Course Syllabus

Department: Science and Technology

Date: 2/6/12

I. Course Prefix and Number: BIO 171

Course Name: Human Anatomy and Physiology 1

Credit Hours and Contact Hours: 4 credit hours and 6 contact hours

Catalog Description including pre- and co-requisites: Structure and function of the human body dealt with at the following levels of organization: chemical/biochemical, cell/tissue, organ/system. Organ systems include integumentary, skeletal, muscular, digestive, nervous and special senses. Laboratory involves analysis done at both microscopic and macroscopic levels, the latter including disarticulated bones, muscle models, digestive enzyme biochemistry, and selected dissections. Prerequisite: Successful completion of all required remedial courses.

II. Course Outcomes and Objectives

Student Learning Outcomes

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

1. Define basic anatomical and physiological terms.
2. Understand basic chemistry and biochemistry as it relates to human anatomy and physiology.
3. Define the basic tissue types and identify them correctly on a slide.
4. Describe the normal anatomy and physiology of the integumentary, skeletal, muscular, and nervous systems and diseases common to these systems.
5. Identify the 206 bones in the body and approximately 10% of the muscles in a laboratory practical.
6. Describe how body systems interact with one another in human health and disease.
7. Explain the concept of homeostasis and give examples of homeostatic regulatory mechanisms in cells, tissues, organs, and body systems.

In addition students will demonstrate:

- Understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical and interpretive analysis;

- Ability to apply scientific data, concepts, and models in natural sciences.

Relationship to Academic Programs and Curriculum:

This course is required for nursing, athletic training and massage therapy majors. It can also be taken for general science/biology credit.
College Learning Outcomes Addressed by the Course:

☐ writing     ☐ ethics/values
☐ oral communications     ☐ citizenship
☐ reading     ☐ global concerns
☐ mathematics     ☐ information resources
☐ critical thinking       ☐ computer literacy

III. Instructional Materials and Methods

Types of Course Materials:

The course will require a textbook (Human Anatomy and Physiology, Elaine Marieb) and the associated lab manual. Other course materials may be added as instructors choose.

Methods of Instruction (e.g. Lecture, Lab, Seminar …):

3 lecture hours/week to reinforce concepts presented in the text. 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

2 lab hours/week to provide “hands-on” learning opportunities
1 seminar hour/week used variously for video presentations, case studies, exam review, etc.

IV. Assessment Measures (Summarize how the college and student learning outcomes will be assessed):

Students will complete objective format exams including multiple choice and/or short answer items that examine student understanding of important scientific principles and the important features of scientific inquiry (hypothesis testing, data analysis, etc.)

Students will complete laboratory reports in which they apply scientific reasoning and critical thinking skills to interpret and synthesize scientific data from a variety of sources. These reports will include hypothesis testing, mathematical analysis, graphing, cause and effect analysis, and experimental design.

Students will complete two hands-on laboratory practicals, one on bones and the other on muscles.

V. General Outline of Topics Covered:

1. Orientation to the Human Body
2. Chemistry/Biochemistry
3. Cytology/Histology
4. Bone Tissue and the Skeleton

5. Muscle Tissue and the Muscular System

6. Nervous Tissue and the Nervous System

7. Special Senses

8. Digestive System