

**HUMAN
ANATOMY****ANTR****Department of Anatomy
College of Human Medicine****350 Human Gross Anatomy and Structural Biology**

Fall, Spring. 3(4-0) P:M: (BS 111 or LBS 149H or LBS 145) R: Not open to freshmen or approval of department. SA: ANTR 316, ANTR 316

Survey of human systemic gross anatomy with clinical illustrations. Introduction to the language of medicine. Structural basis of physiological principles. Designed for pre-professional students entering health-care disciplines.

381 Human Gross Anatomy Laboratory

Spring. 2(0-6) P:M: (ANTR 350) R: Approval of department. Not open to students with credit in KIN 217 or ZOL 328.

Structured survey of human regional gross anatomy using prosections, cross-sections, medical imaging, multimedia, and hypermedia.

401 Quantitative Human Biology

Spring. 3(4-0) Interdepartmental with Bio-medical Engineering; Materials Science and Engineering; Radiology. Administered by College of Engineering. P:M: (MTH 235 and PHY 184) and (PSL 250 or concurrently or PSL 431 or concurrently) and (CEM 141 or CEM 151) and (ANTR 350 or concurrently) R: (CSE 131 or concurrently or CSE 231 or concurrently or PSL 410)

Qualitative description and quantitative engineering analysis of selected, tractable human-biological systems. Multi-disciplinary problem-solving among medical and engineering professionals.

480 Special Problems in Anatomy

Fall, Spring, Summer. 1 to 5 credits. A student may earn a maximum of 15 credits in all enrollments for this course. R: Approval of department. SA: ANTR 480

Topics from an anatomical field such as gross anatomy, histology, tissue culture, cytology, neurology, or embryology.

485 Directed Study in Human Prosection

Fall, Spring, Summer. 2 to 4 credits. A student may earn a maximum of 15 credits in all enrollments for this course. P:M: (ANTR 350 or ZOL 328 or KIN 217) R: Open only to juniors or seniors.

Prosection of selected regions and isolated structures of preserved human cadavers.

534 Cell Biology and Physiology I

Fall. 3 credits. Interdepartmental with Physiology; Biochemistry and Molecular Biology. Administered by Department of Physiology. R: Open only to graduate-professional students in the College of Human Medicine or College of Osteopathic Medicine.

Modern concepts of cell biology as a basis for understanding the physiology of human tissues and organ systems in health and disease.

290 Independent Study

Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: (AMS 265 or AMS 210) and (AMS 280 or 250) and (HST 202 or HST 203) R: Approval of department.

Special projects, directed reading, and research arranged by an individual student and a faculty member in areas supplementing regular course offerings.

310 Topics in American Studies

Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P:M: (AMS 210 or AMS 265) and (AMS 280 or AMS 250) Completion of Tier I writing requirement.

Significant theoretical, methodological and bibliographical issues in American studies. Techniques for analyzing cultural texts such as literature, film, paintings, photographs, music and architecture.

332 Technology and Culture

Fall. 4(4-0) Interdepartmental with Lyman Briggs School. Administered by Lyman Briggs School. P:M: Completion of Tier I writing requirement. R: Open only to juniors or seniors in the American Studies major in Lyman Briggs School.

History of technology with special emphasis on the interaction of technical innovation and other elements of culture.

335 The Natural Environment: Perceptions and Practices

Spring. 4(4-0) Interdepartmental with Lyman Briggs School. Administered by Lyman Briggs School. P:M: Completion of Tier I writing requirement. R: Open only to sophomores or juniors or seniors in the American Studies major or in Lyman Briggs School.

American attitudes toward the natural environment and related public and private institutions.

451 American Art through 1875

Spring of even years. 3(3-0) Interdepartmental with History of Art. Administered by Department of Art and Art History. P:M: (HA 120 or HA 121 or HA 250) and completion of Tier I writing requirement. SA: HA 438

Artistic production in North America from colonial times to 1875 in its cultural context.

453 American Art, 1875-1940

Fall of even years. 3(3-0) Interdepartmental with History of Art. Administered by Department of Art and Art History. P:M: (HA 120 or HA 121 or HA 250) and completion of Tier I writing requirement. SA: HA 458, HA 358

Artistic production in North America from 1875 to 1940, in its cultural context.

