

BIOO - Biology-Organismal

BIOO 162CS Insects and Human Society: 3 Credits (3 Lec)

Whether fighting for our food, spreading disease, or scaring us in our basement – insects intersect with our lives at every turn. In this course, we will explore the curiosities of the natural world and demystify the scientific process through the tiny lens of insects.

BIOO 220 General Botany: 3 Credits (3 Lec)

PREREQUISITE: BIOB 170IN. This course focuses on organisms that possess plastid organelles in all their cells, and investigates their function (physiology, biochemistry), diversity, life cycles, and environmental adaptations

BIOO 230 Identification of Seed Plants: 4 Credits (2 Lec, 2 Lab)

PREREQUISITE: BIOB 170IN. (Sp) Identification of conifers, trees and shrubs, and herbaceous seed plants; determination by use of manuals; vocabulary, classification and nomenclature; and preparation and collection of seed plant specimens. Offered in spring

BIOO 262IN Introduction to Entomology: 3 Credits (2 Lec, 1 Lab)

PREREQUISITE: BIOL 100IN or BIOB 170IN. General biology of insects including principles of morphology, physiology, behavior, ecology, and control. Includes identification of major orders and common families

BIOO 291 Special Topics: 1-4 Credits ()

Course prerequisites as determined for each offering.

BIOO 310 Comparative Vertebrate Anatomy: 4 Credits (2 Lec, 2 Lab)

PREREQUISITE: BIOB 170IN or BIOB 258. (F) A comparative study of organ systems of vertebrates. Laboratory utilizes representative vertebrate types

BIOO 315 Aquatic Insects: 3 Credits (2 Lec, 1 Lab)

PREREQUISITE: BIOB 160 and BIOB 170IN and BIOE 370. (F) This course will introduce students to the evolution, biology, ecology and classification of aquatic insects. This course will provide basic skills to identify and collect aquatic insects, as well as curating an aquatic insect collection. Students will also gain an understanding of the ecology and evolution of aquatic insects

BIOO 412 Animal Physiology: 3 Credits (3 Lec)

PREREQUISITE: BIOB 160 or BIOB 260; and any Chemistry course; Junior or Senior standing recommended. (F) General homeostatic physiology of animals with emphasis on mammals. Selected body systems are covered with major emphasis on the integration of body processes. Offered in the fall

BIOO 415 Ichthyology: 3 Credits (2 Lec, 1 Lab)

PREREQUISITE: BIOO 310 or BIOO 412. (Sp) Junior standing. Characteristics, classification, evolution, and life histories of major groups of marine and freshwater fishes, with an emphasis on North American freshwater fauna. Laboratory emphasizes identification, morphology, life history, and distribution of Montana species. Offered in spring

BIOO 418 Ecological Physiology of Aquatic Organisms: 3 Credits (1 Lec, 2 Lab)

PREREQUISITE: BIOO 412 and currently in a Biological Sciences Major or Consent of Instructor. (F) Provides a strong foundation on the physiological processes and systems that drive organismal responses to changes within the ecosystems they inhabit, with an emphasis on aquatic organisms. Students will learn to perform and interpret physiological measurements as well as read and discuss current scientific literature that connects physiology with wildlife management and conservation biology. Offered in the fall

BIOO 433 Plant Physiology: 3 Credits (3 Lec)

PREREQUISITE: Junior standing, BIOB 160 and one of the following: CHMY 211, CHMY 321, or CHMY 123. Physiological processes of higher plants, including photosynthesis, water relations, mineral nutrition, and development

BIOO 435 Plant Systematics: 3 Credits (1 Lec, 2 Lab)

PREREQUISITE: BIOB 170IN and BIOO 230 Introduction to the local vascular plant flora emphasizing characteristics of the common families and genera. Lab concentrates on plant identification of common angiosperm plant families in Montana; preparation of about 120 reference specimens taken from the local flora

BIOO 437 Plant Development: 3 Credits (3 Lec)

PREREQUISITE: BIOO 220 or BCH 380 or consent of instructor. This course studies the specific plant functions allowing a zygote to develop into an embryo. It further analyzes development of the embryo into a vegetatively growing plant, then a process known as 'floral transition' allowing the plant to "switch" from vegetative to reproductive growth, and finally investigates the formation of floral organs allowing completion of the plant's life cycle

-Department of Plant Sciences/Plant Pathology.

BIOO 460 Plant Metabolism: 3 Credits (3 Lec)

PREREQUISITE: BIOO 220 or BCH 380 or consent of instructor. (Sp) In-depth overview of plant metabolism: photosynthesis including C4 and CAM pathways; intermediary carbon metabolism (sucrose and starch synthesis and degradation); lipids; nitrogen and sulfur assimilation and metabolism; amino acid biosynthesis; secondary metabolism (terpenoids, alkaloids, phenolic compounds)

BIOO 465 Insect Identification: 4 Credits (2 Lec, 4 Lab)

PREREQUISITE: BIOO 262IN and one of the following: BIOB 100IN, BIOB 160 or BIOB 170IN. The identification of insects and related terrestrial arthropods. Evolutionary patterns reflected in modern insect diversity will be used to illustrate classification methods. Taxonomic methods will be used as an access to information retrieval

BIOO 470 Ornithology: 3 Credits (2 Lec, 1 Lab)

PREREQUISITE: BIOO 310. (Sp) Junior standing. Evolution, functional biology, distribution, and classification of birds. Montana species recognition is developed through laboratory use of a representative skin collection. Offered in the spring

BIOO 475 Mammalogy: 3 Credits (2 Lec, 1 Lab)

PREREQUISITE: BIOO 310. (F) Junior standing. Evolution, functional biology, distribution, and classification of mammals. Labs cover taxonomy and identification of representative forms with a focus on Montana species. Offered in fall

BIOO 491 Special Topics: 1-4 Credits ()

Course prerequisites as determined for each offering.

BIOO 537 Plant Development: 3 Credits (2 Lec, 1 Lab)

PREREQUISITE: BIOO 220 or BCH 380 or consent of instructor. Note that 'consent of instructor' may be the rule rather than the exception, as many graduate students will have attended similar classes at other universities. This course studies the specific plant functions allowing a zygote to develop into an embryo. It further analyzes development of the embryo into a vegetatively growing plant, then a process known as 'floral transition' allowing the plant to "switch" from vegetative to reproductive growth, and finally investigates the formation of floral organs allowing completion of the plant's life cycle

BIOO 560 Plant Metabolism: 3 Credits (2 Lec, 1 Lab)

PREREQUISITE: BIOO 220 OR BCH 380 OR consent of instructor.
(Sp) In-depth overview of plant metabolism: photosynthesis including C₄ and CAM pathways; intermediary carbon metabolism (sucrose and starch synthesis and degradation); lipids; nitrogen and sulfur assimilation and metabolism; amino acid biosynthesis; secondary metabolism (terpenoids, alkaloids, phenolic compounds)

BIOO 591 Special Topics: 1-4 Credits ()

Course prerequisites as determined for each offering.