The function of the musculoskeletal system in modern humans. A comparative perspective emphasizing the adaptive contexts of the evolutionary transformations leading to our modern anatomy. Structural, functional, and evolutionary anatomy of humans, with primary focus on the musculoskeletal system of the postcranial. General biomechanical principles of anatomical systems are covered through the regional anatomy of the muscles, bones and joints. Lectures are supplemented by selected prosections of human cadavers, in-class lab sessions examining bones and models, and computer animations and exercises.

**Prerequisite:** BIOL_SCI 313-CN, equivalent anatomy course, or permission of instructor.

**BIOL_SCI 317-CN Regional Human Anatomy Lab (0.34 Unit)**
Lab course utilizing prosections and demonstrations of human cadavers. It is an advanced anatomy course examining the details of human body systems. Topics include: body wall and cavities, contents and features of the thorax and abdomen (cardiac, pulmonary, and gastrointestinal systems), pelvis (genito-urinary system), spinal cord and back, innervation and blood supply of the upper and lower limbs, cranial cavities and contents, cranial nerves and blood supply of the head and neck. Credit for this course is 0.34 units.

**Prerequisite:** BIOL_SCI 313-CN or equivalent.

**BIOL_SCI 318-DL Advanced Human Physiology (1 Unit)**
Builds on concepts covered in BIOL_SCI 217-CN or an equivalent physiology course focusing on the body as an integrated set of systems. A global view of the body, its systems, and the many processes that keep the systems working. Integrated approach to studying all major organ systems including neural, autonomic/somatic motor, endocrine, cardiovascular, respiratory, renal, digestive, and reproductive physiology. The clinical relevance of the organ system that will include abnormal function, disease states, and medications used to bring the system back to normal functioning.

**Prerequisite:** BIOL_SCI 217-CN or equivalent.

**BIOL_SCI 327-CN Biology of Aging (1 Unit)**
Biological aspects of aging, from molecular to evolutionary.

**Prerequisite:** BIOL_SCI 217-CN.

**BIOL_SCI 328-CN Microbiology (1 Unit)**
How microbes interact with their environments, including with humans.

**Prerequisite:** BIOL_SCI 217-CN.

**BIOL_SCI 342-CN Evolutionary Processes (1 Unit)**
Evolutionary mechanisms (natural selection, genetic drift), evolutionary history (speciation, phylogenetics), and adaptations (sex, cooperation, aging, life history).

**Prerequisite:** BIOL_SCI 215-CN and BIOL_SCI 219-CN.

**BIOL_SCI 355-DL Immunobiology (1 Unit)**
Nature of host resistance; characteristics of antigens, antibodies; basis of immune response; hypersensitivity.

**Prerequisite:** BIOL_SCI 217-CN.

**BIOL_SCI 390-DL Advanced Molecular Biology (1 Unit)**
Builds on topics introduced in introductory Molecular Biology. Topics discussed include techniques, transcriptional and translational regulation, epigenetics, replication, regulatory RNAs, DNA repair, and genetic engineering.

**Prerequisite:** BIOL_SCI 215 or BIOL_SCI 201.