# BIOL 240 - General Zoology Course Outline Approval Date: 3/10/2022 Effective Date: 8/11/2023

### **SECTION A**

Unique ID Number	CCC000085469
Discipline(s)	Biological Sciences
Division	Science and Engineering
Subject Area	Biology
Subject Code	BIOL
Course Number	240
Course Title	General Zoology
TOP Code/SAM Code	0407.00 - Zoology, General / E - Non-Occupational
Rationale for adding this course to the curriculum	1. Updating math prerequisite to remove the discontinued MATH 94 and replace it with "MATH 95, Intermediate Algebra or equivalent placement." This language is consistent with recently approved changes to the math prerequisite for CHEM 120, which is a prerequisite for this course. 2. Changing the course schedule to replace the 1-hour discussion with a second, weekly 3-hour lab. This reverts back to the original schedule for this class, is consistent with other 200-level biology lab courses, and is needed in

#### Maximum Enrollment

Grading Option Letter Grade or P/NP

Distance Education Mode of Instruction

#### **SECTION B**

#### **General Education Information:**

#### **SECTION C**

**Course Description** 

Repeatability May be repeated 0 times

**Catalog** An integrated course in zoology and organismal biology, emphasizing the **Description** anatomy, physiology, development, diversity, and evolutionary relationships of animals. Major topics include comparative study of major animal phyla, principles of evolution, genetics of organisms and populations, mechanisms of animal development, and structure-function relationships in animals. Intended for biology majors.

## Schedule

Description

#### SECTION D

#### **Condition on Enrollment**

#### 1a. Prerequisite(s)

BIOL 120 with a minimum grade of C or better and CHEM 120 with a minimum grade of C or better and Intermediate Algebra, MATH-95, or appropriate placement.

#### 1b. Corequisite(s): None

- 1c. Recommended: None
- 1d. Limitation on Enrollment: None

#### SECTION E

#### **Course Outline Information**

#### 1. Student Learning Outcomes:

- A. Characterize the major animal phyla and compare their basic anatomy.
- B. Articulate the principles of Darwinian evolutionary theory.
- C. Relate structure to function in the vertebrate organ systems.
- 2. Course Objectives: Upon completion of this course, the student will be able to:
  - A. Trace the evolutionary history of animal lifeufr13()-4(f) 37.92to function in the verteste GP

- E. Compare the anatomy of the chordate classes and identify homologous structures in different classes and different organ systems.
- F.

- b. Animal tissues
- c. Homeostasis
- d. Thermal and energy relations of animals
  l. Physiology of vertebrate organ systems

  a. Skeletal system
  b. Muscular system
  c. Digestive system

- diagram phylogeny of the vertebrate classes and compare representative specimens

- compare anatomy of a shark and a bony fish

- identify diverse types of reptiles, birds and mammals

- describe morphological adaptations for swimming, flying and terrestrial locomotion in different vertebrate classes

g. Field Trip to the Coast

- observe intertidal and marine animals in a protected harbor and along the exposed coastline
- characterize zonation patterns of intertidal animals
- discuss specific adaptations for life in the intertidal zone
  - C. Animal development
    - a. Embryology of the sea star
- identify stages of early sea star development on slides
  - b. Embryology of the frog
- identify stages and structures of the frog embryo
  - c. Development of the vertebrate body plan
- relate embryonic structures in the frog and chick embryo to the vertebrate body plan
  - D. Vertebrate Form and Function
    - a. Vertebrate skeleton
- identify major bones on mounted and disarticulated skeletons
- recognize skeletal homology in diverse mammal skeletons
- compare skull morphology and dentition in herbivorous, carnivorous and omnivorous mammals

b. Functional anatomy of mammals: Fetal pig dissection and study of human anatomical models

- 1. Muscular system
- 2. Digestive and respiratory systems
- 3. Circulatory systems
- 4. Urogenital systems

#### 4. Methods of Instruction:

**Discussion:** Instructor-guided discussion of lecture topics and selected reading assignments.

Field Trips: Class field trip to Bodega Marine Laboratory

**Lab:** Observation and inquiry-based study of animal diversity, embryology, functional anatomy and physiology

Lecture: Spoken lectures with visual media, diagram handouts, and interactive question and discussion

**Online Adaptation:** Discussion, Lecture

**Explain how the online adaptation of the methods of instruction aligns with the course outcomes:** Online lectures will use instructor-narrated Powerpoint presentations supplemented with detailed lecture outlines posted weekly on the course Canvas website.

Quizzes -- Lecture quizzes consist of multiple choice and short answer questions. Lab

3. Diagram the water flow pattern through the mantle cavity of a marine snail, showing the incurrent and excurrent flows.

4. What structures function to close the valves of a clam shell? What structure opens the valves?

5. Describe how a clam burrows into sand or mud. What specific muscle(s) does it use?6. Make a table of several species you studied in lab that divides them into the following groups: ciliary-mucoid filter feeders, radular grazers, active predators.

#### 4. Required Materials

A. EXAMPLES of typical college-level textbooks (for degree-applicable courses) or other print materials.

Book #1:	
Author:	Urry, L.A., et al
Title:	Campbell Biology
Publisher:	Pearson
Date of Publication:	2020
Edition:	12th
Book #2:	
Author:	Hickman, C.P., et al
Title:	Integrated Principles of Zoology
Publisher:	McGraw-Hill
Date of Publication: 2020	
Edition:	18th
Book #3:	
Author:	Hickman, C.P., et al
Title:	Laboratory Studies in Integrated Principles of Zoology
Publisher:	McGraw-Hill
Date of Publication:	2020
Edition:	18th

B. Other required materials/supplies.