**ENTO 4000/6000, General Entomology**

**Fall 2021 Griffin and Tifton Campus**

**Syllabus**

**Time:**

Lecture: Tuesday, Thursday 12:45- 2:00 PM

Laboratory (Griffin): Thursday 2:20- 4:20 PM

**Locations:**

Tifton Lecture and Laboratory: 201 NESPAL

Griffin Lecture: SLC Room 215

Griffin Laboratory: 301 Flynt building

**Instructors:**

**Tifton Lecture: Jason Schmidt**, Associate Professor, 315 Agricultural Research Building

4603 Research Way, Tifton Campus: (229) 386-7251, jschmid2@uga.edu

**Tifton Lab: Pedro Toledo** ([toledo@uga.edu](mailto:toledo@uga.edu)); **Eddie Slusher** ([eks29261@uga.edu](mailto:eks29261@uga.edu)), **Amos Kaldor** ([adk14957@uga.edu](mailto:adk14957@uga.edu));Teaching Assistants

**Griffin Lecture: Shimat V. Joseph**, Assistant Professor, Turfgrass Research and Extension Facility, 1109 Experiment Street, Griffin, GA 30223, (470) 629-6287, [svjoseph@uga.edu](mailto:svjoseph@uga.edu)

**Griffin Lab: Lisa M. Ames,** lames@uga.edu

Teaching Assistant, **Robert Wolverton**, Robert.Wolverton@uga.edu

**Office Hours:** By appointment. Please do not hesitate to see us to arrange a time.

**Text Book:** Daly and Doyen’s Introduction to Insect Biology and Diversity. **Third Edition**. 2012. J. B. Whitfield and A.H. Purcell III

**Supplemental Reading Material:**

Triplehorn, C.A. and N.F. Johnson. 2005. Borror and DeLong’s Introduction to the Study of Insects. 7th ed. Thomson Brooks/Cole, Belmont CA, 864 pp.

**Course Objectives:** The goal of this course is to make you familiar with the fundamentals of insect biology and relationships among insects, plants and other organisms. It will also introduce you to the different specialization within the field of entomology including agriculture, medical and veterinary, apiculture, etc. We hope to give you an appreciation for the diversity of form and function in the insect world by presenting both beneficial and detrimental effects of insects. Hopefully, you will leave this course with a better understanding of how insects affect all other forms of life on the planet.

**Laboratory Objectives:** In the laboratory, you will learn how to identify commonly encountered insects. We will introduce basic elements of insect morphology and taxonomy. Learning to distinguish unique features of insects will also allow an increased appreciation for insect diversity and a sense of where insects fit in to the animal kingdom.

**Attendance:**

Students are expected to attend class on a regular basis in person or via zoom. If absent from class, it is the responsibility of the student to make up any work that is missed.

**Grades will be based on the following items:**

1. Lecture Exams (3)
2. Laboratory Quizzes (5)
3. Laboratory Exams (2)
4. Insect Collection (1)

**Lecture Exams**

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There will be three lecture exams including the final exam, each worth 100 points for ENTO 4000. Exams will be given in class and will test your knowledge of the material presented during the lecture portion of the class. The first two lecture exams will be given during the semester while the third will serve as the final exam for the course. Students registered for ENTO 6000 will have additional 25 points of questions for each exam. These questions usually will involve an essay-type answer.

**Laboratory Quizzes**

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You will be given five - 10 point quizzes that will be worth a total of 50 points. Quizzes will be administered at the beginning of five labs and will cover insect taxonomy.

**Laboratory Exams**

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There will be two laboratory exams worth 50 points. These exams will test your knowledge of the material presented in the laboratory during the course of the semester.

### Insect Collection

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You will be required to make an insect collection that will be turned in for grading at the end of the semester. This collection will be worth a total of 100 points. Details on collection requirements and grading will be presented in laboratory.

