

BIOL 105 - Human Biology Course Outline

Approval Date: 5/12/2022

Effective Date: 8/11/2023

SECTION A

Unique ID Number CCC000590096

Repeatability May be repeated 0 times

Catalog Description A survey of human biology focusing on anatomy, physiology, cell development, tissues, organs, and organ systems. The course also covers molecular biology, genetics, human evolution, and diversity. Laboratories include microscopic observations, experiments, and animal dissections. This course is specifically designed for health occupations students as a prerequisite to Human Anatomy and Human Physiology, but is also designed for non-majors.

Schedule Description

SECTION D

Condition on Enrollment

1a. Prerequisite(s)

CHEM 110

Intermediate Algebra, MATH 93 or MATH 232 with a minimum grade of C or appropriate placement.

1b. Corequisite(s)

CHEM 110

1c. **Recommended:** *None*

1d. **Limitation on Enrollment:** *None*

SECTION E

Course Outline Information

1. Student Learning Outcomes:

- A. Demonstrate a fundamental understanding of the anatomy and physiology of the major organ systems in humans.
- B. Demonstrate a basic understanding of the scientific method.

2. Course Objectives: Upon completion of this course, the student will be able to:

- A. Apply scientific methodology to the study of human biology.
- B. Apply basic principles of chemistry to human biology.

- c. Biological chemistry
- d. Cell biology including cell structure, cell division, cellular metabolism, DNA structure and replication, and protein synthesis
- e. Tissues
- f. Skin and the integumentary system
- g. The musculoskeletal system
- h. The nervous system including function, organization, integration, and physiology of neurons
- i. Endocrine system
- j. Cardiovascular system
- k. Composition and function of blood
- l. Body defenses and immunity
- m. Respiratory system
- n. Digestive system and enzymes
- o. Urinary system and osmoregulation
- p. Reproduction
- q. Human genetics

2. LABORATORY OUTLINE

- a. Laboratory safety
- b. Use of the light microscope
- c. Metric system and measurements
- d. Cell structure and division
- e. Biological chemistry and nutrition
- f. Body tissues
- g. Introduction to animal dissection
- h. Digestive system
- i. Blood and the cardiovascular system
- j. Skeletal system
- k. Human genetics
- l.

4. Methods of Instruction:

Discussion: Group discussion of relevant research and topics

Experiments:

Lab:

Lecture: Lecture 94.85 re83(ato)10(3(r)-3(s:ge)147)5(cs)]TJE(sys)11(nd t)-couand ()-n4(em

examine and identify cellular structures and tissues; dissections of preserved animal specimens; identification of skeletal bones. Students will keep an organized lab notebook of their observations of anatomical, physiological, and genetic exercises performed in the laboratory. The lab notebook will be evaluated by the laboratory instructor.

Final Exam -- The final exam will be a cumulative assessment covering all the lecture topics presented in the course.

Letter Grade or P/NP

6. Assignments: State the general types of assignments for this course under the following categories and provide at least two specific examples for each section.

A. Reading Assignments

Selected readings from the required textbook and laboratory manual.

For example:

1. Read chapter 1 from "Biology of Humans" covering the scientific method.
2. Read exercise 1 in the laboratory manual and summarize the procedures to be performed in lab.

B. Writing Assignments

Writing assignments are graded on scientific accuracy, organization, and correct use of English grammar and spelling.

For example:

1. Laboratory notebook
2. Dietary analysis
3. Genetic problem set
4. Chemistry problem set

C. Other Assignments

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7. Required Materials

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

Book #1:

Author: Goodenough and McGuire,
Title: Biology of Humans: Concepts, Applications, and Issues
Publisher: Pearson Prentice Hall
Date of Publication: 2017
Edition: 6th

Book #2:

Author: Mader and Windelspecht
Title: Human Biology
Publisher: McGraw Hill
Date of Publication: 2016
Edition: 14th

Edition: 9th

B. Other required materials/supplies.

A lab fee may be required.