480 Seminar in American Material Folk Culture

Spring of odd years. 3(3-0) RB: Coursework in arts, humanities and cultural studies.

Understanding American material folk culture and folklife as sources for analysis and appreciation. Methodological approaches and fieldwork techniques.

492 Seminar in American Studies

Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. RB: (AMS 265 or AMS 210) and (AMS 280 or AMS 250) and (AMS 310 and ENG 481 and HST 480 and HST 202 and HST 203) R: Open only to American Studies majors.

Selected topics in American studies emphasizing interdisciplinary approaches. Topics vary.

855 Seminar in American Art

Spring of odd years. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with History of Art. Administered by Department of Art and Art History. R: Approval of department.

Intensive investigation of a topic in the history of American art.

881 American Studies Theory, Methods, and Bibliography

Fall. 3(3-0)

Methods and bibliographical sources of American Studies research. Interdisciplinary approaches to studying American culture.

890 Independent Study

Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Approval of college.

Special projects, directed reading, and research arranged by an individual graduate student and a faculty member in areas supplementing regular course offerings.

891 Special Topics in American Studies

Fall, Spring, Summer. 3(3-0) A student may earn a maximum of 12 credits in all enrollments for this course.

Special topics supplementing regular course offerings proposed by faculty for graduate students on a group study basis.

899 Master's Thesis Research

Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of college.

Directed research leading to a master's thesis in partial fulfillment of Plan A master's degree requirements.

999 Doctoral Dissertation Research

Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Approval of college.

Doctoral dissertation research.

Human Anatomy—ANTR

535 Cell Biology and Physiology II
Spring. 4 credits. Interdepartmental with Physiology; Biochemistry and Molecular Biology. Administered by Department of Physiology. R: Open only to graduate-professional students in the College of Human Medicine or the College of Osteopathic Medicine.

Modern concepts of cell biology as a basis for understanding the physiology of human tissues and organ systems in health and disease. Continuation of PSL 534.

551 Medical Gross Anatomy
Fall. 6(4-6) R: Open only to graduate-professional students in the College of Human Medicine or College of Osteopathic Medicine or approval of department. SA: ANT 551

Human regional gross anatomy with clinical correlations using prosections, cross-sections, medical imaging, multimedia and hypermedia.

552 Medical Neuroscience
Spring. 4(3-2) Interdepartmental with Neurology and Ophthalmology; Physiology; Radiology. Administered by Department of Neurology and Ophthalmology. R: Graduate-professional students in the Colleges of Human Medicine and Osteopathic Medicine. SA: ANT 552

Correlation of normal structure and function of the human nervous system with clinical testing, classical lesions, and common diseases.

562 Medical Histology
Spring. 3(2-2) R: Graduate-professional students in colleges of Human Medicine and Osteopathic Medicine. SA: ANT 562

Histology of the human body.

585 Directed Study in Human Prosection
Fall, Spring, Summer. 1 to 5 credits. A student may earn a maximum of 15 credits in all enrollments for this course. P:M: (ANTR 551) R: Open only to graduate-professional students in the College of Human Medicine or College of Osteopathic Medicine and approval of department.

Prosection of selected regions and isolated structures of preserved human cadavers. Oral presentation.

820 Advanced Neuroanatomy
Summer of odd years. 1 to 5 credits. A student may earn a maximum of 12 credits in all enrollments for this course. Interdepartmental with Neuroscience. Administered by Program in Neuroscience. R: Approval of department.

Current topics in anatomy and physiology processes of central nervous system cells.

839 Systems Neuroscience
Spring. 4(4-0) Interdepartmental with Neuroscience; Pharmacology and Toxicology; Physiology; Psychology; Zoology. Administered by Program in Neuroscience. R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Agriculture and Natural Resources, Natural Science, Social Science, and Veterinary Medicine. SA: ANT 839

Anatomy, pharmacology, and physiology of multicellular neural systems. Sensory, motor, autonomic, and chemo-regulatory systems in vertebrate brains.

