

**BIOL-6A:**

# Biological Form & Function

“E-Greensheet”: Detailed course syllabus, schedule, lecture slides, and lab materials on the course website:  
<http://www.deanza.edu/faculty/heyerbruce/bio6a.html>

- Required Text: *Campbell Biology*, 12<sup>th</sup> ed., Urry, L.A., *et al*; Pearson Education, 2021.
- Required *Mastering Biology* supplemental instruction-homework-quiz website:  
 — Purchase access code with text, or from Pearson Education through the class *Canvas*
- Required Lab Manual: *Biology 6A Lab Manual*, Heyer, B. & B. McCauley; De Anza College, 2025.  
 — Download and/or print from the class website.
- Required Lab Simulations: *eMind Simulation Suite*, Expandable Mind Software, 2025.  
 — available to enrolled students.
- Recommended Lab Supplement: *Van De Graaff's Photographic Atlas for the Biology Laboratory*, 8<sup>th</sup> ed., Adams, B. & J. Crawley; Morton Publishers, 2018. (Older editions OK)

Email: [heyerbruce@deanza.edu](mailto:heyerbruce@deanza.edu)

Instructor: **Bruce Heyer**

Office: via Zoom  
 Office Hours: Tue/Thu — 12:10–2:00PM

Phone: (408) 864-8933

## COURSE DESCRIPTION

Biology-6A is the first of three courses for serious enthusiasts of the biological sciences to present the foundations of life's processes and the methods for scientific investigation. In this first course we shall elaborate on organismal biology - the comparative structure (form) and physiology (function) of the diverse range of living inhabitants of our planet relevant to the basic universal necessities of being alive. Central themes include producing and maintaining a stable internal body environment while exchanging energy, nutrients, water, gases, and wastes with the outside world; sensing and responding to stimuli; and transporting materials and coordinating actions in a multicellular organism.

The class lectures examine specific biological phenomena across a wide variety of organisms, but the laboratory portion focuses on the overall structure of specific groups of multicellular organisms. Thus, while the concepts presented in lectures are applied to this survey of the major plant, fungus, and animal body plans, the lab exercises do not directly parallel the lectures and much of the content is presented only in lab. Therefore, it is mandatory to fully participate in both the lecture and laboratory components to pass the class.

## STUDENT LEARNING OUTCOMES

- (1) Analyze and compare the process of homeostasis as applied to common physiological processes across higher taxonomy.
- (2) Develop observational skills in the context of scientific methodologies.
- (3) Contrast the Linnaean, traditional phylogenetic and cladistic processes of taxonomy.

## GRADING

- **Lab Exercises & Quizzes:** ~12 exercises and/or quizzes. Average of all % scores = 200 points.
- **On-line Homework & Problem sets:** ~20 sets. % Total score out of all problem sets = 100 points.
- **Lecture Exams:** There are three non-cumulative exams based upon material covered in lecture. (The final exam is Exam 3.) Each exam counts 100 points. (3 x 100 = 300 points)
- The final class grade will be determined as a percentage of the maximum total 600 points:  
 | 92-100%= A | 89-91%= A- | 86-88%= B+ | 80-85%= B | 77-79%= B- |  
 | 74-76%= C+ | 65-73%= C | 53-64%= D | <53%= F

# BIOL-6A: Biological Form & Function

## Winter 2026

BIOLOGY–006A: Lecture		asynchronous	On Canvas
BIOLOGY–006A.01Y: CRN #00218 Lab		Mon/Wed 10:30–1:20	SC-2108
BIOLOGY–006A.02Y: CRN #36233 Lab		Mon/Wed 1:30–4:20	SC-2108
Instructor: <b>Bruce Heyer</b>	Email: <a href="mailto:heyerbruce@deanza.edu">heyerbruce@deanza.edu</a>		
	Office: SC 1212	Office Hours via Zoom: Tue/Thu — 12:10–2:00	Phone: (408) 864-8933

### BIOL-6A: Biological Form & Function

### Winter 2026 Schedule

Week	Date	Day	Lab Topic	Lecture Topic	Chapter
1	Jan 05	Mon	<b>01: Scientific Method</b>	Life & Science	1
	Jan 07	Wed	<b>02: Microbes &amp; Microscopy</b>	Classification Systems	26
2	Jan 12	Mon	<b>03: Systematics</b>	Life Cycles	12.1; 13.1-2; 28.2-6
	Jan 14	Wed	<b>04: Plants I</b>	Plant Development & Tissues	35
3	Jan 19	Mon	∅ [holiday]	Plant Vasculature & Transport	36
	Jan 21	Wed	<b>05: Plants II</b>	Gas Exchange in Animals	42
4	Jan 26	Mon	<b>06: Plants III</b>	SE*-1: Gas Exchange	“
	Jan 28	Wed	<b>Lecture Exam 1</b>	Circulation	“
5	Feb 02	Mon	<b>07: Plants IV</b>	Animal Development & Tissues	47
	Feb 04	Wed	<b>08: Fungi</b>	Homeostasis & Thermoregulation	40
6	Feb 09	Mon	<b>Plants &amp; Fungi Review</b>	Feeding & Foraging	41
	Feb 11	Wed	<b>09: Animals I</b>	Digestion	“
7	Feb 16	Mon	∅ [holiday]	Osmoregulation	44
	Feb 18	Wed	<b>10: Animals II</b>	Excretion	“
8	Feb 23	Mon	<b>11: Animals III</b>	SE*-2: Osmoreg & Excretion	“
	Feb 25	Wed	<b>Lecture Exam 2</b>	Coordinating Body Functions	45; 48
9	Mar 02	Mon	<b>12: Animals IV</b>	Animal Senses	50
	Mar 04	Wed	<b>13: Animals V</b>	“	“
10	Mar 09	Mon	<b>Animal Review</b>	Locomotion & Motor Systems	“
	Mar 11	Wed	<b>14: Fish Anatomy</b>	SE*-3: Sensory-Motor	48; 50
11	Mar 16	Mon	<b>15: Mammalian Anatomy</b>	Animal Reproduction	46
	Mar 18	Wed	<b>16: Skeletons</b>	Wrap-up & Review	
12	Mar 23	Mon	1:45 - <b>Lecture Exam 3 - Sec 02Y</b>		
	Mar 25	Wed	9:15 - <b>Lecture Exam 3 - Sec 01Y</b>		

\* SE = pre-exam Study Exercise