FORESTRY

Department of Forestry
College of Agriculture and Natural Resources

101 Michigan’s Forests
Spring, 3(3-0)
Ecological and social and economic roles of Michigan’s forests in historic and contemporary context. Geographic similarities and differences in forest resources.

110 Seminar on Contemporary Issues in Forests and the Environment
Fall, 1(1-0)
Role of forests in environmental quality and human well-being.

202 Introduction to Forestry
Fall, Spring, 3(3-0)
Historical development of forestry. Forest growth, protection, management, and products. Relationship of national and world economy and policy to forestry. Emphasis on multiple uses of forests.

204 Forest Vegetation
Fall, 3(2-3)
Identification of common forest trees, shrubs, and herbaceous plants. Field trip required.

211 Introduction to Gender and Environmental Issues
Spring, 3(3-0) Interdepartmental with Criminal Justice and Environmental Economics and Policy and Environmental Studies and Agriscience and Fisheries and Wildlife and Women’s Studies. Administered by Fisheries and Wildlife and Agriculture and Natural Resources.

222 Forestry Field Methods
Fall, 2(1-3)
Basic field techniques including forest survey methods, tree and forest measurements, GPS land navigation and orienteering.

330 Human Dimensions of Forests
Spring, 3(3-0) P: (ISS 210 or ISS 215 or ISS 220 or ISS 225) and completion of Tier I writing requirement R: Not open to freshmen. Social factors underlying human decisions about and conflicts over forest resources. Societal and citizen values, knowledge and behavior with respect to forest resources. Forest governance, public participation, collaboration, conflict management and communication.

404 Forest Ecology
Fall, Spring, 3(3-0) P: (CSS 210) and completion of Tier I writing requirement and (PLB 105 or BS 162 or LB 144) RB: ZOL 355
Ecological interactions crucial to the sustainable management of forest ecosystems. Plant resources, species interactions, succession, biodiversity, productivity, nutrient and carbon cycling, ecosystem structure and function, exotic species, global environmental change.
466 Natural Resource Policy
Spring. 3(3-0) Interdepartmental with Environ-
mental Studies and Agriscience and
Fisheries and Wildlife. Administered by For-
estry. R: Not open to freshmen or sopho-
morees.
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.

467 BioEnergy Feedstock Production
Fall. 3(3-0) Interdepartmental with Biosys-
tems Engineering and Crop and Soil Sci-
ences. Administered by Crop and Soil Sci-
ences. P: MTH 103 or MTH 116 or MTH 124
or MTH 132 or LB 118 or MTH 152H RB:
CSS 101 and CSS 210
Agronomic, economic, technological, and environ-
mental principles involved in bioenergy feedstock
production. Cultivation, harvest, transportation, and
storage of agricultural and forest biomass.

472 Ecological Monitoring and Data Analysis
Fall. 3(2-2) Interdepartmental with Geogra-
phy, Administered by Forestry. P: (MTH 124 or MTH 132) and completion of Tier I
writing requirement) and (STT 201 or STT
224 or STT 231 or STT 421)
Design of ecological monitoring systems and analy-
sis of resulting ecological data sets. Monitoring
system design, model specification and implementa-
tion, and computational considerations from both a
design- and model-based perspective. Hands-on
introduction to statistical software.

478 Integrated Pest Management (W)
Spring. 3(3-0) Interdepartmental with Horti-
culture. Administered by Horticulture. P: BS
162 or PLB 105 R: Not open to freshmen or
sophomorees.
Physiology of carbon utilization. Effects of water,
temperature, nutrition, and light on apical, vegeta-
tive, and reproductive growth of woody plants.

486 Biotechnology in Agriculture: Applications and Ethical Issues
Fall of even years. 3(3-0) Interdepartmental withCrop and Soil Sciences and Environ-
tology and Forestry. Administered by Environ-
tology. P: (ENT 404 or ENT 470 or PLP
405 or CSS 302) and completion of Tr-
er I writing requirement
Theory, philosophy and application of pest man-
agement focusing on agricultural and natural sys-
tems.

490 Independent Study in Forestry
Fall. Spring. Summer. 1 to 3 credits. A stu-
dent may earn a maximum of 6 credits in all
enrollments for this course. R: Open to sen-
iorors. Approval of department.
Special problems course for students qualified for
advanced study in some phase of forestry.

