BACHELOR OF SCIENCE IN ENVIRONMENTAL STUDIES: CONCENTRATION IN NATURAL RESOURCE MANAGEMENT AND CONSERVATION – BIOL ASSOCIATE DEGREE FOR TRANSFER (ADT) ROADMAP

This is a sample pathway for students who transfer to San Francisco State University in the current Bulletin year with an AS-T in Biology. Up to 15 units in the major (BIOL 230, BIOL 240, and CHEM 115) and all lower-division GE requirements have been satisfied. Check with a major advisor about the most appropriate course sequence. Degree completion guaranteed in 60 units; see the Associate Degree for Transfer (ADT) section for more information.

To Do at SF State:

Enough total units to reach 120 minimum for graduation; 30 units minimum at the upper-division level; to include the following:

University-Wide Requirements: 9-15 units

• American Institutions (0-6 units): US History, US Government, California State and Local Government if not taken before transfer. Courses required for the major or UD GE may double-count if approved for USH, USG, and/or CSLG.

• Upper-Division GE, Areas B, C, and D (9 units) – Courses required for the major may double-count if approved for UD GE.

• Students entering the major with the AS-T in BIOL are not required to fulfill SF State Studies requirements.

Environmental Studies Major: 45-53 units

• BIOL 230, BIOL 240, and CHEM 115 met before transfer

• Required (21 units)

• Electives (24-32 units) – one course from each of eight categories

University Electives: 5 or more units

Depends on course choices made at the community college, how transferred units are applied to the requirements above, and course choices at SF State - some courses may meet more than one requirement, e.g., in both UD GE and the major.

Course | Title | Units
--- | --- | ---
First Semester | BIOL 530 | 3
| ENVS 130 | Environmental Studies (Major Core, ES) | 3
| ENVS 224 | Research Methods for Environmental Studies (Major Core) | 4

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
</table>
| ENVS 450GW | Environmental Law and Policy - GWAR (Major Core) | 3
| GEOG/ENVS 657 | Natural Resource Management: Biotic Resources (Major Core) | 4
| Ecology - Select One (Major Elective) | | 3-4
| GE Area UD-B: Upper-Division Physical and/or Life Sciences | | 3
| University Elective | | 3

Units: 16-17

Third Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
</table>
| ENVS 680 | Environmental Studies Internship (Major Core) | 1
| Tools/Techniques - Select One (Major Elective): | | 3-4
| GEOG 603 | Introduction to Geographic Information Systems | 3-4
| GEOG/USP 652 | Environmental Impact Analysis | 4
| GEOG/USP 658 | Land-Use Planning | 4
| Resources - Select One (Major Elective) | | 3-4
| GE Area UD-D: Upper-Division Social Sciences | | 3
| University Elective | | 3

Units: 13-15

Fourth Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
</table>
| ENVS 690 | Senior Seminar in Environmental Studies | 3
| Global/International - Select One (Major Elective): | | 3-4
| ENVS/I R 331 | Global Environmental Crisis (ES, GP, SJ) | 3-4
| ENVS 470 | Climate Politics and Policy (ES, GP) | 4
| ENVS 480 | Climate Change Adaptation and Justice | 3
| GEOG/I R 428 | International Political Economy of Food and Hunger | 4

Biodiversity - Select One (Major Elective) | | 3-4
| Resource Policy and Techniques - Select One (Major Elective) | | 3-4
Bachelor of Science in Environmental Studies: Concentration in Natural Resource Management and Conservation – BIOL Associate Degree for Transfer (ADT) Roadmap

<table>
<thead>
<tr>
<th>Sustainability and Social Justice - Select One (Major Elective)</th>
<th>3-4 Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Units</td>
<td>60-68</td>
</tr>
</tbody>
</table>

1. **Select One:**
   - HIST 470 The U.S. Constitution to 1896 (3 units) (UD-C, CSLG, USG, USH, AERM, SJ)
   - HIST 471 The U.S. Constitution Since 1896 (3 units) (UD-C, CSLG, USG, USH, AERM, SJ)

2. **Ecology - Select One:**
   - BIOL 482 Ecology (4 units)
   - BIOL 529GW Plant Ecology - GWAR (4 units)
   - BIOL 532 Restoration Ecology (3 units)
   - BIOL 534 Wetland Ecology (4 units)
   - BIOL 582 Biological Oceanography & Limnology (4 units)
   - BIOL 585 Marine Ecology (3 units)
   - BIOL 586GW Marine Ecology Laboratory - GWAR (4 units)

3. **Resources - Select One:**
   - CHEM 380 Chemistry Behind Environmental Pollution (3 units) (UD-B, ES)
   - ENVS 460 Energy, Justice, and Sustainability (3 units)
   - ERTH 330 California Water (3 units) (UD-B, ES)
   - ERTH 335 Global Warming (3 units) (UD-B, ES, GP)
   - GEOG 317 Geography of Soils (4 units)
   - GEOG 427 Agriculture and Food Supply (4 units) (ES, GP)
   - GEOG 646 The Geography of Marine Resources (4 units)
   - GEOG 647 Geography of Water Resources (4 units)
   - GEOG 666 Geography of Garbage: Recycling and Waste Reduction (3 units) (ES)
   - LS 430 Future of the Forests (3 units) (UD-B, ES, GP)
   - RPT 440 Urban Recreation and Parks (3 units) (UD-D, AERM, SJ)
   - RPT 640/ENVS 640 Recreational Use of National Parks and Protected Areas (3 units)

4. **Biodiversity - Select One:**
   - BIOL 470 Natural History of Vertebrates (4 units)
   - BIOL 475GW Herpetology - GWAR (3 units)
   - BIOL 478GW Ornithology - GWAR (4 units)
   - BIOL 502 Biology of the Algae (3 units)
   - BIOL 504 Biology of the Fungi (4 units)
   - BIOL 514 Plant Biodiversity and California Field Botany (5 units)
   - BIOL 570GW Biology of Fishes - GWAR (4 units)
   - Or a second course chosen from the Ecology section

5. **Resource Policy and Techniques - Select One:**
   - ENVS 470 Climate Politics and Policy (3 units) (ES, GP)
   - ENVS 480 Climate Change Adaptation and Justice (3 units)
   - ENVS 530 Environmental Leadership and Organizing (3 units)
   - ENVS 570 Applied Local Sustainability (3 units) (ES)
   - GEOG 652/USP 652 Environmental Impact Analysis (4 units)
   - GEOG 658/USP 658 Land-Use Planning (4 units)
   - RRS 410/SOC 410 Grassroots Organizing for Change in Communities of Color (3 units) (UD-D, AERM, SJ)

6. **Sustainability and Social Justice - Select One:**
   - ENVS 460 Energy, Justice, and Sustainability (3 units)
   - ENVS 480 Climate Change Adaptation and Justice (3 units)
   - ENVS 570 Applied Local Sustainability (3 units) (ES)
   - PHIL 470 Environmental Ethics (3 units) (UD-C, ES, SJ)
   - USP 514 Sustainable Development in Cities (4 units) (ES, SJ)
   - USP 515/GEOG 667 Environmental Justice: Race, Poverty, and the Environment (4 units) (ES, GP, SJ)