



# Course Approval Form

For approval of new courses and deletions or modifications to an existing course.

registrar.gmu.edu/facultystaff/curriculum

### Action Requested:

Create new course       Delete existing course

Modify existing course (check all that apply)

Title       Credits       Repeat Status       Grade Type

Prereq/coreq       Schedule Type       Restrictions

Other: \_\_\_\_\_

### Course Level:

Undergraduate

Graduate

**College/School:**       **Department:**

**Submitted by:**       **Ext:**       **Email:**

**Subject Code:**       **Number:**       **Effective Term:**  Fall       Spring       Summer

(Do not list multiple codes or numbers. Each course proposal must have a separate form.)      Year

**Title:** Current

Banner (30 characters max including spaces)

New

**Credits:** (check one)  Fixed  Variable

     **Repeat Status:** (check one)  Not Repeatable (NR)  Repeatable within degree (RD)  Repeatable within term (RT)

Maximum credits allowed:

**Grade Mode:** (check one)  Regular (A, B, C, etc.)  Satisfactory/No Credit  Special (A, B, C, etc. +IP)

**Schedule Type Code(s):** (check all that apply)  Lecture (LEC)  Lab (LAB)  Recitation (RCT)  Internship (INT)

Independent Study (IND)  Seminar (SEM)  Studio (STU)

**Prerequisite(s):**

**Corequisite(s):**

**Instructional Mode:**

100% face-to-face

Hybrid: ≤ 50% electronically delivered

100% electronically delivered

**Special Instructions:** (list restrictions for major, college, or degree; hard-coding; etc.)

**Are there equivalent course(s)?**

Yes       No

If yes, please list

### Catalog Copy for NEW Courses Only (Consult University Catalog for models)

Description (No more than 60 words, use verb phrases and present tense)	Notes (List additional information for the course)
BIOL 333 explores the use of insects and other arthropods in field of forensic science as it pertains to the investigations of human and animal deaths and abuse, food and other product contamination, thefts, the illegal drug trade and unethical entomological practices. The use and presentation of this information from such investigations in court room proceedings will be discussed.	

**Indicate number of contact hours:** Hours of Lecture or Seminar per week:       Hours of Lab or Studio:

**When Offered:** (check all that apply)  Fall       Summer       Spring

## Approval Signatures

Department Approval \_\_\_\_\_ Date \_\_\_\_\_      College/School Approval \_\_\_\_\_ Date \_\_\_\_\_

If this course includes subject matter currently dealt with by any other units, the originating department must circulate this proposal for review by those units and obtain the necessary signatures prior to submission. Failure to do so will delay action on this proposal.

Unit Name	Unit Approval Name	Unit Approver's Signature	Date

## FORENSIC ENTOMOLOGY BIOL 333

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**Instructor:** Dr. J. Thomas McClintock

**Office Phone:** (703) 993-1050

**EMAIL:** [jmcclin1@gmu.edu](mailto:jmcclin1@gmu.edu)

### GENERAL COURSE OUTLINE

**BIOL 333** is a 3-semester hour biological science course designed to explore the use of insects and other arthropods in the field of forensic science as it pertains to the investigations of human and animal deaths and abuse, food and other product contamination, thefts, the illegal drug trade and unethical entomological practices. The use of this information from such investigations in court room proceedings will be discussed.

### COURSE GOALS and OBJECTIVES

The objective of this course is for each student to have a better understanding for the role of insects in crime scene investigations. Upon completion of this course, each student is expected to understand

- How insects are used during a legal/criminal investigation
- Why and how insects become valuable evidence
- Recognizing insects of forensic importance

### COURSE POLICIES

**Attendance:** A student enrolled in this course should attend each session in order to receive full credit. If a class is missed, you will be responsible for the material covered during your absence. Make-up exams will only be offered to students with legitimate excuses who notify the instructor prior to, or on the day of, the exam. Students should contact the Biology Department Office (703 993-1050) and ask that Dr. McClintock be notified of the circumstances causing your absence or call the instructor at the phone number listed above.

**Exams:** There will be two (2) Exams and one (1) comprehensive Final Exam. The date of the Final Exam will be announced.

**Grading System:** Your final grade in BIOL 333 will be based on the number of points you receive out of a possible 100 points. Final grades will be determined as follows: 93-100, A; 90-92, A-; 87-89, B+; 83-86, B; 80-82, B-; 77-79, C+; 70-76, C; 60-69, D; and <60, F.

