GROSSMONT COLLEGE

COURSE OUTLINE OF RECORD

Curriculum Committee Approval: 05/18/2021

GCCCD Governing Board Approval: 06/15/2021

BIOLOGY 144 - ANATOMY AND PHYSIOLOGY I

1. Course Number Course Title Semester Units

BIO 144 Anatomy and Physiology I 4

Semester Hours

3 hours lecture: 48-54 hours 96-108 outside of class hours 3 hours lab: 48-54 hours

192-216 total hours

2. Prerequisites

A "C" grade or higher or “Pass” in Biology 120 or equivalent. Only Nursing majors may fulfill the Biology 120 prerequisite with one year of high school biology with a lab.

Corequisite

None

Recommended Preparation

None

3. Catalog Description

The study of physiological chemistry, cell physiology, tissues and the structure and functions of following human systems: bone, muscle, endocrine and nervous systems. The gross anatomy, micro-anatomy as well as functions and interrelationships of these systems are studied. The course emphasizes the homeostatic nature of these systems with some reference to human disease states. Cat or other suitable, available specimens are used as dissected specimens in lab along with selected human organs, tissue slides, cadaver and computer demonstrations. This course, along with Biology 145, meets the anatomy and physiology requirements for associate degrees and baccalaureate degrees in nursing as well as degrees in avariety of related paramedical fields.

4. Course Objectives

The student will:

a. Identify the structural features of the human body, both microscopic and macroscopic.

b. Analyze the functions of the physiological systems in the human body.

c. Relate physiology to the basic principles of chemistry and physics.

d. Examine physiological homeostasis as the unifying principle in the ongoing function of living systems, from the cellular level to the organismal level.

e. Apply the general methods and critical thought processes of life sciences.

f. Contrast normal physiology with that of abnormal physiology (disease).

g. Employ laboratory techniques necessary to access normal and abnormal physiology.

h. Employ the techniques of dissection on preserved cator other suitable available preserved specimensand the techniques of microscopic study of prepared tissue slides.

1. Comprehend the principles of evolution and identify the key areas of human anatomy and physiology that have been shaped by evolution.

j. Apply a systems-oriented approach to explain the interrelationships within living systems as well as between living systems and their physical, chemical, and energy environments.

k. Analyze, explain and apply the data collected from laboratory experiments performed in class.

1. Use self-prepared and prepared materials for examination and analysis using laboratory equipment.

m. Read and analyze college-level materials that elaborate and expand on the understanding of biological topics

5. Instructional Facilities

a. Standard classroom.

b. Science laboratory (microscope, pH meters, specimens, models, Physiograph, spot cameras, solutions, real/synthetic bodily fluid etc.)

6. Special Materials Required of Student

a. Any suitable protection for clothing (lab coat, apron, etc.).

b. Dissecting tools including scalpel, scissors, blunt probes, forceps and dissecting needles.

7. Course Content

All course content is taught in both lecture and lab. There are no topics exclusively taught in lab

a. Lecture Content:

1) Introductory chemistry and biochemistry

2) Endocrine Anatomy and Physiology

b. Lecture and Lab Content:

1) Anatomical planes and sections

2) Cell micro-anatomy and Physiology

3) Tissue structure and function

4) Bone Anatomy and Physiology

5) Muscular Anatomy and Physiology

6) Neuro Anatomy and Physiology

8. Method of Instruction

a. Lecture and discussion

b. Multimedia presentations

c. Laboratory experiments.

d. Laboratory dissection.

. e. Use of microscope, anatomical models and histology slides.

f. Use of physiological equipment, solutions, actual/synthetic body fluids, graphs, charts and chemicals

9. Methods of Evaluating Student Performance

a. Lecture: Examinations covering specific biological units and bodily systems. Each student will be expected to:

1) Define relevant terms.

2) Describe and explain relevant concepts and apply them.

3) Make drawings of chemical structures and cellular components.

4) Demonstrate critical thinking application skills based on the concepts studied in class.

5) Be able to apply critical thinking and relate physiological concepts to normal and abnormal

homeostatic conditions.

6) Spell, write comprehensive essays and full sentences using proper grammar and verbiage

including use of technical terms relevant to the course.

b. Final exam consists of specific physiological units covered in class. Students are expected to demonstrate all the skills mentioned above.

c. Laboratory "Practical Exams. Each student will be expected to:

1) Identify anatomical structures from dissected animals, models, microscope slides and

appropriate hand-outs.

2) Spell, write full sentences using proper grammar and verbiage including use of

technical terms relevant to the course.

3) Be able to apply critical thinking and relate anatomical/physiological concepts to

normal and abnormal homeostatic conditions.

10. Outside Class Assignments

a. Study assigned text readings.

b. Answer study questions.

c. Study illustrations in lab workbook.

d. Take practice quizzes provided within blackboard container for class.

e. Participate in ongoing discussions on topics provided within blackboard container for class.

f. Write short reports periodically on topics provided and submit on due dates.

1. Conducting independent research using primary sources.
2. Writing homework assignments and reports.
3. Writing short lab reports.
4. Spell, write comprehensive essays and full sentences using proper grammar and verbiage including use of technical terms relevant to the course.

11. Representative Texts

a. Representative text(s):

1) Tortora, Gerard and Bryan Derrickson. *Principles in Anatomy and Physiology*. 15th edition. Hoboken, NJ: Wiley & Sons, 2016

2) Lab manual published by the Grossmont College Biology Department

b. Supplementary texts and workbooks:

1) Lecture slides down loaded from LMS

2) Any other material that is relevant to the course as described in syllabus

Addendum: Student Learning Outcomes

Upon completion of this course, our students will be able to do the following:

a. Define a given topic which may be a physiological process, a functional system or the combination of an anatomical structure and its comprehensive function or a specific functional description.

b. List the different components of the given topic and differentiate between its parts and their relative functions.

c. Describe the process via which the specific structure maintains its function or set of functions.