Welcome to the Biology Department!

Dr. Greg Harris
Professor and Vice Chair of Biology
Director of Undergraduate Advising and Curriculum
What makes SDSU Biology unique?

- Approx. 40 full time, tenure/tenure-track faculty who both teach and conduct research
- Large number of laboratories, activity and discussion sections, field-based coursework
- Approximately half of our majors participate in research projects while at SDSU.
- Dedicated advising staff and resources
Meet the Biology Advising Staff

Logan Watson
Biology Advisor

Arlene Castillo, M.S.
Administrative Coordinator
Bioadvising

We advise Biology majors on topics such as:

• Course selection and guidance
• Articulation of courses from other institutions
• Grade performance and academic concerns
• Research opportunities
• Career opportunities
• Staying on track for graduation
Welcome to the Biology Department's advising page!

Logan Watson and Arlene Castillo

Biology and microbiology degree information

Changing majors

Biology course information

Top 5 tips for success

25 Frequently Asked Questions

Bioadvising Hours in LSN-135

A Biology Advisor is generally available for walk-in advising during our normal advising hours:

Mon-Fri 8:30-12:00 and 1:00-3:30pm

Advising appointments are available upon request except during peak advising times at the beginning of the semesters and during registration periods

Biology Undergraduate Advising Office, LSN-135
San Diego State University
5500 Campanile Dr. San Diego, CA 92182-4614

(619) 594-6442
bioundergrad@sdsu.edu

http://www.sci.sdsu.edu/bioadvise/index.html
Check Your Email

Be on the alert for emails with subject lines that begin with **Bioundergrad-HR**. These **often** come from Bioadvising and will relate to registration, course offerings, program updates, policy changes, etc. that may directly affect your program of study.

Check Your Blackboard notifications

Study abroad and internship opportunities, various Biology club activities, and copies of all email notifications will be archived on the **Bioundergrad-HR** site.
Other Advising

College of Sciences Student Success Center
General assistance and advice for COS majors (CMGS- 429)

General coursework (GE) advice
SDSU Academic Advising Center (SSW-1551)

Pre-professional Health advising (GMCS 323)
Pre-medical, dental, veterinary, physicians assistant, optometry, pharmacy

Career Services
SSE 1200
Bachelor's degree opportunities

- **B.S. Biology**, with optional emphasis in:
  - Ecology
  - Evolution and Systematics
  - Zoology
  - Cellular and Molecular Biology
  - Marine Biology

- **B.S. Microbiology**, with optional emphasis in:
  - Clinical Laboratory Science and Public Health Microbiology

- **B.A. Biology or B.A. Microbiology**

- **Preparation for Teaching High School Biology**
  (Single Subject Teaching Credential)
Degree information

1. Begin as a **premajor** with prep courses (37 units)
   - Chemistry, Math, Physics, Biology

2. Courses required to graduate with the **major** (36 units for the B.S.)
   - Required Upper Division courses (15 u)
   - UD electives (21 u)
     - General Biology (no emphasis), or
     - Emphasis in Cell & Molecular Biology, Ecology, Evolution, Marine Biology, Zoology or Single Subject Teaching Credential
Let’s look at your checklist

**Impaction: Lower Division**

1. C or better in every LD class
2. Prep-for-major GPA 2.8 (excluding Physics)
3. Cumulative GPA 2.8

**To Graduate**

1. Major GPA 2.0
2. Overall GPA 2.0
3. Other graduation requirements:
   See our web page:
   FAQ #8, link to Office Adv. & Ev.
UNDERGRADUATE STUDIES:
GENERAL BIOLOGY CHECKLIST

Preparation for the Major Coursework
See Department of Biology undergraduate advisers (LSN-135)

Four Year Degree
To finish your degree in four years, all 9 sets of premajor courses listed below will need to be finished by the end of your 4th semester, or the 5th at the latest.

