

162. American Radical Thought
(112E.) Winter. 3(3-0) Three credits in the first term of any ATL sequence numbered 121 or above; or satisfactory performance in Comprehensive English.
Aims to acquaint the student with ideas concerning radical social change, and to improve his ability at reading and writing. Selected readings and theme topics.

163. American Radical Thought
(113E.) Spring. 3(3-0) Three credits in the second term of any ATL sequence numbered 121 or above; or satisfactory performance in Comprehensive English.
Aims to acquaint the student with ideas concerning radical social change, and to improve his ability at reading and writing. Selected readings and theme topics.

165. American Utopianism: Beginnings
Fall. 3(3-0)
Utopian and communitarian urge in early American thought and experience; improvement of the student's reading, writing, and speaking abilities.

166. American Utopianism: Middle Years
Winter. 3(3-0)
Utopian and communitarian urge in American thought and experience in the middle years; improvement of the student's reading, writing, and speaking abilities.

167. American Utopianism: Contemporary
Spring. 3(3-0)
Utopian and communitarian urge in contemporary American thought and experience; improvement of the student's reading, writing, and speaking abilities.

171. America on Film
(111F.) Fall. 3(3-2) Satisfactory grade on English proficiency examination or in Comprehensive English.
Aims to acquaint the student with cinematic and fictional representation of experience, and to improve his ability at reading and writing. Selected readings and theme topics.

172. America on Film
(112F.) Winter. 3(3-2) Three credits in the first term of any ATL sequence numbered 121 or above; or satisfactory performance in Comprehensive English.
Aims to acquaint the student with cinematic and fictional representation of experience, and to improve his ability at reading and writing. Selected readings and theme topics.

173. America on Film
(113F.) Spring. 3(3-2) Three credits in the second term of any ATL sequence numbered 121 or above; or satisfactory performance in Comprehensive English.
Aims to acquaint the student with cinematic and fictional representation of experience, and to improve his ability at reading and writing. Selected readings and theme topics.

181. Women in America
(111J.) Fall. 3(3-0) Satisfactory grade on English proficiency examination or in Comprehensive English.
Aims to acquaint the student with women's experience in America, and to improve the student's ability at reading and writing. Selected readings and theme topics.

182. Women in America
(112J.) Winter. 3(3-0) Three credits in the first term of any ATL sequence numbered 121 or above; or satisfactory performance in Comprehensive English.
Aims to acquaint the student with women's experience in America, and to improve the student's ability at reading and writing. Selected readings and theme topics.

183. Women in America
(113J.) Spring. 3(3-0) Three credits in the second term of any ATL sequence numbered 121 or above; or satisfactory performance in Comprehensive English.
Aims to acquaint the student with women's experience in America, and to improve the student's ability at reading and writing. Selected readings and theme topics.

191H. Honors Work in American Experience
(111H.) 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
(112H.) Winter. 3(3-0) Satisfactory grade in the first term of any ATL sequence numbered 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
(113H.) Spring. 3(3-0) Satisfactory grade in the second term of any ATL sequence numbered 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
Fall, Winter, Spring. 2(0-4) May re-enroll 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.

300. Supervised Individual Study
Fall, Winter, Spring, Summer. 2 to 4 credits. May re-enroll 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.

350. Contemporary American Film and Society
Winter. 4(4-0) Sophomores.
Contemporary American films as reflections of and influences on American society. Term topics: Violence and Crime or Women.

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.

ANATOMY ANT
College of Human Medicine
College of Osteopathic Medicine
College of Veterinary Medicine

316. General Anatomy
Fall, Spring. 5(5-0)
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 oells, tissues and organs.

480. Special Problems
Fall, Winter, Spring, Summer. 1 to 5 credits. May re-enroll 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, neurology, or embryology.

505A. Anatomy in Physical Diagnosis
(505.) Fall. 1 to 3 credits. HM 505 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. 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. 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
(521.) Summer. 6(3-9) Admission to professional veterinary program.
Gross anatomy of a representative animal, the dog, is studied. Lecture, dissection of embalmed specimen, study of prosections, slides, models and living animals.

511. Veterinary Histology
(520.) Summer. 4(2-6) First-term Veterinary Medicine students.
A general histology course for veterinary students which includes a survey of the tissue of the animal body.

**Descriptions — Anatomy
of
Courses**

512. Veterinary Neuro Anatomy
Summer. 2(2-0) First-term Veterinary
Medicine students.

Gross anatomy of the central nervous system in animals emphasizing functional and dysfunction-
al aspects of pathways and nuclei in dogs as a
foundation for clinical neurology.

513. Veterinary Microscopic Anatomy
(522.) Fall. 5(3-6) Second-term Vet-
erinary Medicine students.

Microscopic anatomy of the digestive, urinary,
respiratory, male and female reproductive sys-
tems, integumentary system, central nervous
system and special sense organs of domesticated
animals.

514. Veterinary Comparative Anatomy
(523.) Fall. 4(2-6) Second-term Vet-
erinary Medicine students.

Lecture, dissection of embalmed specimens and
the study of prosections, models and live animals
related to the anatomy of the domestic animals.

540. Gross Biomedical Structure

Fall, Winter, Spring. Variable credit.
May re-enroll for a maximum of 15 credits.
Human Medicine students; approval of depart-
ment for graduate students.

