

## COURSE SYLLABUS AND OUTLINE

This is a basic course in forensic entomology. The field may be broadly defined as the interactions between insects as evidence and the legal system. This definition includes the areas of stored product, structural, and medicocriminal or medicolegal entomology. The primary focus of this course will be in the area of medicocriminal forensic entomology. The other two areas will be covered more briefly. Since forensic entomology in all three sub disciplines entails more than just the analyses of entomological evidence, several non-entomological topics will be covered. Forensic entomology operates within our legal system and is concerned with assisting in the administration of justice. To this end, the highest moral and ethical standards must be an integral part of the investigations undertaken. Areas to be covered in lectures will include: crime scene processing, detection and recovery of remains, evidence collection and processing, processing and identifications of insects, techniques for estimation of the postmortem interval, entomotoxicology, patterns of decomposition, life cycles of forensically important taxa, preparation of case reports, and techniques in providing expert witness testimony. Additionally, a case study will be provided to each student during the semester. This case will include all pertinent data and specimens. The student will provide an analysis of this case in the form of a written case report in proper form for submission to an investigating agency.

The laboratory portion of this course will serve to compliment the lectures materials and provide hands-on experience with different aspects of forensic entomology. Practical experience will be provided through processing of mock crime scenes, recovery of scattered remains, and grave excavation. A decomposition study will be conducted during the course and this will provide the basis for laboratory exercises in collection and preservation of arthropod materials, evidence collection and documentation, identification of immature arthropod specimens, and calculations of postmortem intervals. A final report of the results and analyses of this decomposition study will be required from each student.

**Objectives:** At the end of this course the student will:

1. be able to identify the different arthropod taxa of significance in the decomposition process.
2. understand the life cycles of the various species involved in decomposition.
3. able to properly collect, preserve and document arthropod specimens.
4. able to calculate the postmortem interval using ADH and ADD calculations.

5. understand the patterns of decomposition of a human body under different conditions.
6. understand the differences in development of arthropods related to presence of drugs and/or toxins in tissues.
7. Understand the role of the forensic entomologist in the moral and legal systems of our society.
8. be able to prepare case reports.

**GRADING:**

The point spread for the lecture is as follows:

Lecture Exam 1	100 pts
Lecture Exam 2	100 pts
Case Study	100 pts
Final Exam	<u>150 pts</u>
<b>Total</b>	<b>450 pts</b>

The point spread for the laboratory is as follows:

Laboratory Exam 1	100 pts
Laboratory Exam 2	100 pts
Decomposition Report	<u>100 pts</u>
<b>Total</b>	<b>300 pts</b>

**GRADING SCALE:**

The grading scale for both lecture and laboratory is as follows:

90% +	=	A
80-89%	=	B
70-79%	=	C
60-69%	=	D
59 % and lower	=	F

**Text:** Entomology and Death - A Procedural Guide. Catts, E.P. & Haskell, N.H., eds. 1990. Joyce's Print Shop, Clemson, SC. - Required

A Fly for the Prosecution. Goff, M.L. 2000. Harvard Univ. Press. Optional

Forensic Taphonomy: The Postmortem Fate of Human Remains. Haglund, W.D. & Sorg, M.H., eds. 1997. CRC Press, New York - Suggested

**Forensic Entomology  
Lecture Schedule - Fall 2001**

<u>Date</u>	<u>Topic</u>
Aug. 28	Introduction and scope of course
30	Insect morphology and classification
Sept. 04	Insect life cycles
06	Decomposition - postmortem changes
11	Decomposition - roles of insects
13	Collection techniques
18	Decomposition - stages
20	Estimation of PMI - early stages
25	Estimation of PMI - late stages (cont)
27	Estimation of PMI - climatic factors
Oct. 02	Movement following death
04	Forensic Anthropology - Guest Lecture
09	Wound assessment
11	Crime scene/habitat assessment
16	Laboratory Exam #1
18	Lecture Exam #1
23	Autopsy of the decomposed body - Guest Lecture
25	Entomotoxicology
30	Entomotoxicology (cont) - Case studies distributed
Nov. 01	DNA applications
06	Myiasis in abuse and neglect
08	Preparation of reports
13	Preparation of reports (cont.)
15	Defining the crime scene
20	Evidence recovery & processing
22	Thanksgiving Holiday
27	Outdoor crime scene
29	Detection of buried remains
Dec. 04	Expert testimony
06	Lab Exam #2 Case Study - Written Report

Final Examination Per University Schedule

## Forensic Entomology Laboratory Schedule - Fall 2001

<u>Date</u>	<u>Topic</u>
Aug. 28	Introduction and scope of course
30	Insect morphology and classification
Sept. 04	Insect morphology and classification
06	Insect life cycles
11	Insect life cycles
13	Collection techniques, begin decomposition study *
18	Insect orders of forensic significance - Apterygota, Expoterygota
20	Insect orders of forensic significance - Expoterygota
25	Insect orders of forensic significance - Exopterygota
27	Insect orders of forensic significance - Diptera
Oct. 02	Insect orders of forensic significance - Diptera
04	Insect orders of forensic significance - Diptera
09	Insect orders of forensic significance - Diptera
11	Open Lab - review
16	<b>Laboratory Exam #1</b>
18	Insect orders of forensic significance - Coleoptera
23	Insect orders of forensic significance - Coleoptera
25	Insect orders of forensic significance - Coleoptera
30	Insect orders of forensic significance - Coleoptera
Nov. 01	Insect orders of forensic significance - Hymenoptera
06	Insect orders of forensic significance - Hymenoptera
08	Insect orders of forensic significance - Misc. orders
13	Decomposition study analysis
15	Decomposition study analysis
20	Open Lab -
22	Thanksgiving Holiday
27	Indoor crime scene practicum
29	Outdoor crime scene/grave detection
Dec. 04	Open lab. - review & <b>Decomposition study report due</b>
06	<b>Lab Exam #2</b>

\* The decomposition study will be a continuing activity throughout the semester.

Final Examination Per University Schedule