

## Descriptions – Agriculture and Natural Resources

of

### Courses

- 455. Natural Resource Economics**  
(N R 455.) Fall. 4(4-0) Approval of department. Interdepartmental with the departments of Fisheries and Wildlife, Forestry, Park and Recreation Resources and Resource Development. Administered by the Department of Forestry.  
Basic economic and political principles and techniques that govern the production and consumption of forest land products, including basic forest valuation procedures.
- 462. Agricultural and Rural Development in Developing Nations**  
(AG 462.) Fall. 3(3-0) PAM 201 or EC 201; PAM 260 recommended. Interdepartmental with Public Affairs Management, and Food Systems Economics and Management. Administered by Food Systems Economics and Management.  
Traditional agricultural systems and the incentive environment for economic growth in rural areas. Adjustment to technological, institutional and human change. Strategies for rapid agricultural transformation.
- 475. International Studies in Agriculture and Natural Resources**  
(AG 475.) Spring, Summer. 3 to 9 credits. Approval of college.  
Study-travel experience emphasizing contemporary problems affecting agriculture in the world, national, and local communities. Field trips, case studies, interviews with leading experts, government officials, community leaders. Supervised individual study.
- 480. Selected Topics**  
Fall, Winter, Spring, Summer. 1 to 4 credits. May re-enroll for a maximum of 9 credits if different topics are taken. Approval of department. Juniors.  
Exposition of special topics in agriculture and natural resources.
- 491. Natural Resources and Modern Society**  
(N R 491.) Spring. 3(3-0) Juniors. Interdepartmental with the departments of Forestry, and Resource Development. Administered by the Department of Forestry.  
A survey of the social and economic significance of natural resources in modern industrial and urban society. Current problems of natural resources management and use are examined in terms of the society in which they exist.

## AMERICAN STUDIES AMS

### College of Arts and Letters

- 301. Issues in American Civilization**  
Fall, Winter, Spring. 3(3-0) May re-enroll for a maximum of 9 credits. Not applicable to major requirements.  
Selected issues in American life past and present, with materials drawn from such disciplines as history, social sciences, philosophy, literature and the arts. Topics vary.
- 378. Popular Culture and Technical Change**  
Winter. 4(4-0) Juniors or approval of department. Interdepartmental with and administered by Lyman Briggs School.  
Interrelationships among elements of mass culture and technical change. Introduction to relevant research methods.

- 410. Perspectives in American Studies**  
Fall. 3 credits. Juniors in American Studies or approval of American Studies Committee.  
Methods and significant works, for majors in the American Studies program. Offered by members of the relevant departments.
- 411. Problems in American Civilization**  
Winter, Spring. 3 credits. Majors must re-enroll for a maximum of 6 credits. AMS 410, Juniors in American Studies or approval of American Studies Committee.  
Seminar approach to selected problems in American life employing the objectives and approaches of interdisciplinary studies. Offered by members of relevant departments, for majors in the American Studies program.

## AMERICAN THOUGHT AND LANGUAGE

ATL

### College of Arts and Letters

To satisfy the University General Education requirement, a student must take one course in each of the following groups. Additional courses may be taken for elective credit.

1. 1144, 121, 131, 141, 151, 161, 171, 181, 191H
2. 1154, 122, 132, 142, 152, 162, 172, 182, 192H
3. 1164, 123, 133, 143, 153, 163, 173, 183, 193H

#### 0142. Writing Laboratory I

Fall, Winter, Spring. 0(0-2) [2(2-0) See page A-1 item 3.] ATL 0991 or admission by placement test; ATL 1144 concurrently.

An individualized program to develop composition skills by aiding students to discover how language functions in communication and by helping them to accept responsibility for learning to write correctly.

#### 0152. Writing Laboratory II

Fall, Winter, Spring. 0(0-2) [2(2-0) See page A-1 item 3.] ATL 0142, ATL 1144 or approval of department; ATL 1154 concurrently. Continuation of ATL 0142.

#### 0162. Writing Laboratory III

Fall, Winter, Spring. 0(0-2) [2(2-0) See page A-1 item 3.] ATL 0152, ATL 1154 or approval of department; ATL 1164 concurrently. Continuation of ATL 0152.

#### 0991. Preparatory Writing Skills

Fall, Winter, Spring, Summer. 0(3-0) [3(3-0) See page A-1 item 3.] Admission by placement test.

Instruction and practice in writing. Emphasis on mastery of fundamental skills needed for a variety of writing assignments.

#### 1144. Developmental Writing I

Fall, Winter, Spring. 3(3-0) ATL 0991 or admission by placement test; ATL 0142 concurrently.

Students engage in expressive writing to respond to reading in clear and direct prose. Students write personal essays and read autobiographical materials, making use of college-level readings.

