Agricultural Engineering of Courses

477. Thermal Process Engineering
Winter. 3(2-2) F E 475.

487. Food Engineering Design
Winter. 3(3-0) F E 477 or concurrently; A E 486.

Agricultural Technology and Systems Management
See Agricultural Engineering.

Agricultural and Natural Resources ANR

College of Agriculture and Natural Resources

220. Plants and Their Environment
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.

275. Exploring International Agriculture
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.

250. Selected Topics
Fall, Winter, Spring, Summer. 1 to 4 credits. May reenroll for a maximum of 8 credits if different topics are taken. Approval of department.

350. Leadership Development for Agriculture and Natural Resources
Winter, Spring. 3(3-0) Given at W. K. Kellogg Biological Station Fall, Spring. 2 credits. May reenroll for a maximum of 6 credits. Approval of department.

399. Professional Internships in Agriculture and Natural Resources
Fall, Winter, Spring. Summer. 6 to 12 credits. May reenroll for a maximum of 12 credits. Juniors and approval of department.
Professionalized experiences in a student's major. Supervision and evaluation by faculty and cooperating agencies.

410. Environmental Toxicology
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. Approved through Fall 1989.

425. Agriculture and Natural Resources Seminar
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.

445. Pest Management: Pesticide Chemistry and Application Systems for Plant Protection
Fall. 5(3-0) CEM 143, ENT 425, HRT 402 or CSS 402, BOT 405 or concurrently or approval of instructor. 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: Biological Systems for Plant Protection
Fall. 3(3-0) ENT 425, HRT 402 or CSS 402, BOT 405 or concurrently or approval of instructor. Interdepartmental with and administered by the College of Natural Science.
Management of plant pests utilizing host resistance, cultural practices, legislation, and biological systems.

447. Pest Management: Systems Management for Plant Protection
(A NR 444.) Winter. 4(3-2) NSC 445, NSC 446 or approval of instructor. 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 in the fields of agronomy, wildlife, horticulture, entomology, and plant pathology.

450. Natural Resource Administration
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.

455. Natural Resource Economics
Fall. 4(3-2) EC 200 or EC 201. 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 institutional principles and techniques that govern the production and consumption of renewable natural resources. Natural resource valuation, project analysis, and distributional considerations.

462. Agricultural and Rural Development in Developing Nations
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
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 reenroll 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
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. 3(3-0) May reenroll for a maximum of 9 credits. Sophomores. 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.

377. The Natural Environment: Perceptions and Practices
Fall. 4(4-0) Sophomores. Interdepartmental with Lyman Briggs School. Administered by Lyman Briggs School.
Factors which have influenced U.S. environmental attitudes as reflected in art and literature. Ways in which changing attitudes have led to changes in legislation and practice.

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
Winter. 3(3-0) Juniors. Approval of American Studies adviser.
Methods and significant works, for majors in the American Studies program. Offered by members of the relevant departments.
411. Problems in American Civilization
Spring, 3(3-0) May reenroll for a maximum of 6 credits if different topic is taken. Junior, approval of American Studies adviser.
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. No 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 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 0991, 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 0991, ATL 1154 or approval of department; ATL 1164 concurrently.
Continuation of ATL 0152.

0991. Preparatory Writing Skills
Fall, Winter, Spring, Summer. 0(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.

104. Writing for Science Majors
Fall. 3(3-0) Satisfactory grade in English proficiency exam; College of Natural Science majors only. Interdepartmental with and administered by the Department of English.
Writing workshop for science students that develops and refines composition ability.

105. The Scientist as Writer
Winter. 3(3-0) ENG 104. Interdepartmental with and administered by the Department of English.
Study of various types of writing by scientists—fiction, poetry, and autobiography as well as professional papers and books. Students will write frequently about the readings.

106. Introductory Scientific Writing
Spring, 3(3-0) ENG 106. Interdepartmental with and administered by the Department of English.
Writing of popular essays, scientific papers and reports, and other papers related to science.

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 0991 or admission by placement test; ATL 0142 concurrently.
Interpretive, analytical, and expository writing in response to college-level readings.

1164. Developmental Writing III
Fall, Winter, Spring, 3(3-0) ATL 0991 or admission by placement test; ATL 0142 concurrently.
Students write analytical/critical/persuasive papers and undertake a research project. Reading of college-level materials.

117. Use of Libraries
Fall, Winter, 3(3-0) The use of libraries, with emphasis on MSU Library. Course will stress knowledge and use of bibliographic and reference resources.

121. Writing: American Expression
Fall, Winter, Spring, 3(3-0) Satisfactory performance on the placement test.
Writing course to improve composition and critical reading abilities. Writings based on American literary and historical materials from Puritan times through the Enlightenment. Emphasis on unity and structure of essays.

122. Writing: 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.
Writing course to improve composition and critical reading abilities. Writings based on American literary and historical materials of the nineteenth century. Emphasis on style and development of essays.

123. Writing: 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.
Writing course to improve composition and research abilities. Writings based on American literary and historical materials of the twentieth century. Research project required.

124. Writing: American Humanities
Fall, 3(3-0) Three credits in the second term of any ATL sequence numbered 121 or higher or approval of department.
Writing course to improve composition and critical reading abilities. Writings based on minority literature from Reconstruction, Indian wars and end of European immigration. Emphasis upon style and development of essays.

133. Writing: Major Currents in American Experience
Spring, 3(3-0) Three credits in the second term of any ATL sequence numbered 121 or higher or approval of department.
Writing course to improve composition and critical reading abilities. Writings based on dissenting thought from the colonial to the early national period. Emphasis upon unity and structure of essays.