125. Writing: The American Ethnic and Racial Experience
Fall, Spring, 4(4-0)
P: Designated score on English placement test or ATL 1004. R: Not open to students with credit in MC 111 or MC 112 or LBS 133 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 or AL 192 or AL 192H.
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: Designated score on English placement test or ATL 1004. R: Not open to students with credit in MC 111 or MC 112 or LBS 133 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 or ATL 195H or AL 192 or AL 192H.
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: Designated score on English placement test or ATL 1004. R: Not open to students with credit in MC 111 or MC 112 or LBS 133 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 or ATL 195H or AL 192 or AL 192H.
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: Designated score on English placement test or ATL 1004. R: Not open to students with credit in MC 111 or MC 112 or LBS 133 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 or ATL 195H or AL 192 or AL 192H.
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: Designated score on English placement test or ATL 1004. R: Not open to students with credit in MC 111 or MC 112 or LBS 133 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 or ATL 195H or AL 192 or AL 192H.
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: Designated score on English placement test or ATL 1004. R: Not open to students with credit in MC 111 or MC 112 or LBS 133 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 or ATL 195H or AL 192 or AL 192H.
Drafting, revising, and editing compositions derived from American historical, social, and cultural texts to develop skills in narration, persuasion, analysis, and documentation.

155. Writing: Major Topics in American Thought
Fall, Spring, 4(4-0)
P: Designated score on English placement test. R: Not open to students with credit in MC 111 or MC 112 or LBS 133 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 or ATL 195H or AL 192 or AL 192H.
Drafting, revising, and editing compositions derived from readings on major topics in American thought to develop advanced skills in narration, persuasion, analysis, and documentation.

250. Independent Study
Fall, Spring, Summer, 1 to 4 credits.
R: Open only to freshmen and sophomores. Approval of department.
Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

ANATOMY

Department of Anatomy
College of Human Medicine
College of Osteopathic Medicine
College of Veterinary Medicine

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

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

515. Comparative Veterinary Gross Anatomy
Fall, 6(4-2)
R: Open only to graduate-professional students in the College of Veterinary Medicine.

310. Medical Gross Anatomy
Fall, 6(4-2)
R: Open only to graduate-professional students in the College of Veterinary Medicine.

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

290. Comparative Analysis of Gross Anatomy
Fall.

511. Medical Gross Anatomy
Fall, 6(4-6)
R: Graduate professional students in colleges of Human and Osteopathic Medicine.

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

585. Human Gross Anatomy Dissection
Fall, Spring, Summer, 2 to 7 credits. A student may earn a maximum of 15 credits in all enrollments for this course.
R: ANT 551. R: Graduate-professional students in colleges of Human and Osteopathic Medicine.
Dissection of selected regions of the human body.

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

802. Clinical Surgical Anatomy
Spring, 4(2-4) Interdepartmental with Surgery, Administration by Surgery.

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-numbered years, 1 to 5 credits.
R: Open only to graduate students in Anatomy.
Seminars in evaluating abstracts and delivering oral presentations of anatomical sciences. Organization, timing and effective illustrations.

820. Advanced Neuroanatomy
Summer of odd-numbered years, 1 to 5 credits.
A student may earn a maximum of 12 credits in all enrollments for this course.
R: Approval of department.

885. Vertebrate Neural Systems
Spring of odd-numbered 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.
ANIMAL SCIENCE  ANS

Department of Animal Science
College of Agriculture and Natural Resources

110. Introductory Animal Agriculture  Fall (3-3-2)

112. Introductory Animal Management  Spring (3-2-2)
Principles of managing beef and dairy cattle, horses, poultry, sheep and swine throughout their life cycles. Topics include genetics, nutrition, reproduction, health, care, and economically efficient 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.

200B. Introductory Judging of Dairy Cattle or Horses  Spring. 1 to 2 credits. A student may earn a maximum of 3 credits in all enrollments for this course.

210. Animal Products  Fall. 4(3-3)
P: ANS 112. 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 of odd-numbered years. 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-numbered years. 3(1-2)
R: Open only to sophomores, juniors, and seniors.
Purebred livestock industry. Private treaty and auction sales. Advertising, animal selection and budgeting of purebred livestock sales. Field trip required.

242. Introductory Horse Management  Fall. 3(2-2)
Principles of horse management. Reproduction, nutrition, herd health, genetics, economics, marketing. Field trip required.

262. Sheep Management  Spring. 3(2-2)
R: Open only to sophomores, juniors, and seniors.
Principles of sheep management: genetics, reproduction, nutrition, marketing, and economics. Field trips required.

276. Seafood Systems Management  Spring. 3(3-0) Interdepartmental with Food Science and Fisheries and Wildlife. Administered by Fisheries and Wildlife.
Domestic and international perspectives on major aquatic foods. Cultural and nutritional value; wild harvest; aquaculture; processing technology; food handling and food safety.

300A. Advanced Livestock Judging  Fall of even-numbered years. 2 credits.
P: ANS 200A. R: Not open to freshmen. A student may earn a maximum of 8 credits from ANS 200A, ANS 200B, ANS 300A, ANS 300B, ANS 300C and ANS 300D.
Evaluation of conformation and performance records of beef cattle, swine and sheep. Represent MSU in intercollegiate competition. Field trips required.

300B. Advanced Meat Evaluation and Grading  Fall of odd-numbered years. 2 credits.
P: ANS 200A. R: Not open to freshmen. A student may earn a maximum of 8 credits from ANS 200A, ANS 200B, ANS 300A, ANS 300B, ANS 300C and ANS 300D.
Evaluation of beef, pork, and lamb carcasses and wholesale cuts according to industry standards. Federal grading standards. Field trips to meat packing operations required. Represent MSU in intercollegiate competition.

300C. Advanced Dairy Cattle Judging  Fall. 2 credits.
P: ANS 200B. R: Not open to freshmen. A student may earn a maximum of 8 credits from ANS 200A, ANS 200B, ANS 300A, ANS 300B, ANS 300C and ANS 300D.
Evaluation of conformation of various breeds of dairy cattle. Represent MSU in intercollegiate competition. Field trips required.

300D. Advanced Horse Judging  Fall. 2 credits.
P: ANS 200B. R: Not open to freshmen. A student may earn a maximum of 8 credits from ANS 200A, ANS 200B, ANS 300A, ANS 300B, ANS 300C and ANS 300D.
Evaluation of functional characteristics of horses. Represent MSU in intercollegiate competition. Field trips required.

310. Livestock and Product Marketing  Fall. 3(3-2) Interdepartmental with Food Systems Economics and Management.
P: ANS 112. R: Not open to freshmen.

315. Principles of Animal Feeding and Nutrition  Fall. 4(0-2)
P: CEM 143, BS 111. R: Completion of Tier I writing requirement.