**BACHELOR OF SCIENCE IN ENVIRONMENTAL STUDIES: CONCENTRATION IN NATURAL RESOURCE MANAGEMENT AND CONSERVATION**

The Bachelor of Science in Environmental Studies with a concentration in Natural Resource Management and Conservation provides students with the theoretical and applied knowledge and skills in ecology, conservation biology, and natural resources they need to address natural resource management and conservation issues. Required courses provide knowledge in ecology, conservation biology, statistics, and the ability to integrate these with the understandings and critical evaluations of descriptive statistics commonly used in environmental literature. Students choose additional coursework in ecology, biodiversity studies, applied both quantitative and qualitative problem-solving techniques. Students choose additional coursework in ecology, biodiversity studies, applied methods, and management of specific resources.

**Program Learning Outcomes**

1. Demonstrate understanding of the relationships between social justice and environmental problems in local, national, and global contexts.
2. Demonstrate understanding of chemical, biological, and social processes related to environmental problems and the ability to integrate these with the understandings and critical evaluations of descriptive statistics commonly used in environmental literature.
3. Communicate clearly and accurately both orally and in writing and be able to conduct research appropriate to the area of emphasis.
4. Demonstrate a basic understanding of civic activities and processes, and of methods of engagement in those processes.
5. Demonstrate readiness to enter the professional job market by preparing/training students in developing appropriate job market skills (e.g., resume and cover letter writing, interview preparation, writing well and engagingly, acquiring professional experience via internship).
6. Demonstrate understanding of ecological and conservation biology theories and how they relate to natural resource management and conservation decisions.
7. Demonstrate understanding of natural resource management techniques and approaches.

**Environmental Studies (B.S.): Concentration in Natural Resource Management and Conservation — 58 units minimum**

**Required Courses (34-38 units)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 115</td>
<td>General Chemistry I: Essential Concepts of Chemistry</td>
<td>3-5</td>
</tr>
<tr>
<td>or CHEM 180</td>
<td>Chemistry for Energy and the Environment</td>
<td></td>
</tr>
<tr>
<td>BIOL 230</td>
<td>Introductory Biology I</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 240</td>
<td>Introductory Biology II</td>
<td>5</td>
</tr>
<tr>
<td>BIOL 530</td>
<td>Conservation Biology</td>
<td>3</td>
</tr>
<tr>
<td>ENVS 130</td>
<td>Environmental Studies</td>
<td>3</td>
</tr>
</tbody>
</table>

**Elective Courses (24–32 units)**

Students must consult with a faculty advisor prior to selection of elective courses to determine which courses are most appropriate for the student's particular interests and/or career path. Choose one course from each category.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENVS 224</td>
<td>Research Methods for Environmental Studies</td>
<td>4</td>
</tr>
<tr>
<td>ENVS 450GW</td>
<td>Environmental Law and Policy - GWAR</td>
<td>3</td>
</tr>
<tr>
<td>ENVS 680</td>
<td>Environmental Studies Internship</td>
<td>1</td>
</tr>
<tr>
<td>ENVS 690</td>
<td>Senior Seminar in Environmental Studies</td>
<td>3</td>
</tr>
<tr>
<td>GEOG/ENVS 657</td>
<td>Natural Resource Management: Biotic Resources</td>
<td>4</td>
</tr>
</tbody>
</table>

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### Bachelor of Science in Environmental Studies: Concentration in Natural Resource Management and Conservation

Courses certified as meeting the SF State Studies requirements may be upper or lower division in General Education (GE), a major or minor, or an elective.

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Course Level</th>
<th>Units</th>
<th>Area Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>American Ethnic and Racial Minorities</td>
<td>LD or UD</td>
<td>3</td>
<td>AERM</td>
</tr>
<tr>
<td>Environmental Sustainability</td>
<td>LD or UD</td>
<td>3</td>
<td>ES</td>
</tr>
<tr>
<td>Global Perspectives</td>
<td>LD or UD</td>
<td>3</td>
<td>GP</td>
</tr>
<tr>
<td>Social Justice</td>
<td>LD or UD</td>
<td>3</td>
<td>SJ</td>
</tr>
</tbody>
</table>

Note: LD = Lower-Division; UD = Upper-Division.

### First-Time Student Roadmap (4 Year)

1. In order to choose your English Composition A2 course and your QR/Math B4 course, please complete the online advising activities at writingadvising.sfsu.edu ([https://writingadvising.sfsu.edu/](https://writingadvising.sfsu.edu/)) and mathadvising.sfsu.edu ([https://mathadvising.sfsu.edu/](https://mathadvising.sfsu.edu/)). Questions? Contact Gator Smart Start. ([https://gatorsmartstart.sfsu.edu/](https://gatorsmartstart.sfsu.edu/))
2. Select the row that matches your English course choice for A2.*
3. Select the column that matches your QR/Math course choice for B4.
4. Click the Roadmap that lines up with your row and column.

