

**ENVIRONMENTAL STUDIES AND AGRISCIENCE**      **ESA**

**Department of Community, Agriculture, Recreation and Resource Studies**  
**College of Agriculture and Natural Resources**

- 124 Introduction to Sustainable Agriculture and Food Systems**  
 Fall, Spring. 1(0-2) Interdepartmental with Crop and Soil Sciences and Horticulture. Administered by Crop and Soil Sciences. R: Open to undergraduate students or agricultural technology students.  
 Impact of agricultural and social sciences on our food system. Contemporary research and movements involving agricultural and food system sustainability.
- 191 Introductory Special Topics in Environmental Studies and Agriscience**  
 Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open to freshmen or sophomores.  
 Selected introductory topics concerning issues in agriculture or natural resources.
- 200 Introduction to Environmental Studies and Agriscience**  
 Fall, Spring. 3(3-0) SA: RD 200  
 Interdisciplinary nature of environmental, natural resource, and agricultural issues.
- 207 Great Lakes: Biology and Management**  
 Fall. 3(3-0) Interdepartmental with Fisheries and Wildlife. Administered by Fisheries and Wildlife.  
 Living aquatic resources of the Great Lakes, environmental history, and biological resources and their management. Policy issues.
- 211 Introduction to Gender and Environmental Issues**  
 Spring. 3(3-0) Interdepartmental with Criminal Justice and Environmental Economics and Policy and Forestry and Fisheries and Wildlife and Women's Studies. Administered by Fisheries and Wildlife. R: Not open to freshmen.  
 The concept of gender. Overview of environment and habitat. Historical gender roles in environmental management. Gender-based theoretical perspectives. Case studies on developing and developed countries. Environmental management with emphasis on fisheries, wildlife and wetlands. Women environmental professionals.
- 225 Land and Environmental Issues in Law and Policy**  
 Fall. 3(3-0) Fall: Traverse City.  
 Michigan environmental and land use law. Regulatory programs. Land development and preservation processes. Common law. Private property rights and balance among local, state and federal governance.
- 235 Exploring Environmental Issues and Policy Using Film**  
 Spring. 3(3-0) RB: Completion of Tier I Writing requirement  
 Environmental issues, themes, and perspectives in feature films and documentaries.

- 312 Principles of Leadership for Environmental and Agriscience Professionals**  
 Fall. 3(3-0)  
 Leadership theory, practice, and reflection. Individual and team leadership.
- 320 Environmental Planning and Management**  
 Fall. 3(3-0) RB: ESA 200 SA: RD 320  
 Concepts, principles and objectives of management and planning. Demand, supply and impacts of natural resources. Suitability assessment for sustainable development and land use planning.
- 324 Water Resource Management**  
 Spring. 3(3-0) RB: BS 161 or BS 162 or CEM 141 or CSS 210 SA: RD 324  
 Biophysical, community, and institutional components of comprehensive water resources management. Biophysical and social processes that control the quality and quantity of aquatic resources at the watershed level.
- 335 Engaged Learning and Teaching**  
 Spring. 3(3-0) R: Open to juniors or seniors or graduate students.  
 Engaged teaching and learning within communities in non-formal settings.
- 343 Community Food and Agricultural Systems**  
 Spring. 3(3-0) P: Completion of Tier I Writing Requirement  
 Food and agricultural systems. Inputs, production, processing, distribution, consumption and disposal. Industrialization, globalization and centralization of power. Community goals including ecological sustainability, social justice, economic viability and democracy.
- 401 Communications Campaigns for Agricultural and Environmental Issues (W)**  
 Fall, Spring. 3(3-0) P: (ACR 205 or ADV 205 or JRN 108 or JRN 200 or COM 100 or COM 225 or COM 240) and completion of Tier I writing requirement R: Open to juniors or seniors in the College of Agriculture and Natural Resources or in the College of Communication Arts and Sciences. SA: AEE 410, AEE 401  
 Planning and execution of agricultural, natural resource and environmental communication campaigns. Theories, strategies and techniques using mass and controlled media channels.
- 412 Special Topics in Leadership and Education**  
 Spring. 3(3-0) P: ESA 312 or approval of department R: Open to juniors or seniors.  
 Current issues, problems and debates in leadership and education. Theory and practice.
- 413 Grantwriting and Fund Development (W)**  
 Fall. 3(3-0) P: Completion of Tier I Writing Requirement R: Open to juniors or seniors or graduate students. SA: RD 313  
 Theoretical and practical background for proposal writing. Program and strategic planning. Fund-raising and institutional advancement.
- 415 Environmental Impact Assessment**  
 Fall. 3(3-0) P: ZOL 355 RB: An introductory course or experience in GIS (Geographic Information Systems) SA: RD 415  
 Environmental impact assessment of proposed projects and plans. Regulatory frameworks and project management.

