

# BACHELOR OF SCIENCE IN ENVIRONMENTAL STUDIES: CONCENTRATION IN NATURAL RESOURCE MANAGEMENT AND CONSERVATION - QUANTITATIVE REASONING CATEGORY I/II AND STRETCH ENGLISH

120 Total Units Required

Minimum Number of Units in the Major: 65

This roadmap is a suggested plan of study and does not replace meeting with an advisor. Please note that students may need to adjust the actual sequence of courses based on course availability. Please consult an advisor in your major program for further guidance.

Course	Title	Units
<b>First Semester</b>		
ENG 104	Writing the First Year: Finding Your Voice Stretch I <sup>1</sup>	3
ENVS 130	Environmental Studies (Major Core, ES)	3
GE Area A <sup>2</sup>		3
GE Area B: Quantitative Reasoning (B4) <sup>3</sup>		3
GE Area C		3
	Units	15
<b>Second Semester</b>		
BIOL 230	Introductory Biology I (Major Core)	5
Select One (Major Core):		3-5
CHEM 115	General Chemistry I: Essential Concepts of Chemistry	
CHEM 180	Chemistry for the Energy and the Environment (B1, B3, ES)	
ENG 105	Writing the First Year: Finding Your Voice Stretch II (A2) <sup>1</sup>	3
GE Area A		3
	Units	14-16
<b>Third Semester</b>		
BIOL 240	Introductory Biology II (Major Core)	5
GE Area B: Life Science (B2) and Laboratory Science (B3) <sup>4</sup>		3-4
GE Area D		3

GE Area E		3
	Units	14-15
<b>Fourth Semester</b>		
ENVS 224	Research Methods for Environmental Studies (Major Core)	4
Physical Environment - Select One (Major Elective):		3
ERTH 230	Environmental Geology (B1, B3, ES)	
GEOG 101	Our Physical Environment (Prerequisite for GEOG 657 and many upper-division GEOG courses, B1, ES)	
GE Area C		3
GE Area D - Take Two		6
	Units	16
<b>Fifth Semester</b>		
BIOL 458	Biometry (Major Core)	4
ENVS 680	Environmental Studies Internship (Major Core)	1-3
Ecology - Select One (Major Elective) <sup>5</sup>		3-4
Biodiversity - Select One (Major Elective) <sup>6</sup>		3-5
GE Area C		3
	Units	14-19
<b>Sixth Semester</b>		
BIOL 530	Conservation Biology (Major Core)	3
ENVS 450GW	Environmental Law and Policy - GVAR (Major Core)	3
Sustainability and Social Justice - Select One (Major Elective) <sup>7</sup>		3-4
Global/International - Select One (Major Elective):		3-4
ENVS/I R 331	Global Environmental Crisis (ES, GP, SJ)	
ENVS 470	Climate Politics and Policy (ES, GP)	
GEOG/I R 428	International Political Economy of Food and Hunger	
GE Area UD-C: Upper-Division Arts and/or Humanities (Consider SF State Studies Course)		3
	Units	15-17
<b>Seventh Semester</b>		
Select One (Major Core):		3
GEOG 603	Introduction to Geographic Information Systems	
GEOG/USP 652	Environmental Impact Analysis	
GEOG/USP 658	Land-Use Planning	
Resources - Select One (Major Elective) <sup>8</sup>		3-4

GE Area UD-B: Upper-Division Physical and/or Life Sciences (Consider SF State Studies Course)	3
GE Area UD-D: Upper-Division Social Sciences (Consider SF State Studies Course)	3
SF State Studies or University Elective	3

Units 15-16

**Eighth Semester**

ENVS 690	Senior Seminar in Environmental Studies (Major Core)	3
GEOG/ENVS 657	Natural Resource Management: Biotic Resources (Major Core)	4
Resource Policy and Techniques - Select One (Major Elective) <sup>9</sup>		3-4
SF State Studies or University Elective - Take Two		7

Units 17-18

Total Units 120-132

<sup>1</sup> ENG 114 can only be taken if you complete Directed Self-Placement (DSP) and select ENG 114; if you choose ENG 104/ENG 105 through DSP you will satisfy A2 upon successful completion of ENG 105 in the second semester; multilingual students may be advised into alternative English courses.

<sup>2</sup> To avoid taking additional units, it is recommended that you meet **SF State Studies** (AERM, GP, ES, SJ) and **Ethnic Studies requirements** within your GE or major.

<sup>3</sup> Depending on courses completed through Early Start, students in Pathway/Category III or IV may be required to enroll in a support course to complement their Quantitative Reasoning/B4 requirement. There are multiple course options for this pathway. Before enrolling in a B4 course, students should verify their MATH Pathway/Category in their Student Center (<http://cms.sfsu.edu/content/student-center/>). Information regarding the courses that correspond with your MATH Pathway/Category can be found on the Developmental Studies Office Website (<http://developmentalstudies.sfsu.edu/>).

<sup>4</sup> Consider taking a class combined with a laboratory or a separate lab to fulfill B3 if not already satisfied.

<sup>5</sup> **Ecology - Select One:**

- BIOL 482 Ecology (4 units)
- BIOL 529GW Plant Ecology - GVAR (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)

<sup>6</sup> **Biodiversity - Select One:**

- BIOL 470 Natural History of Vertebrates (4 units)
  - BIOL 475GW Herpetology - GVAR (3 units)
  - BIOL 478GW Ornithology - GVAR (4 units)
  - BIOL 504 Biology of the Fungi (4 units)
  - BIOL 514 Plant Taxonomy (5 units)
  - BIOL 570GW Biology of Fishes - GVAR (4 units)
- Or a second course chosen from the Ecology section

<sup>7</sup> **Sustainability and Social Justice - Select One:**

- ENVS 306/ECON 306 Economics and the Environment (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)

<sup>8</sup> **Resources - Select One:**

- CHEM 380 Chemistry Behind Environmental Pollution (3 units) (UD-B, ES)
- 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)
- RPT 640/ENVS 640 Recreational Use of National Parks and Protected Areas (3 units)

<sup>9</sup> **Resource Policy and Techniques - Select One:**

- ENVS 470 Climate Politics and Policy (3 units) (ES, GP)
- ENVS 530 Environmental Leadership and Organizing (3 units)
- ENVS 570 Applied Local Sustainability (3 units) (ES)
- ENVS 306/ECON 306 Economics and the Environment (3 units)
- GEOG 652/USP 652 Environmental Impact Analysis (4 units)
- GEOG 658/USP 658 Land-Use Planning (4 units)