

Course Descriptions for BIOS Project Labs (BIOS 4590) and Special Topics (BIOS 48X1, 48X2, 48X3)

Spring 2024 Special Topics and Project Lab Descriptions

BIOS 4803 ROS Nutrition (Rosbruck)

ASYN

Prerequisite: APPH 1040/1050

Description: The course is a study of human nutrition as an applied science and covers nutrition physiology: metabolism, energy production, biochemical aspects, role of nutrients, weight control mechanisms, fitness and consumerism.

BIOS 4083 BAL Neuromotor Physiology (Balog and Nichols)

TR 2-3:15 pm

Prerequisites: BIOS/APPH/BIOL 3755 or BME 3100

Description: This course focuses on the function and adaptations of the skeletal, nervous and muscular systems. Students will gain understanding of the normal physiological responses of these systems and how each adapts to perturbations such as physical and psychological stressors such as loading and pathology. Interactions among the various systems and their plasticity will be emphasized.

BIOS 4590 Research Project Lab (Hu) – Conservation Technology

Permits at <https://forms.office.com/r/pVsQwqPwVU>

Description: In this course, we will follow our curiosity to ask questions about movement, form, and function of plants and animals. For example: how do eyelashes protect the eyes, how do cats clean themselves, and what sets the size of the largest pumpkin? We will learn a few ideas from fluid and solid mechanics and apply them to research a problem of the student's choice. We will emphasize learning physical intuition rather than any mathematics. The goal is to formulate an original question and find a surprising answer. Measurements may be done in the lab or off-campus. Herbariums at Emory and Botanical Garden, collections at Fernbank or other natural history museums are available. YouTube and literature search can provide further data. Experiments on plants or invertebrates are possible in the lab, coupled with observations at the Atlanta Zoo. Students will present results in context of previous literature and practice science communication using photography, videography, and live demonstrations.

BIOS 4590 Research Project Lab (Schmidt-Krey) – Molecular and Structural Biology Research Using

Permits at <https://forms.office.com/r/pVsQwqPwVU>

Bioinformatics and Computational Biology Approaches

Description: Students will gain experience in designing, implementing, and communicating a biology research project, and practical training in modern approaches for biological research. This section will have a scientific theme of Molecular and Structural Biology Research Using Bioinformatics and Computational Biology Approaches. Following initial experiments to obtain hands-on knowledge and training in methods, students will design and carry out a research project, communicating the overall goal and results in an end-of-semester manuscript and poster presentation, as well as in the Communicating Biological Research class.