493 Professional Internship in Forestry
Fall, Spring, Summer. 1 to 3 credits. A stu-
dent may earn a maximum of 3 credits in all
enrollments for this course. P: Completion of
Tier I Writing Requirement R: Open to jun-
orors or seniors in the Department of Forest-
ery. Approval of department, application re-
quired.
Supervised professional experiences in agencies,
organizations and businesses related to forestry.

802 Forest Science Research
Fall. 2 credits.
The philosophy, nature, and procedures of research
in the forestry sciences.

804 Forest Ecology
Fall of odd years. 3(4-0) RB: FOR 404
Processes controlling population, community, eco-
system, landscape, and global ecology of forested
systems. Extrapolation across scales, succession,
spatial models of forest dynamics, causes and con-
sequences of biodiversity, nutrient cycling, sustaina-
ability of managed ecosystems and human-
accelerated environmental change.

819 Advanced Plant Breeding
Fall of even years. 3(3-0) Interdepartmental withCrop and Soil Sciences and Horticultu-
re. Administered by Horticulture. RB: STT
422 and ZOL 341
Genetic expectations resulting from breeding strate-
gies with cross- and self-pollinated crop plants.
Germplasm collections, mapping populations, and
modifications of reproductive biology useful for crop
improvement.

820 Plant Reproductive Biology and Polyploidy
Spring of odd years. 3(3-0) Interdepart-
mental with Crop and Soil Sciences and Plant
Biology. Administered by Horticulture. RB:
Introductory Genetics and Plant Biology
Genetic processes underlying variations in plant
reproductive biology and polyploidy. Utilization of
these characteristics in plant breeding.

821 Crop Evolution
Spring of odd years. 1 credit. Interdepartment-
al with Crop and Soil Sciences and Horticulture and Plant Biology and Plant Pa-
thology. Administered by Horticulture. RB:
Introductory Genetics and Plant Biology
Cultural and biological aspects of the evolution of
domestic plants.

822 Historical Geography of Crop Plants
Spring of odd years. 1 credit. Interdepart-
mental with Crop and Soil Sciences and Horticulture and Plant Biology and Plant Pa-
thology. Administered by Horticulture. RB:
Introductory Genetics and Plant Biology
Development and spread of the major crop species.

826 International Development Theory and Practice
Fall. 3(3-0) Interdepartmental with Commu-

ity, Agriculture, Recreation and Resource
Studies and Anthropology and Political Sci-
ence and Social Science. Administered by
Community, Agriculture, Recreation and
Resource Studies. SA: RD 826
Evolution of international development theory across
disciplines. Changing conceptualizations, measure-
ments, processes and effects of development and
poverty. Ethnicity, social class, gender, and com-
munity influences on socioeconomic processes.
Current issues, concerns, and strategic alternatives.

829 The Economics of Environmental Resources
Spring. 3(3-0) Interdepartmental with Com-

munity, Agriculture, Recreation and Re-
source Studies and Agricultural Economics
and Economics and Fisheries and Wildlife.
Administered by Agricultural Economics.
Economic principles related to environmental con-
flicts and public policy alternatives. Applications to
water quality, land use, fish and wildlife, conserva-
tion, development, and global environmental issues.

831 Forest Biogeochemistry and Global Climate Change
Fall. 3(3-1) RB: Background course in ecol-
ogy
Biogeochemical cycling of carbon and nutrients
within forest ecosystems. Disturbance, harvesting
and forest management effects on the exchange of
greenhouse gases between forest ecosystems and
the atmosphere.

833 Human Dimensions of Forest Carbon Management
Fall. 3(3-0)
Social dimensions associated with the development
and implementation of forest-based climate change
mitigation projects, including: valuation of trees and
forests by local communities vs. international com-
munity; community decision making; public partici-
pation; community engagement.

835 Forest Carbon Policy, Economics and Finance
Spring. 3(3-0)
Policy, economic and financial dimensions of the
development and implementation of forest-based
climate change mitigation projects, including: the
role of forests in international agreements and poli-
cy, finance and investment approaches to forest
carbon sequestration; emissions trading; biofuels;
and valuation of ecosystem services.

837 Measurement and Monitoring of Forest Carbon
Fall. 3(2-2)
Skill-based training in forest carbon inventory and
carbon accounting methods. National and interna-
tional monitoring of forest carbon stocks. Applica-
tions of remote sensing and geospatial technologies
to forest carbon inventories.

842 Population Genetics, Genealogy and Genomics
Fall. 3(3-0) Interdepartmental with Animal
Science and Crop and Soil Sciences and
Fisheries and Wildlife and Genetics and
Horticulture. Administered by Forestry. RB:
Pre-calculus, basic genetics
Population genetic processes underlying patterns of
molecular genetic variation. Genealogical approach-
es to the study of genomic diversity, phylogenetic
reconstruction, and molecular ecology.

