

BACHELOR OF SCIENCE IN BIOLOGY: CONCENTRATION IN ECOLOGY – BIOL ASSOCIATE DEGREE FOR TRANSFER 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. Thirty-two units in the major (BIOL 230, BIOL 240, CHEM 115, CHEM 215, CHEM 216, MATH 226, and required PHYS sequence) and 33 units of 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
First Semester		
BIOL 529GW	Plant Ecology - GVAR (Major Upper-Division) ¹	4
CHEM 130	General Organic Chemistry (Major Lower-Division)	3
GE Area C		3
US History (http://bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#USHaGR) or University Elective if US History met before transfer		3
University Elective		2
	Units	15
Second Semester		
BIOL 355	Genetics (Major Upper-Division) ¹	3
BIOL 458	Biometry (Major Upper-Division)	4
GE Area D		3
GE Area UD-C: Upper-Division Arts and/or Humanities		3
University Elective		3
	Units	16
Third Semester		
BIOL 337	Evolution (Major Upper-Division)	3
BIOL 525 or BIOL 630	Plant Physiology (Major Upper-Division) or Animal Physiology	3
Major Upper-Division Requirement (3-4 units) ³		3-4
Major Upper-Division Electives (11–14 Units Total) - Take One ⁴		3
GE Area UD-D: Upper-Division Social Sciences		3
	Units	15
Fourth Semester		
Major Upper-Division Electives (11–14 Units Total) - Take as many as needed ⁴		11
University Elective		3
	Units	14
	Total Units	60

¹ Students are required to complete at least one GVAR course in order to graduate.

² BIOL 355 also satisfies GE Area UD-B: Upper-Division Physical and/or Life Sciences.

- 3 **Major Upper-Division Requirement**
 Select 3-4 units on advisement from the following:
 BIOL 482 Ecology (4 units)
 BIOL 490 Ecology of Infectious Diseases (4 units)
 BIOL 530 Conservation Biology (3 units)
 BIOL 532 Restoration Ecology (3 units)
 BIOL 534 Wetland Ecology (4 units)
 BIOL 577 Ecological and Environmental Modeling (4 units)
 BIOL 580 Limnology (3 units)
 BIOL 582 Biological Oceanography (4 units)
 BIOL 585 Marine Ecology (3 units)
 BIOL 586 Marine Ecology Laboratory (2 units)

- 4 **Major Upper-Division Electives**
 Select 11-14 units upon advisement from the alternates not used in fulfilling the requirements listed above, or any other upper-division Biology courses not specifically excluded for major credit, or any graduate course in Biology.

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: 15 Units

- American Institutions (0-6 units): US History, US Government, CA Government.
- Lower-Division GE (6 units) – Area C (3 units in any subarea) and Area D (3 units). D2 courses satisfy US History; D3 courses satisfy US/CA Government requirement.
- 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 this major with the AS-T in Biology are not required to fulfill SF State Studies or Complementary Studies requirements.

Biology – Ecology Major: 38 Units

Completed: BIOL 230/BIOL 240, MATH 226, all PHYS, CHEM 115, CHEM 215, and CHEM 216.

- Lower-Division Requirements (3 units): CHEM 130
- Major Upper-Division Requirements/GWAR (21 units)
- Major Upper-Division Electives (14 units) – upon advisement.

University Electives: 3 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.