

American Thought and Language—ATL

- 120 Writing: American Philosophy, Literature, and the Arts**
Fall, Spring. 4(4-0) P:M: (ATL 1004) or designated score on English placement test. Not open to students with credit in MC 111 or MC 112 or LBS 133 or AL 192 or AL 192H or ATL 110 or ATL 115 or ATL 125 or ATL 130 or ATL 135 or ATL 140 or ATL 145 or ATL 150 or ATL 195H.

Drafting, revising, and editing compositions derived from readings on American philosophy, literature, and the arts to develop skills in narration, persuasion, analysis, and documentation.

- 125 Writing: The American Ethnic and Racial Experience**
Fall, Spring. 4(4-0) P:M: (ATL 1004) or designated score on English placement test. Not open to students with credit in MC 111 or MC 112 or LBS 133 or AL 192 or AL 192H or ATL 110 or ATL 115 or ATL 120 or ATL 130 or ATL 135 or ATL 140 or ATL 145 or ATL 150 or ATL 195H.

Drafting, revising, and editing compositions derived from readings on the experience of American ethnic and racial groups to develop skills in narration, persuasion, analysis, and documentation.

- 130 Writing: American Radical Thought**
Fall, Spring. 4(4-0) P:M: (ATL 1004) or designated score on English placement test. Not open to students with credit in MC 111 or MC 112 or LBS 133 or AL 192 or AL 192H or ATL 110 or ATL 115 or ATL 120 or ATL 125 or ATL 135 or ATL 140 or ATL 145 or ATL 150 or ATL 195H.

Drafting, revising, and editing compositions derived from readings on American radical thought to develop skills in narration, persuasion, analysis, and documentation.

- 135 Writing: Public Life in America**
Fall, Spring. 4(4-0) P:M: (ATL 1004) or designated score on English placement test. Not open to students with credit in MC 111 or MC 112 or LBS 133 or AL 192 or AL 192H or ATL 110 or ATL 115 or ATL 120 or ATL 125 or ATL 130 or ATL 140 or ATL 145 or ATL 150 or ATL 195H.

Drafting, revising, and editing compositions derived from readings on American civic tradition and community service-learning experiences to develop skills in narration, persuasion, analysis, and documentation.

- 140 Writing: Women in America**
Fall, Spring. 4(4-0) P:M: (ATL 1004) or designated score on English placement test. Not open to students with credit in MC 111 or MC 112 or LBS 133 or AL 192 or AL 192H or ATL 110 or ATL 115 or ATL 120 or ATL 125 or ATL 130 or ATL 135 or ATL 145 or ATL 150 or ATL 195H.

Drafting, revising, and editing compositions derived from readings on women in America to develop skills in narration, persuasion, analysis, and documentation.

- 145 Writing: Men in America**
Fall, Spring. 4(4-0) P:M: (ATL 1004) or designated score on English placement test. Not open to students with credit in MC 111 or MC 112 or LBS 133 or AL 192 or AL 192H or ATL 110 or ATL 115 or ATL 120 or ATL 125 or ATL 130 or ATL 135 or ATL 140 or ATL 150 or ATL 195H.

Drafting, revising, and editing compositions derived from readings on men in America to develop skills in narration, persuasion, analysis, and documentation.

- 150 Writing: The Evolution of American Thought**
Fall, Spring. 4(4-0) P:M: (ATL 1004) or designated score on English placement test. Not open to students with credit in MC 111 or MC 112 or LBS 133 or AL 192 or AL 192H or ATL 110 or ATL 115 or ATL 120 or ATL 125 or ATL 130 or ATL 135 or ATL 140 or ATL 145 or ATL 195H.

Drafting, revising, and editing compositions derived from American historical, social, and cultural texts to develop skills in narration, persuasion, analysis, and documentation.

