

Course Descriptions
Bachelor of Science in Life Sciences
2021-2022 Catalog

ANAT10101 Anatomy I

3 credit hours

This course is a detailed study of the anatomy and functions of the musculoskeletal system of the human body. The approach will be regional in nature, with units pertaining to the back, posterior neck, upper and lower extremities, thorax and abdominal wall. Basic anatomic terminology, osteology, arthrology, angiology and neurology will be emphasized, along with basic biomechanical and kinesiologic principles. Clinical context and applications of the anatomical knowledge will be presented. A discussion of clinically relevant embryological development of the neuro-musculoskeletal system will also be featured.

Co-requisites: Anatomy I Lab

ANAT1L101 Anatomy I Lab

2 credit hours

This course will present the anatomy of the back, posterior neck, upper and lower limbs, and the thoracic and abdominal walls through cadaveric dissection. Basic anatomic terminology, osteology, arthrology and neurology will be emphasized, along with basic biomechanical and kinesiologic 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.

ANAT10102 Histology

2 credit hours

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

ANAT10202 Anatomy II

3 credit hours

This course is a detailed study of human head and neck gross anatomy. Students will learn the structures and relationships of the musculoskeletal, nervous, cardiovascular, and visceral components of the head and neck via lectures, in-class discussions, and supplementary videos. Histology, development, and clinical relevance are reinforced.

Pre-requisites: Anatomy I, Anatomy I Lab

Co-requisites: Anatomy II lab

ANAT1L202 Anatomy II Lab**1.5 credit hours**

This course is a detailed study of human head and neck gross anatomy. In a laboratory setting, students will learn the structures and relationships of the musculoskeletal, nervous, cardiovascular, and visceral components of the head and neck via hands-on dissections and peer demonstrations. Histology, development, and clinical relevance are reinforced.

Pre-requisites: Anatomy I, Anatomy I Lab

Co-requisites: Anatomy II

PYSO10202 Physiology 1**4 credit hours**

This course, the first of a sequence of three 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**

This course is an introduction to the study of microbiology, human immunology, infection control, epidemiology, and public health. Topics include innate and acquired immunity, autoimmune disorders, epidemiology of microbial diseases, and the role of public health in disease prevention and health promotion.

Pre-requisites: Anatomy I

Co-requisites: Anatomy II, Biochemistry I, Physiology I

BCHM10201 Biochemistry I**3 credit hours**

The chemistry and functions of the building block molecules (simple sugars, amino acids, and fatty acids) and their corresponding macromolecular formats (polysaccharides, proteins, and lipids) are discussed. The function of enzymes is covered both qualitatively and quantitatively with emphasis on the types of enzyme systems encountered in biochemistry. The electron transport system is fully described including reference to the thermodynamics of biological energy transformation process.

Pre-requisites: Cell Biology, Undergraduate Chemistry recommended

ANAT10303 Anatomy III**3 credit hours**

This course will present the anatomy of the thoracic and abdominopelvic cavities, and viscera. Cardiorespiratory, gastrointestinal, urogenital and reproductive systems will be emphasized, along with additional terminology, osteology, arthrology, angiology and neurology.

Pre-requisites: Anatomy II, Anatomy II Lab

Co-requisite: Anatomy III Lab

ANAT1L303 Anatomy III Lab**1.5 credit hours**

This course will present the anatomy of the thoracic and abdominopelvic cavities and viscera. Cardiorespiratory, gastrointestinal, urogenital and reproductive systems will be emphasized, along with additional terminology, osteology, arthrology, angiology and neurology.

Pre-requisites: Anatomy II, Anatomy II Lab

Co-requisite: Anatomy III

PSYO10303 Physiology II**4 credit hours**

This course is the second of a three-trimester sequence of course in Physiology. Physiology II covers muscle, cardiovascular, respiratory, and gastrointestinal physiology. For each organ system, the following areas are discussed: underlying functional anatomy, cellular physiology, major functions, regulation, and disorders illustrating homeostatic disturbances. An emphasis is placed on the interdependence of organ systems.

Pre-requisites: Physiology I

BCHM10302 Biochemistry II**4 credit hours**

The digestion of dietary proteins, polysaccharides and lipids is described followed by detailed descriptions of the catabolic and anabolic pathways for simple sugars, fatty acids and amino acids. The functions of most B-complex vitamins is explained in the context of each of the metabolic pathways referred to above. Hormonal function and lipid transport processes are explained and the metabolic response of the human organism to starvation is described. Cumulative relationships of the metabolic pathways are emphasized.

Pre-requisites: Biochemistry I

MICR10302 Microbiology II**4 credit hours**

This course will focus on the interactions between microorganisms and human disease, medical microbiology and immune response. Prevention, identification and treatment of infectious disease in the clinical setting as well as in the community are highlighted with an emphasis on human microbial pathogens such as bacteria, viruses, prions, parasites and fungi.

Pre-requisites: Microbiology I