

835. **Research in Building Construction**  
Fall, Winter, Spring, Summer.  
Variable credit. Approval of department.

880. **Special Problems**  
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 9 credits. Approval of department.  
Individual student research and study in land acquisition and development, design, construction, management, finance, marketing, and structural analysis.

899. **Master's Thesis Research**  
Fall, Winter, Spring, Summer.  
Variable credit. Approval of department.

**AGRICULTURE AND NATURAL RESOURCES ANR**

**College of Agriculture and Natural Resources**

202. **Soils and Man's Environment**  
Winter. 3(3-0) Interdepartmental with the departments of Crop and Soil Sciences, Resource Development, and Fisheries and Wildlife and administered by the Department of Crop and Soil Sciences.  
Use of soil and water resources in a technological society as it relates to environmental quality. Nature of pollution problems and their possible solutions. Food production and world population. Approved through Spring 1981.

220. **Plants and Their Environment**  
(N R 220.) Winter. 3(3-0)  
Interdepartmental with and administered by the Department of Forestry.  
Relationships between plants and fundamental climatic, edaphic, and biotic factors; structure and function of different ecosystems in relation to environmental factors.

230A. **Introduction to Careers in Vocational and Practical Arts Education: Agriculture and Natural Resources**  
(AG 124A., 1245.) Fall. 2(1-2) Open only to teaching majors or minors in agriculture and natural resources. Interdepartmental with and administered by the College of Education.  
To assist agriculture and natural resources teachers in developing concepts pertaining to the nature and functions of persons in agriculture and natural resources occupations and development of competencies which will assist in making their students aware of these functions.

275. **Exploring International Agriculture**  
(AG 275.) Spring. 3(3-0)  
Exploration of overseas assignments with international agencies; potential world food actualities and potentialities; special problems of the tropics compared with those in temperate regions.

280. **Selected Topics**  
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 6 credits if different topics are taken. Approval of department.

341. **Energy in the Food System**  
(AG 341.) Winter. 3(3-0) Juniors or approval of department. Interdepartmental with and administered by Agricultural Engineering Technology.  
Energy flow in the food system. Conversion principles and processes—solar, engines, fertilizers, pesticides, electrical, waste heat utilization. Environmental considerations, economic and social implications related to the food system. Alternatives. Conservation.

350. **Leadership Development for Agriculture and Natural Resources**  
(AG 350.) Winter, Spring. 3(3-0) May reenroll for a maximum of 6 credits. Approval of department.  
Leadership development. Preparation for community leadership. Firsthand look at social, economic, and political problems. Series of seminars, interviews, field trips. Emphasis on awareness, action, and involvement. Field trips required.

399. **Professional Internships in Agriculture and Natural Resources**  
(AG 399.) Fall, Winter, Spring, Summer. Zero to 10 credits. (10 credits.) Juniors and approval of department.  
Professionalized experiences in a student's major. Supervision and evaluation by faculty and cooperating agencies.

401. **Agriculture and Natural Resources Communications**  
(AG 401.) Winter, Spring. 3(2-2) JRN 201 or other writing course and approval of department.  
Techniques, strategies and practices in development of agricultural and natural resources information programs. Including writing, public relations, TV and radio production for specialized and general audiences.

402. **Agriculture and Natural Resources Communications Internship**  
(AG 402.) Fall, Winter, Spring, Summer. 1 to 6 credits. May reenroll for a maximum of 6 credits, AG 401, approval of college.  
Internship with professionals in communications field with emphasis on student's areas of interest—writing, radio, TV, publications, etc.

410. **Environmental Toxicology**  
(AG 410.) Winter. 4(4-0) B S 212, BCH 401. Interdepartmental with and administered by the College of Natural Science.  
Fate and effects of toxic chemicals in soil, plants, wildlife, and aquatic systems. Interactions between chemicals and the environment which influence their fate and ecological importance.

425. **Agriculture and Natural Resources Seminar**  
(AG 425.) Spring. 2(2-0)  
Current agricultural, natural resources, and environmental problems and solutions as presented by discussion leaders from various disciplines, arranged by undergraduate students.

444. **Pest Management I: Systems Management for Plant Protection**  
(AG 437, AG 444.) Fall. 4(3-2) FSM 200 or EC 201. Interdepartmental with and administered by the College of Natural Science.  
Designed to integrate knowledge and improve ability in arriving at pest management decisions of varying complexity involving the fields of agronomy, wildlife, horticulture, entomology, and plant pathology.

445. **Pest Management II: Pesticide Chemistry and Application Systems for Plant Protection**  
(AG 435, AG 445.) Winter. 5(3-4) CEM 132. Interdepartmental with and administered by the College of Natural Science.  
A broad overview of pesticide chemistry, efficient usage, environmental fate, legislation and application techniques.

