370 Editing and Style in Professional Writing
Spring, 3(3-0) P:M: (WRA 202) and completion of Tier I writing requirement. SA: AL 370
Theories, practice, and processes of editing in professional writing contexts. Rhetoric and style.

410 Advanced Web Authoring
Spring, 3(3-0) P:M: (WRA 210) and completion of Tier I writing requirement. SA: AL 410
Developing and maintaining large-scale, interactive Web sites. Visual design, usability, audio and video integration, ongoing site management, and web accessibility.

415 Digital Rhetoric
Fall, 3(3-0) P:M: Completion of Tier I writing requirement. SA: AL 415
Rhetorical, social, political, economic, and ethical dimensions of electronic writing and publishing. Rhetorical dynamics of computer-mediated writing spaces such as the Internet, World Wide Web, e-mail, and synchronous chat.

417 Multimedia Writing
Fall, 4(4-0) P:M: (WRA 210) and completion of Tier I writing requirement. RB: Prior experience with graphical computer applications. SA: AL 417
Visual rhetoric and design theories applied to digital short subjects. Write, direct, critique, and produce motion-based digital compositions that include multiple media.

420 Advanced Technical Writing
Spring, 3(3-0) P:M: (WRA 320) and completion of Tier I writing requirement. SA: AL 420
Applied theory and specialized practices. User-centered design, project and document management, information and interface design. Issues in digital writing, technical editing, and writing for scientific and technical journals.

444 Writing in American Cultures
Fall, Spring, 3(3-0) A student may earn a maximum of 6 credits in all enrollments for this course. P:M: (WRA 260) and completion of Tier I writing requirement. SA: AL 444
Analysis of rhetorical practices in selected academic and professional disciplines, communities, and public cultures.

445 Writing in American Cultures: Rhetoric and Music
Spring of even years, 3(3-0) P:M: (IAH 201 or IAH 202 or IAH 203 or IAH 204 or IAH 206 or IAH 207 or IAH 208) and completion of Tier I writing requirement. RB: (AL 260) R: Open only to juniors and seniors. SA: AL 445
Exploration of forms of writing about music. Links between music and oral cultures. Practice in modes of writing about and evaluating critiques of music.

446 American Indian Rhetorics (N)
Spring, 3(3-0) P:M: (WRA 260) Completion of Tier I writing requirement. RB: 3 credits in other ethnic studies coursework. SA: AL 446
Theoretical approaches to Native rhetorics. Historical and contemporary debates about the production and reception of visual and written Native texts.

451 Managing Large-Scale Publication Projects
Spring of even years, 3(3-0) P:M: (WRA 202 or WRA 320) and completion of Tier I writing requirement. SA: AL 451
Design theory, task management research, collaborative problem-solving approaches, and team processes involved in designing and creating large-scale publications.

453 Grant and Proposal Writing
Fall, 3(3-0) P:M: (WRA 202) and completion of Tier I writing requirement. SA: AL 453
Researching and writing grants and proposals for corporations, nonprofit organizations, businesses, and government agencies.

455 Portfolio Seminar
Fall, Spring, 3(3-0) P:M: Completion of Tier I writing requirement. SA: AL 455
Workshop for students preparing professional document portfolios in print and digital formats, including application materials for career, graduate study, and professional positions.

490 Independent Study
Fall, Spring, Summer. 1 to 3 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 students in the College of Arts and Letters.
Special project, directed reading and research.

491 Special Topics
Fall, Spring, Summer. 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.
Writing and reading intensive course on special topics in professional writing. Topics vary.

493D Internship in Professional Editing and Publishing
Spring of odd years. 1 to 3 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P:M: Completion of Tier I writing requirement. RB: (WRA 370 and WRA 355) R: Approval of college. SA: AL 493D
Supervised work in editing and publishing.

493E Internship in Professional Writing
Spring. 3 to 6 credits. A student may earn a maximum of 6 credits in all enrollments for this course. P:M: (WRA 202) and completion of Tier I writing requirement. RB: Web-authoring course or experience. R: Approval of college. SA: AL 493E
Supervised work as writers and editors in a corporate or organizational setting. Required workshop component.

