493 English Internship
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. P:M: Completion of Tier I writing requirement. RB: 15 credits of English. R: Open only to juniors or seniors in the Department of English or American Studies major.
Supervised pre-professional field experience in English.

499 Senior Thesis Research
Fall, Spring. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. P:M: Completion of Tier I writing requirement. R: Open only to juniors or seniors with approval of department.
Faculty-supervised research project that demonstrates ability to do independent research and submit or present a major paper.

ENGLISH AS A SECOND LANGUAGE ESL

Department of Linguistics and Germanic, Slavic, Asian and African Languages
College of Arts and Letters

090A Intensive English for Non-Native Speakers
Fall, Spring. 0(20-0) R: Approval of English Language Center. SA: ENG 090A
Explanation and intensive practice of English skills. Focus on beginning grammar, speaking, listening, reading, and writing.

090B Intensive English for Non-Native Speakers
Fall, Spring. 0(20-0) R: Approval of English Language Center. SA: ENG 090B
Explanation and intensive practice of English skills. Focus on intermediate grammar, speaking, listening, reading, and writing.

090C Intensive English for Non-Native Speakers
Fall, Spring. 0(20-0) R: Approval of English Language Center. SA: ENG 090C
Explanation and intensive practice of English skills. Focus on advanced grammar, speaking, listening, reading, and writing.

220 English Grammar and Composition for Non-Native Speakers of English
Fall, Spring, Summer. 6(6-0) A student may earn a maximum of 12 credits in all enrollments for this course. R: Approval of the English Language Center SA: ENG 093
Systematic review of English grammar. Intensive and extensive writing of English.

221 English Composition for Non-Native Speakers of English
Fall, Spring. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of English Language Center. SA: ENG 095
Intensive and extensive writing in English for academic purposes.

222 Listening and Speaking for Academic Purposes for Non-Native Speakers of English
Fall, Spring, Summer. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of English Language Center SA: ENG 092
Improvement of oral English skills for academic purposes.

223 Reading for Academic Purposes for Non-Native Speakers of English
Fall, Spring, Summer. 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. R: Approval of English Language Center SA: ENG 094
Study of English for students needing a reading knowledge of English for academic purposes

ENTOMOLOGY ENT

Department of Entomology
College of Agriculture and Natural Resources

110 Applied Entomology for Ornamentals and Turf
Fall of odd years. 3(2-2) Fall: NW. Mich.Coll./MSU. RB: Interest or experience in ornamentals and turf production systems. R: Open only to students in the Institute of Agricultural Technology. Not open to students with credit in ENT 111.
Arthropod pests of woody ornamentals and turf grasses. Groups and species of importance to northern Michigan.

111 Basics of Applied Entomology
Spring. 2(2-1) R: Open only to students in the Institute of Agricultural Technology. SA: AT 057 Not open to students with credit in ENT 110 or AT 057.
Basic insect biology, principles of integrated pest management, and the major pests of field crops, woody ornamentals, other perennials, turf, and commercial greenhouses. Offered first ten weeks of semester.

205 Pests, Society and Environment
Fall, Spring. 3(3-0) Interdepartmental with Plant Pathology.
Nature of pests and their impact on society. Principles of integrated pest management in relation to environmental quality and sustainable development.

222 New Horizons in Biotechnology
Fall. 2(2-0) Interdepartmental with Crop and Soil Sciences. Administered by Department of Crop and Soil Sciences.
Perspectives on biotechnology for safer food production, environmental quality, and improved human health. Impacts of biotechnology on the national economy. Political and ethical ramifications of applied biotechnology.

319 Introduction to Earth System Science
Fall. 3(3-0) Interdepartmental with Plant Biology; Geological Sciences; Zoology; Sociology. RB: Completion of one course in biological or physical science.
Systems approach to Earth as an integration of geochemical, geophysical, biological and social components. Global dynamics at a variety of spatio-temporal scales. Sustainability of the Earth system.

362 Management of Turfgrass Pests
Fall. 4(3-2) Interdepartmental with Crop and Soil Sciences; Plant Pathology. Administered by Department of Crop and Soil Sciences. P:M: (CSS 232)
Chemical, biological, and cultural methods of managing weeds, diseases, and insect pests of turfgrass. Environmental considerations in pest management.

401 Directed Studies
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Approval of department.
Individual field or laboratory research, or review of published literature, on a topic of interest.

404 Insects: Success in Biodiversity
Fall. 4(3-4) P:M: (BS 110) or (BOT 105 and BOT 106)
Biological adaptations of insects to the environment. Evolution, behavior, ecology, metamorphosis, classification, importance to humans, and pest management.

407 Diseases and Insects of Forest and Shade Trees
Spring. 4(3-3) Interdepartmental with Plant Pathology; Plant Biology. Administered by Department of Plant Pathology. P:M: (PLB 105 or BS 110 or LBS 144 or LBS 148H) and (PLB 218 or FOR 204 or HRT 211) and completion of Tier I writing requirement. SA: BOT 407
Diseases, insects, and environmental problems affecting trees in forests, parks, suburbs, and nurseries. Methods of control.

410 Apiculture and Pollination
Fall. 2(1-2)
Biology of bees and their relationship to flowers, pollination and crop production.

419 Advanced Earth System Science
Spring. 3(2-2) Interdepartmental with Plant Biology; Geological Sciences; Zoology; Sociology. P:M: (ENT 319)
Systems science theory applied to analysis of the biological, geological, physical, and social causes and consequences of global changes. Issues of sustaining the Earth system.

422 Aquatic Entomology
Fall of odd years. 3(2-3) Interdepartmental with Fisheries and Wildlife; Zoology. P:M: (BS 110) SA: ENT 420
Biology, ecology and systematics of aquatic insects in streams, rivers and lakes. Field trips and aquatic insect collection required.

442 Concepts of Biological Information Systems
Spring. 3(3-0) Interdepartmental with Resource Development. R: Open only to seniors or graduate students.
Systems approach to managing biological information using computer technology.

469 Biomonitoring of Streams and Rivers
Summer of even years. 3(2-3) Summer: KBS. Interdepartmental with Fisheries and Wildlife. P:M: (BS 110)
Practical field and lab rapid bioassessment methodologies used to sample and assess the biota of streams and rivers. Sampling and identification of fish, macroinvertebrates and other biota will be emphasized.