



# ILLINOIS VALLEY COMMUNITY COLLEGE

## COURSE OUTLINE

**DIVISION: Natural Sciences and Business**

**COURSE: BIO 1002 General Biology II**

Date: Spring 2023

Credit Hours: 4

*Complete all that apply or mark "None" where appropriate:*

Prerequisite(s): BIO 1001

Enrollment by assessment or other measure?  Yes  No

If yes, please describe:

Corequisite(s): None

Pre- or Corequisite(s): None

Consent of Instructor:  Yes  No

Delivery Method:	<input checked="" type="checkbox"/> <b>Lecture</b>	<b>3 Contact Hours</b> (1 contact = 1 credit hour)
	<input type="checkbox"/> <b>Seminar</b>	<b>0 Contact Hours</b> (1 contact = 1 credit hour)
	<input checked="" type="checkbox"/> <b>Lab</b>	<b>2 Contact Hours</b> (2-3 contact = 1 credit hour)
	<input type="checkbox"/> <b>Clinical</b>	<b>0 Contact Hours</b> (3 contact = 1 credit hour)

Offered:  **Fall**  **Spring**  **Summer**

**CATALOG DESCRIPTION and IAI NUMBER (if applicable):**

This course reinforces the concepts introduced in BIO 1001 with an emphasis on human biology, ecology and the diversity of life. Special attention is given to the biological processes of digestion, respiration, circulation, excretion, communication and reproduction.

## **ACCREDITATION STATEMENTS AND COURSE NOTES:**

None

## **COURSE TOPICS AND CONTENT REQUIREMENTS:**

1. Human and Animal Organization
2. Obtaining Nutrients: Digestion and Nutrition
3. Gas exchange: Respiration
4. Circulation: Cardiovascular System
5. Lymphatic System and Immunity
6. Urinary System and Excretion
7. Communication: Nervous System
8. Communication: Senses
9. Communication: Endocrine System
10. Reproduction
11. Animal Behavior
12. Ecology: Population Growth and Regulation
13. Ecology: Community Interactions
14. Ecology: Nature of Ecosystems
15. Ecology: The Biosphere – Terrestrial Biomes of the World

## **INSTRUCTIONAL METHODS:**

1. Lectures
2. Laboratory and lecture discussions
3. Laboratory dissections and experiments
4. Lecture and lab discussions and assignments
5. Group activities

## **EVALUATION OF STUDENT ACHIEVEMENT:**

1. Text and laboratory reading assignments
2. Lecture exams and quizzes
3. Laboratory practical quizzes and/or exams
4. Laboratory exercises and experiments
5. Participation in lecture and/or laboratory discussions and demonstrations
6. Other assignments as appropriate

A = 90-100

B = 89-80

C = 79-70

D = 69-60

F = 59 and below

## **INSTRUCTIONAL MATERIALS:**

### **Textbooks**

Essentials of Biology, 6<sup>th</sup> edition, Mader, Sylvia S. (Inclusive Access)

Lab Manual: BIO-1002 Customized Lab Manual, Mader, Sylvia S.

### **Resources**

1. Visual aids (models, videos, internet resources, display materials,
2. Preserved fetal pigs and various lab atlases and dissection guides

3. Other preserved materials
4. Document Camera
5. Compound light microscope and prepared slides
6. Automatic Digital Sphygmomanometers
7. Spirometers
8. Standard laboratory glassware and reagent solutions
9. Blackboard for testing, quizzes, assignments and/or announcements

## **LEARNING OUTCOMES AND GOALS:**

### **Institutional Learning Outcomes**

- 1) Communication – to communicate effectively;
- 2) Inquiry – to apply critical, logical, creative, aesthetic, or quantitative analytical reasoning to formulate a judgement or conclusion;
- 3) Social Consciousness – to understand what it means to be a socially conscious person, locally and globally;
- 4) Responsibility – to recognize how personal choices affect self and society.

### **Course Outcomes and Competencies**

1. Understand the levels of organization that are considered in studying the general biology of organisms, with special emphasis on human homeostatic processes.
  - 1.1. Describe the general structure and function of the human body at the chemical, cellular, tissue, organ, and organ system levels.
  - 1.2. Identify the more common types of tissues found in the body based on microscopic appearance.
  - 1.3. Relate the organ systems of the body to their general homeostatic functions.
2. Understand in general the ways in which the processes of digestion, respiration, circulation, excretion, nerve and endocrine function and reproduction work to maintain homeostasis, especially as these processes apply to human biology.
  - 2.1. Describe in general the features of complete and incomplete digestive plans in animals with emphasis on the structure and function of the human digestive system.
  - 2.2. Describe in general the features of gas exchange in animals with emphasis on the structure and function of the human respiratory system.
  - 2.3. Describe in general the features of open and closed circulatory systems in animals with emphasis on the structure and function of the human cardiovascular system.
  - 2.4. Describe several mechanisms of excretion that exist among different groups of living organisms and in humans with emphasis on the structure and function of the human urinary system.
  - 2.5. Demonstrate an understanding of the communication functions of nerve cells with emphasis on the structure and function of the human nervous system and special sense organs.
  - 2.6. Demonstrate an understanding of sexual and asexual methods of reproduction that exist among different groups of living organisms with emphasis on the structure and function of the male and female human reproductive systems.

3. Demonstrate a general understanding of the behaviors exhibited by animals.
  - 3.1. Describe, using examples, the differences between innate and learned behaviors that can be observed among animal groups.
  
4. Demonstrate a basic understanding of the principles of ecology.
  - 4.1. Demonstrate an understanding of the identification, analysis and evaluation of population dynamics.
  - 4.2. Demonstrate an understanding of the identification, analysis and evaluation of population dynamics.
  - 4.3. Describe the concepts of energy flow and nutrient/ materials cycling within ecosystems.
  - 4.4. Demonstrate an understanding of the characteristics of climate and soil type that determine the characteristic plant and animal life within the terrestrial biomes of the world.
  
5. Demonstrate a general understanding of the diversity of life and the ways in which organisms are classified.
  - 5.1. Demonstrate a general understanding of the three- domain and five-kingdom (within D. Eukarya) method of taxonomic classification.
  - 5.2. Describe the basic criteria used to classify organisms belonging to some of the simplest animal phyla.