Course Syllabus

Department: Science and Technology

Date: 2/6/12

I. Course Prefix and Number: BIO 172

Course Name: Human Anatomy and Physiology II

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

Catalog Description including pre- and co-requisites: A continuation of BIO 171 to include the circulatory, respiratory, urinary, reproductive and endocrine systems, along with genetics and pH balance. Laboratory will constitute a continuation of BIO 171 lab studies: microscopic and macroscopic levels of analysis, the latter including electronic apparatus, mammalian dissection, and elementary physiological experiments. Prerequisites: BIO 171.

II. Course Outcomes and Objectives

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

1. Describe the normal anatomy and physiology of the endocrine, cardiovascular, respiratory, lymphatic, immune, and reproductive systems and diseases common to these systems.
2. Explain the processes of electrolyte, water and acid-base balance in the human body.
3. Describe the process of genetic inheritance in humans.
4. Describe how body systems interact with one another in human health and disease.
5. 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.

V. General Outline of Topics Covered:

1. Endocrine System
2. Blood
3. Cardiovascular System
4. Respiratory System
5. Urinary system, electrolyte, fluid and pH balance

6. Immune and lymphatic systems

7. Reproductive systems, Mendelian genetics, development