493F Internship in Professional Editing
Fall, Spring. 1 to 2 credits, A student may earn a maximum of 6 credits in all enrollments for this course. P:M: (WRA 202) and completion of Tier I writing requirement. RB: (WRA 355) R: Approval of college. SA: AL 493F
Supervised work as writers and editors in a corporate or organizational setting. Required workshop component.

ZOLOGY—ZOL

Department of Zoology
College of Natural Science

101 Preview of Zoology
Fall, Spring, 1(1-0) R: Open only to freshmen in the Zoology major. ZOL 213
Zoology as a discipline. Availability of diverse career options. Integration of human and technical skills in scientific problem solving.

111L Cell and Molecular Biology Laboratory
Fall, Spring, Summer. 2(1-3) Interdepartmental with Biological Science; Plant Biology and Molecular Genetics; Plant Biology. Administered by College of Natural Science. P:M: (BS111 or concurrently) Not open to students with credit in ZOL 159H. Principles and applications of common techniques used in cell and molecular biology.

141 Introductory Human Genetics
Fall, Spring, 3(3-0) R: Not open to students in the Biochemistry and Molecular Biology, Plant Biology, Entomology, Medical Technology, Clinical Laboratory Science, Physiology, Zoology, Microbiology and Molecular Genetics, Biological Science-Interdepartmental, or Human Biology majors. Not open to students in the corresponding Lyman Briggs School coordinate majors or to students in the Lyman Briggs College of Arts and Letters.

306 Invertebrate Biology
Fall, Spring, 3(3-0) P:M: (BS 110 or LBS 144 or LBS 148H) R: Systemsatics, morphology, and natural history of invertebrate animals. Identification of live and preserved specimens. Recognition of selected groups.

310 Psychology and Biology of Human Sexuality
Spring of odd years. 3(3-0) Interdepartmental with Psychology. Administered by Department of Psychology. P:M: (PSY 101 or concurrently) and (BS 110 or concurrently or BS 111 or concurrently or LBS 144 or concurrently or LBS 145 or concurrently or LBS 148H or concurrently or LBS 149H or concurrently) Not open to students with credit in FCE 445.

313 Animal Behavior
Fall, Spring, 3(3-0) P:M: (BS 110 or LBS 144 or LBS 148H) R: Not open to freshmen. SA: ZOL 213
Development, physiological mediation, adaptive significance and evolution of behavior.

316 General Parasitology
Spring, 3(3-0) P:M: (LBS 144 or LBS 145 or LBS 148H or LBS 149H or BS 110) or (BS 111 and BS 111L)
Identification, life history, host-parasite relationships, and epidemiology of protozoan, helminth, acanthocephalan, copepod, and arthropod parasites of animals and humans.

316L General Parasitology Laboratory
Spring, 1(0-2) P:M: (ZOL 316 or concurrently) R: Not Open to freshman. Laboratory diagnosis of protozoans, helminths, acanthocephalans, copepods, and arthropods that infect humans and animals. Animal necropsy.

319 Introduction to Earth System Science
Fall, 3(3-0) Interdepartmental with Entomology; Plant Biology; Geological Sciences; Sociology. Administered by Department of Entomology. 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.
320 Developmental Biology
Fall. 4(3-3) P:M: (BS 110 or LBS 144 or LBS 148H) and (BS 111 or LBS 145 or LBS 149H) SA: ZOL 220
Principles of development, emphasizing vertebrates. Illustrations from morphological and experimental investigations.

328 Comparative Anatomy and Biology of Vertebrates
Spring. 4(3-3) P:M: (BS 110 or LBS 144 or LBS 148H) and completion of Tier I writing requirement. SA: ZOL 228
Comparative morphology and natural history of vertebrates. Dissection of representatives of most vertebrate classes.

341 Fundamental Genetics
Fall, Spring, Summer. 4(4-0) Interdepartmental with Plant Biology. P:M: (BS 111 or LBS 145 or LBS 149H)
Principles of heredity in animals, plants and microorganisms. Classical and molecular methods in the study of gene structure, transmission, expression and evolution.

343 Genetics Laboratory
Spring. 2(0-4) P:M: (ZOL 341 or concurrently) and completion of Tier I writing requirement. SA: ZOL 350L
Experiments involving genetics of Drosophila and other eucaryotic organisms.

