

Minnesota State College Southeast

BIOL 2515: Anatomy & Physiology I

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 2

OJT Hours/Week: *.*

Prerequisites:

This course requires the following prerequisite

NATS 0510 - Science Foundations

Corequisites: None

MnTC Goals: Goal 02 - Critical Thinking, Goal 03 - Natural Science

Human Anatomy and Physiology I introduces the structure and function of the human body with an emphasis on normal health. This course includes a review of cellular biology, cellular transport, cell reproduction and basic biochemistry. Topics covered include tissues, the integumentary system, skeletal system, articulations, muscular system, and nervous system. (MnTC Goals 2 & 3) (Prerequisite: Recent High School Biology or NATS 0510 or equivalent) (4 credits: 3 lecture/1 lab)

B. COURSE EFFECTIVE DATES: 03/07/2012 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Introduction to Human Anatomy and Physiology
2. Chemical Basis of Cell Structure, Organization and Function
3. Organization and Function of the Integumentary System
4. Organization and Function of the Skeletal System
5. Organization and Function of the Muscular System
6. Organization and Function of the Nervous System

D. LEARNING OUTCOMES (General)

1. Broadly describe the organization, function, and study of human anatomy and physiology
2. Describe the chemical basis and organization of biological organisms
3. Describe the general organization of the cell and the mechanisms of cellular transport
4. Describe the process and locations of cellular metabolism
5. Explain the classification, organization, and function of tissues in organs
6. Describe the structure and function of the skin and its accessory organs
7. Identify bones, bone features, and joints of the skeletal system
8. Explain the physiology of bone formation, reabsorption, and aging
9. Describe the gross anatomy of skeletal muscle and identify major muscles of the body
10. Describe the microscopic anatomy of a muscle fiber and explain the process of muscle stimulation and contraction
11. Describe the divisions, organs, organization, neuron classes, and cellular organization of the nervous system
12. Explain the basic mechanism of nerve impulse transmission and relate it to the function of the nervous system

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

Goal 02 - Critical Thinking

1. Gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.
2. Imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems.
3. Analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted