	ENSP Core Course (4)
	<i>(physical science, social science or humanities)</i>
ENSP Core Course (3-4)	Upper-Division GE (3-4)
<i>(physical science, social science or humanities)</i>	
Upper-Division GE (3-4)	Upper-Division GE (3-4)

SENIOR YEAR: 30 Units

<i>Fall Semester (15 Units)</i>	<i>Spring Semester (11-15 Units)</i>
ENSP 423 (5)	ENSP 497 (1)
ENSP 499 - Internship (2)	ENSP 499 - Internship(2)
ENSP Core Course (3-4)	ENSP elective (2-4)
<i>(physical science, social science or humanities)</i>	
UD Biology Elective (4)	Elective (2-4)
<i>(see study plan for list of eligible courses)</i>	UD Biology Elective
	– taxonomic course (4)
	<i>(see study plan for list of eligible courses)</i>

TOTAL UNITS: 120

Sample Four-Year Program for Bachelor of Arts in ENSP-Conservation and Restoration (with Geography minor)

* Please note that the Geography minor is optional, not required.

Track II, Social Sciences Emphasis

This is only an example of how one might plan out your four years as a C&R Track II student; the only classes that have specific prerequisites are noted. Most GE classes can be taken in any order or sequence. Please consult with your advisor for suggestions of when to take particular courses, or when choosing electives. Students must complete a total of 120 units to meet university graduation requirements.

FRESHMAN YEAR: 30 Units

<i>Fall Semester (13-16 Units)</i>	<i>Spring Semester (13-16 Units)</i>
MATH 165 (B4) (4)	ECON 205 (D1) (4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)

SOPHOMORE YEAR: 30 Units

<i>Fall Semester (13-16 Units)</i>	<i>Spring Semester (14-17 Units)</i>
GEOG 203 (D2) (3)	GEOG 201 (B1) (4)
ENSP 201 (1)	SSCI 299 (1)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)

JUNIOR YEAR: 30 Units

<i>Fall Semester (13-16 Units)</i>	<i>Spring Semester (15-16 Units)</i>
ENSP 302 (4)	ENSP 322 (4)
ENSP 307 (4)	ENSP 401 (4)
Elective in major (2-4) <i>(see study plan for list of eligible courses)</i>	GEOG elective for minor (4)
Upper-Division GE (3-4)	Upper-Division GE (3-4)

SENIOR YEAR: 30 Units

<i>Fall Semester (12-14 Units)</i>	<i>Spring Semester (14-16 Units)</i>
ENSP 416 (4) OR ENSP 404 (3)	ENSP 425 (4)
GEOG 387 (4)	ENSP 497 (2)
Upper-Division GE (3-4)	ENSP 499 - Internship (2)
ENSP 499 - Internship (2)	GEOG elective for minor (4) <i>(see study plan for list of eligible courses)</i>
	Elective in major (2-4)

TOTAL UNITS: 120

Sample Four-Year Program for Bachelor of Arts in ENSP-Energy Management and Design

FRESHMAN YEAR: 30 Units

<i>Fall Semester (15 Units)</i>	<i>Spring Semester (15 Units)</i>
CHEM 115A (5)	GE (A3) (4)
ECON 205 (4)	GE (B2) (4)
GE (A1) (3)	GE (C) (4)
GE (A2) (3)	GE (D1) (3)

SOPHOMORE YEAR: 30 Units

<i>Fall Semester (15 Units)</i>	<i>Spring Semester (15 Units)</i>
MATH 160 (4)	ENSP 202 (3)
GE (C) (4)	PHYS 210A (3)
GE (D2) (3)	GE (D3) (3))
GE (C) (4)	GE (D4) (3)
	GE (D5) (3)

JUNIOR YEAR: 32 Units

<i>Fall Semester (16 Units)</i>	<i>Spring Semester (16 Units)</i>
ENSP 201 (1)	ENSP 401 (2)
ENSP 307 (4)	ENSP 430 (4)
ENSP 330 (4)	ENSP 437 (4)
ENSP 337 (4)	GE (E) (3)
GE (B3) (3)	Elective (3)

