

# BIOL - Biology

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## BIOL 6800 Biomedical Sciences Exit Survey (0)

Students in this course will reflect on their experiences in the Biomedical Sciences program. This will include how experiences in the program have shaped perspectives toward ethical and equitable professional behavior in fields related to Biomedical Sciences. This course is awarded as credit or no-credit.

## BIOL 7200 Advanced Anatomy and Physiology I (3)

Provides the student an opportunity to build upon basic knowledge of the anatomy and physiology of cells, tissues and blood and the following systems: musculoskeletal, neuroendocrine and respiratory systems and their applicability to anesthesia and acute care. A review of cell physiology is followed by an in-depth analysis of muscular, nervous and circulatory systems. Gross anatomy includes study of head and neck and thorax. The student engages in critical thinking regarding the effects of anesthetics on physiologic functions and their relation to the client's state of health/wellness as it interacts with the culturally diverse population in the twenty-first century. **Co-requisite:** BIOL 7201

## BIOL 7201 Advanced Anatomy and Physiology I Lab (1)

Content topics discussed in lecture will be explored through dissection of human cadavers. **Co-requisite:** BIOL 7200.

## BIOL 7500 Immunology (3)

Examines cellular structure and function in both white blood cells and lymphocytes. This course provides the foundation for understanding modes of cellular communication between immune cells and antigens, allergens and pathogens. Examination of the innate and Adaptive immunity, differences between them, their function and diseases associated with each.

## BIOL 7600 Cell Biology (3)

Covers fundamental concepts of the structure and function of human cells. The course begins with a light microscope study of tissue cells and an electron micrograph study of specific cells; followed by a study of organelle function; and ending with cellular perspectives on the nervous system, immunology and cancer as they relate to anesthesia.

## BIOL 7700 Genetics (1)

Presents an overview of human genetics and its relationship to the disease process. Principles of transmission genetics will be covered. Abnormalities of the nervous, cardiac, respiratory and muscular systems will be addressed. The molecular basis for various inborn errors of cellular activity and how it relates to the delivery of anesthesia will be covered.

## BIOL 7800 Microbiology (3)

Microbiology focuses on properties of bacteria, viruses and fungi as well as the pathogen-host interactions. This course is an introduction to the molecular genetics of bacteria and viruses. The relation of these organisms to anesthesia and their control will be explored.

## BIOL 7900 Biomedical Bench Research (1)

A specialized course for students working on an independent, research-oriented project in a topic of current interest. The course offers the student the opportunity to do research under the direction of a member of Webster University faculty. During the course, the student will progress through research design, implementation of the research project and appropriate analysis

of data collected. The final product will be an academic paper. May be repeated up to three times for credit if content differs.

**Prerequisite:** Enrollment in the Biomedical Sciences program, permission of program director and research mentor.

## BIOL 8000 Advanced Anatomy and Physiology II (3)

Provides the student an opportunity to continue building upon basic knowledge of the anatomy and physiology of the cardiovascular, digestive, hepatic, reproductive and renal systems, with particular reference to anesthesia and acute care management. An in-depth analysis will be made of the cardiovascular system. The student engages in critical thinking regarding the effects of anesthesia on normal physiologic functions of the cardiovascular and renal systems. This course is a continuation of gross anatomy study of thorax and abdominal and pelvic regions. **Prerequisite:** BIOL 7200.

## BIOL 8001 Advanced Anatomy and Physiology II Lab (1)

Content topics discussed in lecture will be explored through dissection of human cadavers. **Co-requisite:** BIOL 8000

## BIOL 8100 Advanced Anatomy and Physiology III (3)

This course is a continuation of Anatomy and Physiology II. It continues to explore the topics of the cardiovascular, digestive, hepatic, reproductive and renal systems, with particular reference to anesthesia and acute care management. An in-depth analysis will be made of the cardiovascular system. The student engages in critical thinking regarding the effects of anesthesia on normal physiologic functions of the cardiovascular and renal systems; a continuation of gross anatomy study of thorax and abdominal and pelvic regions. **Prerequisite:** BIOL 8000.

## BIOL 8101 Advanced Anatomy and Physiology Lab III (1)

Content topics discussed in BIOL 8100 lecture will be explored through dissection of human cadavers. **Co-requisite:** BIOL 8100