

# 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
<b>First Semester</b>		
GEOG 102	The Human Environment (Major Lower-Division Core, D1, ES, GP)	3
or University Elective if taken before transfer		
GEOG 205	Geographic Techniques (Major Lower-Division Core)	3
or University Elective if taken before transfer		
Environmental Science (11-12 units) - Take One <sup>1</sup>		3
Environmental Management (11-12 units) - Take One <sup>2</sup>		3
US History OR ( <a href="http://bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#USHaGR">http://bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#USHaGR</a> ) <sup>3</sup>		3
U.S. and California Government ( <a href="http://bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#usg">http://bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#usg</a> )		3
or University Elective if met before transfer		
	Units	15
<b>Second Semester</b>		
GEOG 500GW	Physical and Human Dimensions of Climate Change - GWAR (Major Upper-Division Core)	3
Environmental Science (11-12 units) - Take One <sup>1</sup>		3
Environmental Management (11-12 units) - Take One <sup>2</sup>		3
Analytical Methods (7-8 units) - Take One <sup>4</sup>		4
GE Area UD-B: Upper-Division Physical and/or Life Sciences		3
	Units	16
<b>Third Semester</b>		
GEOG 603	Introduction to Geographic Information Systems (Major Upper-Division Core)	3
Environmental Science (11-12 units) - Take One <sup>1</sup>		3

Environmental Management (11-12 units) - Take One <sup>2</sup>	3
Analytical Methods (7-8 units) - Take One <sup>4</sup>	4
GE Area UD-C: Upper-Division Arts and/or Humanities	3
	Units
	16
<b>Fourth Semester</b>	
GEOG 690	Senior Seminar in Geography and Environmental Science (Major Capstone)
	3
Environmental Science (11-12 units) - Take One <sup>1</sup>	3
Environmental Management (11-12 units) - Take One <sup>2</sup>	3
GE Area UD-D: Upper-Division Social Sciences	3
University Elective	1
	Units
	13
	Total Units
	60

- <sup>1</sup> **Environmental Science Electives (11-12 units)**  
 CHEM 380 Chemistry Behind Environmental Pollution (3 units) (UD-B, ES)  
 GEOG 312 Geography of Landforms (4 units)  
 GEOG 313 Earth's Climate System (4 units)  
 GEOG 314 Bioclimatology (4 units)  
 GEOG 316 Biogeography (4 units)  
 GEOG 317 Geography of Soils (4 units)  
 GEOG 342/ERTH 442 Surface Water Hydrology (4 units)  
 GEOG 644 Water Quality (3 units)
- <sup>2</sup> **Environmental Management Electives (11-12 units)**  
 GEOG 421 Future Environments (3 units) (UD-D, ES, GP, SJ)  
 GEOG 427 Agriculture and Food Supply (4 units) (ES, GP)  
 GEOG 642/ERTH 642 Watershed Assessment and Restoration (4 units)  
 GEOG 646 The Geography of Marine Resources (4 units)  
 GEOG 647 Geography of Water Resources (4 units)  
 GEOG 648 Management of National Parks and Protected Areas (4 units)  
 USP 652 Environmental Impact Analysis (4 units)  
 ENVS 657 Natural Resource Management: Biotic Resources (4 units)  
 GEOG 666 Geography of Garbage: Recycling and Waste Reduction (3 units) (ES)
- <sup>3</sup> **UD GE recommendations that satisfy US History if needed:**  
 AIS 460, HIST 449, HIST 455, HIST 465, HIST 466, HIST 470, HIST 471  
**UD GE recommendations that satisfy US/CA Government if needed:**  
 HIST 470, HIST 471
- <sup>4</sup> **Analytical Methods Electives (7-8 units)**  
 BIOL 458 Biometry (4 units)  
 GEOG 602 Field Methods in Physical Geography (4 units)  
 GEOG 604 Environmental Data Science (3 units)  
 GEOG 610 Remote Sensing of the Environment I (4 units)  
 GEOG 611 Remote Sensing of the Environment II (4 units)  
 GEOG 620 Geographical Information Systems (4 units)  
 GEOG 621 Geographic Information Systems for Environmental Analysis (4 units)  
 GEOG 625 Programming for Geographic Information Science (4 units)  
 GEOG 629 Coastal and Marine Applications of GIS (3 units)

## 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.