

HBA

Anatomical Sciences

HBA 521: Gross Anatomy of Head, Neck, and Trunk

Tutorial laboratories with emphasis on dissections of the human head, neck, and trunk.

8 credits, Letter graded (A, A-, B+, etc.)

HBA 531: Nervous System

This course provides an integrative overview of the structure and function of the mammalian nervous system with an emphasis on the human brain, the cranial nerves and the neurobiology relevant to the oral cavity.

It begins with a series of lectures centered on cellular foundations, basic principles of cell signaling/neurophysiology and nervous system development. The major structures of the central and peripheral nervous system and their functions are also introduced.

These sessions build foundations for more in-depth investigations at systems levels; sensory, motor, higher order, homeostatic and cranial systems are emphasized. For most topics, basic principles are reinforced using clinical examples from different dental disciplines and the interactive lectures are complemented and extended in student working group sessions that use the primary literature, case-based problem solving and other forms of active learning to solidify learning and make clinical connections. This course represents a coordinated teaching effort from the Departments of Neurobiology and Behavior, and Anesthesiology.

8 credits, S/F graded

HBA 540: Human Anatomy for Physical Therapists

A lecture and laboratory course that includes dissections of the entire human body. The course is organized in three modules: (1) thorax and abdomen, (2) head and neck, including neuroanatomy, and (3) limbs. It covers regional and conceptual information on the gross anatomy of all organ systems in the human body. There is a lab fee associated with this course.

Summer, 5 credits, Letter graded (A, A-, B+, etc.)

HBA 541: Evolutionary Anatomy

A lecture and laboratory with emphasis on dissection of the entire human body. Includes functional and comparative anatomy with special emphasis on the musculoskeletal morphology of humans and higher primates. This course is offered as both DPA 541 and

HBA 541. There is a lab fee associated with this course. 8 credits, Letter graded (A, A-, B+, etc.)

8 credits, Letter graded (A, A-, B+, etc.)

HBA 542: Advanced Human Anatomy for Physical Therapists

Regional approach to the gross anatomy of the lower limb for physical therapy graduate students (DPT). The course is presented in conjunction with HYA519, Kinesiology for Physical Therapists. This module will offer an expanded view of the functional anatomy and arthrology of the hip, thigh, leg and foot. Labs will be three hours, one day per week. Enrollment will be limited to DPT students.

Fall, S/U grading

HBA 550: Vertebrate Evolution

Survey of the fossil record of vertebrate evolution. The course emphasizes the origin, phylogeny, comparative and functional morphology, biogeography, and paleontology of vertebrate animals. Laboratory included. The lectures and laboratories will utilize an extensive collection of comparative anatomical material, fossil casts, and slides.

Spring, alternate years, 4 credits, Letter graded (A, A-, B+, etc.)

HBA 551: Phylogenetic Systematics, Biogeography and Comparative Methods

This course will provide students with a familiarity in the practical application of modern phylogenetic methods and the use of phylogenies in framing evolutionary hypotheses. The course will have both a lecture and laboratory component with lectures including in-class discussions of assigned readings. Lab exercises will be devoted to hands-on experience with available software for phylogenetic and comparative methods. Comparative methods examined will include a focus on historical biogeography as well as ancestral state reconstruction, rates of evolution and diversification, and analysis of adaptation and key innovations.

Spring, 4 credits, Letter graded (A, A-, B+, etc.)

HBA 560: Regional Anatomy for non-Healthcare students

A lecture and laboratory course that includes dissections of the entire human body covering regional and conceptual information on the gross anatomy of all organ systems in the human body. In the Fall, this course is presented in conjunction with The Body Course (MED 500A); in the Summer, it is presented in conjunction with Advanced

Regional Anatomy for Physical Therapists and for Physician Assistants (HBA 540 and 561). There is a lab fee associated with this course. This course is not for students in a Healthcare Professional Program. Prerequisite: Permission of Instructor

Fall, Summer, 3-8 credits, Letter graded (A, A-, B+, etc.)

HBA 561: Human Gross Anatomy for Physician Assistants

A lecture and laboratory course that includes dissections of the entire human body. The course is organized in three modules: (1) thorax and abdomen; (2) head and neck, including neuroanatomy; and (3) limbs. It covers regional and conceptual information on the gross anatomy of all organ systems in the human body. There is a lab fee associated with this course.

Summer, 5 credits, Letter graded (A, A-, B+, etc.)

