

BIOL-6A:

Biological Form & Function

<p>“E-Greensheet”: Detailed course syllabus, schedule, lecture slides, and lab materials on the course website: http://www.deanza.edu/faculty/heyerbruce/bio6a.html</p>		
<ul style="list-style-type: none"> ▪ Required Text: Campbell Biology, 12th ed., Urry, L.A., <i>et al</i>; Pearson Education, 2021. ▪ Required Mastering Biology supplemental instruction-homework-quiz website: — Purchase access code with text, or from Pearson Education through the class <i>Canvas</i> ▪ Required Lab Manual: Biology 6A Lab Manual, McCauley, B. & B. Heyer; De Anza College, 2021. — Download and/or print from the class website. ▪ Required Lab Simulations: eMind Simulation Suite, Expandable Mind Software, 2024. — Purchase access from the De Anza College Bookstore. ▪ Recommended Lab Supplement: Van De Graaff's Photographic Atlas for the Biology Laboratory, 8th ed., Adams, B. & J. Crawley; Morton Publishers, 2018. (Older editions OK) 		
<p>Instructor: Bruce Heyer</p>	<p>Email: heyerbruce@deanza.edu</p>	
	<p>Office: via Zoom Office Hours: Tue/Thu — 12:10–2:00PM</p>	<p>Phone: (408) 864-8933</p>

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

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Fall 2024

BIOLOGY-006A: Lecture		asynchronous	On Canvas
BIOLOGY-006A-03Y: CRN #00239 Lab		Mon/Wed 10:30-1:20	SC-2108
BIOLOGY-006A-04Y: CRN #00240 Lab		Mon/Wed 1:30-4:20	SC-2108
Instructor: Bruce Heyer	Email: heyerbruce@deanza.edu		Phone: (408) 864-8933
	Office: SC 1212 Office Hours via Zoom: Tue/Thu — 12:10-2:00		

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Fall 2024 Schedule

Week	Date	Day	Lab Topic	Lecture Topic	Chapter
1	Sep 23	Mon	01: Scientific Method	Life & Science	1
	Sep 25	Wed	02: Microbes & Microscopy	Classification Systems	26
2	Sep 30	Mon	03: Systematics	Life Cycles	12.1; 13.1-2; 28.2-6
	Oct 02	Wed	04: Plants I	Plant Development & Tissues	35
3	Oct 07	Mon	05: Plants II	Plant Vasculature & Transport	36
	Oct 09	Wed	06: Plants III	Gas Exchange in Animals	42
4	Oct 14	Mon	07: Plants IV	SE-1: Gas Exchange	"
	Oct 16	Wed	Lecture Exam 1	Circulation	"
5	Oct 21	Mon	08: Fungi	Animal Development & Tissues	47
	Oct 23	Wed	Plants & Fungi Review	Homeostasis & Thermoregulation	40
6	Oct 28	Mon	09: Animals I	Feeding & Digestion	41
	Oct 30	Wed	10: Animals II	Nutrition	"
7	Nov 04	Mon	11: Animals III	Osmoregulation	44
	Nov 06	Wed	12: Animals IV	Excretion	"
8	Nov 11	Mon	∅ [holiday]	SE-2: Osmoreg & Excretion	
	Nov 13	Wed	Lecture Exam 2	Coordinating Body Functions	45; 48
9	Nov 18	Mon	Invertebrate Animal Review	Animal Senses	50
	Nov 20	Wed	13: Animals V	∅ [holiday]	
10	Nov 25	Mon	14: Fish Anatomy	"	"
	Nov 27	Wed	15: Mammalian Anatomy	Locomotion & Motor Systems	"
11	Dec 02	Mon	16: Skeletons	Animal Reproduction	
	Dec 04	Wed	Vertebrate Review	SE-3: Sensory-Motor	
12	Dec 09	Mon	1:45 - Lecture Exam 3 - Sec 04Y		
	Dec 11	Wed	9:15 - Lecture Exam 3 - Sec 03Y		