Impaction
Biology is impacted. After admission to SDSU, students are initially placed into the Biology premajor. Premajors must meet department specific criteria in order to be admitted into the major. Admission to Biology Major requires the following:

- Completion of all the preparation for the Major courses and a combined GPA of 2.8 or higher in these courses (excluding Phys 180A, 180B, 182A, and 182B).
- A minimum of C or better in every course (Recommended A’s and B’s).
- Courses in the Preparation for the Major cannot be taken Cr/Nc.

After completing these requirements, you will be admitted to the Major automatically. If you are not admitted automatically meet with the Undergraduate Biology Advisor as soon as possible.

Students who do not meet one or more requirements should meet with the Undergraduate Biology Advisor each semester to determine an appropriate course of action.

NOTE: Not all upper division Biology courses are offered every semester. Check the current class schedule for complete course listings.

PREPARATION FOR THE MAJOR (37 units of lower division courses)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 203</td>
<td>Princ of Cell Molec Biology</td>
<td>3</td>
</tr>
<tr>
<td>Biol 203L</td>
<td>Princ of Cell Molec Biology Lab</td>
<td>1</td>
</tr>
<tr>
<td>Biol 204</td>
<td>Princ of Organismal Biology</td>
<td>3</td>
</tr>
<tr>
<td>Biol 204L</td>
<td>Princ of Organismal Biology Lab</td>
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<tr>
<td>Biol 215</td>
<td>Biostatistics</td>
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</tr>
<tr>
<td>Chem 200</td>
<td>General Chemistry</td>
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<tr>
<td>Chem 201</td>
<td>General Chemistry</td>
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<tr>
<td>Chem 232</td>
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<tr>
<td>Chem 232L</td>
<td>Organic Chemistry Lab</td>
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<tr>
<td>Math 124</td>
<td>Calculus of Life Sciences</td>
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<tr>
<td>Phys 180A</td>
<td>Fundamentals of Physics</td>
<td>3</td>
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<td>Phys 182A</td>
<td>Physical Measurements</td>
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<td>Phys 182B</td>
<td>Fundamentals of Physics</td>
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<td>Phys 182B</td>
<td>Physical Measurements</td>
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</table>

No transfer courses will substitute for courses in the major without prior departmental approval.

Rev. 7/10/18

UPPER DIVISION MAJOR
(36 units for B.S., 24 units for B.A.)

2.0 GPA required in all upper division coursework applied to the major.

Core Coursework
(15 units)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 352</td>
<td>Genetics and Evolution</td>
<td>3</td>
</tr>
<tr>
<td>Biol 354</td>
<td>Ecology and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>Biol 365</td>
<td>Biochemistry, Cell, and Molecular Biology I</td>
<td>3</td>
</tr>
<tr>
<td>Biol 366</td>
<td>Biochemistry, Cell, and Molecular Biology II</td>
<td>4</td>
</tr>
<tr>
<td>Biol 366L</td>
<td>Biochemistry, Cell, and Molecular Biology Lab</td>
<td>2</td>
</tr>
</tbody>
</table>

Elective Coursework
(21 units for B.S., 19 units for B.A.)

Required: 2 Lab Courses (One course cannot fulfill both lab course requirements)

