BIOL 105 - Human Biology Course Outline

Approval Date: 5/12/2022
Effective Date: 8/11/2023

SECTION A

Unique ID Number	CCC000590096
Discipline(s)	Biological Sciences
Division	Science and Engineering
Subject Area	Biology
Subject Code	BIOL
Course Number	105
Course Title	Human Biology
TOP Code/SAM Code	0401.00 - Biology, General / E - Non-Occupational
Rationale for adding this course to the curriculum	Update Math recommendation to match Chem 110 language since Chem 110 is now a pre/co-requisite. Remove English requirement since English 90 is no longer offered.
Units	4
Cross List	*N/A*
Typical Course Weeks	18
Total Instructional Hours	

	Contact Hours
Lecture	54.00
Lab	54.00
Activity	0.00
Work Experience	0.00
Outside of Class Hours	108.00

Total Contact Hours	108
Total Student Hours	216
Open Entry/Open Exit	No
Maximum Enrollment	
Grading Option	Letter Grade or P/NP
Distance Education Mode of Instruction	On-Campus Hybrid Entirely Online Online with Proctored Exams

SECTION B

General Education Information:

SECTION C

Course Description

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. Describe the structure and function of cells and the processes of cell division (mitosis and meiosis).
D. Identify the major microscopic and macroscopic structural features of the human body.
E. Provide examples of the relationship between anatomical structures and body functions.
F. Identify the organ systems of the body and their major components and functions.
G. Describe the fundamental mechanisms of heredity and perform basic genetics calculations.
H. Describe some commonly encountered pathological and genetic conditions.
I. Discuss the function of the immune system in health and disease.
J.

3. Course Content

The course content is drawn primarily from contemporary texts used in the field of human biology. This is supplemented with current articles from scientific journals. The lectures emphasize body function (physiology), while laboratory work focuses on structure (anatomy). Cell division and genetics are covered in both lecture and laboratory.

1. LECTURE OUTLINE

a. Scientific method
b. Organization of the human body and the concept of homeostasis

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 covering topics in course ontent with images

5. Methods of Evaluation: Describe the general types of evaluations for this course and provide at least two, specific examples.

Typical classroom assessment techniques

Exams/Tests -- Lecture examinations will consist of objective questions in a variety of formats including short answer, multiple choice, and essay questions. Lab examinations involve identifying microscopic and macroscopic structures and relating them to their functions.
Quizzes -- Quizzes will be short examinations dealing with both lecture material and laboratory exercises.
Home Work -- Homework assignments will include solving Medelian genetic calculations, chemistry problem sets,and keeping a food diary to perform a nutritional analysis of the student's diet.
Lab Activities -- Students will perform laboratory exercises including using microscopes to

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

Book #3:
Author: Johnson, M.
Title: Human Biology: Concepts and Current Issues
Publisher: Pearson
Date of Publication: 2022

Edition: 9th

B. Other required materials/supplies.

- A lab fee may be required.