

DATE: Summer 2007

COURSE NAME: Fundamentals of Human Anatomy and Physiology

PREFIX AND NUMBER: BIO 110

CREDIT AND CONTACT HOURS: 3 credit hours - 4 contact hours

COURSE DESCRIPTION:

Study of the basics of human anatomy and physiology including anatomical terminology, basic biochemistry, cells and tissues, and the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic/immune, respiratory, digestive, urinary, and reproductive systems. Introduction to common human disease processes. Four hours of lecture weekly with potential lab experience within the four contact hours (three credit hours).

II. COURSE OUTCOMES AND OBJECTIVES

This course is intended as an introductory basic biology course for students planning to take advanced anatomy and physiology courses. Students who are pre-nursing, pre-athletic training and pre-massage therapy would benefit the most from this course.

Course objectives - At the completion of this course students will be able to:

1. Define basic anatomical and physiological terms.
2. Describe the normal anatomy and physiology of the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, lymphatic/immune, respiratory, digestive, urinary and reproductive systems and diseases common to these systems.
3. Describe how body systems interact with one another in human health and disease.
4. Explain the concept of homeostasis and give examples of homeostatic regulatory mechanisms in cells, tissues, organs, and body systems.

The course is intended for pre-nursing, pre-athletic training and pre-massage therapy students. It can also be taken for general science/biology credit. It is not a required course for any specific degree program.

This course addresses the following college competencies: reading, oral communication, problem solving, and writing, using the following methods:

1. Reading – ability to read and comprehend written assignments, textbooks, and study materials
2. Oral communication – ability to convey information to the class through oral reports, both group and individual
3. Problem solving – ability to successfully complete assigned in-class projects; successful input into class discussions such as case studies
4. Writing – ability to successfully convey written information in reports and on exams

III. METHOD OF INSTRUCTION

The course will require a textbook (Essentials of Anatomy and Physiology, Martini and Bartholomew). Other course materials may be added as instructors choose. Methods of instruction may vary for different instructors and may include:

1. Lecture
2. In-class group work and problem solving.

3. Class projects and presentations.
4. Papers or summary reports based on articles of interest.
5. In-class laboratory exercises

METHOD OF EVALUATION

1. Tests and quizzes on course topics
2. Assigned reports on course topics
3. In-class exercises
4. Group presentations

IV. GENERAL OUTLINE OF TOPICS COVERED:

1. Introduction to the human body
2. General chemistry
3. Cells, organelles and their functioning; introduction to DNA, RNA and protein synthesis
4. Cell membrane structure, and entry and exit mechanisms
5. The four tissue types, their characteristics, roles and locations in the human body
6. Bone microscopic structure and function; introduction to major bones of the body
7. Muscle structure and physiology; introduction to major muscles of the body
8. Nervous system
9. Endocrine system
10. Blood – components, functions; structure and function of hemoglobin; clotting
11. Cardiovascular system
12. Lymphatic and immune system
13. Respiratory system
14. Digestive system
15. Renal system
16. Reproductive system

Potential accessory laboratory exercises include:

1. Basic Human Anatomy (use of models in class is recommended wherever possible)
2. How to use a microscope, representative tissue slides
3. Bone and muscle models
4. Blood pressure and heart sounds
5. Blood typing
6. Respiratory spirometry