



ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Natural Sciences and Business

COURSE: BIO 1007 Anatomy & Physiology I

Date: Spring 2023

Credit Hours: 4

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

Prerequisite(s): None

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

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

CATALOG DESCRIPTION and IAI NUMBER (if applicable):

This course involves an introductory study of the structure and function of the human body. A study of cytology, histology and five organ systems (integumentary, skeletal, muscular, nervous, and endocrine) illustrates the relationships between structures and their functions. Laboratory exercises include microscopy, experiments, preserved specimen dissection and/or observation, cadaver demonstration and other materials.

ACCREDITATION STATEMENTS AND COURSE NOTES:

None

COURSE TOPICS AND CONTENT REQUIREMENTS:

1. Introduction to anatomy and physiology (directional terms, planes of section, regional terms, organs and organ systems, body orientation)
2. Basic chemistry as it relates to human physiology
3. Cytology (including mitosis and protein synthesis)
4. Histology
5. Integumentary System
6. Skeletal System
7. Muscular System
8. Nervous System
9. Endocrine System

INSTRUCTIONAL METHODS:

1. Lectures
2. Seminar and laboratory discussions
3. Laboratory dissections and experiments
4. Written evaluations in lecture, seminar, and/or laboratory
5. Online assignments and/or discussions
6. Software applications - Virtual cadaver dissection, accu-scope digital microscope camera
7. Group activities -- particularly laboratory group activities

EVALUATION OF STUDENT ACHIEVEMENT:

1. Text and laboratory reading and writing assignments
2. Lecture exams
3. Laboratory practical exams
4. Quizzes
5. Participation in laboratory activities including experiments, dissections, observation of anatomical materials, and demonstrations
6. Online discussions (for blended and/or online students)
7. Advanced preparation of seminar objectives (for blended and/or online students)
9. Other assignments as appropriate

Grades will be assigned primarily on the basis of total points earned during lecture tests, laboratory practicals, quizzes, group work, and assignments. The following grading scale will be used as a guide in determining the final letter grade for the course:

A= 90-100%

B= 80-89%

C= 70-79%

D= 60-69%

F= 0-60%

Other criteria such as class participation, demonstrated laboratory skill, and attendance may also be considered in assigning a final letter grade.

INSTRUCTIONAL MATERIALS:

Textbooks

Required:

Inclusive Access: Connect APR & PHILs for *Seeley's Essentials of Anatomy and Physiology*, 11th edition. VanPutte, C., Regan, J. & Russo, A. (2022). McGraw-Hill Publishing: Dubuque, IA. ISBN13: 9781265169862

Lab Manual by Wise, for *Seeley's Anatomy & Physiology*, 12th edition (2020), McGraw-Hill Publishing: Dubuque, IA. Physical copy required. ISBN13: 9781264075201

Optional:

Loose-leaf version of the e-book is available through e-campus

VanPutte, C., Regan, J. & Russo, A. (2022). *Seeley's Essentials of Anatomy and Physiology*, 11th edition, McGraw-Hill Publishing: Dubuque, IA.

Recommended – A&P Coloring book -- available in the IVCC bookstore

Resources

1. Instructor lecture and lab packets
2. Anatomical models
3. Preserved specimens including human bones, human brains, mammalian organs (cat, sheep brain, beef eye)
4. Virtual cadaver
5. Human cadaver demonstrations
6. Videos
7. Online resource materials
8. Laboratory equipment – Compound light microscope, analytical balances, test tubes, beakers, graduated cylinders, pipettes, hot plates
9. Document camera
10. Smart Classroom equipment
11. LMS for collaborating, testing, quizzes, assignments, and announcements
12. Polling using Zoom, Microsoft Forms, or LMS

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

Upon completion of the course, the student will be able to:

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 parts of the cell and describe their functions.

- Competency 1.2 – Students will be able to identify types of tissues and describe their locations and functions.
- Competency 1.3 – Students will be able to identify the organs of the integumentary system and describe their functions.
- Competency 1.4 – Students will be able to identify the organs of the skeletal system and describe their functions.
- Competency 1.5 – Students will be able to identify the organs of the muscular system and describe their functions.
- Competency 1.6 – Students will be able to identify the organs of the nervous system and describe their functions.
- Competency 1.7 – Students will be able to identify the organs of the endocrine 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 describe the process of body temperature regulation.
- Competency 2.1 – Students will be able to describe the process of vitamin D synthesis by the integumentary system.
- Competency 2.3 – Students will be able to describe the process of bone formation.
- Competency 2.4 – Students will be able to describe the process of bone healing.
- Competency 2.5 – Students will be able to describe the process of skeletal muscle contraction.
- Competency 2.6 – Students will be able to describe the process of maintaining resting membrane potential in a neuron.
- Competency 2.7 – Students will be able to describe the process of nerve impulse conduction.
- Competency 2.8 – Students will be able to describe the events of a spinal reflex arc.
- Competency 2.9 – Students will be able to describe the functions of the autonomic nervous system.
- Competency 2.10 – Students will be able to describe the neural pathways related to olfaction, gustation, vision, and hearing.
- Competency 2.11 – Students will be able to describe the process of vision.
- Competency 2.12 – Students will be able to describe the process of hearing.
- Competency 2.13 – Students will be able to describe the actions of steroid and non-steroid hormones on their target cells.
- Competency 2.14 – Students will be able to describe the control of hormone production through negative feedback mechanisms.
- Competency 2.15 – Students will be able to explain how hormones control various metabolic processes.

3. demonstrate laboratory skills in microscopy and scientific instrumentation, anatomical dissection, and observation of preserved materials;

- Competency 3.1 – Students will be able to demonstrate proper use of the compound microscope.
- Competency 3.2 – Students will be able to demonstrate the use of analytical balances and other laboratory equipment related to experimentation.
- Competency 3.3 – Students will be able to identify the 206 bones and related bony landmarks of the human skeleton.

Competency 3.4 – Students will be able to compare structures/organs of the cat with human structures/organs.

Competency 3.5 – Students will be able to identify structures in the preserved sheep brain.

Competency 3.6 – Students will be able to identify the structures of the human brain.

Competency 3.7 – Students will be able to dissect and identify the structures of the cow/sheep eye.

Competency 3.8 – Students will be able to identify the organs and related structures using the human cadaver.

4. use the content of this course to prepare for more advanced work in anatomy and physiology.

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.