### BACHELOR OF SCIENCE IN BIOLOGY: CONCENTRATION IN BOTANY – 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.

#### Course Title | Units
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**First Semester**
BIOL 529GW or BIOL 534 | Plant Ecology - GWAR 1 or Wetland Ecology | 4
CHEM 130 or CHEM 233 | General Organic Chemistry or Organic Chemistry I | 3
GE Area A: Written English Communication II (A4) or University Elective if A4 met in transfer | 3
US History (bulletin.sfsu.edu/undergraduate-education/graduation-requirements/#USHaGR) 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
BIOL 458 | Biometry | 4
BIOL 525 | Plant Physiology | 3
GE Area D: Social Sciences (D1) or U.S. History (D2) or U.S. and California Government (D3) | 3
GE Area UD-C: Upper-Division Arts and/or Humanities (Consider SF State Studies Course) | 3
Units | 16

**Third Semester**
BIOL 337 | Evolution | 3
Select One: | 4
- BIOL 502 | Biology of the Algae
- BIOL 504 | Biology of the Fungi
- BIOL 514 | Plant Taxonomy

**Fourth Semester**
BIOL 500 or BIOL 505 | Evolution and Diversity of Plants or Comparative Anatomy of Vascular Plants | 4
Major Upper Division Electives 4 | 4-7
University Elective | 3
Units | 14
Total Units | 60

1. If ENG 214 equivalent not taken before transfer, GWAR course must be taken in a subsequent semester; this may impact timely progress to degree.
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. Select upper division electives in consultation with an advisor.

#### 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 – Botany Major: 37 Units**
Completed: BIOL 230/BIOL 240, MATH 226, all PHYS, and CHEM 115/CHEM 215/CHEM 216.
- Lower Division requirements (3 units): CHEM 130
- Major Upper Division Requirements/GWAR (27 units)
- Major Upper Division Electives (4-7 units) – see note 4.

**University Electives: Two 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.