1. Organismal Lab Requirement – select at least one Organismal lab in bold from below.
2. Lab Elective Requirement – select at least one additional lab course from below (may or may not be required)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biol 350</td>
<td>General Microbiology</td>
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</tr>
<tr>
<td>Biol 354L</td>
<td>Genetics and Evolution</td>
<td>2</td>
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<tr>
<td>Biol 436</td>
<td>Ecology and the Environment</td>
<td>2</td>
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<tr>
<td>Biol 458</td>
<td>Plant Biology</td>
<td>4</td>
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<tr>
<td>Biol 480L</td>
<td>Clinical Hematology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>Biol 512</td>
<td>Evolutionary &amp; Ecology of Marine Mammals</td>
<td>3</td>
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<tr>
<td>Biol 514</td>
<td>Biology of Algae</td>
<td>4</td>
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<tr>
<td>Biol 515</td>
<td>Marine Invertebrate Biology</td>
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<tr>
<td>Biol 516A</td>
<td>Marine Larval Ecology Research Pt.I</td>
<td>4</td>
</tr>
<tr>
<td>Biol 516B</td>
<td>Marine Larval Ecology Research Pt.2</td>
<td>4</td>
</tr>
<tr>
<td>Biol 517</td>
<td>Marine Ecology</td>
<td>4</td>
</tr>
<tr>
<td>Biol 518</td>
<td>Biology of Fishes</td>
<td>4</td>
</tr>
<tr>
<td>Biol 523</td>
<td>Herpetology</td>
<td>4</td>
</tr>
<tr>
<td>Biol 524</td>
<td>Ornithology</td>
<td>4</td>
</tr>
<tr>
<td>Biol 525</td>
<td>Mammalogy</td>
<td>4</td>
</tr>
<tr>
<td>Biol 526</td>
<td>Terrestrial Arthropod Biology</td>
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<tr>
<td>Biol 527L</td>
<td>Animal Behavior Lab</td>
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<tr>
<td>Biol 530</td>
<td>Plant Systematics</td>
<td>4</td>
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<tr>
<td>Biol 531</td>
<td>Taxonomy of California Plants</td>
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<tr>
<td>Biol 535</td>
<td>Plant Ecology</td>
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<tr>
<td>Biol 540</td>
<td>Conservation Ecology</td>
<td>3</td>
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<tr>
<td>Biol 544L</td>
<td>Global Change Science Lab</td>
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</tr>
<tr>
<td>Biol 556</td>
<td>Scanning Electron Microscopy Lab</td>
<td>2</td>
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<tr>
<td>Biol 557</td>
<td>Transmission Electron Microscopy Lab</td>
<td>3</td>
</tr>
<tr>
<td>Biol 562</td>
<td>Ecological Metamorphosis</td>
<td>3</td>
</tr>
<tr>
<td>Biol 567L</td>
<td>Biochemistry, Cellular and Molecular Biology Lab II</td>
<td>2</td>
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<tr>
<td>Biol 568</td>
<td>Bioinformatics</td>
<td>3</td>
</tr>
<tr>
<td>Biol 597A</td>
<td>Univariate Statistical Methods in Biology</td>
<td>3</td>
</tr>
</tbody>
</table>

No transfer courses will substitute for courses in the major without prior departmental approval.

Rev. 7/10/18

Custom Electives
- Customize your major by taking courses that you’re interested in that are upper division Biology courses numbered 350-599 and upper division Chemistry courses (except Chem 300, 308, 497, 499, 560).
- Prior approval of the Biology Undergraduate Advisor (LSN-135) is needed and paperwork must be filed in order to enroll in Biol 497 and/or 499.
- A maximum or 6 units between Biol 497 and 499 may be applied to the major.
- For B.A. in Biology, Biol 497 and 499 cannot be applied to elective units.

Rev. 7/10/18

No transfer courses will substitute for courses in the major without prior departmental approval.
UNDERGRADUATE STUDIES: BIOLOGY – EMPHASIS IN CELLULAR AND MOLECULAR BIOLOGY CHECKLIST

Preparation for the Major Coursework

See Department of Biology undergraduate advisers (LS-135)

Cell and molecular biology is the study of the macromolecules and mechanisms involved in basic biological processes. This discipline crosses traditional boundaries between genetics, biochemistry, cell biology, physics, and chemistry. Graduates will have training appropriate for entry-level positions in the biotechnology industry, and the prerequisites for cell and molecular biology program graduates. Students should obtain research experience through Biology 497/499 Special Studies (discuss with professors).

Four Year Degree

To finish your degree in four years, all 9 sets of premajor courses listed below will need to be finished by the end of your 4th semester, or the 5th if the latest

Impaction

Biology is impacted. After admission to SDSU, students are initially placed into the Biology premajor. Premajors must meet department specific criteria in order to be admitted into the major. Admission to Biology Major requires the following:

- Completion of all the preparation for the Major courses and a combined GPA of 2.8 or higher in these courses (excluding Phys 180A, 180B, 182A, and 182B).
- A minimum of C or better in every course (Recommended A’s and B’s).
- Courses in the Preparation for the Major cannot be taken CR/NCR.

