Bachelor of Science in Biology: Concentration in Botany Roadmap

120 Total Units Required
Minimum Number of Units in the Major: 67

Course | Title | Units
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First Semester | | 
CHEM 115 | General Chemistry I: Essential Concepts of Chemistry | 5
GE Area A: Oral Communication (A1) or Critical Thinking (A3) | 3
GE Area A: Written English Communication (A2) | 3
GE Area B: Quantitative Reasoning (B4) | 3
| Units | 14

Second Semester | | 
BIOL 230 | Introductory Biology I | 5
Select Major Lower Division Requirement (16-17 Units Total) | 4-5
GE Area A: Oral Communication (A1) or Critical Thinking (A3) | 3
GE Area A: Written English Communication II (A4) | 3
or Written English Communication (A2) Stretch II | 
| Units | 15-16

Third Semester | | 
CHEM 130 | General Organic Chemistry | 3
CHEM 233 | or Organic Chemistry I | 
Select Major Lower Division Requirement (16-17 Units Total) | 4-5
GE Area A: Written English Communication II (A4) if not already satisfied | 
or SF State Studies or University Elective | 
GE Area D: U.S. History (D2) or U.S. and California Government (D3) | 3
| Units | 15-16

Fourth Semester | | 
BIOL 240 | Introductory Biology II | 5
Select Major Lower Division Requirement (16-17 Units Total) | 4-5
GE Area C: Arts (C1) | 3
GE Area D: U.S. History (D2) or U.S. and California Government (D3) | 3
| Units | 15-16

Fifth Semester | | 
BIOL 355 | Genetics | 3
BIOL 458 | Biometry | 4
GE Area C: Arts (C1) or Humanities (C2) | 3
GE Area C: Humanities: Literature (C3) | 3
GE Area D: Social Sciences (D1) | 3
| Units | 16

Sixth Semester | | 
BIOL 337 | Evolution | 3
Select One: | 
BIOL 502 | Biology of the Algae | 3-5
BIOL 504 | Biology of the Fungi | 
BIOL 514 | Plant Taxonomy | 
Select Major Lower Division Requirement (16-17 Units Total) | 4
GE Area UD–D: Upper Division Social Sciences (Consider SF State Studies Course) | 3
SF State Studies or University Elective | 3
| Units | 17-19

Seventh Semester | | 
BIOL 500 | Evolution and Diversity of Plants or Comparative Anatomy of Vascular Plants | 4
or BIOL 505 | 
BIOL 529GW | Plant Ecology - GWAR or Wetland Ecology | 4
or BIOL 534 | 
Major Upper Division Major Electives 4-7 units in consultation with advisor | 4
GE Area UD–C: Upper Division Arts and/or Humanities (Consider SF State Studies Course) | 3
| Units | 15

Eighth Semester | | 
BIOL 525 & BIOL 526 | Plant Physiology and Plant Molecular Physiology Laboratory | 5
Major Upper Division Major Electives 4-7 units in consultation with advisor | 3-4
SF State Studies or University Elective | 6
| Units | 14-15

Total Units | 120-125

1 To avoid taking additional units, it is recommended that you meet LLD and SF State Studies requirements (AERM, GP, ES, SJ) within your GE.
2 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.
3 Depending on courses completed through Early Start, students in Pathway/Category 3 or 4 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).
Major Lower Division Requirement
CHEM 215 General Chemistry II: Quantitative Applications of Chemistry Concepts (3 units)
& CHEM 216 General Chemistry II Laboratory: Quantitative Applications of Chemistry Concepts (2 units)
MATH 226 Calculus I (4 units)
MATH 227 Calculus II (4 units)
PHYS 111 General Physics I (3 units)
& PHYS 112 General Physics I Laboratory (1 units)
PHYS 121 General Physics II (3 units)
& PHYS 122 General Physics II Laboratory (1 units)

Area B1: Physical Science is satisfied upon completion of CHEM 130 or CHEM 233.
Areas B2: Life Science and B3: Laboratory Science are satisfied upon completion of BIOL 240.
GE Area UD–B: Upper Division Physical and/or Life Sciences is satisfied upon completion of BIOL 355.