- 420 Risk and Decision Science for Environmental and Natural Resources Management (W)**  
 Fall. 3(3-0) Interdepartmental with Environmental Economics and Policy. Administered by Environmental Studies and Applications. P: Completion of Tier I Writing Requirement and (STT 200 or STT 201 or FW 324 or PSY 295 or COM 200) R: Open to juniors or seniors or graduate students.  
 Influential theories and approaches in risk and decision sciences. Environmental, human health, and natural resources management.
- 424 Sustainable Agriculture and Food Systems: Integration and Synthesis**  
 Fall. 3(3-0) Interdepartmental with Crop and Soil Sciences and Horticulture. Administered by Crop and Soil Sciences. P: CSS 124 RB: (CSS 101 or CSS 360 or CSS 431 or ENT 479 or HRT 203 or HRT 251 or HRT 341 or EEP 255 or EEP 260 or ESA 343) or (ESA 444 or GEO 410) R: Open to juniors or seniors or graduate students.  
 Biogeochemical and socio-economic aspects of food, fiber, and fuel production. Environmental impacts and social context. Experiential learning projects.
- 430 Environmental and Natural Resource Law**  
 Fall. 3(3-0) Interdepartmental with Environmental Economics and Policy and Forestry. Administered by Environmental Studies and Agriscience. P: ESA 200 or EEP 255 or approval of department R: Open to juniors or seniors or graduate students. SA: RD 430  
 Legal principles applied to the environment and natural resources. Sovereignty, property rights, land and water use, jurisdiction, public trust doctrine, wetland law, and eminent domain. Case and statutory law analysis.
- 435 Conservation Education**  
 Fall. 3(2-2) P: Completion of Tier I Writing Requirement RB: ZOL 355 R: Open to juniors or seniors or graduate students.  
 Methods, materials and theory for teaching conservation and environmental education in formal and nonformal educational settings. Field trips required.
- 436 Conservation Education Practice**  
 Fall, Spring. 1(1-0) A student may earn a maximum of 3 credits in all enrollments for this course. P: ESA 435 or concurrently  
 Professional training for certification in conservation education curricula.
- 440 Environmental and Natural Resource Policy in Michigan**  
 Spring. 3(3-0) Interdepartmental with Environmental Economics and Policy. Administered by Environmental Studies and Agriscience. P: ESA 200 or EEP 255 or PRR 211 or approval of department SA: RD 440  
 State legislative process and its role in environmental and natural resource policy formulation. Influence of lobbying, grass roots environmental movements, and economic factors.
- 444 Pesticides, People and Politics**  
 Fall. 3(3-0) P: Completion of Tier I Writing Requirement RB: Completion of at least one ISS course. SA: RD 444  
 Comparative state, national, and international policy issues and politics related to pesticide regulations and use in industrialized and non-industrialized countries.

