Course Title: Integrated Human Anatomy & Physiology I Lab  
Course No.: BIO 2070L

No. of Credit Hours: 1

Prerequisites: BIO 2070 taken in the same or a previous semester

Course Description:

Students dissect a cat and study the relation of its anatomy to man's. Students also perform physiological experiments and study human anatomy models. This course fulfills the general education requirements as identified in the college catalog.

Credit for this course may be earned through departmental examination.

Core Learning Areas:

The Core Learning Areas represent a common body of skills and knowledge to which all graduates with associate’s degrees should be exposed and for which the college may determine certain levels of competency which will be assessed through the general education curriculum.

Quantitative Reasoning
Quantitative reasoning addresses the conceptual understanding of numbers, the correct application of proportional reasoning and, the proper interpretation of various representations of statistical data.
Competency in this area is measured by the ability to:
- Solve problems using mathematics that model real-world applications

This Core Learning objective is taught and emphasized during the lab exercise on the skeleton. Students are taught to determine overall height from an individual bone using both metric and English measurement systems. The real-world application is exposure to the career of forensic anthropology and relating it to popular crime show television programs that emphasize forensic anthropology. This objective will be assessed with similar homework assignment questions to those learned in the classroom.

Scientific Reasoning
Scientific reasoning is the process of solving problems and learning about the world through the quantitative and qualitative analysis of empirical data.
Competency in this area is measured by the ability to:
- Evaluate reasoning as generally scientific or non-scientific

This Core Learning objective is taught and emphasized during the discussion of diffusion and osmosis. Statistical probabilities of these events are emphasized. Scientific understanding of this objective is assessed by test questions.

**Performance Objectives (outcomes)**

After the successful completion of BIO 2070L, Integrated Human Anatomy and Physiology I Laboratory, students should be able to:

- enumerate and describe the 4 types of measurement done in science.
- differentiate when to use mean, median, mode and range for data analysis.
- compare and contrast line and bar graphs.
- evaluate the statistical validity of various statements.
- differentiate between filtration, diffusion and osmosis.
- identify and describe the various types of epithelial, connective, muscular and nervous tissue.
- utilization of anatomical directional and positional terms.
- execute the assembly of human bones and bone parts as indicated in the BIO 2070 lab guide.
- determine the structure/function relationship of muscles in the human body and the cat.
- identify features of the brain, spinal cord, and neuron.
- describe the formation and circulation of cerebrospinal fluid.
- summarize the features of a reflex arc.
- compare the parts of the human eye with their function.
- attribute various eye diseases with structure/function pathology.
- recognize the parts of the human ear.
- summarize general auditory functioning.
- recall the structures of the human and cat, male and female reproductive system.

**Performance Objectives are measured by various objective assessments that may include but are not limited to multiple choice, true/false, matching, and fill-in the blank questions and by various written assessments that may include short answer questions, essay questions, case study reports, journals, portfolios, research reports, laboratory reports, practical examinations, and other papers.**

**Outline of Topics**

Experimental Data & Measurement  
Anatomical Terminology  
Membrane Transport  
Histology
Skeleton – Overview
Skelton Vertebrae – Thorax
Skelton Skull
Skeleton Appendicular
Muscles – Overview/head, neck
Muscles – Shoulder Trunk
Muscles – Arms – Abdomen
Nervous System – Brain
Nervous System – Spinal Cord & neuron
Nervous System – Meninges & CSF
Nervous System – Eyes – Vision
Nervous System – Ears - Equilibrum
Reproductive Male/ Female System

Learning Activities may include the following:

Lab work done in small groups (2-4)
Observation Micro & Macroscopic – tissue/models
Dissections
Construction of a skeleton
Membrane transport experiments
Homework exercises
Test taking
Possible internet activities

Instructional Delivery

Lecture
Demonstrations
Individual assistance during lab
Computer Interactive Programs
Videos
Closed circuit T.V. cameras
CD Rom