885 Vertebrate Neural Systems
Spring of odd years. 3(2-2) Interdepartmental with Neuroscience; Physiology. Administered by Program in Neuroscience. SA: ANT 885

Comparative analysis of major component systems of vertebrate brains. Evolution, ontogeny, structure, and function in fish, amphibians, reptiles, birds and mammals.

VETERINARY ANATOMY ANTV

Department of Pathobiology and Diagnostic Investigation College of Veterinary Medicine

515 Comparative Veterinary Gross Anatomy
Fall. 6(2-10) R: Open only to graduate-professional students in the College of Veterinary Medicine. SA: ANT 515

Canine anatomy. Comparisons with ruminant, porcine, and equine anatomy.

516 Veterinary Histology and Cell Biology
Fall. 4(3-2) R: Open only to graduate-professional students in the College of Veterinary Medicine. SA: ANT 516

Principles of developmental, cellular, and molecular biology as related to veterinary medicine.

517 Veterinary Neuroanatomy
Spring. 1(1-0) R: Completion of Semester 1 of the graduate-professional program in the College of Veterinary Medicine. SA: ANT 517

Introduction to the anatomy of the nervous system using the canine species as a model.

610 Veterinary Gross Anatomy Dissection
Spring. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. RB: (ANTV 515) R: Open only to graduate-professional students in College of Veterinary Medicine. SA: ANT 610

Dissection and prosection of selected regions of domestic animals.

611 Research Problems in Veterinary Anatomy
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate-professional students in the College of Veterinary Medicine. Approval of department. SA: ANT 611

Veterinary gross anatomy, cell biology, histology, or neurobiology.

ANIMAL SCIENCE ANS

Department of Animal Science College of Agriculture and Natural Resources

110 Introductory Animal Agriculture
Fall, Spring. 4(3-2) SA: ANS 112

History of animal agriculture and its relationship to human needs, production systems, marketing, and environmental considerations. Current goals of and limitations affecting U.S. farm animal production.

140 Fundamentals of Horsemanship
Spring. 2(0-4) A student may earn a maximum of 4 credits in all enrollments for this course.

Safe horse handling skills. Riding skills. Riding aids and working with the horse at the beginner, intermediate or advanced level.

141 Draft Horse Basics
Fall, Spring. 2(0-4)

Safe handling, hitching and driving of draft horses. Care and maintenance of harness and horse drawn equipment.

142 Horse Training for Competition
Summer. 2(0-4) RB: (ANS 140) R: Approval of department.

Training techniques to prepare horses for competition. Exhibiting horses. Field trips required.

200A Introductory Judging of Livestock or Carcasses
Spring. 1 to 2 credits. A student may earn a maximum of 3 credits in all enrollments for this course. RB: (ANS 211) R: A student may earn a maximum of 8 credits from ANS 200A, ANS 200B, ANS 200C, ANS 200D, ANS 300A, ANS 300B, ANS 300C and ANS 300D.

Evaluation of functional conformation of beef cattle, sheep and swine and their carcasses. Preparation for intercollegiate competition. Field trips required.

200C Introductory Judging of Dairy Cattle
Spring. 1 to 2 credits. A student may earn a maximum of 3 credits in all enrollments for this course. R: A student may earn a maximum of 8 credits from the following courses: ANS 200A, ANS 200B, ANS 200C, ANS 200D, ANS 300A, ANS 300B, ANS 300C and ANS 300D. SA: ANS 200B

Evaluation of functional conformation of dairy cattle. Preparation for intercollegiate competition. Field trips required.

200D Introductory Judging of Horses
Spring. 1 to 2 credits. A student may earn a maximum of 3 credits in all enrollments for this course. R: A student may earn a maximum of 8 credits from ANS 200A, ANS 200B, ANS 200C, ANS 200D, ANS 300A, ANS 300B, ANS 300C and ANS 300D. SA: ANS 200B

Evaluation of functional conformation and performance of horses. Preparation for intercollegiate competition. Field trips required.

210 Animal Products
Fall. 4(3-3) R: Not open to freshmen.

Edible animal products. Processing, preservation, storage and distribution of dairy, meat, and egg products.