

# Minnesota State College Southeast

## BIOL 2516: Anatomy & Physiology II

### A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 2

OJT Hours/Week: \*.\*

Prerequisites:

This course requires the following prerequisite

BIOL 2515 - Anatomy & Physiology I

Corequisites: None

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

Human Anatomy and Physiology II continues the study of the human body from Human Anatomy and Physiology I. This course includes principles of chemistry, biochemistry, and molecular biology as they relate to the study of normal body function. Topics covered include the endocrine system, cardiovascular system, immune system, respiratory system, urinary system, digestive system, and reproductive systems. (MnTC Goals 2 & 3) (Prerequisite: Successful completion of BIOL2515 Anatomy & Physiology I) (4 credits: 3 lecture/1 lab)

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

### C. OUTLINE OF MAJOR CONTENT AREAS

1. Organization and Function of the Endocrine System
2. Organization the Digestive System and Metabolism
3. Transport Systems
4. Systems that Maintain Blood Physiology
5. Immunity
6. Organization and Function of the Reproductive System

## **D. LEARNING OUTCOMES (General)**

1. List and identify major endocrine glands, the hormones they produce, and the mechanism of hormone function
2. Describe the structure, organization, and regulation of the digestive system
3. Trace the path of nutrients through the digestive system and describe where and how movement, digestion, and absorption occur
4. Describe the major characteristics of blood
5. Describe the cardiac cycle and relate it to blood flow and electrical activity of the heart
6. Explain the mechanisms that regulate blood flow, blood pressure, and cardiac output
7. Identify by location major arteries, veins, and structures of the heart
8. Describe the general structure, function, location of lymph vessels
9. Identify the location and structures of the lungs and respiratory tract
10. Explain the mechanisms, regulation, and chemical basics of ventilation and respiration
11. Identify the gross and microscopic structures of the urinary system and relate their role in urine formation
12. Explain the relationship between blood and urine formation
13. Describe nonspecific immune defenses
14. List the cells involved in specific immunity, and explain how they initiate an immune response and destroy pathogens
15. Identify and describe the structure of reproductive organs, process of gamete formation, and events involved in fertilization

## **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