BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCE – ENVS 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 Environmental Science. Twenty-one units in the major [Biol and Phys requirements; CHEM 180; GEOG 101; GEOG 160; MATH 226] 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 (http://bulletin.sfsu.edu/undergraduate-admissions/transfer-students).

Course | Title | Units
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**First Semester**<br>GEOG 102 | The Human Environment (Major Lower-Division Core, D1, ES, GP) | 3<br> or University Elective if taken before transfer<br>GEOG 205 | Geographic Techniques (Major Lower-Division Core) | 3<br> or University Elective if taken before transfer
Environmental Science (11-12 units) - Take One | 3<br>Environmental Management (11-12 units) - Take One | 3<br>Environmental Science (11-12 units) - Take One | 3<br>US History OR (bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#USHaGR) | 3
U.S. and California Government (bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#usg) | 3<br>or University Elective if met before transfer

**Second Semester**<br>GEOG 500GW | Physical and Human Dimensions of Climate Change - GWAR (Major Upper-Division Core) | 3<br>Environmental Science (11-12 units) - Take One | 3<br>Environmental Management (11-12 units) - Take One | 3<br>Analytical Methods (8 units) - Take One | 4<br>GE Area UD-B: Upper-Division Physical and/or Life Sciences | 3

**Third Semester**<br>GEOG 603 | Introduction to Geographic Information Systems (Major Upper-Division Core) | 3<br>Environmental Science (11-12 units) - Take One | 3

**Environmental Science Electives (12 units)**<br>CHEM 380 Chemistry Behind Environmental Pollution (3 units) (UD-B, ES)<br>GEOG 312 Geography of Landforms (4 units)<br>GEOG 313 Earth’s Climate System (4 units)<br>GEOG 314 Bioclimatology (4 units)<br>GEOG 316 Biogeography (4 units)<br>GEOG 317 Geography of Soils (4 units)<br>GEOG 342/ERTH 442 Surface Water Hydrology (4 units)<br>GEOG 644 Water Quality (3 units)<br>

**Environmental Management Electives (12 units)**<br>GEOG 421 Future Environments (3 units) (UD-D, ES, GP, SJ)<br>GEOG 427 Agriculture and Food Supply (4 units) (ES, GP)<br>GEOG 642/ERTH 642 Watershed Assessment and Restoration (4 units)<br>GEOG 646 The Geography of Marine Resources (4 units)<br>GEOG 647 Geography of Water Resources (4 units)<br>GEOG 648 Management of National Parks and Protected Areas (4 units)<br>USP 652 Environmental Impact Analysis (4 units)<br>ENVS 657 Natural Resource Management: Biotic Resources (4 units)<br>GEOG 666 Geography of Garbage: Recycling and Waste Reduction (3 units) (ES)<br>

**Total Units**<br>Units | 16<br>Fourth Semester<br>GEOG 690 | Senior Seminar in Geography and Environmental Science (Major Capstone) | 3<br>Environmental Science (11-12 units) - Take One | 3<br>Environmental Management (11-12 units) - Take One | 3<br>GE Area UD-D: Upper-Division Social Sciences | 3<br>University Elective | 1<br>Units | 13<br>**Total Units** | 60

1. Environmental Science Electives (12 units)<br>CHEM 380 Chemistry Behind Environmental Pollution (3 units) (UD-B, ES)<br>GEOG 312 Geography of Landforms (4 units)<br>GEOG 313 Earth’s Climate System (4 units)<br>GEOG 314 Bioclimatology (4 units)<br>GEOG 316 Biogeography (4 units)<br>GEOG 317 Geography of Soils (4 units)<br>GEOG 342/ERTH 442 Surface Water Hydrology (4 units)<br>GEOG 644 Water Quality (3 units)<br>

2. Environmental Management Electives (12 units)<br>GEOG 421 Future Environments (3 units) (UD-D, ES, GP, SJ)<br>GEOG 427 Agriculture and Food Supply (4 units) (ES, GP)<br>GEOG 642/ERTH 642 Watershed Assessment and Restoration (4 units)<br>GEOG 646 The Geography of Marine Resources (4 units)<br>GEOG 647 Geography of Water Resources (4 units)<br>GEOG 648 Management of National Parks and Protected Areas (4 units)<br>USP 652 Environmental Impact Analysis (4 units)<br>ENVS 657 Natural Resource Management: Biotic Resources (4 units)<br>GEOG 666 Geography of Garbage: Recycling and Waste Reduction (3 units) (ES)<br>

3. UD GE recommendations that satisfy US History if needed:<br>AIS 460, HIST 449, HIST 455, HIST 465, HIST 466, HIST 470, HIST 471<br>4. UD GE recommendations that satisfy US/CA Government if needed:<br>HIST 470, HIST 471<br>

4. Analytical Methods Electives (8 units)<br>BIOL 458 Biometry (4 units)<br>GEOG 602 Field Methods in Physical Geography (4 units)<br>GEOG 610 Remote Sensing of the Environment I (4 units)<br>GEOG 611 Remote Sensing of the Environment II (4 units)<br>GEOG 620 Geographical Information Systems (4 units)<br>GEOG 621 Geographic Information Systems for Environmental Analysis (4 units)<br>GEOG 625 Programming for Geographic Information Science (4 units)<br>GEOG 629 Coastal and Marine Applications of GIS (3 units)<br>

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, CA Government. If not met in transfer, see next bullet.
- Upper-Division GE (9 units): Courses may satisfy the US History or US/CA Government requirements, and UD-C or UD-D at the same time, if approved for multiple areas.
- Students entering the major with the AS-T in ENVS are not required to fulfill SF State Studies requirements.

Environmental Science Major: 39-47 units

- BIOL and PHYS Requirements; CHEM 180, GEOG 101, GEOG 160, MATH 226 (21 units) met before transfer.
- Lower-Division Requirements (6 units) if not taken before transfer: GEOG 102, GEOG 205.
- Upper-Division Requirements (39-41 units)

University Electives: 1 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.