For example, if you select ENG 104/ENG 105 and a multi-semester QR/math sequence for your first year, then choose Roadmap D.

### Transfer Student Roadmap (2 Year)

For students with an AS-T in Biology. This roadmap opens in a new tab. ([http://bulletin.sfsu.edu/colleges/health-social-sciences/environmental-](http://bulletin.sfsu.edu/colleges/health-social-sciences/environmental-))

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**General Education Requirements**

- **ERTH 330** California Water 3
- **ERTH 335** Global Warming 3
- **GEOG 317** Geography of Geos 4
- **GEOG 427** Agriculture and Food Supply 4
- **GEOG 646** The Geography of Marine Resources 4
- **GEOG 647** Geography of Water Resources 4
- **GEOG 666** Geography of Garbage: Recycling and Waste Reduction 3
- **LS 430** Future of the Forests 3
- **RPT 440** Urban Recreation and Parks 3
- **RPT/ENVS 640** Recreational Use of National Parks and Protected Areas 3

### Resource Policy and Techniques

- **ENVS/ECON 306** Economics and the Environment 3
- **ENVS 470** Climate Politics and Policy 3
- **ENVS 480** Climate Change Adaptation and Justice 3
- **ENVS 530** Environmental Leadership and Organizing 3
- **ENVS 570** Applied Local Sustainability 3
- **GEOG/USP 652** Environmental Impact Analysis 4
- **GEOG/USP 658** Land-Use Planning 4
- **RRS/SOC 410** Grassroots Organizing for Change in Communities of Color 3

* Composition for Multilingual Students: If taking ENG 209 as your first English course, choose the ENG 114 row. If taking ENG 201 or ENG 212 for your first English course, choose the ENG 104/ENG 105 row.
General Advising Information for Transfer Students

1. Before transfer, complete as many lower-division requirements or electives for this major as possible.

2. The following courses are not required for admission but are required for graduation. Students are strongly encouraged to complete these units before transfer; doing so will provide more flexibility in course selection after transfer.
   - a course in U.S. History
   - a course in U.S. & California Government

For information about satisfying the requirements described in (1) and (2) above at a California Community College (CCC), please visit http://www.assist.org. Check any geographically accessible CCCs; sometimes options include more than one college. Use ASSIST to determine:

- Which courses at a CCC satisfy any lower-division major requirements for this major;

Remedial courses are not transferable and do not apply to the minimum 60 semester units/90 quarter units required for admission.

Additional units for courses that are repeated do not apply to the minimum 60 units required for upper-division transfer (for example, if a course was not passed on the first attempt or was taken to earn a better grade).

Before leaving the last California Community College of attendance, obtain a summary of completion of lower-division General Education units (IGETC or CSU GE Breadth). This is often referred to as a GE certification worksheet. SF State does not require delivery of this certification to Admissions, but students should retain this document for verifying degree progress after transfer.

Credit for Advanced Placement, International Baccalaureate, or College-Level Examination Program courses: AP/IB/CLEP credit is not automatically transferred from the previous institution. Units are transferred only when an official score report is delivered to SF State. Credit is based on the academic year during which exams were taken. Refer to the University Bulletin in effect during the year of AP/IB/CLEP examination(s) for details regarding the award of credit for AP/IB/CLEP.

Students pursuing majors in science, technology, engineering, and mathematics (STEM) disciplines often defer 6-9 units of lower-division General Education in Areas C and D until after transfer to focus on preparation courses for the major. This advice does not apply to students pursuing associate degree completion before transfer.

Transferring From Institutions Other Than CCCs or CSUs

Review SF State’s lower-division General Education requirements. Note that, as described below, the four basic skills courses required for admission meet A1, A2, A3, and B4 in the SF State GE pattern. Courses that fulfill the remaining areas of SF State’s lower-division GE pattern are available at most two-year and four-year colleges and universities.

Of the four required basic skills courses, a course in critical thinking (A3) may not be widely offered outside the CCC and CSU systems. Students should attempt to identify and take an appropriate course no later than the term of application to the CSU. To review more information about the A3 requirement, please visit bulletin.sfsu.edu/undergraduate-education/general-education/lower-division/#AAEL.

Waiting until after transfer to take a single course at SF State that meets both US and CA/local government requirements may be an appropriate option, particularly if transferring from outside of California.