353 Marine Biology
Fall. 4(4-0) P:M: (BS 110 or LBS 144 or LBS 148H) and completion of Tier I writing requirement.

355 Ecology
Fall, Spring, Summer. 3(3-0) Interdepartmental with Plant Biology. P:M: (BS 110 or LBS 144 or LBS 148H) SA: ZOL 250
Plant and animal ecology. Interrelationships of plants and animals with the environment. Principles of population, community, and ecosystem ecology. Application of ecological principles to global sustainability.

355L Ecology Laboratory
Fall, Spring, Summer. 1(0-3) Interdepartmental with Plant Biology. P:M: (ZOL 355 or concurrently or PLB 355 or concurrently) and completion of Tier I writing requirement. SA: ZOL 355L
Population, community, and ecosystem ecology, utilizing plant and animal examples to demonstrate general field principles.

360 Biology of Birds
Fall. 4(3-3) P:M: (BS 110 or LBS 144 or LBS 148H)
Behavior, ecology, evolution, and systematics of birds; biodiversity. Laboratories emphasize diversity of form and function, life history patterns, and identification.

361 Michigan Birds
Summer. 4(3-3) Summer: Given only at W.K. Kellogg Biological Station. P:M: (BS 110 or LBS 144 or LBS 148H) Not open to students with credit in ZOL 360.
Field study of avian diversity, ecology, and behavior using current systematics and habitat identification techniques.

365 Biology of Mammals
Spring. 4(3-3) P:M: (BS 110 or LBS 144 or LBS 148H)
Analysis of the behavior, ecology, evolution, and systematics of mammals. Laboratories emphasize diversity of form and function, life history patterns, and identification. Field trips required.

369 Introduction to Zoo and Aquarium Science
Spring. 3(3-0) Interdepartmental with Landscape Architecture; Fisheries and Wildlife; Veterinary Medicine. P:M: (BS 110 or LBS 144 or LBS 148H)
Fundamentals of zoo and aquarium operations including research, interpretation, design, nutrition, captive breeding, conservation, ethics and management.

370 Introduction to Zoogeography
Fall. 3(3-0) Interdepartmental with Fisheries and Wildlife; Geography. P:M: (ZOL 355) SA: ZOL 384
Patterns of geographical distribution of animals and the ecological and historical processes leading to these patterns.

384 Biology of Amphibians and Reptiles
Fall. 4(3-3) P:M: (BS 110 or LBS 144 or LBS 148H)
The evolution, systematics, ecology, and behavior of amphibians and reptiles. Laboratory emphasizes diversity and identification of families and Great Lakes species. Field trips may be required.

400H Honors Work
Fall, Spring. 1 to 5 credits. A student may earn a maximum of 5 credits in all enrollments for this course. R: Not open to freshmen or sophomores. Approval of the department.
Honors work on a topic in zoology.

402 Neurobiology
Fall, Spring. 3(3-0) P:M: (BS 110 or LBS 144 or LBS 148H) and (BS 111 or LBS 145 or LBS 149H) R: Not open to freshmen or sophomores. Structure and function of nerve cells and nervous systems.

404 Human Genetics
Spring. 3(3-0) P:M: (ZOL 341) and (BMB 401 or concurrently or BMB 461 or concurrently) and completion of Tier I writing requirement. SA: ZOL 344

408 Histology
Fall. 4(3-3) P:M: (BS 111 or LBS 145 or LBS 149H) SA: ZOL 350
Structure of cells and their interactions to form tissues.

413 Laboratory in Behavioral Neuroscience
(W)
Fall. 4(2-4) Interdepartmental with Psychology. Administered by Department of Psychology. P:M: (PSY 205 or ZOL 402) and (PSY 285 or concurrently or STT 201) and completion of Tier I writing requirement. SA: PSY 309
Theory and laboratory experience in the study of behavioral neuroscience. Relationship among hormones, brain, and behavior.

415 Ecological Aspects of Animal Behavior
Spring. 3(3-0) P:M: (ZOL 313) and completion of Tier I writing requirement. SA: ZOL 369
Advanced topics in the ecology and evolution of animal behavior.