## Environmental Studies and Agriscience—ESA

- 446 Environmental Issues and Public Policy**  
Fall. 3(3-0) Interdepartmental with Zoology. Administered by Zoology. R: Not open to freshmen or sophomores.  
Interrelationship of science and public policy in resolving environmental issues. Technical, social, economic, and legal influences. Case study approach.
- 450 Smart Growth and Strategic Land Use Decision Making**  
Fall, Spring. 3(3-0) Interdepartmental with Environmental Economics and Policy and Geography and Urban Planning. Administered by Environmental Studies and Agriscience. RB: EC 201 or UP 201 or GEO 113 R: Not open to freshmen or sophomores.  
Theories and models of smart growth and strategic land use planning and decision making. Intergovernmental coordination, regional socioeconomic development and environmental sustainability. Land use research and leadership development.
- 452 Watershed Concepts**  
Fall, Spring, Summer. 3(3-0) Interdepartmental with Biosystems Engineering and Crop and Soil Sciences and Forestry and Fisheries and Wildlife. Administered by Environmental Studies and Agriscience. P: ESA 324 and ZOL 355 RB: organic chemistry SA: RD 452  
Watershed hydrology and management. The hydrologic cycle, water quality, aquatic ecosystems, and social systems. Laws and institutions for managing water resources.
- 460 Natural Resource Economics**  
Spring. 3(3-0) Interdepartmental with Biosystems Engineering and Environmental Economics and Policy and Park, Recreation and Tourism Resources. Administered by Environmental Studies and Applications. P: EC 201 and (ESA 302 or EEP 255) SA: RD 460  
Economic framework for analyzing natural resource management decisions. Spatial and inter-temporal allocation of renewable and nonrenewable resources. Special emphasis on institutions, externalities, and public interests in resource management.
- 466 Natural Resource Policy**  
Spring. 3(3-0) Interdepartmental with Forestry and Fisheries and Wildlife. Administered by Forestry. R: Not open to freshmen or sophomores.  
Natural resources policy-making in the context of scientific, environmental, social, and legal-institutional factors. Historical evolution of policies and case studies of contemporary policy issues.
- 470 Theory and Practice in Community and Economic Development**  
Spring. 3(3-0) Interdepartmental with Environmental Economics and Policy and Sociology. Administered by Environmental Studies and Agriscience. P: EC 201 or EC 202 SA: RD 470  
Concepts, principles, models, and skills for community and economic development. Community participation in local development initiatives.
- 475 Agriscience and Natural Resources Study Abroad**  
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 department; application required. SA: AEE 475  
Study and travel experience emphasizing contemporary problems affecting Agriculture and Natural Resources in world, national, and local communities.
- 480 Environmental Studies Abroad**  
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 12 credits in all enrollments for this course. R: Not open to freshmen. Approval of department; application required. SA: RD 480  
Contemporary problems affecting natural resource management outside the United States. Ecological, socio-dynamic, and cultural influences on environmental management. Study-travel experience.
- 490 Independent Study**  
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Approval of department; application required. SA: RD 490  
Individual supervised study of selected topics.
- 491 Special Topics in Environmental Studies and Agriscience**  
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open to juniors or seniors. SA: RD 491  
Selected issues in environmental, natural resource or agricultural studies derived from current resource policy changes, or other emerging topics of interest.
- 493 Professional Internship**  
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. A student may earn a maximum of 6 credits in all enrollments for any or all of these courses: ABM 493, ANR 493, ANS 493, CSS 493, EEP 493, ESA 493, FIM 493, FW 493, HRT 493, PKG 493, PLP 493, and PRR 493. R: Open to juniors or seniors in the Department of Community, Agriculture, Recreation and Resource Studies. Approval of department; application required. SA: RD 493  
Supervised professional experiences in agencies, organizations and businesses related to environmental and agricultural fields.
- 495 Senior Seminar**  
Spring. 2(2-0) R: Open to seniors in the Environmental Studies and Applications major. SA: RD 495  
Examples and practice in directing change and resolving issues by anticipating resource problems. Analysis and application of policy alternatives. Preparation of position papers.
- 499 Senior Thesis Research**  
Fall, Spring, Summer. 3 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open to seniors in the Environmental Studies and Applications major. SA: RD 499  
Supervised research option for satisfying capstone experience requirement.