Spring 2019

BIOL-6A:

Biological Form & Function

BIOLOGY–006A: Lecture	**Tue/Thu 12:30–2:20**	**S 34**
BIOLOGY–006A–03: CRN #46376 Lab	**Mon/Wed 11:30–2:20**	**SC 2108**
BIOLOGY–006A–04: CRN #46378 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)

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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. % Total score out 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 Spring 2019 Schedule

Week	Date	Day	Lecture Topic	Chapter	Lab Topic
1	Apr 08	Mon			01: Scientific Method
	Apr 09	Tue	Life & Science	1	
	Apr 10	Wed			02: Systematics
	Apr 11	Thu	Classification Systems	26	
2	Apr 15	Mon			03: Plants I
	Apr 16	Tue	Life Cycles	12.1; 13.1-2; 28.2-6	
	Apr 17	Wed			04: Plants II
	Apr 18	Thu	Plant Development & Tissues	35	
3	Apr 22	Mon			05: Plants III
	Apr 23	Tue	Plant Vasculature & Transport	36	
	Apr 24	Wed			06: Plants IV
	Apr 25	Thu	Gas Exchange in Animals	42	
4	Apr 29	Mon			SE-1: Gas Exchange
	Apr 30	Tue	Circulation	"	
	May 01	Wed			07: Fungi
	May 02	Thu	Exam 1		
5	May 06	Mon			Review for lab exam
	May 07	Tue	Animal Development & Tissues	47	
	May 08	Wed			Lab Exam 1
	May 09	Thu	Homeostasis & Thermoregulation	40	
6	May 13	Mon			08: Animals I
	May 14	Tue	Feeding & Digestion	41	
	May 15	Wed			09: Animals II
	May 16	Thu	Nutrition	"	
7	May 20	Mon			10: Animals III
	May 21	Tue	Osmoregulation	44	
	May 22	Wed			SE-2: Osmoregulation & Excretion
	May 23	Thu	Excretion	"	
8	May 27	Mon			*Memorial Day* — No lab
	May 28	Tue	Exam 2		
	May 29	Wed			11: Animals IV
	May 30	Thu	Coordination of Body Functions	45; 48	
9	Jun 03	Mon			12: Animals V
	Jun 04	Tue	Animal Senses	50	
	Jun 05	Wed			13: Fish Anatomy
	Jun 06	Thu	"	"	
10	Jun 10	Mon			14: Mammalian Anatomy
	Jun 11	Tue	Locomotion & Motor Systems	"	
	Jun 12	Wed			15: Vertebrate Skeletons
	Jun 13	Thu	"	"	
11	Jun 17	Mon			Review for lab exam
	Jun 18	Tue	Animal Reproduction	46	
	Jun 19	Wed			Lab Exam 2
	Jun 20	Thu	Catch-up & Wrap-up		
12					
	Jun 27	Thu	Exam 3 (11:30–1:30)		