

BACHELOR OF SCIENCE IN BIOLOGY: CONCENTRATION IN ZOOLOGY – 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, 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		
CHEM 130	General Organic Chemistry	3
Major Upper Division Requirement – also satisfies University GWAR – See List ¹		3-4
GE Area A: Written English Communication II (A4) ¹ or University Elective if A4 met in transfer		3
US History (bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#USHaGR) ² or University Elective if US History met before transfer		3
GE Area C: Arts (C1) or Humanities (C2) or Humanities: Literature (C3)		3
	Units	16
Second Semester		
BIOL 355	Genetics ³	3
BIOL 458	Biometry	4
GE Area UD-C: Upper-Division Arts and/or Humanities (Consider SF State Studies Course)		3
GE Area D: Social Sciences (D1) or U.S. History (D2) or U.S. and California Government (D3)		3
	Units	13
Third Semester		
BIOL 337	Evolution	3
Major Upper Division Requirement – See List A ⁴		3
Major Upper Division Requirement – See List B ^{4,5}		3-4
GE Area UD-D: Upper-Division Social Sciences (Consider SF State Studies Course)		3
University Elective		3
	Units	16
Fourth Semester		
Major Upper Division Requirement – See List C ^{4,6}		3-4
Major Upper Division Electives ⁴		8

University Electives	4-5
Units	15
Total Units	60

- ¹ If ENG 214 equivalent not taken before transfer, GWAR course must be taken in a subsequent semester. Timely progress to degree will be affected.
- ² Some GE Area UD-C: Upper Division Arts and/or Humanities courses also satisfy US History. Check the Class Schedule
- ³ BIOL 355 satisfies GE Area UD-B: Upper Division Physical and/or Life Sciences.
- ⁴ **Major Upper Division List A**
 BIOL 350 Cell Biology (3 units)
 BIOL 357 Molecular Genetics (3 units)
 BIOL 380 Evolutionary Developmental Biology (3 units)
 BIOL 382 Developmental Biology (3 units)
 BIOL 453 General Parasitology (3 units)
 BIOL 600 Animal Behavior (3 units)
 BIOL 612 Human Physiology (3 units)
 BIOL 620 Endocrinology (3 units)
 BIOL 621 Reproductive Physiology (3 units)
 BIOL 630 Animal Physiology (3 units)
Major Upper Division List B
 BIOL 482 Ecology (4 units)
 BIOL 529GW Plant Ecology - GWAR (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)
Major Upper Division Taxonomy or Whole Organism Biology of an Invertebrate or Vertebrate (List C)
 BIOL 460 General Entomology (4 units)
 BIOL 461 Insect Taxonomy (4 units)
 BIOL 464 Medical Entomology (3 units)
 BIOL 475GW Herpetology - GWAR (3 units)
 BIOL 478GW Ornithology - GWAR (4 units)
 BIOL 555 Marine Invertebrate Zoology (4 units)
 BIOL 570GW Biology of Fishes - GWAR (4 units)
- ⁵ If BIOL 529GW taken in the first Semester, take University elective instead.
- ⁶ If BIOL 475GW, BIOL 478GW or BIOL 570GW taken in the first Semester, take a University elective instead.

To Do at SF State:

Enough total units to reach 120 minimum for graduation; 40 units minimum at the upper division level; to include the following:

University-Wide Requirements: 12–21 Units

- ENG 214 or equivalent A4 course (0–3 units) if not taken before transfer
- American Institutions (0–6 units): See next bullet.
- Lower division GE (6 units) – Area C (3 units in any subarea) and Area D (3 units; D2 satisfies US History if needed; D3 satisfies US/CA Government requirement if needed)

- Upper division GE (6 units to do): 1) Major course satisfies UD-B. 2) Take UD-C and UD-D courses. See notes.
- Students entering this major with the AS-T in Biology are not required to fulfill SF State Studies or Complementary Studies requirements.

Biology – Zoology Major: 35 Units

BIOL 230/BIOL 240, MATH 226, all PHYS,
CHEM 115/CHEM 215/CHEM 216 met in transfer.

- Lower Division requirements (3 units): CHEM 130 if not met in transfer
- Major Upper Division Requirements/GWAR (21 units)
- Major Upper Division Electives (11 units) – upon advisement. See note 4.

University Electives: Three 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. both in UD GE and the major.

Major Upper Division Requirement – Also Satisfies University GWAR

Code	Title	Units
BIOL 475GW	Herpetology - GWAR	3
BIOL 478GW	Ornithology - GWAR	4
BIOL 529GW	Plant Ecology - GWAR	4
BIOL 570GW	Biology of Fishes - GWAR	4