446. **Pest Management III: Biological Systems for Plant Protection**  
(AG 436, AG 446.) Spring. 3(3-0) ENT 425, BOT 405, HRT 402 or CSS 402. Interdepartmental with and administered by the College of Natural Science.  
Management of plant pests utilizing host resistance, cultural practices, legislation, and biological systems.

450. **Natural Resource Administration**  
(N R 450.) Fall, Spring. 4(4-0) Seniors. Interdepartmental with the departments of Fisheries and Wildlife, Forestry, Park and Recreation Resources and Resource Development. Administered by the Department of Forestry.  
Concepts and methods of administering wildland properties. The legal, economic and social environment. Benefit-cost analysis of management changes. Unit organization, personnel management and accounting. Presents a systems view of administration.

455. **Natural Resource Economics**  
(N R 455.) Winter. 4(4-0) FOR 450 or 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.

## Descriptions - AGRICULTURE AND NATURAL RESOURCES

### of Courses

- IDC. The Impact of Animal Resource Management Upon the World's Developing Nations**  
For course description, see Interdisciplinary Courses.

- 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 reenroll 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 College.  
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 reenroll 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. 121 or 121E, 131, 141, 151, 161, 171, 181, 191H
2. 122 or 122E, 132, 142, 152, 162, 172, 182, 192H
3. 123 or 123E, 133, 143, 153, 163, 173, 183, 193H

#### 101A. Comprehensive English

Fall, Winter, Spring, Summer, 3(3-1)  
Admission by examination or approval of department. Students may not receive credit in more than one of the following courses: ATL 101A, ATL 101B, ATL 101E.

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

#### 101B. Comprehensive English

Fall, Winter, Spring, Summer, 3(3-1)  
Admission by examination or approval of department. Students may not receive credit in more than one of the following courses: ATL 101A, ATL 101B, ATL 101E.

Instruction and practice in reading and writing. Instruction in reading is emphasized.

#### 101E. Comprehensive English-Experimental

Fall, 3 credits. Admission by examination or approval of department. Students may not receive credit in more than one of the following courses: ATL 101A, ATL 101B, ATL 101E.

Instruction and practice in reading and writing. Approved through Spring 1981.

#### 102. Comprehensive English

Fall, Winter, Spring, Summer, 3(3-1)  
ATL 101A or ATL 101B or approval of department. Students may not receive credit in both ATL 102 and ATL 102E.

Continuation of ATL 101 with emphasis on writing and reading.

#### 102E. Comprehensive English-Experimental

Winter, 3 credits. ATL 101E or approval of department. Students may not receive credit in both ATL 102 and ATL 102E.  
Continuation of ATL 101E.  
Approved through Spring 1981.

#### 103. Comprehensive English

Fall, Winter, Spring, Summer, 3(3-1)  
ATL 102 or approval of department. Students may not receive credit in both ATL 103 and ATL 103E.

Continuation of ATL 102 with emphasis on reading and writing on American cultural topics.

#### 103E. Comprehensive English-Experimental

Spring, 3 credits. ATL 102E or approval of department. Students may not receive credit in both ATL 103 and ATL 103E.  
Continuation of ATL 102E.  
Approved through Spring 1981.

#### 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 grade on English proficiency examination or in Comprehensive English. Students may not receive credit in both ATL 121 and ATL 121E.

Aims to improve the student's ability to read and write and to acquaint him with his American heritage. Selected reading and theme topics.

#### 121E. American Expression-Experimental

Fall, 3 credits. Admission by examination or approval of department. Students may not receive credit in both ATL 121 and ATL 121E.

Approved through Spring 1981.

#### 122. American Expression

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

Three credits in the first term of any ATL sequence numbered ATL 121 or above; or satisfactory performance in Comprehensive English. Students may not receive credit in both ATL 122 and ATL 122E.

Aims to improve the student's ability to read and write, and to acquaint him with his American heritage. Selected reading and theme topics.

#### 122E. American Expression-Experimental

Winter, 3 credits. Completion of ATL 121E or approval of department. Students may not receive credit in both ATL 122 and ATL 122E.

Approved through Spring 1981.

#### 123. American Expression

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

Three credits in the second term of any ATL sequence numbered ATL 121 or above; or satisfactory performance in Comprehensive English. Students may not receive credit in both ATL 123 and ATL 123E.

Aims to improve the student's ability to read and write, and to acquaint him with his American heritage. Selected reading and theme topics.

#### 123E. American Expression-Experimental

Spring, 3 credits. Completion of ATL 122E or approval of department. Students may not receive credit in both ATL 123 and ATL 123E.

Approved through Spring 1981.

#### 131. Major Currents in American Experience

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

Satisfactory grade on English proficiency examination or in Comprehensive English.

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 ATL 121 or above; or satisfactory performance in Comprehensive English.

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.