

# BIOS-BIOSCIENCES (BIOS)

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## **BIOS-242: Fundamentals of Microbiology with Lab**

Contact Hours: Lecture - 48, Lab - 32, Clinical - 0

Semester Hours: Theory 3, Lab 1

This course covers basic concepts of microbiology, with emphasis on medically important microorganisms and infectious diseases. The topics studied also include microscopy, microbial growth and genetics, antimicrobial agents, epidemiology and immune system responses to pathogens. Lab exercises emphasize aseptic techniques, isolation and culture of microorganisms, microscopy and staining techniques.

Prerequisite: CHEM-120

## **BIOS-251: Anatomy and Physiology I with Lab**

Contact Hours: Lecture - 24, Lab - 16, Clinical - 0

Semester Hours: Theory 1.5, Lab .5

This course is the first of a four-course sequence in which human anatomy and physiology are studied using a body systems approach. Coursework emphasizes inter-relationships between form and function at the gross and microscopic levels of organization. Topics include basic anatomical and directional terminology, planes and sections, body cavities, chemical level of organization, fundamental concepts and principles of cell biology, histology, the integumentary system, the skeletal system, joints, and articulations. The concept of homeostasis is included and emphasized in each body system. Course work and laboratory exercises are designed to emphasize foundational concepts, promote critical thinking, and application of knowledge.

Prerequisite: None

## **BIOS-252: Anatomy and Physiology II with Lab**

Contact Hours: Lecture - 24, Lab - 16, Clinical - 0

Semester Hours: Theory 1.5, Lab .5

This course is the second in a sequence of four-courses in human anatomy and physiology where we continue using a body systems approach. Coursework emphasizes interrelationships between structure and function at the gross and microscopic levels of organization. In this course, we will cover the following topics: fundamental concepts and principles of the muscular, macroscopic and microscopic organization and function of the nervous system, structure and functional components of the tissues making up the special senses, and analyzing the structure and functions of the endocrine system. The concept of homeostasis is included and emphasized in each body system. Course work and laboratory exercises are designed to emphasize foundational concepts, promote critical thinking, and application of knowledge.

Prerequisite: BIOS-251

Corequisite: MATH-114N or MATH-105N

## **BIOS-255: Anatomy and Physiology III with Lab**

Contact Hours: Lecture - 24, Lab - 16, Clinical - 0

Semester Hours: Theory 1.5, Lab .5

This course is the third in a four-course sequence where we continue using a body systems approach. Coursework emphasizes interrelationships between form and function at the gross and microscopic levels of organization. The topics include the anatomy and physiology of the cardiovascular, lymphatic, immune, and respiratory systems with emphasis on physiological concepts and systems-level interactions. The concept of homeostasis is included and emphasized in each body system. Course work and laboratory exercises are designed to emphasize foundational concepts, promote critical thinking, and application of knowledge.

Prerequisite: BIOS-252, MATH-114N or MATH-105N

## **BIOS-256: Anatomy and Physiology IV with Lab**

Contact Hours: Lecture - 24, Lab - 16, Clinical - 0

Semester Hours: Theory 1.5, Lab .5

This course is the last course of the A&P series in which human anatomy and physiology are studied using a body systems approach. Coursework emphasizes interrelationships between form and function at the gross and microscopic levels of organization. Topics include the digestive system, metabolism and nutrition, urinary system, fluid, electrolyte, and acid-base balance, the male and female reproductive systems, and human development and inheritance. The concept of homeostasis is included and emphasized in each body system. Course work and laboratory exercises are designed to emphasize foundational concepts, promote critical thinking and application of knowledge.

Prerequisite: BIOS-255, MATH-114N or MATH-105N