419 Advanced Earth System Science
Spring. 3(2-2) Interdepartmental with Entomology; Plant Biology; Geological Sciences; Sociology. Administered by Department of Entomology. P:M: (ENT 319) SA: ZOL 370
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.

420 Stream Ecology
Fall. 3(3-0) Interdepartmental with Fisheries and Wildlife. Administered by Department of Fisheries and Wildlife. P:M: (BS 110 or LBS 144 or LBS 148H) RB: (CEM 141 and ZOL 355)
Biological and environmental factors determining structure and function of stream ecosystems.

422 Aquatic Entomology
Fall of odd years. 3(3-0) Interdepartmental with Entomology; Fisheries and Wildlife. Administered by Department of Entomology. 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.

424 Algal Biology
Fall of even years. Summer of odd years. 4(2-4) Summer: KBS. Interdepartmental with Plant Biology. Administered by Department of Plant Biology. P:M: (BS 110 or LBS 144 or LBS 148H) and completion of Tier I writing requirement. RB: (ZOL 355 and ZOL 355L) or (PLB 441) SA: BOT 424
Algal taxonomy, systematics, physiology, ecology, and environmental assessment. Lab focus on identification of freshwater algal genera collected from regional habitats. Field trips required.

425 Cells and Development
Spring. 4(3-3) P:M: (BS 111 and BS 111L) or (LBS 145) or (LBS 149H) and completion of Tier I writing requirement. SA: ZOL 221
The role of cells in growth, differentiation and development of animals from protozoa to mammals.

426 Biogeochemistry
Summer. 3 credits. Summer: Given only at W.K. Kellogg Biological Station. Interdepartmental with Microbiology and Molecular Genetics; Crop and Soil Sciences; Geophysical Sciences. Administered by Department of Microbiology and Molecular Genetics. RB: (BS 110 or LBS 144 or LBS 148H) or BS 111 or LBS 145 or LBS 149H) and (CEM 143 or CEM 251) SA: MPH 426
Integration of the principles of ecology, microbiology, geochemistry, and environmental chemistry. Societal applications of research in aquatic and terrestrial habitats.

428 Frontiers in Developmental and Tissue Biology
Fall. 3(3-0) RB: (BS 111 or ZOL 320) or (ZOL 408 and BMB 401) and completion of Tier I writing requirement. SA: ZOL 428
Integrated approach to common cellular mechanisms in normal and abnormal development, tissue regeneration, stem cell biology and differentiation. Tissue engineering, tissue and organ replacement and chronic diseases, such as arthritis, cancer, diabetes and Parkinson’s disease.
### Zoology—ZOL

