Fall 2018

BIOL-6A & -6AH (Honors): Biological Form & Function

BIOLOGY–006A & -006AH: Lecture	Tue & Thu 11:30–1:20	MLC 103
BIOLOGY–006A–03: CRN 00239 Lab or BIOLOGY–006AH–03H: CRN 24987 Lab	Mon & Wed 11:30–2:20	SC 2108
BIOLOGY–006A–04: CRN 00240 Lab or BIOLOGY–006AH–04H: CRN 24988 Lab	Mon & Wed 2:30–5:20	SC 2108

"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***, 11th ed., Urry, L,A,, *et al*; Pearson Education, 2017.
- Required ***Mastering Biology*** supplemental instruction-homework-quiz website:
  — **http://www.pearsonmastering.com/**
- Required Lab Manual: ***Biology 6A Lab Manual***, McCauley, B. & B. Heyer; DeAnza College, 2014.
  — download and print from the class website.
- 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	**Office: SC 1212** Office Hours: Tu & Th — 9:30–11:20	**Email:** heyerbruce @ deanza.edu **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 = 100 points.
- **On-line Homework & Problem sets:** ~20 sets. Average score of all problem sets = 100 points.
- **Lab Exams:** Two lab practical exams. Average of lab exam scores counts 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 — Sections 03 & 04 **Fall 2018 Schedule**

Week	Date	Day	Lecture Topic	Chapter	Lab Topic
1	Sep 24	Mon			01: Scientific Method
	Sep 25	Tue	Life & Science	1	
	Sep 26	Wed			02: Systematics
	Sep 27	Thu	Classification Systems	26	
2	Oct 01	Mon			03: Plants I
	Oct 02	Tue	Life Cycles	12.1; 13.1-2; 28.2-6	
	Oct 03	Wed			04: Plants II
	Oct 04	Thu	Plant Development & Tissues	35	
3	Oct 08	Mon			05: Plants III
	Oct 09	Tue	Plant Vasculature & Transport	36	
	Oct 10	Wed			06: Plants IV
	Oct 11	Thu	Gas Exchange in Animals	42	
4	Oct 15	Mon			SE-1: Gas Exchange
	Oct 16	Tue	Circulation	"	
	Oct 17	Wed			07: Fungi
	Oct 18	Thu	Exam 1		
5	Oct 22	Mon			Review for lab exam
	Oct 23	Tue	Animal Development & Tissues	47	
	Oct 24	Wed			Lab Exam 1
	Oct 25	Thu	Homeostasis & Thermoregulation	40	
6	Oct 29	Mon			08: Animals I
	Oct 30	Tue	Feeding & Ingestion	41	
	Oct 31	Wed			09: Animals II
	Nov 01	Thu	Digestion & Assimilation	"	
7	Nov 05	Mon			10: Animals III
	Nov 06	Tue	Osmoregulation	44	
	Nov 07	Wed			SE-2: Osmoregulation & Excretion
	Nov 08	Thu	Excretion	"	
8	Nov 12	Mon			11: Animals IV
	Nov 13	Tue	Exam 2		
	Nov 14	Wed			12: Animals V
	Nov 15	Thu	Coordination of Body Functions	45	
9	Nov 19	Mon			13: Fish Anatomy
	Nov 20	Tue	Animal Senses	50	
	Nov 21	Wed			14: Mammalian Anatomy
	Nov 22	Thu	*Thanksgiving holiday*		
10	Nov 26	Mon			15: Vertebrate Skeletons
	Nov 27	Tue	Animal Senses – cont.	"	
	Nov 28	Wed			"
	Nov 29	Thu	Locomotion & Motor Systems	"	
11	Dec 03	Mon			Review for lab exam
	Dec 04	Tue	Muscles & Skeletons	"	
	Dec 05	Wed			Lab Exam 2
	Dec 06	Thu	Animal Reproduction	46	
12					
	Dec 11	Tue	(11:30–1:30) Exam 3		