



## COURSE OUTLINE: NET250 - GENERAL ENTOMOLOGY

Prepared: Elisa Muto

Approved: Sherri Smith, Chair, Natural Environment, Business, Design and Culinary

<b>Course Code: Title</b>	NET250: GENERAL ENTOMOLOGY
<b>Program Number: Name</b>	5220: NAT ENVIRONMENT TN 5221: NAT ENVIRONMENT TY
<b>Department:</b>	NATURAL RESOURCES PRG
<b>Semesters/Terms:</b>	20W
<b>Course Description:</b>	This course provides the student with an introduction to the biology and ecology of aquatic and terrestrial insects and related invertebrates. Emphasis is placed on the development of identification skills in the laboratory.
<b>Total Credits:</b>	3
<b>Hours/Week:</b>	3
<b>Total Hours:</b>	45
<b>Prerequisites:</b>	There are no pre-requisites for this course.
<b>Corequisites:</b>	There are no co-requisites for this course.
<b>Substitutes:</b>	NRT207, NRT243
<b>Vocational Learning Outcomes (VLO's) addressed in this course:</b>	<p><b>5220 - NAT ENVIRONMENT TN</b></p> <p>VLO 1 Collect data from representative biological and environmental samples using routine test procedures.</p> <p>VLO 3 Apply the basic concepts of science to natural resource conservation and management.</p> <p>VLO 8 Complete all work in compliance with applicable municipal, provincial and federal standards and guidelines.</p> <p><b>5221 - NAT ENVIRONMENT TY</b></p> <p>VLO 1 Collect, analyze, interpret and report on data from representative biological and environmental samples.</p> <p>VLO 3 Apply the basic concepts of science to natural resource conservation and management.</p> <p>VLO 7 Ensure all work is safely completed in adherence to occupational health and safety standards.</p> <p>VLO 10 Communicate technical information accurately and effectively in oral, written, visual and electronic forms.</p>
<b>Essential Employability Skills (EES) addressed in this course:</b>	<p>EES 1 Communicate clearly, concisely and correctly in the written, spoken, and visual form that fulfills the purpose and meets the needs of the audience.</p> <p>EES 2 Respond to written, spoken, or visual messages in a manner that ensures effective communication.</p> <p>EES 7 Analyze, evaluate, and apply relevant information from a variety of sources.</p>



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EES 8	Show respect for the diverse opinions, values, belief systems, and contributions of others.
EES 9	Interact with others in groups or teams that contribute to effective working relationships and the achievement of goals.
EES 10	Manage the use of time and other resources to complete projects.
EES 11	Take responsibility for ones own actions, decisions, and consequences.

**General Education Themes:** Science and Technology

**Course Evaluation:** Passing Grade: 50%, D

**Other Course Evaluation & Assessment Requirements:** Note 1: Academic success is directly linked to attendance. Missing more than 1/3 of the course hours in a semester shall result in an 'F' grade for the course.

Note 2: It is impossible to do this course without the required textbook. If you do not have the required text by the third week of the course you will not be allowed to continue in the course.

**Books and Required Resources:** An Introduction to the Study of Insects by Borror, D.J., C.A. Triplehorn and N.F. Johnson. Publisher: Brooks Cole Edition: 7 ISBN: 978-0030968358

**Course Outcomes and Learning Objectives:**

<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
Collect, preserve, process, and present insect specimens from both terrestrial and aquatic environments in accordance with scientific standards.	1.1 Demonstrate various tools and methods of collecting insect specimens including nets, traps and baits. 1.2 Collect and mount adult insects representing at least 8 Orders and appropriately record collection information. 1.3 Collect and preserve immature insects and appropriately record collection information.
<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>
Identify 15 Orders and 20 Families of adult and immature insects using taxonomic keys and microscopic technique.	2.1 Demonstrate use of taxonomic keys. 2.2 Demonstrate use of the binocular microscope. 2.3 Sort selected specimens (Hymenoptera, Lepidoptera, Coleoptera, Hemiptera, Diptera) into appropriate taxonomic groupings. 2.4 Recognize select insects used as indicators of environmental quality.
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
Describe the biology and ecology of insects.	3.1 Identify and describe the function of external structures of insects. 3.2 Describe the significant anatomical features which distinguish insects from other arthropods. 3.3 Describe the significant anatomical features which distinguish insect Orders. 3.4 Distinguish between various types of insect metamorphosis. 3.5 Demonstrate correct use of entomological terminology presented in the course. 3.6 For selected species, research and describe their life cycle and optimal habitat requirements. 3.7 Describe positive contributions that insects make to the health and sustainability of natural environments.

	3.8 Prepare properly labelled scientific drawings from microscopic examinations of specimens.								
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>								
Describe procedures used in the monitoring and control of pest species.	4.1 Describe the objectives of environmental monitoring in general. 4.2 Describe monitoring procedures for select insect species.								
<b>Evaluation Process and Grading System:</b>	<table border="1"> <thead> <tr> <th>Evaluation Type</th> <th>Evaluation Weight</th> </tr> </thead> <tbody> <tr> <td>Assignments</td> <td>35%</td> </tr> <tr> <td>Tests</td> <td>30%</td> </tr> <tr> <td>Weekly Identification Log</td> <td>35%</td> </tr> </tbody> </table>	Evaluation Type	Evaluation Weight	Assignments	35%	Tests	30%	Weekly Identification Log	35%
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<b>Date:</b>	June 19, 2019								
<b>Addendum:</b>	Please refer to the course outline addendum on the Learning Management System for further information.								