Zoology (ZOOL)

ZOO 1090 BB Introduction to Human Anatomy and Physiology 3:3:0 Fall, Spring, Summer * Prerequisite(s): BIOL 1010 or BIOL 1610

Presents a basic introduction to the sciences of anatomy and physiology. Covers the basic structure and function of the human body at the cellular, tissue, organ, and system levels. Provides a foundation of particular value for pre-nursing students who wish to have a preview of their required life science courses.

ZOO 2320 BB Human Anatomy 3:3:0 Fall, Spring, Summer * Prerequisite(s): (BIOL 1010 or BIOL 1610) and ENGL 1010 with a minimum of C- or written permission of the Anatomy program coordinator

* Corequisite(s): ZOO 2325

Studies, in-depth, the anatomy of the human body. Covers the structure and some functions at the cellular, tissue, organ, and system levels. Emphasizes the names, locations, and functions of body components. Involves problem solving and analytical thinking. Includes weekly laboratory study of human cadavers, models, and specimens.

ZOO 2325 Human Anatomy Laboratory 1:0:3 Fall, Spring, Summer * Corequisite(s): ZOO 2320

Studies, in-depth, the anatomy of the human body. Covers the structure and some functions at the cellular, tissue, organ, and system levels. Emphasizes the names, locations, and functions of body components. Involves problem solving and analytical thinking. Includes weekly laboratory study of human cadavers, models, and specimens. Course Lab fee of $30 applies.

ZOO 232H BB Human Anatomy 3:3:0 Fall, Spring * Prerequisite(s): BIOL 1010 or BIOL 1610; ENGL 1010 or written permission of the Anatomy program coordinator; a minimum of a C- required in prerequisite courses.

* Corequisite(s): ZOO 232L

For students who intend to pursue careers in the bio-medical sciences; especially pre-nursing, pre-med, pre-dent, and pre-vet students. Emphasizes the role and value of anatomical knowledge in health and disease. Covers the same general material as ZOO 2320, but emphasizes clinical applications of the information. Students will choose and complete a course project that may involve short written reports, a term paper, or a poster presentation. Includes weekly laboratory study of human cadavers, models, and specimens.

ZOO 232L Human Anatomy Honors Laboratory 1:0:3 Fall, Spring * Prerequisite(s): BIOL 1010 or BIOL 1610. ENGL 1010 or written permission of the Anatomy program coordinator.

* Corequisite(s): ZOO 232H

Studies the functions of the human body at the chemical, cellular, organ, and system levels. Explains control mechanisms involved in homeostasis and stimulus/response pathways. Involves problem solving and analytical thinking. Includes weekly laboratory. Course Lab fee of $24 applies.

ZOO 242L Human Physiology Honors Laboratory 1:0:3 On Sufficient Demand * Prerequisite(s): BIOL 1010 (or BIOL 1610), CHEM 1110, written permission of the physiology program coordinator.

* Corequisite(s): ZOO 242H

Studies the functions of the human body at the chemical, cellular, organ, and system levels. Explains control mechanisms involved in homeostasis and stimulus/response pathways. Involves problem solving and analytical thinking. Includes weekly laboratory. Course Lab fee of $30 applies.

ZOO 2420 BB Human Physiology 3:3:0 Fall, Spring, Summer * Prerequisite(s): (BIOL 1010 or BIOL 1610) with a minimum grade of C- and CHEM 1110 with a minimum grade of C-

* Corequisite(s): ZOO 2425

Studies the functions of the human body at the chemical, cellular, organ, and system levels. Explains control mechanisms involved in homeostasis and stimulus/response pathways. Involves problem solving and analytical thinking. Includes weekly laboratory.

ZOO 2425 Human Physiology Laboratory 1:0:3 Fall, Spring, Summer * Prerequisite(s): (BIOL 1010 or BIOL 1610) and CHEM 1110

* Corequisite(s): ZOO 2420

Studies the functions of the human body at the chemical, cellular, organ, and system levels. Explains control mechanisms involved in homeostasis and stimulus/response pathways. Involves problem solving and analytical thinking. Includes weekly laboratory. Course Lab fee of $24 applies.

ZOO 242H BB Human Physiology 3:3:0 On Sufficient Demand * Prerequisite(s): BIOL 1010 (or BIOL 1610) with a minimum grade of C- and CHEM 1110 with a minimum grade of C-, written permission of the physiology program coordinator.

* Corequisite(s): ZOO 242L

Studies the functions of the human body at the chemical, cellular, organ, and system levels. Explains control mechanisms involved in homeostasis and stimulus/response pathways. Involves problem solving and analytical thinking. Includes weekly laboratory. Requires a term paper, project, or presentation.

ZOO 2420 BB Human Physiology 3:3:0 On Sufficient Demand * Prerequisite(s): BIOL 1010 or BIOL 1610, CHEM 1110, written permission of the physiology program coordinator.

* Corequisite(s): ZOO 242H

Studies the functions of the human body at the chemical, cellular, organ, and system levels. Explains control mechanisms involved in homeostasis and stimulus/response pathways. Involves problem solving and analytical thinking. Includes weekly laboratory. Course Lab fee of $24 applies.