Human structure, systemic and regional, is
studied in self-instructional and dissection se-
quences. Application of this knowledge to recog-
nition of normal and abnormal structure in
appropriate medical contexts is accomplished
through self-instructional and clinical sessions.

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.

545. Neuroanatomy

Spring. 3(4-0) Admission to med-
ical school or approval of Neuroscience Com-
mittee.

Introduction to gross and microscopic anatomy
of the human nervous system, to related basic
neurophysiologic concepts and to a problem-
solving approach to the diagnosis of nervous
system disease.

560. Medical Histology

Summer. 4(3-4) Admission to a col-
lege of medicine or approval of department.

Structural and functional characteristics of basic
cells, tissues and organ systems. Emphasis on
core concepts and visual discrimination.

**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 topo-
graphical human gross anatomy: Prosection,
discussion and lecture methods using audio-
visual aids and frequent review.

580. Special Problems

Fall, Winter, Spring, Summer. 1 to 5
credits. May re-enroll for a maximum of 15
credits. Admission to professional program in
the College of Human Medicine, College of
Osteopathic Medicine or the College of Veteri-
nary Medicine, and approval of department.
Biomedical research, gross anatomy, histology,
neurology, immunology or embryology.

801. Seminar

Fall, Winter, Spring. 1(1-0) Ap-
proval of department.

813. Problems in Anatomy

Fall, Winter, Spring, Summer. Varia-
ble credit. May re-enroll 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, cytology,
neurology and embryology will be studied.

815. Anatomy of the Nervous System

Fall. 5(3-5) Approval of department.

Developmental, gross and microscopic anatomy
of the nervous system. Organizational and func-
tional aspects of the peripheral and central ner-
vous system are stressed. Gross demonstrations
include brain and dog dissections.

816. Developmental Anatomy

Fall. 4(3-3) Graduate students or
approval of department.

Study of the normal and abnormal organo-
genesis of the human embryo and fetus.

899. Research

Fall, Winter, Spring, Summer. Varia-
ble credit. Majors.

999. Research

Fall, Winter, Spring, Summer. Varia-
ble credit. Majors.

245. Meat Evaluation and Grading

Fall, Spring. 1 to 3 credits. May
re-enroll for a maximum of 4 credits subject to
a maximum of 10 credits in 245 and 335 com-
bined. 241.

Evaluation of carcasses and wholesale cuts of
beef, pork, veal and lamb in accordance with
federal and commercial grading standards. In-
spection trips through large meat packing plants.

335. Livestock Selection

Fall, Winter, Spring. 1 to 3 credits.
May re-enroll for a maximum of 9 credits sub-
ject to a maximum of 10 credits in 245 and 335
combined. 111.

Evaluation of productive merit of individual
animals. Comparison of type with a standard.
Relationship of form to function. Field trips
to prominent livestock breeding establishments
and to major livestock events.

415. Special Problems

Fall, Winter, Spring. 1 to 3 credits.
May re-enroll for a maximum of 5 credits.
Seniors and approval of department.

Special studies in fields not covered by other
animal husbandry courses.

451. Swine Production

Fall. 4(3-3) 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(3-3) ANS 325 or approval
of department.

Management of sheep enterprises. Using the
tools of selection, reproduction, nutrition, flock
health, housing and marketing to increase re-
turns. Practice in trimming, showing, and
management skills.

453. Beef Production

Spring. 4(3-3) ANS 325 or approval
of department.

Feeding, breeding management, marketing.
Emphasis on growth and development; costs and
returns; feed requirements; reproduction, cross-
breeding; performance testing; housing; diseases.
Practice in management skills. One field trip.

462. Meat Animal Breeding

Spring. 3(2-2) ANS 461.

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

**IDC. The Impact of Animal Resource
Management Upon the World's
Developing Nations**

For course description, see Interdisci-
plinary Courses.

825. Techniques in Nutrition Research

Winter of odd-numbered years. 1 to
3 credits. CEM 333; approval of department.
Interdepartmental with Human Nutrition and
Foods.

Use of specialized instruments and techniques.
Laboratory safety. Management of laboratory
animals. Development of abilities in areas of
particular interest to individual students.

890. Advanced Special Problems

Fall, Winter, Spring, Summer. 1 to 4
credits. May re-enroll for a maximum of 8
credits. Approval of department.

Investigation of animal husbandry areas of spe-
cial interest to individual graduate students.

ANIMAL HUSBANDRY A H

**College of Agriculture and
Natural Resources**

111. Livestock and Meat Industry

Fall, Spring. 4(3-4)

Livestock utilization of renewable resources in
producing products for man. Adaptation, eco-
nomics of production and management systems
of beef cattle, swine, sheep and horse enter-
prises. Evaluation of market livestock.

214. Horses and Man

Fall. 3(3-1)

The horse in today's world. Types, breeds and
uses for recreation and therapy. Selection, de-
velopment and maintenance of a healthy, well-
trained horse.

241. Meat Production

Winter. 5(3-6) 111.

Principles of meat evaluation and selection. Car-
cass certification programs. Influence of produc-
tion factors on carcass desirability. Practice in
slaughtering, cutting and meat processing.

**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.