GROSSMONT COLLEGE

COURSE OUTLINE OF RECORD

Curriculum Committee Approval: 05/18/2021 GCCCD Governing Board Approval: 06/15/2021

BIOLOGY 145 – ANATOMY AND PHYSIOLOGY II

1. Course Number Course Title Semester Units

BIO 145 Anatomy and Physiology II 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 144 or equivalent.

Corequisite

None

Recommended Preparation

None

3. Catalog Description

This course is a continuation of Biology 144, Anatomy and Physiology I. It is a study of structures and functions of the following systems: circulatory, respiratory, digestive, excretory, immune, lymphatic, and reproductive 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 reference to human disease states. Cat or other suitable, available specimens are used as dissected specimens in lab along with selected human organs and tissue slides and computer demonstrations. This course, along with Biology 144, meets the anatomy and physiology requirements for associate degree, and baccalaureate degrees in nursing as well as degrees in a variety of other related paramedical fields.

4. Course Objectives

The studentwill:

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 cats and sheep organs.

i. 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 explaining 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

l. 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, gloves, etc.).

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

7. Course Content

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

a. Cardiac Anatomy and Physiology

b. Blood chemistry and Histology

c. Blood Physiology

d. Lymphatic Anatomy

e. Physiology of Immune system

f. Circulatory Anatomy and Physiology.

g. Respiratory Anatomy and Physiology

h. Digestive Anatomy and Physiology.

i. Excretory Anatomy and physiology

j. Balancing of body fluids.

k. Urinalysis

l. Reproductive 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

1. Lecture: Essay and multiple-choice examinations each covering specific physiological units. Types of questions will include those which require the student 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) Write comprehensive essays and full sentences using proper spelling, grammar and verbiage including use of technical terms relevant to the course.

1. Lecture: Independent or small group project to perform research about physiological conditions, provide concise information, format and design brochure about these conditions, and present in front of the class

c. Laboratory "Practical Exams." Types of questions will include those which require the student to:

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

2) Write full sentences using proper spelling, grammar and verbiage including use of technical terms relevant to the course

3) Think critically and relate anatomical/physiological concepts to normal and abnormal homeostatic conditions.

10. Outside Class Assignments

a. Study assigned text readings.

b. Answer study questions provided by instructors.

c. Study illustrations in lab workbook.

d. Take practice quizzes provided within LMS.

e. Participate in ongoing discussions on topics provided within LMS.

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

g. Conducting independent research using primary sources.

h. Writing homework assignments, reports and brochures.

i. Writing short lab reports.

j. Write high quality brochures outlining certain pathological conditions, using independent research, group work and multimedia.

k. Write comprehensive essays and full sentences using proper spelling, 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) Printed lecture slides provided within 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.

d. Read a given situation, identify a given topic as relevant to the situation and apply it to explain specific questions presented related to the situation.