858 Gender, Justice and Environmental Change: Issues and Concepts
Fall. 3(3-0) Interdepartmental with Anthro-
pology and Criminal Justice and Fisheries
and Geography and Sociology. Administered by
Fisheries and Wildlife. RB: Background in social science, environmen-
tal science, or natural resources.
Issues and concepts related to gender, ecology,
and environmental studies. Key debates and theoretical
approaches to addressing environmental issues
from a gender and social justice perspective. Gen-
der and environment issues and processes from a
global perspective.
859 Gender, Justice, and Environmental Change: Methods and Application
Spring of even years. 3(3-0) Interdepartmental with Anthropology and Fisheries and Wildlife and Geography and Resource Development and Sociology. Administered by Anthropology. RB: Background in social science, environmental science, or natural resources.
Methods and case studies related to gender, ecology, and environmental studies. Methodological and fieldwork issues from a feminist perspective in international and intercultural contexts. Qualitative and quantitative methods for integrating social and environmental data.

866 Economics of Renewable Resources
Spring of odd years. 3(2-2) Interdepartmental with Resource Development. Administered by Forestry. RB: AEC 829 or EC 803 or EC 805
Applications of economic theory and analysis to renewable natural resources problems. Focus on renewable resource interactions, including multiple-use forestry and agroforestry.

872 Parks and Protected Areas Policy and Management
Spring of odd years. 3(3-0) Interdepartmental with Community, Agriculture, Recreation and Resource Studies. Administered by Community, Agriculture, Recreation and Resource Studies. SA: PRR 842

885 Leadership in Natural Resources and Environmental Management
Fall of even years. 3(3-0) Interdepartmental with Agricultural Economics and Fisheries and Wildlife. Administered by Fisheries and Wildlife.
Theory and practice of leadership in natural resource and environmental management. Integration across disciplinary and jurisdictional divisions.

890 Special Problems
Fall, Spring, Summer. 1 to 5 credits. A student may earn a maximum of 7 credits in all enrollments for this course. R: Approval of department; application required.
Advanced individual study in an area of forestry.

891B Selected Topics in Plant Breeding and Genetics
Fall, Spring. Summer. 1 to 2 credits. A student may earn a maximum of 6 credits in all enrollments for this course. Interdepartmental with Crop and Soil Sciences and Horticulture. Administered by Horticulture. R: Open only to graduate students in the Plant Breeding and Genetics major or Genetics major. Approval of department.
Selected topics in plant breeding.

892 Plant Breeding and Genetics Seminar
Fall, Spring. Summer. 1(1-0) A student may earn a maximum of 8 credits in all enrollments for this course. Interdepartmental with Crop and Soil Sciences and Horticulture. Administered by Horticulture.
Experience in review, organization, oral presentation, and analysis of research.

899 Master's Thesis Research
Fall, Spring, Summer. 1 to 10 credits. A student may earn a maximum of 99 credits in all enrollments for this course.
Master's thesis research.

923 Advanced Environmental and Resource Economics
Fall. 3(3-0) Interdepartmental with Agricultural Economics and Economics and Park, Recreation and Tourism Resources and Resource Development. Administered by Agricultural Economics. RB: AEC 829 and EC 812A
Advanced economic theory of environmental management and policy. Treatment of externalities and market and non-market approaches to environmental improvement. Topics in conservation and sustainable economic growth. Applications to research and policy.

925 Advanced Natural Resource Economics
Spring. 3(3-0) Interdepartmental with Agricultural Economics and Economics. Administered by Agricultural Economics. RB: (EC 812A and EC 812A and AEC 829 and FOR 866) and (AEC 829 or FOR 866) SA: AEC 991H
Economic theory of managing nonrenewable and renewable resources, including optimal use, the incentives for use under decentralized markets, and public policy design. Analysis of the co-evolution of economic and ecological systems.

941 Quantitative Genetics in Plant Breeding
Spring of even years. 3(2-2) Interdepartmental with Crop and Soil Sciences and Horticulture. Administered by Crop and Soil Sciences. RB: CSS 819 and STT 464
Theoretical and genetic basis of statistical analysis of quantitative traits using genetic markers. Computational tools for the study of quantitative traits.

999 Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to doctoral students in the Department of Forestry.
Doctoral dissertation research.