#### 1154. Developmental Writing II

Fall, Winter, Spring. 3(3-0) ATL 0142, ATL 1144 or approval of department; ATL 0152 concurrently.

Interpretive, analytical, and expository writing in response to college-level readings.

#### 1164. Developmental Writing III

Fall, Winter, Spring. 3(3-0) ATL 0152, ATL 1154 or approval of department; ATL 0162 concurrently.

Students write analytical/critical/persuasive papers and undertake a research project. Reading of college-level materials.

#### 117. Use of Libraries

Fall, Winter. 1(1-0)

The use of libraries, with emphasis on MSU Library. Course will stress knowledge and use of bibliographic and reference resources.

#### 121. American Expression

Fall, Winter, Spring, Summer. 3(3-0)

Satisfactory performance on the placement test.

Aims to improve students' ability to read and write and to acquaint them with their American heritage. Selected reading and theme topics.

#### 122. American Expression

Fall, Winter, Spring, Summer. 3(3-0)

Three credits in the first term of any ATL sequence numbered 121 or higher or approval of department.

Aims to improve students' ability to read and write, and to acquaint them with their American heritage. Selected reading and theme topics.

#### 123. American Expression

Fall, Winter, Spring, Summer. 3(3-0)

Three credits in the second term of any ATL sequence numbered 121 or higher or approval of department.

Aims to improve students' ability to read and write, and to acquaint them with their American heritage. Selected reading and theme topics.

#### 131. Major Currents in American Experience

Fall, Winter, Spring, Summer. 3(3-0)

Satisfactory performance on the placement test.

Investigation into the significance Americans place on individual search for meaning and its effect on our American heritage. Subject matter is the focus for improving reading and writing abilities.

#### 132. Major Currents in American Experience

Fall, Winter, Spring, Summer. 3(3-0)

Three credits in the first term of any ATL sequence numbered 121 or higher or approval of department.

The dreams and realities by which Americans have been inspired and betrayed are emphasized. Subject matter is the focus for improving reading and writing abilities.

#### 133. Major Currents in American Experience

Fall, Winter, Spring, Summer. 3(3-0)

Three credits in the second term of any ATL sequence numbered 121 or higher or approval of department.

Literary and historical study of the major cultural confrontations among groups and subcultures in America's heterogeneous society. Subject matter is the focus for improving reading and writing abilities.

**141. American Humanities**

Fall, Winter, Spring, Summer. 3(3-0)  
Satisfactory performance on the placement  
test.

Aims to acquaint students with their American  
heritage with emphasis on artistic and literary  
expression; and to improve their ability to read  
and write.

**142. American Humanities**

Fall, Winter, Spring, Summer. 3(3-0)  
Three credits in the first term of any ATL  
sequence numbered 121 or higher or approval of  
department.

Aims to acquaint students with their American  
heritage with emphasis on artistic and literary  
expression; and to improve their ability to read  
and write.

**143. American Humanities**

Fall, Winter, Spring, Summer. 3(3-0)  
Three credits in the second term of any ATL  
sequence numbered 121 or higher or approval  
of department.

Aims to acquaint students with their American  
heritage with emphasis on artistic and literary  
expression and to improve their ability to read  
and write.

**151. American Minorities**

Fall. 3(3-0) Satisfactory performance  
on the placement test.

Aims to acquaint students with the experience  
of minorities in America, and to improve their  
ability at reading and writing. Selected readings  
and theme topics.

**152. American Minorities**

Winter. 3(3-0) Three credits in the first  
term of any ATL sequence numbered 121 or  
higher or approval of department.

Aims to acquaint students with the experience  
of minorities in America, and to improve their  
ability at reading and writing. Selected readings  
and theme topics.

**153. American Minorities**

Spring. 3(3-0) Three credits in the sec-  
ond term of any ATL sequence numbered 121 or  
higher or approval of department.

Aims to acquaint students with the experience  
of minorities in America, and to improve their  
ability at reading and writing. Selected readings  
and theme topics.

**161. American Radical Thought**

Fall. 3(3-0) Satisfactory performance  
on the placement test.

Aims to acquaint students with ideas concerning  
radical social change, and to improve their abil-  
ity at reading and writing. Selected readings and  
theme topics.

**162. American Radical Thought**

Winter. 3(3-0) Three credits in the first  
term of any ATL sequence numbered 121 or  
higher or approval of department.

Aims to acquaint students with ideas concerning  
radical social change, and to improve their abil-  
ity at reading and writing. Selected readings and  
theme topics.

**163. American Radical Thought**

Spring. 3(3-0) Three credits in the sec-  
ond term of any ATL sequence numbered 121 or  
higher or approval of department.

