

CHECK LIST FOR THE B.S. DEGREE IN BIOLOGY EMPHASIS IN BIOENGINEERING

Emphasis Advisers: Dr. Andrew Bohonak (LS-135), Dr. Karen May-Newmann (E-323E)

PREPARATION FOR THE MAJOR (54 units of lower division courses)

<u>Y1S1</u> ME 101 Solid Modeling I	2	_____	EE 204 Principles of Elect Engineering	3	_____	<u>Y2S2</u>
Math 150 Calculus I	4	_____	Chem 201 General Chemistry	5	_____	
<u>Y1S2</u> Phys 195 Principles of Physics	3	_____	Phys 197 Principles of Physics	3	_____	
Math 151 Calculus II	4	_____	Biol 203 Principles of Cell & Molecular Biol.	3	_____	<u>Y3S1</u>
<u>Y2S1</u> EM 200 Statics	3	_____	Biol 203L Princ. Cell & Molecular Biol. Lab	1	_____	
Math 252 Calculus III	4	_____	Chem 232 Organic Chemistry	3	_____	
Chem 200 General Chemistry	5	_____	Chem 232L Organic Chemistry Lab	1	_____	
Phys 196 Principles of Physics	3	_____	Biol 204 Principles of Organismal Biology	3	_____	<u>Y3S2</u>
			Biol 204L Princ. of Organismal Biology Lab	1	_____	
			ME 240 Intro to Engineering Materials	3	_____	

Biology is an **impacted major**. Students who wish to declare a Biology major are initially placed into the Biology **premajor**. Premajors must meet department-specific criteria in order to be admitted to the major. (Note that admission to SDSU is a separate process from admission to the major, and is reviewed by a separate administrative unit.)

For this catalog year, admission to the Biology major requires:

- completion of the Preparation for the Major courses
- a GPA of 2.7 or higher in Preparation courses
- a minimum grade of C in each Preparation course
- an overall GPA of at least 2.6
- satisfaction of the lower-division writing competency requirement
- no coursework for the premajor or the major may be graded Cr/NC

Students who have completed these requirements must meet with the Biology undergraduate advisors to be admitted to the major.

Students who do not meet one or more minimum grade or minimum GPA requirements should meet with the Biology undergraduate advisors to determine the appropriate course of action.

EMPHASIS IN BIOENGINEERING (Minimum of 38 upper division units)

Required courses (31-32 units):

<u>Y3S1</u> Math 342A Methods of Applied Math	3	_____	Biol 366 Biochem., Cell & Mol. Biol. II	4	_____	<u>Y4S2</u>
<u>Y3S2</u> Chem 365 Biochem., Cell & Mol. Biol. I	3	_____	Biol 366L Biochem., CMB Lab. I	2	_____	
<u>Y4S1</u> Either Biol 590 Physiol. Human Systems ¹	4	_____	ME 352 Thermodyn. and Heat Transfer	3	_____	
or <i>Y3Su</i> or Biol 560 Animal Physiology ¹	3	_____	ME 490A ¹ Eng. Design Senior Project	3	_____	<u>Y5S1</u>
ME 304 Mechanics of Materials	3	_____	Biol 350 General Microbiology	4	_____	
or Civ E 301 Intro Solid Mechanics	3	_____	ME 490B Eng. Design Senior Project	3	_____	<u>Y5S2</u>

Elective courses (6-7 units): At least 6-7 additional upper division elective units must be selected from the following courses. At least 2 of the 8 units must be from Biology.

†Biol 474 Histology	4	_____	Chem 432 Organic Chemistry	3	_____
†Biol 555 Principles of Electron Microscopy	2	_____	Chem 432L Organic Chemistry Lab	1	_____
Either Biol 556 Scanning Electron Micr. Lab.	2	_____	†EE 303 Electr., Instrum. & Elect Egy Conv.	3	_____
or Biol 557 Transm. Electron Micr. Lab.	3	_____	†EE 503 Biomedical Instrumentation ³	3	_____
Biol 567 Adv. Biochem., Cell and Mol Biol.	4	_____	ME 310 Eng. Design: Intro ³	3	_____
†Biol 575 Molecular Basis of Heart Disease	3	_____	ME 540 Nonmetallic Materials ³	3	_____
Biol 596 Ecological Metagenomics	3	_____	ME 580 Biomechanics ³	3	_____
Biol 497/499/ME 499 Spec. Study/Research ²	1-3	_____	ENS 306 Biomech. of Human Movement ³	3	_____

The course timeline for this major is very specific if you wish to finish in 5 years. No transfer course will substitute without prior approval.

† Not taught in AY 11-12.

¹ ME 490A has a prerequisite of Biol 560 or Biol 590. Biology 590 is taught only in the fall. Biology 560 is taught only in the summer. Biol 560 and 590 both have a Chem 365 prerequisite. If you do not take Chem 365 or Biol 560/590 as soon as you are eligible, your graduation will likely be delayed by one year.

² Prior approval of the Biology Adviser (in LS-135) is needed & papers must be filed with the Office of Advising & Evaluations.

³ Additional prerequisites that are not part of this major are required. Consult with the course instructor.

Department of Biology

<http://www.bio.sdsu.edu/>

San Diego State University
5500 Campanile Drive
San Diego, CA 92182-4614

Undergraduate Advising Office

<http://www.sci.sdsu.edu/bioadvise/>

Life Sciences North, Room 135
Phone (619) 594-6442 Fax (619) 594-5676
bioundergrad@sunstroke.sdsu.edu

Dr. Andrew J. Bohonak, Vice Chair of Biology, and
Director of Undergraduate Advising and Curriculum

Mr. Eddie Lopez, M.S., Associate Director of Advising

Ms. Arlene Castillo, M.S., Administrative Coordinator

Degree opportunities

The Department of Biology offers the following degrees:

B.S. in Biology, with optional emphases in Bioengineering, Cellular & Molecular Biol., Ecology, Evolution & Systematics, Marine Biology, or Zoology	B.A. in Biology
B.S. in Microbiology, with an optional emphasis in Clinical Laboratory Science or Public Health Microbiology	B.A. in Microbiology
Minor in Biology, with optional emphases in five areas	Biotechnology Certificate

Coursework to demonstrate subject matter competency for the
Single Subject Teaching Credential in Biology/Life Sciences

For the most current information, see the bioadvising web page

<http://www.sci.sdsu.edu/bioadvise/>

- Answers to 25 Frequently Asked Questions
- Calendar of important dates
- Checklists of courses required for each of our degrees
- Course offerings we are planning for the entire academic year
- Information on new 496 and 596 "Special Topics" courses
- Course syllabi

Additional information

Explanation of graduation requirements: <http://arweb.sdsu.edu/es/advising/9gradreqs.html>

Preprofessional Health Advising Office (GMCS-323): <http://www.sci.sdsu.edu/preprof/>

Articulation of transferable courses from CA community colleges: www.assist.org

Articulation of science courses not listed on www.assist.org: meet with Biology advisors

Career Services (register with them by your sophomore year): SSE 1200, <http://career.sdsu.edu/>

Chemistry 200 placement exam: http://www.chemistry.sdsu.edu/courses/CHEM200/200_Placement_exam.php

Prospective students: <http://www.sdsu.edu/prospective.html>