

# ME.130 (FUNCTIONAL ANATOMY AND EVOLUTION)

## Courses

**ME.130.600. Scientific Foundations of Medicine - Human Anatomy. 12 Credits.**

**ME.130.602. Human Anatomy: Functional, Clinical, and Developmental Perspectives. 12 Credits.**

This course will introduce Functional Anatomy and Evolution graduate students to human anatomy from a functional, clinical, and developmental perspective. The course runs in parallel with an anatomy course for 1st year medical students and follows a regional approach broken into three parts: 1) thorax, abdomen, pelvis, and perineum; 2) limbs and back; and 3) head and neck. Within each course section, information is presented via several activities: virtual lectures focusing on human anatomy and embryology, interactive review sessions, laboratory dissection, and student-led cooperative presentations on anatomical structures. During the eight weeks of the course, students will dissect all regions of the body. Overall Course Objectives

1. Demonstrate understanding of normal anatomy of the main regions of the human body: thorax, abdomen, and pelvis; back and limbs; and head and neck.
2. Demonstrate effective use of anatomical terminology.
3. Develop dissection skills.
4. Demonstrate good knowledge of 3D relationships of structures within the human body.
5. Demonstrate an ability to present written and oral information clearly.
6. Demonstrate effective collaborative skills and professionalism.

**ME.130.700. Advanced Study and Teaching. 1 - 18 Credits.**

FAE 3rd year student only: TA and Human Anatomy Lab

**ME.130.744. Mammalian Evolution. 1 - 10 Credits.**

**ME.130.746. Evolutionary Theory and Phylogenetic Comparative Methods. 1 - 10 Credits.**

This course examines the theory and techniques of evolutionary analysis with special emphasis on vertebrate anatomical and developmental systems. We will examine and critique classic and emerging viewpoints regarding core evolutionary concepts, review basic approaches to tree construction, and investigate methods for studying evolution in a comparative phylogenetic context.

**ME.130.747. Introduction to Histology. 2 Credits.**

Introduction to basics of histology, using online M-scope imagery and Inverse-Lecture developed for Scientific Foundations of Medicine, plus individual instruction by FAE faculty.

**ME.130.748. Advanced Anatomy Dissection and Research. 5 Credits.**

Supervised small group cadaveric dissection focusing on more detailed understanding of specific systems and regional anatomy, anatomical variation, clinical correlations, and comparative anatomy.

**ME.130.749. Anatomy Teaching Practicum.**

Training in lecturing, small group leadership for presentation of anatomical material; including giving one lecture and assisting in labs in ME:130.300.

**ME.130.753. Fundamentals of Human Anatomy. 4 Credits.**

This course is designed to give graduate students the fundamentals to all aspects of human anatomy, and includes demonstrations using human cadavers.

**ME.130.754. Method & Theory in Evolutionary Functional Morphology I. 1.5 Credits.**

This course provides the foundations for the evolutionary analysis of vertebrate morphology. It will include both theoretical underpinning as well as applied methodologies. Topics will include: vertebrate diversity, phylogenetic methods, evolutionary theory, geometric morphometrics, biogeography, paleoecology, dental quantification, bone biology, biomechanics, neuroanatomy, and evolutionary developmental biology.

**ME.130.755. Method & Theory in Evolutionary Functional Morphology II. 3 Credits.**

This course provides the foundations for the evolutionary analysis of vertebrate morphology. It will include both theoretical underpinning as well as applied methodologies. Topics will include: vertebrate diversity, phylogenetic methods, evolutionary theory, geometric morphometrics, biogeography, paleoecology, dental quantification, bone biology, biomechanics, neuroanatomy, and evolutionary developmental biology.

**ME.130.800. FAE Advanced Work and Research. 1 - 18 Credits.**

Research and Preparation of Dissertation

**ME.130.820. FAE Research Rotation, Part One. 1 - 18 Credits.**

1st year FAE students only

**ME.130.821. FAE Research Rotation, Part Two. 1 - 18 Credits.**

Research rotation for FAE PHD Students