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COURSE NAME

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CODE NO.**I. COURSE DESCRIPTION:**

This course examines general concepts of pest management with emphasis on strategies that minimize pesticide usage and maximize application of biological and ecological information about a given pest. Specific pest species to be considered include a variety of plant and animal species which impact on either trees, aquatic ecosystems, or economically important fish and wildlife.

Lab activities provide experience in the identification of both harmful and beneficial insects, techniques for monitoring and evaluating pest population densities, techniques for rearing insects and proper handling and use of pesticides.

**II. LEARNING OUTCOMES AND ELEMENTS OF PERFORMANCE:****A. Learning Outcomes**

1. Demonstrate an understanding of integrated pest management (IPM) and its objectives.
2. Demonstrate an understanding of strategies and techniques used in the management of various pest groups.
3. Demonstrate proficiency in the identification of both beneficial and harmful insects and techniques for relating life stages.
4. Demonstrate field techniques for the collection and evaluation of population density data and present such data in a technical report.

**B. Learning Outcomes with Elements of Performance:**

Upon successful completion of this course the student will demonstrate the ability to :

1. Demonstrate an understanding of integrated pest management (IPM) and its objectives.

**Elements of the performance:**

provide an overview of pest control history which led to current IPM approaches

describe the difference between pest control, pest management and IPM

define various categories of pests

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COURSE NAME

---

CODE NO.

list various resources affected by pests

list and describe the four basic types of damage imparted by pests

list economic, ecological and sociological implications of pest management

relate ecological principles of energy transfer and niche potential to IPM theory

***This learning outcome will constitute 15% of the course's grade.***

2. Demonstrate an understanding of strategies and techniques used in the management of various pest groups.

**Elements of the performance:**

explain the difference between biological, cultural and chemical control tactics

provide examples of chemicals used in vegetation, insect and vertebrate management and explain their mode of action

provide examples of biological control agents

provide examples of cultural control methods

describe biotic and abiotic factors which contribute to pest population cycles

relate pest life histories to timing of management techniques

explain the difference between economic thresholds, damage thresholds and equilibrium thresholds

research and present case studies

***This learning outcome will constitute 40% of the course's grade***

3. Demonstrate proficiency in the identification of both beneficial and harmful insects and techniques for relating life stages.

**Elements of the performance**

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COURSE NAME

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CODE NO.

using various taxonomic references demonstrate the ability to accurately identify both beneficial and harmful insects in the adult stage to at least the family level

demonstrate accurate measurement of larval structures to determine instars

demonstrate rearing techniques for associating life stages from egg to adult

collect 25 insects at any life stage or by representative damage or affect and identify to the family level

*This learning outcome will constitute 25% of the course's grade*

4. Demonstrate field techniques for the collection and evaluation of population density data and present such data in a technical report.

#### **Elements of the performance**

list and describe the appropriate use of various monitoring equipment

plan and conduct a field survey to evaluate population density of a Pitch Nodule Moth infestation on jack pine

plan and conduct a field survey to evaluate damage caused by a Pitch Nodule Moth infestation

prepare a technical report to summarize and present field data and provide recommended control and monitoring strategies

*This learning outcome will constitute 20% of the course's grade.*

### **III. TOPICS TO BE COVERED**

- History of pest management and pest characteristics.
- Ecological considerations in pest management.
- Population monitoring and assessment.
- Biological control techniques.
- Cultural control techniques.
- Chemical control techniques.

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COURSE NAME

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CODE NO.**IV. REQUIRED STUDENT RESOURCES (OPTIONAL)**

None

**V. EVALUATION PROCESS/GRADING SYSTEM:**

1. Test 1	15%
2. Test 2	20%
3. Research Assignment	20%
4. Field survey & report	20%
5. Insect collection	10%
6. Lab activities	20%
	<hr/> 100%

**Course Grading Scheme**

A+	90% - 100%	outstanding achievement
A	80% - 89%	above average achievement
B	70% - 79%	average achievement
C	60% - 69%	satisfactory achievement
R	repeat	
X		a temporary grade that is limited to instances where special circumstances have prevented the student from completing objectives by the end of the semester. An "X" grade must have the Dean's approval and has a maximum time limit of 120 days

## Special Needs

support services can be arranged for you.

## Plagiarism

Students should refer to the definition of academic dishonesty in the Statement of Students Rights and Responsibilities.

Students who engage in academic dishonesty will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course, as may be decided by the professor.

In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

## Advanced Standing

Students who have completed an equivalent post-secondary course should bring relevant documents to the Coordinator, Natural Resources Programs.

## Retention of Course Outlines

It is the responsibility of the student to retain all course outlines for possible future use in gaining advanced standing at other post-secondary institutions.

Substitute course information is available at the Registrar's Office.

## **VII. PRIOR LEARNING ASSESSMENT:**

Please contact the Prior Learning Assessment Office (E2203) for further information.