Fall 2023

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***, 12th 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***, 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, 2023.
  — 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)

Instructor: Bruce Heyer	**Email:** heyerbruce @ deanza.edu	
	Office: via Zoom Office Hours: Tue/Thu — 9:40–11:30AM	**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 Linnaen, 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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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

Office: SC 1212

Office Hours via Zoom:
Tue/Thu — 9:40–11:30AM

Phone: (408) 864-8933

BIOL-6A: Biological Form & Function **Fall 2023 Schedule**

Week	Date	Day	Lab Topic	Lecture Topic	Chapter
1	Sep 25	Mon	01: Scientific Method	Life & Science	1
	Sep 27	Wed	02: Microbes & Microscopy	Classification Systems	26
2	Oct 02	Mon	03: Systematics	Life Cycles	12.1; 13.1-2; 28.2-6
	Oct 04	Wed	04: Plants I	Plant Development & Tissues	35
3	Oct 09	Mon	05: Plants II	Plant Vasculature & Transport	36
	Oct 11	Wed	06: Plants III	Gas Exchange in Animals	42
4	Oct 16	Mon	07: Plants IV	SE-1: Gas Exchange	"
	Oct 18	Wed	Lecture Exam 1	Circulation	"
5	Oct 23	Mon	08: Fungi	Animal Development & Tissues	47
	Oct 25	Wed	Plants & Fungi Review	Homeostasis & Thermoregulation	40
6	Oct 30	Mon	09: Animals I	Feeding & Digestion	41
	Nov 01	Wed	10: Animals II	Nutrition	"
7	Nov 06	Mon	11: Animals III	Osmoregulation	44
	Nov 08	Wed	12: Animals IV	Excretion	"
8	Nov 13	Mon	Invertebrate Animal Review	SE-2: Osmoreg & Excretion	
	Nov 15	Wed	Lecture Exam 2	Coordinating Body Functions	45; 48
9	Nov 20	Mon	13: Animals V	Animal Senses	50
	Nov 22	Wed	14: Fish Anatomy	Ø	
10	Nov 27	Mon	15: Mammalian Anatomy	"	"
	Nov 29	Wed	16A: Skeletons	Locomotion & Motor Systems	"
11	Dec 04	Mon	16B: Skeletons	Animal Reproduction	
	Dec 06	Wed	Vertebrate Review	SE-3: Sensory-Motor	
12	Dec 11	Mon	1:45 - Lecture Exam 3 - Sec 04Y		
	Dec 13	Wed	9:15 - Lecture Exam 3 - Sec 03Y		