

# ENTOMOLOGY (ENTM)

## ENTM 0610 Beekeeping 2 cr

Introduction to beekeeping that includes economics and marketing of honey and beeswax, equipment and its construction, pollen and nectar plants, pollination, management systems, diseases and pests, honey handling, package bees, wintering of bees, etc.

## ENTM 0620 Insect Pest Management 4 cr

Characteristics, damage, and identification; insecticide use and safety; life histories and control of common Manitoba livestock, field and farmyard insects. General principles of pest management in agriculture will also be discussed.

## ENTM 1000 World of Bugs 3 cr

A survey of insect biology and life styles with emphasis on insect diversity and human-insect interactions.

**Attributes:** Recommended Intro Courses

## ENTM 2050 Introductory Entomology 3 cr

A basic course for students requiring a foundation in entomology. The anatomy, life history, identification, adaptations, and relations of insects to humans are examined along with methods of collecting and preserving insect specimens.

## ENTM 3160 Veterinary and Wildlife Entomology 3 cr

An introduction to the insects and their relatives that affect domestic animals, pets and wildlife. Special consideration is given to life histories, insect/host interaction, evolutionary relationships, impact on host vertebrates and pest management. Not all courses are offered every year. Please contact the department regarding course availability.

## ENTM 3162 Manitoba's Insect Fauna 3 cr

A collection of insects is required. Emphasis is placed on collecting techniques, specimen preparation, diversity of species collected, organization and curatorial skills, and accuracy of identification. Students should contact instructors in April preceding registration in this course.

**PR/CR: A minimum grade of C is required unless otherwise indicated.**

Prerequisite: ENTM 2050.

## ENTM 3170 Crop Protection Entomology 3 cr

A course for students requiring a foundation in entomology and knowledge of major insect pest groups in Western Canada. The pests and principles for their control (chemical, cultural, mechanical, physical and biological methods) are explored with emphasis on the entire ecosystem. Students may not hold credit in ENTM 3170.

## ENTM 3180 Field Techniques in Entomology 3 cr

A field course to provide a foundation in field sampling and collection techniques for insects in natural and agroecosystems. The course is run at the University of Manitoba Star lake research station near Whiteshell MB. Transportation to and from the University and accommodations are included. Six day intensive field-based course.

**PR/CR: A minimum grade of C is required unless otherwise indicated.**

Prerequisites: none.

## ENTM 3190 Introduction to Applied Entomology 3 cr

A course providing a foundation in applied entomology covering topics including: basic insect biology, insect pest management, insect biodiversity and the biological services provided by insects. Online lecture presentations, weekly readings and online laboratories. May not be held with ENTM 3170.

**PR/CR: A minimum grade of C is required unless otherwise indicated.**

Prerequisites: none.

**Equiv To:** ENTM 3170

## ENTM 4000 Topics in Entomology 3 cr

A Course of assigned readings and literature review essays for students in the minor in Entomology program.

**PR/CR: A minimum grade of C is required unless otherwise indicated.**

Prerequisite: ENTM 2050 and consent of department head.

## ENTM 4250 Pesticide Toxicology 3 cr

Action, behaviour, and fate of pesticides in target and non-target species and in the environment. Past, present, and future chemical control agents will be discussed on the basis of chemical and biochemical knowledge. Not all courses are offered every year. Please contact the department regarding course availability.

**PR/CR: A minimum grade of C is required unless otherwise indicated.**

Prerequisite: A course in biochemistry.

## ENTM 4280 Aquatic Entomology 3 cr

Adaptations and significance of insects to aquatic habitats, with emphasis on identification. Aquatic insects as indicator species of pollution and their response to chemical pesticide application. A collection of aquatic insects is required. Not all courses are offered every year. Please contact the department regarding course availability.

**PR/CR: A minimum grade of C is required unless otherwise indicated.**

Prerequisites: ENTM 2050; AGEC 2370 or BIOL 2300; or consent of instructor.

## ENTM 4320 Pollination Biology 3 cr

The biology, ecology of social, semisocial and solitary insect pollinators and their ecological interactions with entomophilous plants. Not all courses are offered every year. Please contact the department regarding course availability.

## ENTM 4500 Insect Taxonomy and Morphology 3 cr

Study of insect structure combined with evolution of insect orders. Modern concepts of subspecies, species and higher taxa. Collection required (contact instructor for details in April/May of preceding year.) Students may not hold credit for ENTM 4500.

**PR/CR: A minimum grade of C is required unless otherwise indicated.**

Prerequisite: ENTM 2050 or consent of instructor.

## ENTM 4520 Physiological Ecology of Insects 3 cr

The effect of environmental factors such as temperature, moisture, light and other organisms on the physiology and ecology of insects. Not all courses are offered every year. Please contact the department regarding course availability.

**PR/CR: A minimum grade of C is required unless otherwise indicated.**

Prerequisite: ENTM 2050 or consent of instructor.