

# FS 335 - Forensic Entomology

Spring Day 2002  
Lecture 3 credits; Lab. 1 credit

TR: 9:00 - Noon  
Dr. M. Lee Goff

## 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. be able to properly collect, preserve and document arthropod specimens.

4. be 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
<u>Case Study</u>	<u>100 pts</u>
<b>Total</b>	<b>300 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

**FS 335 -Forensic Entomology  
Lecture Schedule - Spring 2002**

<u>Date</u>	<u>Topic</u>
Jan. 15	Introduction and scope of course - E & D *, Chapter 1
17	Insect morphology and classification - E & D Chapter 3, Handouts
22	Insect life cycles
24	Decomposition - postmortem changes - Handouts
29	Decomposition - roles of insects
31	Collection techniques - E & D, Chapters 5, 6 & 7
Feb. 05	Decomposition - stages - Handouts
07	Estimation of PMI - early stages E & D, Chapters 7 & 8; Handouts
12 **	Open lab.
14 **	Open lab.
19	Estimation of PMI - late stages (cont)
21	Estimation of PMI - climatic factors
26	Movement following death - Handouts
28	Forensic Anthropology - Guest Lecture
Mar. 05	Wound assessment
07	Crime scene/habitat assessment E & D, Chapter 6
12	Laboratory Exam #1
14	Lecture Exam #1
19	Autopsy of the decomposed body - Guest Lecture
21	Entomotoxicology - Handouts
26	Prince Kuhio Day - Holiday
28	Entomotoxicology (cont) - Case studies distributed
Apr. 02	DNA applications - Handouts
04	Myiasis in abuse and neglect
10	Preparation of reports E & D, Chapter 9
12	Preparation of reports (cont.)
16	Defining the crime scene - Handouts
18	Evidence recovery & processing - Handouts
23	Outdoor crime scene
25	Detection of buried remains
30	Expert testimony - E & D, Chapters 10 & 11
May 02	Lab Exam #2 Case Study - Written Report

Final Examination Per University Schedule: Monday, 6 May: 8:00 - 10:00 AM

\* E & D = Entomology and Death - A Procedural Guide

\*\* Dr. Goff will be attending the annual meetings of the American Academy of Forensic Sciences