SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ONTARIO

Sault College

COURSE OUTLINE

COURSE TITLE:	**Forest Entomology**		
CODE NO. :	**NRT207**	**SEMESTER:**	**III**
PROGRAM:	**Forestry Technician**		
AUTHOR:	**Jerry A. Zuchlinski. M.Sc.**		
DATE:	**June 2000**	**PREVIOUS OUTLINE DATED:**	**August 1999**

APPROVED: _____ _____

DEAN **DATE**

TOTAL CREDITS:	**3**		
PREREQUISITE(S):	**None**		
LENGTH OF COURSE:	**3 hours/week x 16 weeks**	**TOTAL CREDIT HOURS:**	**48**

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For additional information, please contact Joe Fruchter
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I. COURSE DESCRIPTION:

This course provides the student with an introduction to the biology of insects, their ecology in relation to forest environments, their impact on the timber harvesting industry and methods for minimizing their damage. Emphasis is placed on insect species associated with commercial tree species in eastern Canada.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

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

1. Collect, preserve, process, and present insect specimens in accordance with scientific standards.

   Potential Elements of the Performance:
   - Demonstrate various tools and methods of collecting insect specimens including nets, traps and baits.
   - Collect and mount 75 species of adult insects and appropriately record collection information.
   - Collect and preserve 10 species of immature insects and appropriately record collection information

2. Identify adult insects to the Family level and immature insects to the Order level using taxonomic keys and microscopic technique

   Potential Elements of the Performance:
   - Present a collection of 75 species of adult insects and 10 immature insects in relation to taxonomic groups.

3. Recognize by genus and/or species selected harmful and beneficial insects associated with commercial tree species

   Potential Elements of the Performance:
   - Identify 15 selected Hymenoptera
   - Identify 15 selected Lepidoptera
   - Identify 10 selected Coleoptera
   - Identify 10 selected Hemiptera/Homoptera
   - Identify 5 selected Diptera

4. Describe the biology and ecology of insects in general and selected harmful and beneficial species.

Potential Elements of the Performance:

- Identify and describe the function of external structures of insects
- Describe the significant anatomical features which distinguish insects from other arthropods
- Describe the significant anatomical features which distinguish insect Orders
- Discuss insect metamorphosis
- Demonstrate correct use of entomological terminology presented in the course
- For selected species; research and describe their life cycle, the type of damage caused and general importance to the harvesting industry
- Categorize and recognize different types of damage caused by insects
- Describe positive contributions that insects make to the health and sustainability of forest environments
- Prepare properly labeled scientific drawings from microscopic examinations of specimens

5. Describe procedures used in the monitoring and control of pest species

   Potential Elements of the Performance:

   - Describe the objectives of the Forest Disease and Insect Survey and pest monitoring in general
   - Describe monitoring procedures for select forest pest species
   - Describe various methodologies for pest management including; cultural, chemical and biological treatments
   - Describe integrated control strategies for select forest pest species

III. TOPICS:

1. Classification of the Phylum Arthropoda
2. Insect life cycles
3. Internal and external anatomy off insects
4. Economic and ecological significance of forest insects
5. The Order Hymenoptera
6. The Order Lepidopterra
7. The Order Coleoptera
8. The Orders Hemiptera and Homoptera
9. The Order Diptera
10. Integrated pest management

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

Borror, D.J. ,C.A. Triplehorn and N.F. Johnson. 1989. An introduction to the study of insects. 6th Ed. Harcourt Brace College Publishers. 875 pp.

V. EVALUATION PROCESS/GRADING SYSTEM:

1.Insect collection	25%
2. Lab assignments	25%
3. 1 Lab test	20%
4. 2 Theory tests	30%
TOTAL	100%

The value of lab assignments and reports will be reduced at a rate of 10% per day for late submissions for a period of 5 days after the due date. After 5 days the lab assignment/report value be zero. All labs, assignments and reports must be submitted regardless of lateness to pass the course.

No rewrites will be made available at semester end.

The following semester grades will be assigned to students in post-secondary courses:

Grade	Definition	Grade Point Equivalent
A+	90 - 100%	4.00
A	80 - 89%	3.75
B	70 - 79%	3.00
C	60 - 69%	2.00
R (Repeat)	59% or below	0.00
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field placement or non-graded subject areas.	
X	A temporary grade. This is used in limited situations with extenuating circumstances giving a student additional time to complete the requirements for a course (see *Policies & Procedures Manual - Deferred Grades and Make-up*).	
NR	Grade not reported to Registrar's office. This is used to facilitate transcript preparation when, for extenuating	

circumstances, it has been impossible for the faculty member to report grades.

VI. SPECIAL NOTES:

Special Needs:
If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your instructor and/or the Special Needs office. Visit Room E1204 or call Extension 493, 717, or 491 so that support services can be arranged for you.

Retention of course outlines:
It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

The Professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following:

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean’s secretary. Students will be required to provide a transcript and course outline related to the course in question.