ZOO 3100 BB Vertebrate Zoology 3:3:0 Spring, Summer * Prerequisite(s): (BIOL 1010 or BIOL 1620) with a C- or higher and University Advanced Standing

* Corequisite(s): ZOO 3105

Designed for intended Biology or Zoology majors who desire a broad introduction to the vertebrates and a greater understanding of their unique structure, distribution and the importance of these organisms in the present and past history of the Earth. Covers the evolutionary development of the vertebrates pertaining to major skeletal and physiological adaptations. The approach is also ecological as to vertebrate habitat requirements, their distribution, and community roles. Includes weekly laboratory.

ZOO 3105 BB Vertebrate Zoology Laboratory 1:0:2 Spring, Summer * Prerequisite(s): University Advanced Standing

* Corequisite(s): ZOO 3100

Laboratory portion of the course, which provides students with hands-on experience with vertebrates. Course Lab fee of $26 applies.

ZOO 3200 BB Invertebrate Zoology 3:3:0 Fall * Prerequisite(s): BIOL 1620 with a C- or higher and University Advanced Standing

* Corequisite(s): ZOO 3205 Invertebrate Zoology Laboratory

Designed for intended Biology or Zoology majors. Covers the anatomy, physiology, systematics, evolution and ecology of invertebrate animals.

ZOO 3205 BB Invertebrate Zoology Laboratory 1:0:2 Fall * Prerequisite(s): BIOL 1620 with a C- or higher and University Advanced Standing

* Corequisite(s): ZOO 3200 Invertebrate Zoology

Intended for Biology Department majors. Covers the anatomy, physiology, systematics, evolution and ecology of invertebrate animals. Course Lab fee of $25 applies.
ZOOL 3300  
Herpetology  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): BIOL 1620 with minimum grade of C- and University Advanced Standing  
* Corequisite(s): ZOOL 3305 Herpetology Laboratory  
Explores the taxonomy, morphology, behavior, ecology, evolution, development, and conservation of reptiles and amphibians. Includes active class discussions, oral presentations, and field trips.  

ZOOL 3305  
Herpetology Laboratory  
1:0:2  
On Sufficient Demand  
* Prerequisite(s): BIOL 1620 with minimum grade of C- and University Advanced Standing  
* Corequisite(s): ZOOL 3305 Herpetology Laboratory  
Covers the evolution, ecology, and diversity of reptiles and amphibians. Includes active class discussions, oral presentations, and field trips.  

ZOOL 3430  
Entomology  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): BIOL 1620 and BIOL 1625 with a minimum grade of C- in each, and University Advanced Standing  
* Corequisite(s): ZOOL 3435  
An introduction to the study of insects, including insect diversity and classification, anatomy and physiology, relationships to other animals and plants, behavior, and ecology. Also includes the application of the study of insects to pest management, environmental assessment, and forensic investigations.  

ZOOL 3435  
Entomology Laboratory  
1:0:2  
On Sufficient Demand  
* Prerequisite(s): University Advanced Standing  
* Corequisite(s): ZOOL 3430  
Laboratory to accompany ZOOL 3430. Will examine collection, preservation, and identification of insects. An individual reference collection is required of each student.  

ZOOL 3500  
Mammalogy  
3:3:0  
Fall  
* Prerequisite(s): BIOL 1620 with a minimum grade of C- and University Advanced Standing; ZOOL 3100 and ZOOL 3105 strongly recommended  
* Corequisite(s): ZOOL 3505  
Explores the taxonomy, morphology, behavior, ecology, evolution, development, and conservation of mammals. Includes three weekly lectures and a weekly laboratory.  

ZOOL 3505  
Mammalogy Laboratory  
1:0:2  
Fall  
* Prerequisite(s): University Advanced Standing  
* Corequisite(s): ZOOL 3500  
Covers the evolution, ecology, and diversity of reptiles and amphibians. Includes three weekly lectures and a weekly laboratory. Course Lab fee of $56 for transportation, lab applies.  

ZOOL 3700  
(Cross-listed with: EXSC 3700, PES 3700)  
Exercise Physiology  
3:3:0  
Fall, Spring, Summer  
* Prerequisite(s): EXSC Majors: ZOOL 2320 (or 232H), ZOOL 2325 (or 232L), and EXSC 270G all with a C- or higher and MATH 1050, PETE Majors: PETE 2700 and ZOOL 1090 with a C- or higher and (MATH 1050 or MATH 1055) All: University Advanced Standing  
* Prerequisite(s) or Corequisite(s): ZOOL 3300 Herpetology Laboratory  
Studies acute and chronic physiological responses to exercise, as well as nutritional and environmental effects on these responses. Requires separate weekly laboratory.  

ZOOL 3705  
(Cross-listed with: EXSC 3705)  
Exercise Physiology Laboratory  
1:0:3  
Fall, Spring, Summer  
* Prerequisite(s): University Advanced Standing  
* Corequisite(s): ZOOL 3700  
Studies acute and chronic physiological responses to exercise, as well as nutritional and environmental effects on these responses. Requires separate weekly laboratory.  