- 195H Writing: Major Topics in American Thought**
Fall, Spring. 4(4-0) P:NM: Designated score on English placement test. Not open to students with credit in MC 111 or MC 112 or LBS 133 or AL 192 or AL 192H or ATL 110 or ATL 115 or ATL 120 or ATL 125 or ATL 130 or ATL 135 or ATL 140 or ATL 145 or ATL 150.

Drafting, revising, and editing compositions derived from readings on major topics in American thought to develop advanced skills in narration, persuasion, analysis, and documentation.

- 290 Independent Study**
Fall, Spring, Summer. 1 to 4 credits. R: Open only to freshmen or sophomores. Approval of department.

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

ANATOMY

College of Human Medicine
College of Osteopathic Medicine
College of Veterinary Medicine

- 802 Clinical Surgical Anatomy**
Spring. 4(2-4) Interdepartmental with Surgery. Administered by Department of Surgery. R: Open only to Master's students in Surgery.

Review of surgical anatomy. Detailed anatomical information through lecture and dissection sessions. Clinical interpretation of anatomy and surgical approaches.

- 813 Problems in Anatomy**
Fall, Spring, Summer. 1 to 5 credits. A student may earn a maximum of 5 credits in all enrollments for this course. R: Approval of department.

Fields such as gross anatomy, histology, tissue culture, cytology, neurology and embryology.

- 814 Graduate Seminar**
Spring of even years. 1 to 3 credits. R: Open only to graduate students in Anatomy. Supervised practice in evaluating abstracts and delivering oral presentations of anatomical sciences. Organization, timing and effective illustrations.

ANT

- 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. R: Approval of department.

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

- 839 Systems Neuroscience**
Spring of odd years. 4(4-0) Interdepartmental with Pharmacology and Toxicology; Physiology. R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Agriculture and Natural Resources, Natural Science, and Veterinary Medicine.

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 Physiology.

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

- 899 Master's Thesis Research**
Fall, Spring, Summer. 1 to 8 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to graduate students in Anatomy.

Master's thesis research.

- 999 Doctoral Dissertation Research**
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 36 credits in all enrollments for this course. R: Open only to graduate students in Anatomy.

Doctoral dissertation research.

HUMAN ANATOMY ANTR

College of Human Medicine

- 316 General Human Anatomy**
Spring, Summer. 3(3-0) P:NM: (BS 110 or BS 111) or approval of department. SA: ANT 316

Human structure. Major systems of the human body.

- 350 Human Gross Anatomy and Structural Biology**
Fall, Spring. 3(4-0) P:M: (BS 111) or (BS 149H) or (LBS 145) R: Open only to students in the B.S. Degree in Nursing or approval of department. SA: ANT 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, Summer. 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.

- 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: ANT 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.

- 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 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.

VETERINARY ANATOMY ANTV

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. P:NM: (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.

- 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. P:NM: (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.

- 211 Animal and Product Evaluation**
Fall. 3(1-4)
- Evaluation of breeding stock, market animals and carcasses. Production records and soundness of breeding animals. Quality grading, yield grading and pricing of market animals and carcasses.

- 212 Merchandising Purebred Livestock**
Spring of odd years. 2(1-2) RB: (ANS 110)
- Purebred livestock industry. Private treaty and auction sales. Advertising, animal selection and budgeting of purebred livestock sales. Field trips required.

- 222 Introductory Beef Cattle Management**
Spring. 3(2-2) RB: (ANS 110) Not open to students with credit in ANS 422.
- Management practices and systems for beef herds. Feed requirements, reproduction, breeding, performance testing, housing, and diseases. Costs and returns. Field trips required.

- 232 Introductory Dairy Cattle Management**
Fall. 3(2-2) Not open to students with credit in ANS 432.

Principles and techniques of dairy herd management including calf and heifer care plus lactating and dry cow management.

- 242 Introductory Horse Management**
Fall. 3(2-2) Not open to students with credit in ANS 442.

Principles of horse management. Reproduction, nutrition, herd health, genetics, economics, marketing. Field trips required.