SENIOR YEAR: 28 Units

<i>Fall Semester (15 Units)</i>	<i>Spring Semester (13 Units)</i>
ENSP 303 (4)	ENSP 430 (2)
ENSP 338 (4)	ENSP 438 (4)
ENSP 499 - Internship (4)	Elective (4)
Elective (3)	Elective (3)

TOTAL UNITS: 120

Sample Four-Year Program for Bachelor of Arts in ENSP-Planning

This is just an example of how one might plan four years as a Planning student. Classes that have prerequisites are noted, though those prerequisites can change. Most GE classes can be taken in any order or sequence. Consult with your advisor for suggestions on when to take particular courses and when choosing electives.

FRESHMAN YEAR: 30 Units

<i>Fall Semester (13-16 Units)</i>	<i>Spring Semester (13-16 Units)</i>
ENSP 200 (D5) (3)	MATH 165 (B4) (4)
ENSP 201 (1)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	

SOPHOMORE YEAR: 30 Units

<i>Fall Semester (13-16 Units)</i>	<i>Spring Semester (13-16 Units)</i>
GEOG 203 (D2) (3)	ECON 205 (D1) (4)
ENSP 201 (1)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	

JUNIOR YEAR: 30 Units

<i>Fall Semester (13-15 Units)</i>	<i>Spring Semester (14-16 Units)</i>
ENSP 302 (4)	ENSP 303 (4)
ENSP 310 (3)	ENSP 311 (4)
A course from the "Planning Skills" category (3-4)	A course from the "Humanities" category (3-4)
Upper-Division GE (3-4)	Upper Division GE (3-4)

SENIOR YEAR: 30 Units

<i>Fall Semester (15-18 Units)</i>	<i>Spring Semester (11-12 Units)</i>
ENSP 315 (3)	ENSP 411B (4)
ENSP 411A (4)	ENSP 415 (3)
ENSP 499 - Internship (3)	ENSP 498 (1)
A course from the "Technical and Research Skills" category (2-4)	An additional course from the "Planning Skills" category (3-4)
Upper-Division GE (3-4)	

TOTAL UNITS: 120

Sample Four-Year Program for Bachelor of Arts in ENSP-Water Resources Management

This is only an example of how one might plan out your four years as a Water Resources BA student; the only classes that have specific prerequisites are noted. Most GE classes can be taken in any order or sequence. Please consult with your advisor for suggestions of when to take particular courses, or when choosing electives.

FRESHMAN YEAR: 30 Units

<i>Fall Semester (13-15 Units)</i>	<i>Spring Semester (14-16 Units)</i>
GEOL 102 (B1) (3)	ECON 205 (D1) (4)
MATH 165 (B4) (4)	MATH 160 *if needed (4)
GE/Elective (3-4)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)

SOPHOMORE YEAR: 28 Units

<i>Fall Semester (13-14 Units)</i>	<i>Spring Semester (13-14 Units)</i>
BIOL 130 (B2) (4)	BIOL 131 (4)
CHEM 115A (B1) (5)	CHEM 115B (5)
ENSP 201 (1)	SSCI 299 (1)
GE/Elective (3-4)	GE/Elective (3-4)

JUNIOR YEAR: 30 Units

<i>Fall Semester (12-16 Units)</i>	<i>Spring Semester (10-15 Units)</i>
ENSP 303 (4)	GEOL 323 (3)
ENSP 308 (3) OR ENSP 307 (4)	Elective in major (2-4)
Elective in major (2-4) (see study plan for list of eligible courses)	(see study plan for list of eligible courses)
Upper-Division GE (3-4)	Elective in major (2-4) (see study plan for list of eligible courses)
	Upper Division GE (3-4)

