

NRMT/BIOL 3217 FOREST ENTOMOLOGY

COURSE OUTLINE Winter 2019

Lectures: Dr. Don Henne, BB 1003E – Ph. 343-8655 or dhenne@lakeheadu.ca

Office Hours: M-F 1-2 PM

Teaching Assistant: Steven Beery, sbeery@lakeheadu.ca

Lecture Schedule: WF 11:30-12:30pm, ATAC 2021

Lab Schedule: T 2:30-5:30pm, BB1006

INTRODUCTION

Insects are among the most diverse and important organisms on the planet, but few people recognize or appreciate the benefits that insects bring to our existence. In managed forestry systems, as in managed agricultural systems, there are certain insects that are serious pests of all parts of forest trees. The ability to properly manage these pests requires correct identification of the pest, understanding their biology and ecology, effectively applying methods of sampling and monitoring, and knowledge of different control strategies.

LEARNER OUTCOMES

This course examines the theory and practice of Forest Entomology. In this course, you will become familiar with the major insect orders and families. Emphasis will be placed on the biology, ecology, and damage caused by insect species that threaten or cause damage to forests. You will become familiar with current methods and strategies for controlling these insects and limiting the damage they cause to forests. Laboratory periods will focus on insect anatomy and identification. At the end of the course you should be able to identify and recognize select forest insect orders, families, and species.

EVALUATION

Lecture midterm exam	15%
Insect research assignment	10% (see below)
Lecture final exam	30% (comprehensive)
Laboratory Quizzes (4)	20%
Laboratory midterm exam	10%
Laboratory final exam	15%

REQUIRED TEXTS:

None required.

ORGANIZATION OF THE COURSE

Lecture schedule/outline (subject to change)

Date	Tentative Lecture Topic
January 9	Syllabus. Introduction to forest entomology
January 11	External insect anatomy
January 16	Internal insect anatomy
January 18	Insect physiology
January 23	Insect reproduction
January 25	Insect ecology
January 30	Insect ecology and biodiversity
February 1	Insect population dynamics
February 6	Insect population sampling and monitoring
February 8	Insect population control and IPM
February 13	Midterm Exam
February 15	Weather and insects
February 20/22	No classes: February study break
February 27	Defoliating insects - Lepidoptera
March 1	Insects as forest disturbance agents - spruce budworm
March 6	Cone and seed insects
March 8	Tip, shoot, and regeneration insects – weevils (final drop date)
March 13	Invasive forest insects
March 15	Invasive forest insects
March 20	Wood boring insects
March 22	Bark beetles
March 27	Sucking insects
March 29	Leafmining insects
April 3	Gall insects
April 5	Final exam review

Laboratory schedule/outline (subject to change)

Date	Tentative Laboratory Topic
January 15	The dissection microscope and external insect anatomy
January 22	Arthropod classification and cover exopterygota (incomplete metamorphosis)
January 29	Laboratory Quiz #1 and cover endopterygota (complete metamorphosis)
February 5	Immature insects
February 12	Laboratory Quiz #2 and cover defoliating insects and hardwood defoliators
February 19	No laboratory: February study break
February 26	Mid-term laboratory exam
March 5	Softwood defoliators
March 12	Laboratory Quiz #3. Cover leaf mining, sap sucking, and gall forming insects
March 19	Laboratory Quiz #4. Cover xylem and phloem borers
March 26	Review lab
April 2	Laboratory final exam

Insect research assignment (Due March 29th)

Students will be required to conduct a literature review on any forest insect pest of interest. This review should include information about the taxonomy, biology, and ecology of the pest, its hosts and damage caused, and its control. Length should be 3-5 pages (not including title page and references), double-spaced, 2.5 cm margins, 12-point font.

DO NOT use Wikipedia or other internet webpages as a primary source of information. Find actual journal articles using Google Scholar (for example), review articles, and books from the library. Learn how to use literature search engines to find information. Also, remember that plagiarism can be easily identified using Grammarly and other plagiarism detecting software (**see below for link to our University policies regarding plagiarism and other forms of academic dishonesty**).

Late assignments

All assignments in the course must be handed in by 11:59 pm on the assigned due date. Late assignments will be accepted past the due date at a penalty of 5%/day.

Important dates

Final date to register (add): Friday January 18, 2019

Final date for withdrawal: Friday March 8, 2019

Examination period: April 8-18, 2019

Marks due: Friday April 26, 2019

Other important dates

Family Day: Monday February 18, 2019

February break: Monday February 18 – Friday February 22, 2019

Winter term study break: April 6-7, 2019

Good Friday: Friday April 19, 2019

Easter Monday: Monday April 22, 2019

Appendix: University policies

Other University policies governing plagiarism and other forms of academic dishonesty can be found at the following link:

<http://navigator.lakeheadu.ca/Catalog/ViewCatalog.aspx?pageid=viewcatalog&catalogid=24&chapterid=6364&loadusercredits=False>