**Prerequisites:** No prerequisites are required for this course.

**Course Proposal Submitted to the Graduate Council  
by  
The College of Science**

**1. COURSE NUMBER AND TITLE:** BIOL 333: Forensic Entomology

**Course Prerequisites:** BIOL 213 or permission of instructor

**Catalog Description:** BIOL 333 explores the use of insects and other arthropods in field of forensic science as it pertains to the investigations of human and animal deaths and abuse, food and other product contamination, thefts, the illegal drug trade and unethical entomological practices. The use and presentation of this information from such investigations in court room proceedings will be discussed.

**2. COURSE JUSTIFICATION:** BIOL 333 is the only biology undergraduate level course offered to students that presents the applications of insects and other arthropods in legal investigations. This course in forensic entomology will provide students in the forensic sciences an additional “tool” to use in a criminal investigation involving insects.

**Course Objectives:** The objective of this course is for each student to have a better understanding of the role of insects in crime scene investigations. The emphasis is on how insects and related arthropods are used to determine postmortem intervals and estimate time of death in murder investigations. Actual cases will be used to explain major points. Upon completion of this course, each student is expected to understand:

- How insects are used during a legal/criminal investigation
- Why and how insects become valuable evidence
- Recognizing insects of forensic importance

**Course Necessity:** More elective courses are needed in biology for students who are not necessarily interested in a career in a medically related field.

**Course Relationship to Existing Programs:** This will be an elective within the BA and BS in Biology.

**Course Relationship to Existing Courses:** BIOL 332: Insect Biology is currently taught in the Biology Undergraduate Program (see course description below) providing a general overview of insects and their biology.

**332 Insect Biology (4:3:3)** *Prerequisite: BIOL 303, or permission of instructor.* Survey of insects including taxonomy, morphology, physiology, behavior, ecology, and economic importance.

BIOL 332 **DOES NOT** focus on the many different aspects of forensic entomology. There is a lecture devoted to forensic entomology but does not expand on the various applications of insects in legal investigations. BIOL 332 only focuses on the biology of insects and their economic importance. Consequently, this course would provide the student with an interest in the forensic sciences a complete perspective of the use of insects in legal investigations.

**3. APPROVAL HISTORY:** This course has been taught previously at the 500 level. This number will be phased out.

**4. SCHEDULING AND PROPOSED INSTRUCTORS:** To be offered on Tues or Thursday evenings from 4:20 to 7:10 PM or from 7:20 to 10:00 PM each Fall semester.

**Semester of Initial Offering:** Fall, 2013

**Proposed Instructors:** Dr. J. Thomas (Tom) McClintock

**5. TENTATIVE SYLLABUS:** See attached.

**FORENSIC ENTOMOLOGY**  
**BIOL 333 (3 Credits)**

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**Instructor:** Dr. J. Thomas McClintock Fall Semester, 2013  
**Office Phone:** (703) 993-1050 **EMAIL:** Jmcclin1@gmu.edu  
**Text:** J. H. Byrd and J. L. Castner, 2001, Forensic Entomology, CRC Press

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<b>DATE</b>	<b>TOPIC</b>	<b>CHAPTER</b>
Week 1	Introduction: Objective and Goals Introduction to Forensic Entomology	1
Week 2	An Overview of Entomology Entomology and the Law: Scope and Status of Forensic Entomology	2
Week 3	Stored Product Entomology Urban Entomology	3
Week 4	EXAM	
Week 5	Insects and Arthropods: Distribution, Diversity and Ecology Insects and Arthropods: Life Histories and Development	4
Week 6	Applications of Insects to Medical/Legal Entomology Insects of Forensic Importance: The Flies (Order: Diptera)	5
Week 7	Insects of Forensic Importance: The Beetles (Order: Coleoptera) Human Decomposition and Insect Succession	6
Week 8	Factors that Influence Decomposition and Succession Measuring and Estimating Insect Development Factors that Influence Insect Development and PMI Estimates	7
Week 9	EXAM	
Week 10	Postmortem Intervals Making Observations and Reporting at the Crime Scene	8
Week 11	Properly Collecting and Acquiring Temperature Data Collecting, Preserving and Rearing Insect Specimens	9
Week 12	Application of DNA-based Methods in Forensic Entomology	10
Week 13	Interpreting and Writing Entomological Reports	11
Week 14	Court Cases and Testimony of the Forensic Entomologist (the Expert)	
Week 15	Additional Case Studies and Expert Testimony	