After completing these requirements, you will be admitted to the Major automatically. If you are not admitted automatically meet with the Undergraduate Biology Advisor as soon as possible.

Students who do not meet one or more requirements should meet with the Undergraduate Biology Advisor each semester to determine an appropriate course of action.

NOTE: Not all upper division Biology courses are offered every semester. Check the current class schedule for complete course listings.

**Preparation for the Major (37 units of lower division courses)**

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<td>Princ. of Cell Molec. Biology</td>
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<td>Biol 203L</td>
<td>Princ. of Cell Molec. Biology Lab</td>
<td>1</td>
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<tr>
<td>Biol 204</td>
<td>Princ. of Organismal Biology</td>
<td>3</td>
</tr>
<tr>
<td>Biol 204L</td>
<td>Princ. of Organismal Biology Lab</td>
<td>1</td>
</tr>
<tr>
<td>Chem 200</td>
<td>General Chemistry</td>
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</tr>
<tr>
<td>Chem 201</td>
<td>General Chemistry</td>
<td>5</td>
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<tr>
<td>Chem 232</td>
<td>Organic Chemistry</td>
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</tr>
<tr>
<td>Phys 182C</td>
<td>Physical Measurements</td>
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</table>

No transfer courses will substitute for courses in the major without prior departmental approval.

**Upper Division Major (36 units)**

2.0 GPA required in all upper division coursework applied to the major.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Biol 352</td>
<td>Genetics and Evolution</td>
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</tr>
<tr>
<td>Biol 354</td>
<td>Eco. and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>Chem 365</td>
<td>Biochem CMB</td>
<td>3</td>
</tr>
</tbody>
</table>

**Core Coursework (19 units)**

<table>
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<tbody>
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<td>Genetics and Evolution</td>
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<tr>
<td>Biol 354</td>
<td>Eco. and the Environment</td>
<td>3</td>
</tr>
<tr>
<td>Chem 365</td>
<td>Biochem CMB</td>
<td>3</td>
</tr>
</tbody>
</table>

**Elective Coursework (17 Units Minimum)**

Required:

- Two courses must be taken from this list:
  - Biol 350 General Microbiology (4)
  - Biol 354L Genetics and Evolution (2)
  - Biol 356 Human Physiology (2)
  - Biol 358 Plant Biology (4)
  - Biol 360 Clinical Hematology Laboratory (1)
  - Biol 361 General Chemistry (3)
  - Biol 362 Evolutionary & Ecology of Marine Ecosystems (4)
  - Biol 364 Genetics and Evolution (2)
  - Biol 365 Marine Life Research (4)
  - Biol 366 Marine Life Research (4)
  - Biol 367 Biochemistry (4)

Elective:

- 2 Lab Courses (one class cannot fulfill both lab course requirements)
  - 1. Lab Elective Requirement – select at least one Organismal Lab in bold from below.
  - 2. Lab Elective Requirement – select at least one additional lab course from below

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<td>Genetics and Evolution</td>
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</tr>
<tr>
<td>Biol 356</td>
<td>Human Physiology</td>
<td>2</td>
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<tr>
<td>Biol 358</td>
<td>Plant Biology</td>
<td>4</td>
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<tr>
<td>Biol 360</td>
<td>Clinical Hematology Laboratory</td>
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<tr>
<td>Biol 361</td>
<td>General Chemistry</td>
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</tr>
<tr>
<td>Biol 362</td>
<td>Evolutionary &amp; Ecology of Marine Ecosystems</td>
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<tr>
<td>Biol 364</td>
<td>Genetics and Evolution</td>
<td>2</td>
</tr>
<tr>
<td>Biol 365</td>
<td>Marine Life Research</td>
<td>4</td>
</tr>
<tr>
<td>Biol 366</td>
<td>Marine Life Research</td>
<td>4</td>
</tr>
<tr>
<td>Biol 367</td>
<td>Biochemistry</td>
<td>4</td>
</tr>
</tbody>
</table>