Aims to acquaint students with ideas concerning  
radical social change, and to improve their abil-  
ity at reading and writing. Selected readings and  
theme topics.

**171. America on Film**

Fall. 3(3-2) Satisfactory performance  
on the placement test.

Aims to acquaint students with cinematic and  
fictional representation of experience, and to  
improve their ability at reading and writing.  
Selected readings and theme topics.

**172. America on Film**

Winter. 3(3-2) Three credits in the first  
term of any ATL sequence numbered 121 or  
higher or approval of department.

Aims to acquaint students with cinematic and  
fictional representation of experience, and to  
improve their ability at reading and writing.  
Selected readings and theme topics.

**173. America on Film**

Spring. 3(3-2) Three credits in the sec-  
ond term of any ATL sequence numbered 121 or  
higher or approval of department.

Aims to acquaint students with cinematic and  
fictional representation of experience, and to  
improve their ability at reading and writing.  
Selected readings and theme topics.

**181. Women in America**

Fall. 3(3-0) Satisfactory performance  
on the placement test.

Aims to acquaint the student with women's ex-  
perience in America, and to improve the stu-  
dent's ability at reading and writing. Selected  
readings and theme topics.

**182. Women in America**

Winter. 3(3-0) Three credits in the first  
term of any ATL sequence numbered 121 or  
higher or approval of department.

Aims to acquaint the student with women's ex-  
perience in America, and to improve the stu-  
dent's ability at reading and writing. Selected  
readings and theme topics.

**183. Women in America**

Spring. 3(3-0) Three credits in the sec-  
ond term of any ATL sequence numbered 121 or  
higher or approval of department.

Aims to acquaint the student with women's ex-  
perience in America, and to improve the stu-  
dent's ability at reading and writing. Selected  
readings and theme topics.

**191H. Honors Work in American  
Experience**

Fall. 3(3-0) Satisfactory performance  
on the placement test.

Students read and write on selected topics to  
improve their knowledge of the American heri-  
tage 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 heri-  
tage 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 heri-  
tage and their ability at reading and writing.

**205. Reading for University-Level  
Understanding**

Fall, Winter, Spring. 2(0-4) May reen-  
roll for a maximum of 4 credits.

Individualized instruction in techniques for im-  
proving vocabulary, comprehension, rate, study  
skills and test taking skills in order to achieve a  
better understanding of university-level materi-  
als.

**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.

**292. Selected Topics**

(U C 292.) Fall, Winter, Spring. 3 to 5  
credits. May reenroll for a maximum of 8 cred-  
its if different topic is taken.

Interdisciplinary study of topics in American  
culture.

**300. Supervised Individual Study**

Fall, Winter, Spring, Summer. 2 to 4  
credits. May reenroll for a maximum of 12 cred-  
its. 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 se-  
quence, ENG 213 or approval of department.

Provides instruction in the acquiring of knowl-  
edge from the prose essay, making sophisticated  
inferences from the ideas collected, and for-  
mulating and supporting logical theses in the  
writing of such essays.

**350. American Film**

Fall, Winter, Spring. 4(2-4) May reen-  
roll for a maximum of 8 credits if different topic  
is taken. Sophomores.

American films as they reflect and influence so-  
ciety.

**380. The Role of Women in America:  
Arts and Self**

Winter of even-numbered years. 4(4-0)  
Juniors.

Various art forms by women and the exploration  
of a feminine sensibility; sex, 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.

**of  
Courses**

**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.

**480. Special Problems**

Fall, Winter, Spring, Summer. 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, neurology, or embryology.

**505A. Anatomy in Physical Diagnosis**

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. 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, is studied. Lecture, dissection of embalmed specimen, study of prosections, 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**

(523.) Winter. 5(4-4) Second-term Veterinary 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**

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**

Fall. 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(3-0) Admission to a college of medicine; graduate students with approval of department.

Formal lectures, class conferences and student reports on the normal and abnormal organogenesis of the human embryo and fetus with emphasis on clinical correlations.

**545. Neuroanatomy**

Winter. 3(4-0) Admission to medical school or approval of Neuroscience Committee.

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 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.

**580. Special Problems**

Fall, Winter, Spring, Summer. 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, Summer. Variable 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, 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 functional aspects of the peripheral and central nervous system are stressed. Gross demonstrations include brain and dog dissections.

**820. Advanced Neuroanatomy: Structure and Function of Cells of CNS**

Spring. 3 credits. ANT 815 and approval of instructor.

Correlated anatomy and physiology of CNS cells and their processes including current concepts and principles of cytology, ultrastructure, development and plasticity, axonal transport mechanisms, electrical properties and functional connections.

**865. Advanced Neurobiology**

(BIM 865.) Spring. 4(4-0) 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.