191H. Honors Work in American Experience
Fall. 3(3-0) Satisfactory grade in entrance examination. Students read and write on selected topics to improve their knowledge of the American heritage and their ability at reading and writing.

192H. Honors Work in American Experience
Winter. 3(3-0) Satisfactory grade in the first term of any ATL sequence numbered ATL 121 or above. Students read and write on selected topics to improve their knowledge of the American heritage and their ability at reading and writing.

193H. Honors Work in American Experience
Spring. 3(3-0) Satisfactory grade in the second term of any ATL sequence numbered ATL 121 or above. Students read and write on selected topics to improve their knowledge of the American heritage and their ability at reading and writing.

205. Reading for University-Level Understanding
Winter. Fall, Winter, Spring. 20-4 May reenroll for a maximum of 4 credits. Individualized instruction in techniques for improving vocabulary, comprehension, rate, study skills and test-taking skills in order to achieve a better understanding of university-level materials.

232. American Humor
Winter. 4(4-0) Sophomores. An interdisciplinary study of the relationship between American humor and the developing American experience, especially of the nineteenth and twentieth centuries.

265. Reading for University-Level Understanding
Fall. Winter, Spring. 4(4-0) Completion of ATL sequence, ENG 213 or approval of department. May reenroll for a maximum of 4 credits. Individualized instruction in techniques for improving vocabulary, comprehension, rate, study skills and test-taking skills in order to achieve a better understanding of university-level materials.

300. Supervised Individual Study
Fall, Winter, Spring. 2 to 4 credits. May reenroll for a maximum of 12 credits. 9 credits in a composition course; approval of department. Selected students requesting individual study of interdisciplinary problems will work under supervision of University College professors. Variable elective credit will be determined when the student secures instructor, adviser, and department approval.

329. Advanced Writing: The Prose Essay
Spring. 4(4-0) Completion of ATL sequence, ENG 213 or approval of department. Provides instruction in the acquiring of knowledge from the prose essay, making sophisticated inferences from the ideas collected and formulating and supporting logical theses in the writing of such essays.

350. American Film
Fall, Winter, Spring. 4(2-4) May reenroll for a maximum of 8 credits if different topic is taken. Sophomores. American films as they reflect and influence society.

380. The Role of Women in America: Arts and Self
Winter. Fall, Spring. 4(4-0) Juniors. Various aspects of American women and the exploration of a limited knowledge of a woman's place in society, race and class interactions, sexual stereotypes, male views of women and themselves; the impact of the media.

381. The Role of Women in America: Movements and Ideology
Spring of odd-numbered years. 4(4-0) Juniors. Key personalities and philosophical currents in the women's movement, biological and cultural myths and realities, the historical role of the family, 'The Culture of Romance.'

439. Writing the Research Report
Winter, Spring. 4(4-0) Juniors. Advanced methods and organization of written research reports will be taught by providing examples, exercises, and writing practice based on research submitted by the students.

449. Technical Report Writing
Winter, Spring. 4(4-0) Completion of ATL requirement, Juniors or approval of instructor. Use and understanding of language through writing and editing clear, concise, purposeful technical reports, letters, instructions, proposals.

ANATOMY

ANT

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

216. Applied Human Anatomy
Fall, Spring. 5(4-3) HPR major or minor. Structural anatomy of the various systems of the human body. Concepts of kinesiological applications.

316. General Anatomy
Fall, Spring. 5(5-0) B S 211 or B S 212 or approval of department. Designed to impart the basic concepts of the broad field of anatomy. Special requirements of the various disciplines will be met in their respective laboratories.

420. Microscopic Anatomy
Winter. 5(2-8) Medical Technology students or approval of department. Microscopic study of the structure of cells, tissues and organs.

490. Special Problems
Fall, Winter, Spring. 1 to 5 credits. May reenroll for a maximum of 15 credits. Approval of department. Individual study or project under the direction of a faculty member in biomedical research, gross anatomy, histology, hematology, or embryology.