**Custom Electives**

- Customize your major by taking courses that you’re interested in that are upper division Biology courses numbered 350-599 (except Biol 452) and upper division Chemistry courses (except Chem 300, 308, 497, 499, 560).
- Prior approval of the Biology Undergraduate Advisor (LSN-135) is needed and paperwork must be filed in order to enroll in Biol 497 and/or 499.
- A maximum of 6 units between Biol 497 and 499 may be applied to the major.
- Elective courses (including Chem 498, Biol and Chem 496 and 596) must be approved by the emphasis Advisor.

No transfer courses will substitute for courses in the major without prior departmental approval.

1 Only offered during Fall. See Biology Undergraduate Advisor to plan your coursework accordingly.

Revised 7/10/18
Let’s look at your Degree Evaluation

Your Degree Evaluation (Degree Audit Report), that you access on your web portal, tracks your progress in your program of study for all University requirements for graduation.
3. **Univ.** requirements for all majors:
   - Freshman competency: Math and Writing
   - Graduate Writing Assessment Requirement
   - American Institutions
   - General Education:
     1. Communication & Critical Thinking
     2. Foundations
     3. Explorations (Upper Division Courses)
   - Language (BA only)

Open your catalog!
Tips for Success

1. PREREQUISITES MATTER.

2. Time management:
   
   12 units per week =
   
   12 hours in class (+ 2 hours for each. lab)
   
   + 24++ hours of studying
   
   Take no more than 2 labs per week (recommended).

3. Balance science & non-science (incl. GE) courses during your entire time at SDSU.

4. Take a course in the Chemistry series every semester.
The “MyMap”

The Map provides one way that an incoming freshman could complete their degree in exactly 8 semesters. Your coursework series at SDSU will not exactly follow the map if:

- You have AP credits
- You need remedial Math or English.
- You are in a special program that has registered you for freshman GE courses in a different order than the Map.
- You need to take Precalc (Math 141) before Calculus
- You need to take Chem 100 before Chem 200
- You are not a full time student academically capable of taking 14-17 units per semester every semester, while earning grades of B or better.
- You will not have significant outside time commitments (such as work, sports teams, student organizations, family responsibilities) of 20+ hours per week. Many Biology majors with 20+ hours per week of other activities, need to cut back to 12-14 units per semester at some point before they graduate.
The “MyMap”

- If you can follow the Map, you should do so.
- If you cannot follow the map, see the Bioadvising office every semester to help pick classes.

Your goal is to take as many units as possible each semester, and still earn B’s or better in every course.
Calculus registration

All students are required to take the Mathematics Placement Assessment to determine your qualifications to register for:

MATH 105, 105X (Algebra)
MATH 141 (Precalculus)
MATH 124 (Calculus for Life Science) or Math 150 (Calculus)

See SDSU Testing Services for complete details

http://studentaffairs.sdsu.edu/testofc/precalc_prof_prof_assessment.htm
Chem 200 registration

1. To register for Chem 200, you must satisfy the CSU Mathematics/Quantitative Reasoning Assessment requirement.

2. Chem 200 also requires qualification on the Chemistry Department Placement Examination.

3. If you do not pass the placement test, you should take Chem 100 this fall (grade of C or better), and Chem 200 in the spring.

4. If you did not have Chemistry in high school (or have forgotten it all), register for Chem 100.

5. If you think you are ready for Chem 200 but are unsure, register for Chem 100 today. Take the placement test. If you pass, drop Chem 100 as soon as possible and add Chem 200.

See SDSU Testing Services for complete details

http://studentaffairs.sdsu.edu/testofc/chem_info.htm
And now...a few words from your advisor
Let’s complete the worksheet!