SENIOR YEAR: 30 Units

<i>Fall Semester (11-14 Units)</i>	<i>Spring Semester (11-15 Units)</i>
ENSP 404 (3)	ENSP 450 (3)
ENSP 451 (3)	ENSP 499 – Internship (4)
Upper-Division GE (3-4)	ENSP 498 (1)
Elective in major (2-4) (see study plan for list of eligible courses)	Elective (2-4)
	Elective (2-4)

TOTAL UNITS: 120

Sample Four-Year Program for Bachelor of Science in ENSP-Water Resources Management

This is only an example of how one might plan out your four years as a Water Resources BS student; the only classes that have specific prerequisites are noted. Most GE classes can be taken in any order or sequence. Please consult with your advisor for suggestions of when to take particular courses, or when choosing electives.

FRESHMAN YEAR: 30 Units

<i>Fall Semester (15-16 Units)</i>	<i>Spring Semester (15-17 Units)</i>
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GEOL 102 (B1) (3)	CHEM 115B (5)
MATH 165 (B4) (4)	MATH 161 (4)
CHEM 115A (B3) (5)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)

SOPHOMORE YEAR: 30 Units

<i>Fall Semester (13-14 Units)</i>	<i>Spring Semester (14-16 Units)</i>
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BIOL 130 (B2) (4)	BIOL 131 (4)
MATH 211S (2)	PHYS 210B (3)
ENSP 201 (1)	SSCI 299 (1)
PHYS 210A (B3) (3)	GE/Elective (3-4)
GE/Elective (3-4)	GE/Elective (3-4)

JUNIOR YEAR: 30 Units

<i>Fall Semester (12-16 Units)</i>	<i>Spring Semester (10-15 Units)</i>
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ENSP 303 (4)	GEOL 323 (3)
ENSP 308 (3) OR ENSP 307 (4)	Elective in major (2-4)
Elective in major (2-4)	(see study plan for list of eligible courses)
(see study plan for list of eligible courses)	courses)
Upper-Division GE (3-4)	Elective in major (2-4)
	(see study plan for list of eligible courses)
	Upper Division GE (3-4)

SENIOR YEAR: 30 Units

<i>Fall Semester (11-14 Units)</i>	<i>Spring Semester (11-16 Units)</i>
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ENSP 404 (3)	ENSP 450 (3)
ENSP 451 (3)	ENSP 499 – Internship (4)
Upper-Division GE (3-4)	Elective (2-4)
Elective in major (2-4)	Elective (2-5)
(see study plan for list of eligible courses)	

TOTAL UNITS: 120

Sample Four-Year Program for Bachelor of Science in ENSP-Energy Management and Design

FRESHMAN YEAR: 31 Units

<i>Fall Semester (15 Units)</i>	<i>Spring Semester (16 Units)</i>
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CHEM 115A (5)	CHEM 115B (5)
GE (A1) (3)	MATH 161 (4)
GE (A2) (3)	GE (C) (4)
GE (A3) (4)	GE (D1) (3)

SOPHOMORE YEAR: 30 Units

<i>Fall Semester (14 Units)</i>	<i>Spring Semester (16 Units)</i>
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MATH 211S (2)	PHYS 214 (4)
PHYS 114 (4)	GE (D2) (3)
GE (B2) (4)	GE (D3) (3)
GE (C) (4)	GE (D4) (3)
	GE (D5) (3)

JUNIOR YEAR: 31 Units

<i>Fall Semester (16 Units)</i>	<i>Spring Semester (15 Units)</i>
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ENSP 201 (1)	ENSP 430 (2)
ENSP 330 (4)	ENSP 438 (4)
ENSP 338 (4)	GE (E) (3)
GE (C) (4)	Elective (3)
Elective (3)	Elective (3)

SENIOR YEAR: 28 Units

<i>Fall Semester (15 Units)</i>	<i>Spring Semester (13 Units)</i>
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MATH 165 (4)	ENSP 430 (2)
ENSP 337 (4)	ENSP 437 (4)
ENSP 499 - Internship (4)	Elective (4)
Elective (3)	Elective (3)

TOTAL UNITS: 120