

Course Descriptions
Bachelor of Science in Life Sciences
2019-2020 Catalog

ANAT10101 Anatomy I

3 credit hours

This course is a detailed study of the anatomy and function of the musculoskeletal system of the human body. The approach will be regional in nature, with units pertaining to the back and gluteal regions, superficial chest and abdominal wall, and the upper and lower extremities. Clinical context and clinical application of the anatomical knowledge will be emphasized, along with basic biomechanical and kinesiological principles. A discussion of the clinically relevant features of the embryological development of the neuromusculoskeletal system will also be featured.

Pre-requisites: n/a

ANAT1L101 Anatomy I Lab

2 credit hours

This course will present the anatomy of the back, upper and lower limbs, and the thoracic and abdominal walls through cadaveric dissection. Laboratory activities will be supplemented by lectures, clinical correlation presentations, audio-visual aides, and online activities. Basic anatomic terminology, osteology, arthrology, angiology and neurology will be emphasized, along with basic biomechanical and kinesiological principles.

Co-requisites: Anatomy I

PYSO10101 Cell Biology

2 credit hours

Cell Biology introduces the student to the basic structure, function and interrelations in a eukaryotic cell. A special emphasis is placed on molecular and genetic functions.

Pre-requisites: n/a

ANAT10102 Histology

2 credit hours

This course presents the normal microscopic architecture of human tissues and organs with an emphasis on correlating structure with function.

Pre-requisites: n/a

ANAT10202 Anatomy II

3 credit hours

This course is a detailed study of the human regional gross anatomy related to the head and neck. Students will learn the anatomical structure via classroom presentation and discussion. The clinical relevance of each region will be included and developmental anatomy will be covered periodically throughout the course.

Pre-requisites: Anatomy I and lab

ANAT1L202 Anatomy II Lab

1.5 credit hours

This course is a detailed study of human regional gross anatomy related to the head and neck. In a laboratory format, students will explore the anatomical structure via hands-on dissections and peer demonstrations. In addition, each region will be examined for clinical relevance.

Pre-requisites: Anatomy I and lab

PYSO10202 Physiology I**4 credit hours**

This course, the first of a sequence of 3 Physiology courses, introduces the core principles of physiology. The concepts of homeostasis, membrane transport and electrophysiology are introduced. The course's main focus is Neurophysiology. It covers electrical potentials, the general organization of the nervous system, the special senses, the general senses, and the corresponding pathways. The course also discusses spinal reflexes, the ANS (autonomic nervous system), and links brain regions to corresponding functions.

Pre-requisites: Cell Biology**MICR10201 Microbiology I****3 credit hours**

An introduction into human immunology and infection control. Consideration of vaccines, hypersensitivities, autoimmune diseases and immunodeficiencies. Histology and production and function of white blood cells is studied. Public health and epidemiology is studied.

Pre-requisites: Histology, Cell Biology**BCHM10201 Biochemistry I****3 credit hours**

The chemistry and function of carbohydrates, lipids, and proteins are discussed. Enzyme function is explained both quantitatively and qualitatively, and the details of the electron transport system are covered with an emphasis on intracellular energy conversions. Laboratory experiments focus on enzyme kinetics and chemical reactions of proteins, carbohydrates, and lipids.

Pre-requisites: Cell Biology**ANAT10303 Anatomy III****3 credit hours**

This course will present the anatomy of the thoracic and abdominopelvic cavities, and viscera. Lectures will be supplemented with clinical correlation presentations, and audio-visual aides. Cardiorespiratory, gastrointestinal, urogenital and reproductive systems will be emphasized, along with additional anatomic terminology, osteology, arthrology, angiology and neurology.

Pre-requisites: Anatomy I and II**ANAT1L303 Anatomy III Lab****1.5 credit hours**

This course is a detailed study of human regional gross anatomy related to the thorax, abdomen, pelvis, and perineum. In a laboratory format, students will explore the anatomical structure via hands-on dissections and peer demonstrations. In addition, each region will be examined for clinical relevance.

Prerequisites: ANAT 10202 Anatomy II, ANAT 1L202 Anatomy II Lab**Corequisite: ANAT 10303 Anatomy III****PSYO10303 Physiology II****6 credit hours**

This course is the second of a 3-semester sequence of courses in Physiology. Physiology II covers the following organ systems: skeletal muscle, cardiovascular, respiratory, and the gastrointestinal systems.

Pre-requisites: Physiology I**BCHM10302 Biochemistry II****4 credit hours**

Catabolic and anabolic pathways for carbohydrates, fatty acids, and amino acids are explained with an introduction to the function of B-complex vitamins in these processes. The role of

selected hormones in the metabolism of various biomolecules is described, and the well-fed state is contrasted with starvation condition in human organisms. Portions of the course are devoted lipid transport and pathways of specialized metabolites.

Pre-requisites: Biochemistry I

MICR10302 Microbiology II

4 credit hours

An introduction to microbiology and the microbiology laboratory. Continued exploration into infectious organisms that cause human diseases in all human systems.

Pre-requisites: Microbiology I