**Grading Policies**

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First, a review of point values for each required item in the course:

**Maximum Point Value**

**ITEM Ent 4000 Ent 6000**

Lecture Exam 1 100 125

Lecture Exam 2 100 125

Lecture Final (Exam 3) 100 125

Laboratory Quizzes 50 50

Laboratory Exam 1 50 50

Laboratory Exam 2 50 50

Insect Collection 100 100

**TOTAL 550 625**

Term Paper (Extra Credit, Optional) 30 30

**Hypothetical Student's Scores**

**ITEM**

Lecture Exam 1 80

Lecture Exam 2 85

Final Exam 3 85

Laboratory Quizzes 42

Laboratory Exam 1 45

Laboratory Exam 2 48

Insect Collection 90

**TOTAL 475**

**Calculating a Grade**

1. Add total points accumulated and divide by 550 (the maximum possible number of points for ENTO 4000) and convert to a percentage.

2. Calculate grade, based on percentage distribution presented below

**In the example above, the Ent 400 student had 475/550 points, which is rounded to 86%. This is a "B". Plus and minus grades also will be applied according to UGA guidelines.**

**Table for Finals Grades**

**Course Percentages (Approximate)**

|  |  |
| --- | --- |
| A | 90-100% |
| B | 80-89% |
| C | 70-79% |
| D | 60-69% |
| F | <60% |

**University Honor Code and Academic Honesty Policy**

Students are reminded that they are bound by the University’s Academic Honesty Policy. This policy is posted on the Web at: <http://www.uga.edu/honesty/>

Students are responsible to become informed about the standards provided in the “Culture of Honesty”, a document outlining the academic honesty policy of the University of Georgia.

**Food and Drink in the Classroom**

University policy prohibits smoking, food and drink in all labs and classrooms.

**Cell Phones:**

Please leave cell phones off or on silent during class, and do not text-message during class.

**Zoom Meeting Details:**

Join Zoom Meeting (Griffin)  
<https://zoom.us/j/95888830083>

Meeting ID: 958 8883 0083   
One tap mobile   
+13017158592,,95888830083# US (Washington DC)   
+13126266799,,95888830083# US (Chicago)

Dial by your location   
        +1 301 715 8592 US (Washington DC)   
        +1 312 626 6799 US (Chicago)   
        +1 646 876 9923 US (New York)   
        +1 253 215 8782 US (Tacoma)   
        +1 346 248 7799 US (Houston)   
        +1 669 900 6833 US (San Jose)   
Meeting ID: 958 8883 0083   
Find your local number: <https://zoom.us/u/acHeLcEZQa>

Join by SIP   
[95888830083@zoomcrc.com](mailto:95888830083@zoomcrc.com)

Join by H.323   
162.255.37.11 (US West)   
162.255.36.11 (US East)   
Meeting ID: 958 8883 0083