HBA 563: Aspects of Animal Mechanics

An introduction to biomechanics. Covers freebody mechanics and kinetics as applied to vertebrate locomotion. Considers the structure and physiology of muscle as it relates to adaptations of the musculoskeletal system. This course is offered as both HBA 563 and DPA 563.

Prerequisites: Introductory physics and biology or permission of instructor.

Spring, odd years, 2 credits, Letter graded (A, A-, B+, etc.)

HBA 564: Primate Evolution

The taxonomic relationships and evolutionary history of primates as documented by their fossil record and structural and chemical evidence. Emphasis on primates prior to the origin of the human lineage. This course is offered as ANT 564, DPA 564 and HBA 564. 4 credits, Letter graded (A, A-, B+, etc.)

4 credits, Letter graded (A, A-, B+, etc.)

HBA 565: Human Evolution

A survey of the fossil record of hominid evolution through the Pliocene and Pleistocene with emphasis on the morphological structure and function of locomotor, masticatory, and neural systems. Includes utilization of comparative anatomical material and an extensive cast collection. This course is offered as ANT 565, DPA 565 and HBA 565. 4 credits, Letter graded (A, A-, B+, etc.)

4 credits, Letter graded (A, A-, B+, etc.)

HBA 566: Studies in Functional Morphology

Introduction to the theory and methods of functional morphology. Various methods of analysis and the application of experimental techniques such as electromyography or bone strain analysis are discussed as they pertain to the understanding of the interaction between form and function. Special emphasis is placed on the analysis of human and nonhuman primate morphology, and the application of this analysis to interpretation of the fossil evidence for human and nonhuman primate evolution. This course is offered as both HBA 566 and DPA 566.

*Prerequisite: Permission of instructor.
Spring, even years, 2 credits, Letter graded (A, A-, B+, etc.)*

HBA 582: Comparative Primate Anatomy

The comparative anatomy of living primates. Laboratory dissection with emphasis on relating structural diversity to behavior and biomechanics. This course is offered as both HBA 582 and DPA 582. 4 credits, Letter graded (A, A-, B+, etc.)

4 credits, Letter graded (A, A-, B+, etc.)

HBA 590: Projects in Anatomical Sciences

Individual research projects on anatomical sciences topics closely supervised by faculty members to be carried out in staff research laboratories.

*Fall and Spring, 1-6 credits, S/U grading
May be repeated 4 times FOR credit.*

HBA 690: Graduate Seminar

Seminars by graduate students on current literature in the areas of the anatomical sciences.

*Fall and Spring, 1-2 credits, S/U grading
May be repeated 3 times FOR credit.*

HBA 692: Advanced Topics in Anatomical Sciences Literature

Tutorial readings in anatomical sciences with periodic conferences, reports and examinations arranged with the instructor.

*Fall and Spring, 1-4 credits, S/U grading
May be repeated for credit.*

HBA 695: Practicum in Teaching

Practical instruction in the teaching of anatomical sciences carried out under faculty supervision. 1-4 credits, S/U grading

*1-4 credits, S/U grading
May be repeated for credit.*

HBA 699: Dissertation Research on Campus

Original investigation under supervision of thesis adviser and committee.

*Fall, Spring, and Summer, 1-9 credits, S/U grading
May be repeated for credit.*

HBA 700: Dissertation Research off Campus - Domestic

Prerequisite(s): Must be advanced to candidacy (G5). Major portion of research will take place off-campus, but in the United States and/or U.S. provinces. Please note, Brookhaven National Labs and the Cold Spring Harbor Lab are considered on-campus. All international students must enroll in one of the graduate student insurance plans and should be advised by an International Advisor.

*Fall, Spring, 1-9 credits, S/U grading
May be repeated for credit.*

HBA 701: Dissertation Research off Campus - International

Prerequisite(s): Must be advanced to candidacy (G5). Major portion of research will take place outside of the United States and/or U.S. provinces. Domestic students have the option of the health plan and may also enroll in MEDEX. International students who are in their home country are not covered by mandatory health plan and must contact the Insurance Office for the insurance charge to be removed. International students who are not in their home country are charged for the mandatory health insurance. If they are to be covered by another insurance plan they must file a waiver by second week of classes. The charge will only be removed if other plan is deemed comparable.

*Fall, Spring, 1-9 credits, S/U grading
May be repeated for credit.*

HBA 800: Full-Time Summer Research

Full-time laboratory research projects supervised by staff members. 0 credit, S/U grading

*S/U grading
May be repeated for credit.*