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>496</td>
<td>Internship in Zoology</td>
<td>Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open only to seniors. Approval of department. Practical experience applying zoology training in a setting outside the University.</td>
</tr>
<tr>
<td>498</td>
<td>Internship in Zoo and Aquarium Science</td>
<td>Fall, Spring, Summer. 3 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. Interdepartmental with Fisheries and Wildlife; Landscape Architecture. R: Open only to juniors or seniors. Approval of department. Application of zoological experience in a zoo or aquarium setting outside the university.</td>
</tr>
<tr>
<td>499</td>
<td>Undergraduate Thesis</td>
<td>Fall, Spring, Summer. 1 to 6 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 seniors. Approval of department. Laboratory research culminating in the preparation and defense of an undergraduate thesis.</td>
</tr>
<tr>
<td>804</td>
<td>Molecular and Developmental Neurobiology</td>
<td>Fall. 3(0) Interdepartmental with Neuroscience; Pharmacology and Toxicology; Psychology; Pathology. Administered by Program in Neuroscience. RB: Bachelor's degree in a Biological Science or Psychology. R: Open only to graduate students in the Neuroscience major. Nervous system specific gene transcription and translation. Maturity, degeneration, plasticity and repair in the nervous system.</td>
</tr>
<tr>
<td>814</td>
<td>Environmental Chemodynamics</td>
<td>Spring of even years. 4(4-0) R: Open only to graduate students in the College of Agriculture and Natural Resources or College of Engineering or College of Human Medicine or College of Natural Science or College of Osteopathic Medicine or College of Veterinary Medicine. SA: FW 614. Chemical and environmental factors controlling the distribution of organic and inorganic chemicals in air, water, and soil. Environmental monitoring.</td>
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<tr>
<td>822</td>
<td>Topics in Ethology and Behavioral Ecology</td>
<td>Spring of odd years. 3(0-2) A student may earn a maximum of 6 credits in all enrollments for this course. RB: (ZOL 415) R: Open only to graduate students. Critical analysis through seminar-discussions of the primary research literature.</td>
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<tr>
<td>825</td>
<td>Molecular and Biochemical Bases of Human Disease</td>
<td>Spring. 3(0-0) Interdepartmental with Genetics. RB: (ZOL 341) or equivalent general genetics course. Medical genetics. Molecular, biochemical, and diagnostic issues related to human disease. Disease pathophysiology. Ethical, legal, and social issues related to human genetics research.</td>
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<tr>
<td>827</td>
<td>Physiology and Pharmacology of Excitable Cells</td>
<td>Fall. 4(4-0) Interdepartmental with Pharmacology and Toxicology; Physiology; Neurosciences. Administered by Department of Pharmacology and Toxicology. RB: (PSL 431 or PSL 432 or BMB 401 or BMB 461 or ZOL 402). Function of neurons and muscle at the cellular level: membrane biophysics and potentials, synaptic transmission, sensory nervous system function.</td>
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<tr>
<td>828</td>
<td>Conservation and Genetics</td>
<td>Fall of even years. 3(2-2) Interdepartmental with Fisheries and Wildlife; Plant Biology. Administered by Department of Fisheries and Wildlife. RB: (ZOL 341 or CSS 350 or ANS 314). Population and evolutionary genetic principles applied to ecology, conservation, and management of fish and wildlife at the individual, population, and species level.</td>
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<tr>
<td>831</td>
<td>Quantitative Paleobiology</td>
<td>Spring of odd years. 3(2-2) Interdepartmental with Geological Sciences. Administered by Department of Geological Sciences. RB: (GLG 431). Analysis of paleobiological problems using quantitative techniques such as cladistics, morphometrics, ordination, and stereology.</td>
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<tr>
<td>835</td>
<td>Biogeography</td>
<td>Spring of odd years. 3(3-0) Interdepartmental with Fisheries and Wildlife; Geography; Plant Biology. Administered by Department of Fisheries and Wildlife. RB: Courses in evolution and ecology at undergraduate level. Geographical distributions of plants and animals; biogeographic realms. Ecological and evolutionary mechanisms determining distributional patterns. Application of biogeography to conservation problems.</td>
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<tr>
<td>839</td>
<td>Systems Neuroscience</td>
<td>Spring. 4(4-0) Interdepartmental with Neuroscience; Human Anatomy; Pharmacology and Toxicology; Physiology. Psychology. Administered by Program in Neuroscience. R: Open only to graduate students in the Colleges of Human Medicine, Osteopathic Medicine, Agriculture and Natural Resources, Natural Science, Social Science, and Veterinary Medicine. SA: ANT 839. Anatomy, pharmacology, and physiology of multicellular nervous systems. Sensory, autonomic, and chemo-regulatory systems in vertebrate brains.</td>
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<tr>
<td>842</td>
<td>Application of Ecological Principles</td>
<td>Spring. 2 credits. A student may earn a maximum of 8 credits in all enrollments for this course. Interdepartmental with Plant Biology. Administered by Department of Plant Biology. SA: BOT 842. Workshops and discussions with experts from industry, regulatory agencies, conservation groups, and academe on application of basic ecology and evolutionary biology to real-world problems.</td>
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<tr>
<td>849</td>
<td>Evolutionary Biology</td>
<td>Spring. 3(0-0) Interdepartmental with Plant Biology. Administered by Department of Plant Biology. RB: (ZOL 341 and STT 422 or concurrently) SA: BOT 849. Major conceptual, theoretical and empirical questions in evolutionary biology. Readings and lectures are synthesized in student discussions and papers.</td>
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<tr>
<td>851</td>
<td>Quantitative Methods in Ecology and Evolution</td>
<td>Fall. 3(0-0) Interdepartmental with Plant Biology. RB: (STT 465). Interpretation and analysis of ecological and evolutionary biology data. Statistical computer software.</td>
</tr>
<tr>
<td>853</td>
<td>Applied Systems Modeling and Simulation for Natural Resource Management</td>
<td>Spring of odd years. 3(2-2) Interdepartmental with Fisheries and Wildlife; Biosystems Engineering; Forestry; Resource Development. Administered by Department of Fisheries and Wildlife. (FW 820 or BE 486 or ZOL 851) approval of department. R: Open only to seniors and graduate students. Mathematical models for evaluating resource management strategies. Stochastic and deterministic simulation for optimization. System control structures. Team modelling approach.</td>
</tr>
<tr>
<td>855</td>
<td>Molecular Evolution: Principles and Techniques</td>
<td>Fall of odd years. 3(0-0) Interdepartmental with Plant Biology; Microbiology and Molecular Genetics. RB: (ZOL 341 or ZOL 445). Current techniques used to characterize and compare genes and genomes. Genetic variation, assays of variation. Data analysis and computer use to conduct a phylogenetic analysis to compare organisms and infer relationships.</td>
</tr>
<tr>
<td>857</td>
<td>Theoretical Ecology</td>
<td>Spring of even years. 3(2-2) Interdepartmental with Fisheries and Wildlife; Plant Biology. Administered by Department of Fisheries and Wildlife. RB: One course in ecology and calculus. Programming experience helpful. Theoretical ecology of animal behavior, population dynamics, and multispecies communities. Basic mathematical approaches and use of modeling software to perform mathematical functions and develop models.</td>
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<tr>
<td>867</td>
<td>Nature and Practice of Cognitive Science</td>
<td>Spring. 3(0-0) Interdepartmental with Psychology; Linguistics; Philosophy; Computer Science and Engineering. RB: Undergraduate course work in behavioral biology, cognitive psychology, philosophy, linguistics, or artificial intelligence. Survey of how different disciplines explore the cognitive processes underlying intelligent behavior.</td>
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</tbody>
</table>
868  Aquatic Toxicology
Spring of odd years. 4(3-2) R: Open only to graduate students in the College of Agriculture and Natural Resources or College of Engineering or College of Human Medicine or College of Natural Science or College of Osteopathic Medicine or College of Veterinary Medicine. SA: FW 831
Techniques for assessing acute and chronic effects of toxicants on biochemical, physiological, organismal, population, community, and ecosystem levels of organization.

