AGRICULTURE AND NATURAL RESOURCES ANR

College of Agriculture and Natural Resources

350. Leadership Development for Agriculture and Natural Resources
Spring, 2(2-0)
R: Not open to freshmen and sophomores. Approval of college; application required.
Preparation for community leadership. Field observation of social, economic and political problems. Emphasis on awareness, action and involvement. Seminars and interviews.

392. Agriculture and Natural Resources Seminar
Spring, 1(2-0)
R: Not open to freshmen and sophomores.
Current agricultural, natural resources and environmental problems and solutions. Discussion leaders from various disciplines.

475. International Studies in Agriculture and Natural Resources
Fall, Spring, Summer. Given at various off campus sites. 2 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
R: Approval of college; application required.
Study-travel experience emphasizing contemporary problems affecting agriculture and natural resources in the world, national and local communities. Case studies and interviews with officials, community leaders and leading professionals.

481. Agricultural Research Systems in Developing Countries
Fall, Spring, Summer. 3(3-0) Interdepartmental with Agricultural Economics, Animal Science, and Crop and Soil Sciences.
R: Open only to seniors and graduate students in the College of Agriculture and Natural Resources. Planning, organizing and managing agricultural research systems. Problems and alternative reforms to improve research productivity. Adapting new agricultural technology in developing countries.

489. Integrated Approaches to Agriculture and Natural Resources Problems
Fall, Spring, 3(3-0)
R: Open only to seniors in the College of Agriculture and Natural Resources.
Holistic solutions to resource management and allocation: an integrated, multidisciplinary team approach to case study problems.

491. Selected Topics
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
R: Not open to freshmen and sophomores. Special topics in agriculture and natural resources.

493. Professional Internship in Agriculture and Natural Resources
Fall, Spring, Summer. 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to juniors and seniors in the College of Agriculture and Natural Resources. Approval of department; application required.
Supervised professional experiences in agencies and businesses related to a student's major field of study.

AMERICAN STUDIES AMS

College of Arts and Letters

332. Technology and Culture
Fall, 4(4-0) Interdepartmental with Lyman Briggs School. Administered by Lyman Briggs School. P: LBS 133 or another Tier I writing course. R: Not open to freshmen. Open only to students in American Studies and in Lyman Briggs School. American attitudes toward the natural environment and related public and private institutions.

355. The Natural Environment: Perceptions and Practices
Spring, 4(4-0) Interdepartmental with Lyman Briggs School. Administered by Lyman Briggs School. P: LBS 133 or another Tier I writing course. R: Not open to freshmen. Open only to students in American Studies and in Lyman Briggs School. American attitudes toward the natural environment and related public and private institutions.

491. Perspectives in American Studies
Fall, 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course.
R: Not open to freshmen and sophomores. Methods and significant works in American Studies. Topics vary.

492. Seminar in American Studies
Spring, 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course.
R: Open only to majors in Arts and Letters, James Madison College, and Lyman Briggs School. Selected topic in American life emphasizing interdisciplinary approaches. Topics vary.

481. American Studies Theory, Methods, and Bibliography
Fall, 3(3-0)
Methods and bibliographical sources of American Studies research. Interdisciplinary approaches to studying American culture.

490. 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.

491. Special Topics in American Studies
Fall, Spring, Summer. 4(4-0) A student may earn a maximum of 12 credits in all enrollments for this course.
R: Approval of college. Special topics supplementing regular course offerings proposed by faculty for graduate students on a group study basis.

499. 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.

A-11
999. **Doctoral Dissertation Research**  
Fall, Spring, Summer. 1 to 12 credits. A student may earn a maximum of 30 credits in all enrollments for this course.  
R: Approval of college.

**AMERICAN THOUGHT AND LANGUAGE**  
ATL  
Department of American Thought and Language  
College of Arts and Letters

0102. **Preparation for College Writing**  
Fall, Spring. 0(0-2) See page A 2, item 3.1.  
C: ATL 1004. R: Designated score on English placement test.  
Practice in applying the principles of English grammar, syntax, and word usage to writing.

0104. **Preparation for College Writing**  
Fall, Spring. 3(3-0)  
C: ATL 0102. R: Designated score on English placement test.  
Composing, revising, and editing. Active reading and pre-writing strategies. Style, mechanics, and usage. Organization and proofreading.

101. **Library Resources**  
Fall, Spring, Summer. 1(1-O)  
Use of libraries for researching college assignments and papers. Emphasis on bibliographic and reference tools.

110. **Writing: Science and Technology**  
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 120 or ATL 125 or ATL 130 or ATL 145 or ATL 150 or ATL 195H.  
Drafting, revising, and editing compositions derived from readings on American science and technology to develop skills in narration, persuasion, analysis, and documentation.

120. **Writing: American Philosophy, Literature, and the Arts**  
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 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 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: 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 120 or ATL 125 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: 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 120 or ATL 125 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.

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 120 or ATL 125 or ATL 130 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: 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 120 or ATL 125 or ATL 130 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: 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 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 major topics in American thought to develop advanced skills in narration, persuasion, analysis, and documentation.

155H. **Writing: Major Topics in 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 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 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 and sophomores. Approval of department. Special projects arranged by an individual student and a faculty member in areas supplementing regular course offerings.

300. **ANATOMY**  
Department of Anatomy  
College of Human Medicine  
College of Osteopathic Medicine  
College of Veterinary Medicine

315. **Comparative Veterinary Gross Anatomy**  
Fall, Spring. 6(2-10)  
R: Open only to graduate-professional students in the College of Veterinary Medicine.  
Canine anatomy. Comparisons with ruminant, porcine, and equine anatomy.

316. **Veterinary Histology and Cell Biology**  
Fall. 3(2-2)  
R: Open only to graduate-professional students in the College of Veterinary Medicine.  
Principles of developmental, cellular, and molecular biology as related to veterinary medicine.

317. **Veterinary Neuroanatomy**  
Fall. 3(2-2)  
R: Completion of 1 semester of the graduate-professional program in the College of Veterinary Medicine.  
Introduction to the anatomy of the nervous system using the canine species as a model.

351. **Medical Gross Anatomy**  
Fall. 7(4-6)  
R: Graduate-professional students in colleges of Human and Osteopathic Medicine.  
Gross anatomy of the human body using dissections, medical imaging, clinical correlations, case studies, video tapes, and computer aided instruction.

552. **Medical Neurosciences**  
Spring. 4(3-2)  
Interdepartmental with Physiology and Radiology.  
R: Graduate-professional students in colleges of Human and Osteopathic Medicine.  
Correlation of normal structure and function of the human nervous system with clinical testing, classical lesions, and common diseases.

562. **Medical Histology**  
Spring. 3(2-3)  
R: Graduate-professional students in colleges of Human and Osteopathic Medicine.  
Histology of the human body.

565. **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.  
P: ANT 561. R: Graduate-professional students in colleges of Human and Osteopathic Medicine.  
Dissection of selected regions of the human body.

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: 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.  
P: Open only to graduate-professional students in the College of Veterinary Medicine. Approval of department.  
Vascular, gross anatomy, cell biology, histology, or neurobiology.

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