505A. Anatomy in Physical Diagnosis
Fall. 1 to 3 credits. H M 505A concurrently. Exercises in which students study systemic anatomy in a physical diagnosis context. Preparatory self-instruction precedes exercises.

505B. Anatomy in Physical Diagnosis
Winter. 1 to 3 credits. ANT 505A or approval of department. Exercises in which students study regional anatomy in a physical diagnosis context. Preparatory self-instruction precedes exercises.

505C. Anatomy in Physical Diagnosis
Spring. 1 to 3 credits. ANT 505B or approval of department. Exercises in which students study regional anatomy in a physical diagnosis context. Preparatory self-instruction precedes exercises.

510. Veterinary Gross Anatomy
Fall. 6(3-9) First-term Veterinary Medicine students. Gross anatomy of a representative animal, the dog. 360-hour study. Lecture, dissection of embalmed specimens, study of projections, slides, models and living animals.

511. Veterinary Histology
Fall. 5(3-6) First-term Veterinary Medicine students. A general histology course for veterinary students which includes a survey of the tissue of the animal body.

512. Veterinary Neuro Anatomy
Winter. 2(2-0) Second-term Veterinary Medicine students. Gross anatomy of the central nervous system in animals emphasizing functional and dysfunctional aspects of pathways and nuclei in dogs as a foundation for clinical neurology.

513. Veterinary Microscopic Anatomy
Winter. 4(2-4) Second-term Veterinary Medicine students. Microscopic anatomy of the digestive, urinary, respiratory, male and female reproductive systems, integumentary system, central nervous system and special sense organs of domesticated animals.

514. Veterinary Comparative Anatomy
(323.) Spring. 5(4-4) Third-term Veterinary Medicine students. Lecture, dissection of embalmed specimens and the study of projections, models and live animals related to the anatomy of the domestic animals.

540. Gross Biomedical Structure
Winter. 1 to 15 credits. May reenroll for a maximum of 15 credits. Admission to a college of medicine, graduate students with approval of department. Regional gross anatomy of the back, thorax, abdomen, pelvis and perineum.

541. Gross Biomedical Structure
Spring. 1 to 15 credits. Admission to a college of medicine, graduate students with approval of department. Regional gross anatomy of the head and neck.

542. Gross Biomedical Structure
Fall. 1 to 15 credits. Admission to a college of medicine, graduate students with approval of department. Regional gross anatomy of the limbs.

543. Microscopic Anatomy
Winter. 3(1-3) Human Medicine students; approval of department for graduate students. The principles of microscopic anatomy, utilizing self-instructional units and laboratory experience with organ sections viewed through the light microscope.
544. Human Ontogenesis
Fall. 3(3-O) Admission to a college of medicine; graduate students with approval of department.

545. Neuroanatomy
Spring. 3(4-O) Admission to medical school or approval of Neuroscience Committee. Introduction to gross and microscopic anatomy of the human nervous system, related basic neurophysiologic concepts and to a problem-solving approach to the diagnosis of nervous system disease.

550. Medical Histology
Summer. 4(3-4) Admission to a college of medicine or approval of department. Structural and functional characteristics of basic cells, tissues, and organ systems. Emphasis on core concepts and visual discrimination.

563. Osteopathic Medical Neuroanatomy
Fall. 4(3-4) Admission to a college of medicine; graduate students with approval of department. Medically oriented problem-solving neuroanatomy with laboratory. Structure of the human nervous system is correlated with normal function, clinical testing and classical lesions encountered in medical practice.

565. Introduction to Human Gross Anatomy
Summer. 6(4-6) Admission to a college of medicine or approval of department. Core concepts in regional, systemic and topographical human gross anatomy: Prosection, discussion and lecture methods using audiovisual aids and frequent review.