890  Special Problems
Fall, Spring, Summer. 1 to 3 credits. A student may earn a maximum of 10 credits in all enrollments for this course. R: Approval of department.
Current problems in Zoology.

891  Current Topics in Ecology and Evolution
Summer. 1 credit. Summer: Given only at W.K. Kellogg Biological Station. A student may earn a maximum of 8 credits in all enrollments for this course. Interdepartmental with Plant Biology; Crop and Soil Sciences.
Presentation and critical evaluation of theoretical and empirical developments by visiting scientists.

892  Biodiversity
Spring. 2(2-0) A student may earn a maximum of 4 credits in all enrollments for this course. Interdepartmental with Plant Biology; Crop and Soil Sciences. RB: (ZOL 250)
Status of world biota and factors in the decline and extinction of major groups of plants and animals. Theory and design of natural reserves. Assessment and ecological meaning of diversity. Management for global and local diversity.

895  Seminar
Fall, Spring. 1(1-0) A student may earn a maximum of 6 credits in all enrollments for this course.
Graduate seminar on current research topics in Zoology.

896  Population and Community Ecology
Fall. 4(4-0) Interdepartmental with Plant Biology.

897  Ecosystem Ecology
Spring. 4(4-0) Interdepartmental with Plant Biology; Fisheries and Wildlife.
Structure and function of natural ecosystems. Succession, food web analysis, energy flow, nutrient cycling, and effects of human activities on ecosystems. Global environmental change. Ecosystem management and restoration.

899  Master's Thesis Research
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 36 credits in all enrollments for this course.
Master's thesis research.

999  Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 120 credits in all enrollments for this course.
Doctoral dissertation research.