For the major described in the catalog in effect at the time they are
a major preparation course requirement.

Majors and to identify which General Education course will also fulfill
created to help students navigate the course requirements for their
needed to fulfill your major requirements. The MAPs website was

Major Academic Plans (MAPs)
Visit http://www.sdsu.edu/mymap for the recommended courses
preparation course requirement.

Offered by the College of Sciences
Major in environmental sciences with the B.S. degree in applied arts
and sciences.

The Major
Environmental sciences is an interdisciplinary program leading
to a Bachelor of Science degree in applied arts and sciences. The
program will provide the student with a rigorous and broad foundation
in those sciences most relevant to environmental issues. While the
focus is on the physical environmental sciences, some coursework
is required in biology, computer science, geography, and statistics.
Those students wishing to concentrate more on the biological aspects
of the environment, should consider the ecology emphasis offered by
the Department of Biology.

Upon completion of the degree, students will be prepared
to understand and contribute to a broad range of environmental
problems confronting society. This major should be especially
attractive to students who wish a broader background in the environ-
mental sciences than is easily offered by individual departments. The
major will prepare the student for employment in diverse situations in
the dynamic and ever-changing environmental science job market. It
will also be an excellent undergraduate major for students planning to
go on to graduate school in any of the environmental sciences.

Advising
Students are required to meet with the undergraduate adviser in
order to declare the major. Students wishing to major in environmental
sciences are urged to meet with the adviser during their first semester.

Impacted Program
The environmental sciences major is an impacted program. To be
admitted to the environmental sciences major, students must meet the
following criteria:

- Complete preparation for the major;
- Complete a minimum of 60 transferable semester units;
- Have a minimum cumulative GPA of 2.0.

To complete the major, students must fulfill the degree requirements
for the major described in the catalog in effect at the time they are
accepted into the premajor at SDSU (assuming continuous enrollment).

Environmental Sciences Major
With the B.S. Degree in Applied Arts and Sciences
(Major Code: 49011) (SIMS Code: 777001)

- All candidates for a degree in applied arts and sciences must
  complete the graduation requirements listed in the section of this
catalog on “Graduation Requirements.” Individual master plans are
filed with both the environmental sciences adviser and the Office of
Advising and Evaluations.
- A minor is not required with this major.

Preparation for the Major. Environmental Science 100 [or
Sustainability 100]; Biology 203, 203L, 204, 204L; Biology 215 or
Statistics 250; Chemistry 200; Geography 101; and Mathematics 124,
Physics 180A, 180B, 182A, 182B or Mathematics 150, 151, Physics
195, 195L, 196, 196L (34-38 units)

Graduation Writing Assessment Requirement. Passing the
Writing Placement Assessment with a score of 10 or completing one
of the approved upper division writing courses (W) with a grade of C
(2.0) or better. See “Graduation Requirements” section for a complete
listing of requirements.

Study Abroad Requirement. All environmental sciences majors
are required to participate in an international experience. Students
participate in residence for two or more weeks (exceptions must be
approved by the dean of the college for students who, because of
serious and compelling life events or physical limitations, cannot meet
this requirement). Majors must complete one of the following with the
approval of the undergraduate adviser;
- A CSU Study Abroad Program;
- An SDSU Exchange Program;
- An SDSU Semester Abroad Program;
- An SDSU Study Travel Program;
- General Studies 450;
- Science 350.

Major. A minimum of 36-37 upper division units to include
Environmental Science 498A-498B; Biology 354; Geography 511;
Geography 484 or 591 and 591L or Geological Sciences 505;
Geological Sciences 305 or Environmental Engineering 355; 18 units
selected from Environmental Science 301, 538 [or Biology 538], 544
[or Biology 544], Biology 350, 517, 540, Chemistry 571, Computer
Science 558, Economics 455 or 456, Geography 370, 409, 570, 572,
574, Geological Sciences 530 or 551, Mathematics 336, Science 350.

Courses (ENV S)
Refer to Courses and Curricula and University Policies sections of
this catalog for explanation of the course numbering system, unit or
credit hour, prerequisites, and related information.

LOWER DIVISION COURSES

ENV S 100. Environmental Sciences (3) [GE]
(Same course as Sustainability 100)

The earth as an ecosystem composed of biological, chemical, and
physical systems and how these systems interact with one another
and the human population.

ENV S 299. Special Study (1-3)
Prerequisites: Consent of program director and instructor.
Individual Study.
Environmental Sciences

UPPER DIVISION COURSES
(Intended for Undergraduates)

ENV S 301. Energy and the Environment (3) [GE]
Prerequisite: Completion of the General Education requirements in Communication and Critical Thinking and Foundations of Learning II.A., Natural Sciences and Quantitative Reasoning.
Fundamental physical concepts underlying energy, its conversion, and impact on the environment.

ENV S 498A-498B. Senior Seminar in Environmental Sciences (3-3) Cr/NC
Prerequisite: Senior standing in the environmental sciences major.
Research projects related to an environmental issue in the San Diego and California region.

UPPER DIVISION COURSES
(Also Acceptable for Advanced Degrees)

ENV S 538. Environmental Policy and Regulations (3)
(Same course as Biology 538)
Prerequisite: Biology 354.
History of biological conservation and environmental laws; regulations governing biological resources; role of biologists; environmental impact analysis, operation of regulatory and resource agencies; biologists as expert witnesses; wetland protection and mitigation, state heritage programs, role of nongovernmental agencies.

ENV S 544. Terrestrial Ecosystems and Climate Change (3)
(Same course as Biology 544)
Prerequisite: Biology 354.
Controls on fluxes and stocks of nutrients within terrestrial ecosystems, ecosystem responses, feedbacks to climate change. Climate systems, water transport, production and decomposition, nutrient cycling, stable isotopes, spatial and temporal integration.

ENV S 544L. Global Change Science Laboratory (2)
(Same course as Biology 544L)
Six hours of laboratory.
Prerequisite: Biology 354.
Ecological methods in ecosystem and climate change science to include chemical analysis (of stable isotopes and elements) and meteorological measurements. Modeling, data interpretation, and presentations.

Environmental Studies
Refer to “Sustainability” in this section of the catalog.
Refer to “Environmental Studies Certificate” in “Interdisciplinary Programs” in this section of the catalog.