590. Special Problems
Fall, Winter, Spring. 1 to 5 credits. May reenroll for a maximum of 15 credits. Admission to professional program in the College of Human Medicine, College of Osteopathic Medicine or the College of Veterinary Medicine, and approval of department. Biomedical research, gross anatomy, histology, neurology, immunology or embryology.

813. Problems in Anatomy
Fall, Winter, Spring. 3(3-4) credit. May reenroll for a maximum of 15 credits. Basic disciplines in various areas and approval of department. Various anatomical fields such as gross anatomy, histology, hematology, tissue culture, cytolology, neurology and embryology will be studied.

815. Anatomy of the Nervous System
Fall. 3(3-5) Approval of department. Developmental, gross and microscopic anatomy of the nervous system. Organizational and functional aspects of the peripheral and central nervous system are stressed. Gross demonstrations include brain and dog dissections.

816. Developmental Anatomy
Fall. 3(3-3) Graduate students or approval of department. Study of the normal and abnormal organogenesis of the human embryo and fetus.

865. Advanced Neurobiology
Spring. 4(4-O) BPY 827. Interdepartmental with the departments of Biophysics, Physiology, Psychology and Zoology. Basic organization, structure and function of neural networks comprising sensory, motor, and autonomic systems including examples from invertebrates and vertebrates. Attendance at neuroscience seminar is required.

891. Concepts in Tumorigenesis
Winter of even-numbered years. 2(3-0) Approval of instructor.

909. Master's Thesis Research
Fall, Winter, Spring, Summer. Variable credits. Majors.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credits. Majors.

ANIMAL HUSBANDRY A H
College of Agriculture and Natural Resources

111. Livestock and Meat Industry
Fall. Spring. 4(3-4)

121. Introduction to Horses and Horsemanship
Fall. 3(3-1)

235. Live Animal and Carcass Evaluation and Selection
Fall. 3(3-4) A H 111 or concurrently.

242. Meats, Poultry and Fishery Products I
Fall. 3(2-2) Interdepartmental with and administered by Food Science. Principles of evaluation and nutritive value. Identification of grades and cuts of beef, pork, lamb and poultry products.

245. Meat Evaluation and Grading
Fall, Winter. 1 to 3 credits. May reenroll for a maximum of 4 credits subject to a maximum of 10 credits in A H 245 and A H 335 combined. A H 235.

335. Livestock Selection
Fall, Winter, Spring. 1 to 3 credits. May reenroll for a maximum of 3 credits subject to a maximum of 10 credits in A H 245 and A H 335 combined. A H 235.

341. Principles of Meat Science
(241.) Winter. 3(3-0) BCH 200, FSL 240.

344. Meat Science Laboratory
(244.) Winter. 2(0-5) A H 341 or concurrently.

415. Special Problems
Fall, Winter, Spring. 1 to 3 credits. May reenroll for a maximum of 5 credits. Approval of department. Special problems in: animal breeding, ruminant nutrition, nonruminant nutrition, meat science, or reproduction.

426. Swine Nutrition
Spring of odd-numbered years. 3(3-0) A H 451; ANS 325 or ANS 525.

451. Swine Production
Fall. 4(3-2) ANS 325 or approval of department. Historical aspects with emphasis on current trends. Breeds, breeding, selection, nutrition requirements, management practices, marketing, housing and environmental needs, disease and parasite problems. Visits to representative farms.

452. Sheep Production
Winter. 4(3-2) ANS 325 or approval of department. Management of sheep enterprises. Uses of selection, reproduction, nutrition, flock health, housing and marketing to increase returns. Practice in trimming, showing, and management skills.

453. Beef Production
Fall, Spring. 4(3-2) ANS 325 or approval of department. Feeding, breeding management, marketing. Emphasis on growth and development; costs and returns; feed requirements; reproduction; crossbreeding; performance testing; housing; diseases. Practice in management skills.

462. Meat Animal Breeding
Spring. 3(2-2) ANS 361.

Uses and effects of different breeding systems with beef cattle, sheep, and swine. Formulating breeding plans.