Organismal Biology Majors — Bachelors of Science Degrees
San Francisco State University
2009-2010

B.S. in Biology: Concentration in

• Botany — Drs. Desjardin & Parker
• Ecology — Drs. Boyer & Connor
• Marine Biology — Drs. Carpenter & Cohen
• Zoology — Drs. Hafernink, Routman, & Spicer

http://biology.sfsu.edu

Organismal Biology Advising Session
SPRING 2009, updated April 2010
Organismal Biology Majors — Bachelors of Science Degrees

Who takes the B.S. degrees?

• Students tracking toward the Ph.D.

• Students wanting research careers

• Pre educator students

• Pre graduate school students

• Students interested in consulting or research

• Environmentalists

• Students interested in government employment

• Persons interested in careers as field or laboratory technicians
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General structure of the B.S. degrees
• 67 units of course work in the major
  • Lower division courses (34-35 units)
  • Upper division courses (32-33 units)

• Lower division classes cover the basic sciences

• Major designed to be completed in ~ four years
  • 15 units/semester X 8 semesters = 120 units
  • Graduation can be expedited by attending summer sessions
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Lower division requirements

- Biol. 230 — Intro. Biology I (5)
- Biol. 240 — Intro. Biology II (5)
- Chem. 115 Gen. Chemistry I (5)
- Chem. 130 Gen. Organic Chem. (5)
- 16-17 units selected from following:
  - Math 226 — Calculus I (4)
  - Math 227 — Calculus II (4)
  - Physics 111/112 Gen. Physics I (3/1)
  - Physics 121/122 Gen. Physics II (3/1)
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Special studies/research opportunities

• Students may apply for credit for special studies activities
  • Biology 699 special studies 1-3 units
    • Participation in a research project, or independent study
  • Procedure: find faculty sponsor, file petition, register online

• Bio. 694. Cooperative internship in biology (2-4 units)
  • Participation in a community work experience
  • Procedure: select an agency of interest, find a willing sponsor or supervisor. Develop a mutually agreeable plan for your experience, fill out a petition and register online with permit number from your advisor
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Scheduling classes

Scheduling of some biology classes are irregular

• Check with online listings each semester
• Information on scheduling is available from biology office
• Plan early to avoid conflicts
Choosing classes

• Avoid taking more than two majors classes concurrently during the first 2 years of study.
• Keep grades high – adjust course load as you need to.
• Take an extra semester if you need to in order to keep grades high.
• Any prerequisite class must be completed with a minimum grade of C-.
• Complete all prerequisites before enrolling in a class.
• Pre professional students need to consider class substitution options where appropriate – see pre professional advisor.
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Transferring courses from other schools

- Approved classes may be taken at another school and transferred to SFSU if they are equivalent in content and level.
- Before taking a class at another school, check the www.assist.org website to verify if classes will transfer to SFSU, and if they are equivalent to our counterpart.
- Courses at community colleges can only be counted for lower division credit.
- Questions about course equivalency need to be resolved with your advisor.
- Course equivalency forms must be completed for every class transferred to your SFSU major. These should be completed with your advisor and accepted by the biology chair.
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Common mistakes in transferring

• Expecting a junior college class will be accepted at sfsu for upper division credit
  • You may be able to get credit for content, but not for upper division credit

• Unit credit might not transfer equally
  • Unit credit at one school might not receive the same credit at sfsu

• Not completing course equivalency forms until you plan to graduate is a mistake
  • Problems need to be addressed as they come up

• Not saving your equivalency forms is a mistake
  • Equivalency forms must be included with your application for graduation
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• Review with advisor
  • Attach copy of www.assist.org
• Have signed by advisor and dept chair
• Keep for later use at graduation

YOU MUST PROVIDE A PRINTOUT FROM ASSIST.ORG AND/OR A COURSE DESCRIPTION AND/OR A SYLLABUS TO YOUR ADVISOR
EQUIVALENCY AUTHORIZATION
for Biology Major Course Requirements

<table>
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<tr>
<th>Institution</th>
<th>Course No.</th>
<th>Title</th>
<th>Units</th>
<th>Term (Sem or Qtr)</th>
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This course equivalency was determined by:

☐ A formal articulation agreement
☐ evaluation by faculty advisor from course materials

I have determined this course to be:

☐ Lower Division
☐ Course Content only/No Unit Credit
☐ Upper Division

I request the following course:
Course substitutions

• It is sometimes appropriate to substitute a non-required course for a course required in the major

• If appropriate consult with an advisor
  • Show the requested modifications on a substitution form
  • Have form signed by advisor and approved by dept chair

• See copy of substitution form on following slide
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Substitution Form

Name: ___________________ E-mail: ___________________

Major: ___________________ 

I am requesting that the following SFSU upper division course(s), which is not listed as an official elective(s) in my major, be used as upper division ELECTIVE(s) in my major.