ZOOL 4100  
Parasitology  
4:3:2  
On Sufficient Demand  
* Prerequisite(s): (BIOL 1620 or MICR 2060 or BIOL 1010) with a C- or higher and University Advanced Standing  
Introduces the study of parasites. Emphasizes the biology of principal groups of parasites affecting humans and livestock, including their medical and economic significance. Laboratory experience. Involves identification of parasites. Includes weekly laboratory.  

ZOOL 4300  
Histology  
4:3:2  
Spring  
* Prerequisite(s): [(ZOOL 2320 or ZOOL 232H) with a C- or higher or written instructor approval] and University Advanced Standing  
For pre-professional students pursuing biomedical careers and Biology majors with a particular interest in vertebrate structure and function. Studies the microscopic structure of the body at the cellular, tissue, and organ levels. Emphasizes physical and functional relationships of various tissues in the organs of the body. Includes weekly laboratory. Course Lab fee of $35 applies.  

ZOOL 4400  
Pathophysiology  
4:4:0  
Fall, Spring  
* Prerequisite(s): ZOOL 2320, ZOOL 2420, and MICR 2060 each with a minimum grade of C- and University Advanced Standing  
For Biology majors with an emphasis in human physiology, pre-professional majors, and nursing students. Studies pathophysiological etiologies and mechanisms that cause disease and examines physiological adaptations and dysfunction of organs and organ systems in a disease state.  

ZOOL 4500  
Comparative Vertebrate Zoology  
3:3:0  
On Sufficient Demand  
* Prerequisite(s): ZOOL 3000 and (ZOOL 1090 or ZOOL 2320), with a grade of C- or higher, and University Advanced Standing  
* Corequisite(s): ZOOL 4505 Comparative Vertebrate Zoology Laboratory  
Studies the structure and function of vertebrates at the cellular, tissue, organ and systems levels. Emphasizes developmental and evolutionary comparative aspects of mammalian, avian, reptilian, amphibian, and piscian organs and systems.
ZOOL 4505
Comparative Vertebrate Zoology Laboratory
1:0:3 On Sufficient Demand
* Prerequisite(s): ZOOL 3100 and (ZOOL 1090 or ZOOL 2320), with a grade of C- or higher, and University Advanced Standing
* Corequisite(s): ZOOL 4500 Comparative Vertebrate Zoology
Studies the structure and function of vertebrates at the cellular, tissue, organ and systems levels. Emphasizes developmental and evolutionary comparative aspects of mammalian, avian, reptilian, amphibian, and piscian organs and systems. Course Lab fee of $24 applies.

ZOOL 4600
Ornithology
4:3:2 On Sufficient Demand
* Prerequisite(s): BIOL 1620 and University Advanced Standing; ZOOL 3100 and ZOOL 3105 highly recommended
Provides an in-depth study of avian evolution, systematics, developmental anatomy (wings, beaks, feathers), physiology, and social and reproductive behavior. Emphasizes an evolutionary and adaptive theme to the study of birds. Includes lectures, laboratories and field trips. Course Lab fee of $41 for transportation, lab applies.

ZOOL 4700
Advanced Anatomy
4:3:3 Fall, Spring
* Prerequisite(s): ZOOL 2320 with a minimum grade of C- and University Advanced Standing
For students interested in biomedical science careers or with a special interest in anatomy. Covers principles and techniques of anatomical investigation and specimen preparation. Provides supervised experience in human cadaver dissection, anatomic interpretation of radiographs, craniometrics, and palpation of the body. A regional dissection approach will be used in the lab. Requires problem solving and analytical thinking. Includes the theory and basic principles of various forms of diagnostic imaging, light and electron microscopy, skeletal preparation, and injection/maceration techniques. Includes weekly laboratory. Course Lab fee of $13 applies.

ZOOL 4750
Human Physiology A Cell Biology Approach
4:3:3 On Sufficient Demand
* Prerequisite(s): BIOL 3400 and University Advanced Standing
Addresses physiological principles and functions of the human body systems at the molecular level. Emphasizes cell signal transduction involved in the body maintaining homeostasis. Gives special attention to nervous, muscular, cardiovascular, urinary and respiratory systems. Students will be required to use problem solving and analytical thinking skills to be successful in the class. Includes weekly laboratory. Course Lab fee of $25 applies.

ZOOL 4780
Neuroscience
4:4:0 Fall
* Prerequisite(s): ZOOL 2420 with a C- or higher and University Advanced Standing
Focuses on neurobiology and neuroscience, covering aspects of molecular and cell biology, physiology, pharmacology, anatomy and the interplay of these and other disciplines in our understanding of the structure and function of the nervous system. Topics to be covered include neuroanatomy and developmental neurobiology, electrophysiology and membrane specializations related to signal propagation and signal transmission, neurotransmitter function and neuropharmacology, structure and function of simple neuronal circuits and complex neural networks and the plasticity of the nervous system, among others. Incorporates discussion of journal articles related to the latest advances in neuroscience. Requires students write a paper on a neuroscience topic of interest to them.