



# ILLINOIS VALLEY COMMUNITY COLLEGE

## COURSE OUTLINE

**DIVISION: Natural Sciences and Business**

**COURSE: BIO 1008 Anatomy & Physiology II**

Date: Spring 2023

Credit Hours: 4

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

Prerequisite(s): BIO 1007

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>2 Contact Hours</b> (1 contact = 1 credit hour)
	<input checked="" type="checkbox"/> <b>Seminar</b>	<b>1 Contact Hours</b> (1 contact = 1 credit hour)
	<input checked="" type="checkbox"/> <b>Lab</b>	<b>3 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):**

A continuation of BIO 1007, this course completes an introductory study of the structure and function of the human body. Six major systems - circulatory, lymphatic, respiratory, digestive, excretory and reproductive are studied, along with metabolism and regulation of fluids, electrolyte, and pH.

## ACCREDITATION STATEMENTS AND COURSE NOTES:

None

## COURSE TOPICS AND CONTENT REQUIREMENTS:

1. Blood
2. Cardiovascular System
3. Lymphatic System and Immunity
4. Respiratory System
5. Digestive System
6. Nutrition and Metabolism
7. Urinary System
8. Fluid, Electrolyte and Acid-Base Balance
9. Male/Female Reproductive System

## INSTRUCTIONAL METHODS:

1. Lectures
2. Laboratory and lecture/seminar discussions
3. Laboratory dissections and experiments
4. Written evaluations in lecture/seminar and/or laboratory
5. Lecture/seminar, lab and online discussions and assignments
6. Computer software application demonstrations, virtual cadaver dissection
7. Group activities

## EVALUATION OF STUDENT ACHIEVEMENT:

1. Text and laboratory reading assignments
2. Lecture exams
3. Laboratory practical quizzes and/or exams
4. Laboratory exercises and experiments
5. Participation in lecture and/or laboratory discussions and demonstrations
6. Quizzes
7. Other assignments as appropriate
  - A = 90-100
  - B = 89-80
  - C = 79-70
  - D = 69-60
  - F = 59 and below

## INSTRUCTIONAL MATERIALS:

### Textbooks

Required: The following materials are bundled together through "Inclusive Access":

1. E-book (available through Connect – see #3):  
VanPutte, C., Regan, J. & Russo, A. (2019). *Seeley's Essentials of Anatomy and Physiology*, 10th edition, McGraw-Hill Publishing: Dubuque, IA.
2. Lab Manual (Physical copy required): Wise, E. 2019. *Seeley's Anatomy & Physiology*, 12<sup>th</sup> edition, McGraw-Hill Publishing: Dubuque, IA.
3. Connect (with Anatomy & Physiology Revealed) online student e-book and other resources.

Optional: For a small fee, students may purchase from the bookstore the loose-leaf version of the e-book cited above:

1. VanPutte, C., Regan, J. & Russo, A. (2019). Seeley's Essentials of Anatomy and Physiology, 10th edition, McGraw-Hill Publishing: Dubuque, IA.

## Resources

1. Visual aids (models, videos, internet resources, display materials, preserved specimens/organs (cat, beef heart, pig kidney), virtual and human cadaver demonstrations, Connect and Anatomy & Physiology Revealed (APR)
2. Compound light microscope
3. Digital scope camera and app
4. Hematology equipment
5. Sphygmomanometers (aneroid and digital)
6. Stethoscopes
7. Portable ECG device and app
8. Urinalysis equipment
9. Spirometers
10. Smart Classroom equipment
11. 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 relationships that exist between form and function with reference to the study of human anatomy and physiology

- Competency 1.1 – Students will be able to identify the organs of the human male and female reproductive systems and describe their functions.
- Competency 1.2 – Students will be able to identify the anatomical features of the human circulatory system and describe their functions.
- Competency 1.3 – Students will be able to identify the organs of the human lymphatic system and describe their immune and other functions.
- Competency 1.4 – Students will be able to identify the organs of the human respiratory system and describe their functions.
- Competency 1.5 – Students will be able to identify the organs of the human digestive system and describe their functions.
- Competency 1.6 – Students will be able to identify the organs of the human urinary system and describe their functions.

## **2. relate the organ systems of the body to their specific homeostatic functions**

- Competency 2.1 – Students will be able to identify and describe the phases of meiosis.
- Competency 2.2 – Students will be able to identify and describe the stages of spermatogenesis and oogenesis.
- Competency 2.3 – Students will understand the physiology of the male and female reproductive systems.
- Competency 2.4 – Students will understand the mechanisms of transport, immunity, and blood coagulation.
- Competency 2.5 – Students will be able to describe the functions of the heart and blood vessels and relate this to blood pressure and blood flow regulation.
- Competency 2.6 – Students will be able to describe the functions of the lymphatic system with special emphasis on the nonspecific and specific defenses of the body.
- Competency 2.7 – Students will be able to describe the general functions of the respiratory system with an emphasis in acid-base regulation.
- Competency 2.8 – Students will be able to describe the general functions of the digestive system, current nutritional guidelines, healthy body composition, energy expenditure, and fluid intake.
- Competency 2.9 – Students will be able to describe the interrelationships between the metabolic pathways associated with energy formation and nutrition.
- Competency 2.10 – Students will be able to describe the physiology of the urinary system with an emphasis on acid-base regulation and electrolyte balance.
- Competency 2.11 – Students will be able to describe the concepts of fluid, electrolyte and acid-base balance.

## **3. demonstrate laboratory skills in anatomical dissection of the cat and observation of other preserved materials, microscopy and scientific instrumentation**

- Competency 3.1 – Students will be able to identify the organs and other structures of the male and female reproductive systems.
- Competency 3.2 – Students will be able to perform and explain the significance of selected hematology tests.
- Competency 3.3 – Students will be able to identify the organs and selected structures of human and cow/pig/sheep hearts.
- Competency 3.4 – Students will be able to identify the major blood vessels of the cat and human.
- Competency 3.5 – Students will be able to perform blood pressure measurements using aneroid or digital sphygmomanometers and explain the clinical significance of blood pressure values.
- Competency 3.6 – Students will be able to identify the major organs and selected structures of the human and cat respiratory systems.
- Competency 3.7 – Students will be able to perform selected pulmonary volume tests using a handheld spirometer and analyze the clinical significance of measured pulmonary volumes.
- Competency 3.8 – Students will be able to identify the major organs and selected structures of the human and cat digestive systems.

Competency 3.9 – Students will be able to describe the concepts of food digestion, nutritional guidelines and fluid intake.

Competency 3.10 – Students will be able to identify the organs and selected structures of the human and cat urinary systems as well as the pig kidney.

Competency 3.11 – Students will be able to perform and explain the clinical significance of selected urine tests.

Competency 3.12 – Students may gain practice in anatomical observation skills through optional human cadaver demonstrations.

**4. develop an appreciation and curiosity of practical applications of anatomy and physiology in the health care professions**

Competency 4.1 – Students will be able to describe in general the homeostatic imbalances associated with the cell, tissues, organs, and organ systems of study.