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I am requesting the following SFSU course(s) substitute for specified MAJOR REQUIREMENT COURSE(s). The required course (being replaced) is listed and the reason for the substitution is described.

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Listed required course ______________________
Reason ______________________

Listed required course ______________________
Reason ______________________

Listed required course ______________________
Reason ______________________

Major Advisor: ___________________ PRINT NAME ___________________ SIGNATURE ___________________ DATE __________

Department Chair: ___________________ SIGNATURE ___________________ DATE __________
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Changing your undergraduate major

• Declare or change your major if needed
• The required forms are available online* (different forms depend on your units completed)
• Have signed by advisor & approved at biology office; turn in form to One Stop Center

http://www.sfsu.edu/~admisrec/reg/changemajor.html
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Should you repeat a course? Yes, if:

• If you receive less than a C- in a lower division major class (note: must have a minimum C in prerequisite courses for Chemistry courses)
• If you receive a C in a lower division class and you wish to apply for graduate or a professional school
• If your GPA in your major is less than 2.0
• If you receive a credit/no credit grade in a major level class, or in a class required for application to a professional or graduate school

SFSU course repeat policy: you may repeat a course only once and only if your first grade is less than a C-.
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Things to do:

• Meet with an advisor regularly and when you have questions
• Consult with an advisor before planning to transfer a class to sfsu
• Consult with www.assist.org website to verify equivalency status of intended classes from other schools
• Do keep all signed course equivalency and substitution forms for later use
• Do work out a sequence of course studies that will lead you to a prompt graduation date
• Do consult with an advisor in selecting courses
• Do satisfy course prerequisites before registering for courses
• Do keep your grades high and complete your courses
• Do obtain career development counseling on campus
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Things to avoid:

• Don’t expect all courses taken at other schools to transfer smoothly to sfsu
• Don’t expect all courses taken at other colleges to count toward your general biology major
• Don’t expect to receive upper division credit from courses taken at a junior college
• Don’t expect that general education courses designed for non biology majors will count toward the biology major
• Don't expect your desired courses will always be available when you want them.

Have an alternate plan in case of conflicts
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Next steps:

• Declare your major if you have not already done so
• Outline your career objectives and how the biology major will contribute to your success
• If you plan on applying to a professional school or credential program see appropriate advisor about prerequisite requirements
• Visit the campus career center for consultations if needed
• Work out a course sequence plan semester by semester that leads you to a satisfactory graduation date
• See a general biology advisor and review your plan
• Complete any class equivalency and substitution forms and have them approved
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What next? Graduate school?

• Start planning at least one year in advance
• Discuss with your SFSU advisor
• Visit department/program web sites
• Visit web site of potential advisors
• Try to arrange an on-site visit
• Ask to be put in contact with grad students
• Understand fully the requirements and expectations of programs
• Ask about financial aid
• Prepare to take the GRE
• Begin to think about your statement of purpose — have your advisor read it
• Secure referees — always waive the right to see the letter
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B. S. in Biology: Concentration in Botany

• BIOL 337 Evolution (3)
• BIOL 355 Genetics (3)
• BIOL 458 Biometry (4)
• BIOL 525/526 Plant Physiology/Lab (3/2)
• Ecology requirement:
  • BIOL 529 Plant Ecology (4)
  • BIOL 534 Wetland Ecology (4)
• Structural requirement:
  • BIOL 500 Evol and Diversity of Plants (4)
  • BIOL 505 Comparative Anatomy of Vascular Plants (4)
• Taxonomy requirement:
  • BIOL 502 Biology of the Algae (3)
  • BIOL 504 Biology of the Fungi (4)
  • BIOL 514 Plant Taxonomy (5)
• Electives — from alternates not used above, or any other upper division majors’ biology, or any graduate course in biology: (4-7)
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B. S. in Biology: Concentration in Ecology

• BIOL 337 Evolution (3)
• BIOL 355 Genetics (3)
• BIOL 458 Biometry (4)
• Physiology requirement:
  • BIOL 525 Plant Physiology (3)
  • BIOL 630 Animal Physiology (3)
• Ecology requirements: 6-8 units
  • BIOL 482 Ecology (4)
  • BIOL 529 Plant Ecology (4)
  • BIOL 530 Conservation Biology (3)
  • BIOL 532 Restoration Ecology (3)
  • BIOL 534 Wetland Ecology (4)
  • BIOL 577 Ecological and Environmental Modeling (4)
  • BIOL 580 Limnology (3)
  • BIOL 582 Biological Oceanography (4)
  • BIOL 585 Marine Ecology (3)
  • BIOL 586 Marine Ecology Laboratory (2)
• Electives — from alternates not used above, or any other upper division majors’ biology, or any graduate course in biology: (11-14)
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B. S. in Biology: Concentration in Marine Biology

• BIOL 337 Evolution (3)
• BIOL 355 Genetics (3)
• BIOL 458 Biometry (4)
• Physiology requirement:
  • BIOL 525 Plant Physiology (3)
  • BIOL 630 Animal Physiology (3)
• Ecology requirements: 6-8 units
  • BIOL 534 Wetland Ecology (4)
  • BIOL 580 Limnology (3)
  • BIOL 582 Biological Oceanography (4)
  • BIOL 585 Marine Ecology (3)
  • BIOL 586 Marine Ecology Laboratory (2)
• Electives (11-14 units)
  • BIOL 502 Biology of the Algae (3)
  • BIOL 526 Plant Physiology Laboratory (2)
  • BIOL 532 Restoration Ecology (3)
  • BIOL 535 Remote Sensing of Wetlands and Coastal Zones (4)
  • BIOL 555 Marine Invertebrate Zoology (4)
  • BIOL 556 Natural History of Marine Invertebrates (4)
  • BIOL 570 Biology of Fishes (4)
  • BIOL 575 Fisheries Biology (3)
  • BIOL 583 Marine Microbial Ecology (3)
  • BIOL 584 Marine Microbial Ecology Laboratory (1)
  • BIOL 606 Behavior and Physiology of Marine Mammals (3)
  • BIOL 631 Animal Physiology Laboratory (2)
  • CHEM 680 Chemical Oceanography (3)
  • GEOL 452 Coastal Processes (3)
  • GEOL 642 Watershed Assessment (4)
  • MSCI 312-375 Any without duplicating courses taken at SF State
  • OCN 420 Physical Oceanography (3)
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B. S. in Biology: Concentration in Zoology

- BIOL 337  Evolution (3)
- BIOL 355  Genetics (3)
- BIOL 458  Biometry (4)
- Physiology requirement: 3 units
  - BIOL 612  Human Physiology (3)
  - BIOL 630  Animal Physiology (3)
- Units from the following: 3-4 units
  - BIOL 350  Cell Biology
  - BIOL 357  Molecular Genetics
  - BIOL 380  Comparative Embryology
  - BIOL 382  Developmental Biology
  - BIOL 453  General Parasitology
  - BIOL 600  General Animal Behavior (4)
  - BIOL 620  Endocrinology
  - BIOL 621  Reproductive Physiology
- Ecology requirements: 3-4 units
  - BIOL 482  Ecology (4)
  - BIOL 529  Plant Ecology (4)
  - BIOL 530  Conservation Biology (3)
  - BIOL 532  Restoration Ecology (3)
  - BIOL 534  Wetland Ecology (4)
  - BIOL 577  Ecological and Environmental Modeling (4)
  - BIOL 580  Limnology (3)
  - BIOL 582  Biological Oceanography (4)
  - BIOL 585  Marine Ecology (3)
  - BIOL 586  Marine Ecology Laboratory (2)
- Taxonomy or whole organism course: 3 - 4 units
  - BIOL 459 Arthropod Biology (4)
  - BIOL 460 General Entomology (4)
  - BIOL 461 Insect Taxonomy (4)
  - BIOL 464 Medical Entomology
  - BIOL 475 Herpetology
  - BIOL 478 Ornithology (4)
  - BIOL 480 Mammalogy (4)
  - BIOL 555 Marine Invertebrate Zoology (4)
  - BIOL 570 Biology of Fishes (4)
- Electives — from alternates not used above, or any other upper division majors’ biology, or any graduate course in biology: (7-11 units)