**Class Schedule**

**Lecture Schedule: Tuesday, Thursday 12:45- 2:00 PM**

**Griffin: SLC Room 215**

**Tifton: 201 NESPAL**

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| --- | --- | --- | --- | --- |
| **Date** | **Day** | **Lecture** | **Topic** | **Pages in Text** |
| 19-Aug | Thu | 1 | Introduction | 3-10, 13-17 |
| 24-Aug | Tue | 2 | Systematics of Organizing a million species: Arthropoda classification | 10-13, 311-341 |
| 26-Aug | Thu | 3 | Insect External Anatomy: Head | 18-35 |
| 31-Aug | Tue | 4 | Insect Collection Activity |  |
| 2-Sep | Thu | 5 | External Anatomy: Thorax & Abdomen | 35-62 |
| 7-Sep | Tue | 6 | Internal Anatomy and Insect Locomotion | 92-130 |
| 9-Sep | Thu | 7 | Life Cycles, Development and Metamorphosis | 63-77 |
| 14-Sep | Tue | 8 | Insect Reproductive Biology | 78-91 |
| 16-Sep | Thu | 9 | Insect Nervous System and Sensory Reception | 131-161 |
| 21-Sep | Tue | 10 | Social Insects | 162-179 |
| 23-Sep | Thu | 11 | **FIRST LECTURE EXAMINATION** |  |
| 28-Sep | Tue | 12 | Protura through Blattodea | 351-421 |
| 30-Sep | Thu | 13 | Psocoptera through Hemiptera | 425-476 |
| 5-Oct | Tue | 14 | Coleoptera | 493-529 |
| 7-Oct | Thu | 15 | Neuroptera, Mecoptera, Diptera, Siphonaptera | 481-492 &  561-599 |
| 12-Oct | Tue | 16 | Lepidoptera, Trichoptera | 600-640 |
| 14-Oct | Thu | 17 | Hymenoptera | 530-560 |
| 19-Oct | Tue | 18 | Review Session for Exam 2 |  |
| 21-Oct | Thu | 19 | **SECOND LECTURE EXAMINATION** |  |
| 26-Oct | Tue | 21 | Insect Ecology: Population Biology | 183-211 |
| 28-Oct | Thu | 22 | Insects and Plants | 212-231 |
| 2-Nov  (ESA) | Tue | 23 | Insects and Vertebrates  (Medical and Veterinary) | 232-244 |
| 4-Nov | Thu | 24 | Forensic Entomology | 260-272 |
| 9-Nov | Tue | 25 | Insect Pests - Problems (IPM principles for Crops and Urban) | 273-296 |
| 11-Nov | Thu | 26 | Insect Pests - Solutions (Host Plant Resistance) | 273-297 |
| 16-Nov | Tue | 27 | Agricultural Crops and Pest Management | 273-297 |
| 18-Nov | Thu | 28  Lecturer:  Jim Quick | Apiculture | 175-179 |
| 23-Nov | Tue | 29  Lecturer: Dr. Elizabeth McCarty | Forest Insects: Cultural, Chemical and ‘No’ Management |  |
| Nov 24-26 | Wed - Fri | No classes | **THANKSGIVING BREAK** |  |
| 30 Nov | Tue | 30  Lecturer: Dr. David Shapiro-Ilan | \*Biocontrol using Entomopathogens |  |
| 2-Dec | Thu | 31 | \*Entomophagous and Beneficial Insects  (Biocontrol) | 245-259 |
| 7-Dec | Tue | 32 | Review Session for Finals  LAST DAY OF CLASSES |  |
| 9-Dec | Thu | 33 | Reading Day, Term Paper Due |  |
| Dec 14 | Thu | 34 | **Final Exam (Time: 12nn – 3pm)** |  |

**Laboratory Schedule: Thursday 2:20 - 4:20 PM**

**General Entomology, Fall 2021**

**Griffin: 301 FLYNT Building**

Lab Instructor/Teaching Assistant: Lisa Ames /Robert Wolverton

**Tifton: NESPAL 201**

Teaching Assistant: Pedro Toledo/ Kyle Slusher/Amos Kaldor

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| --- | --- | --- |
| **Date** | **Laboratory Number** | **Topic** |
| Aug 19 | 1 | Collecting and mounting techniques; Hand out equipment |
| Aug 26 | 2 | Field collection |
| Sep. 2 | 3 | Insect morphology |
| Sep 9 | 4 | Insect anatomy used in identification |
| Sep 16 | 5 | **QUIZ 1**  Other Arthropod Groups: including Collembola and Diplura. Primitive insects : Thysanura, Ephemeroptera, Odonata, Phasmatodea, Dermaptera, and Plecoptera |
| Sep 23 | 6 | **QUIZ 2**  Orders: Orthoptera, Phthiraptera, Blattodea, Mantodea |
| Sep 30 | 7 | **QUIZ 3**  Order: Hemiptera |
| Oct. 7 | 8 | **Lab Exam I** |
| Oct 14 | 9 | Order: Coleoptera |
| Oct 21 | 10 | Order: Diptera |
| Oct 28 | 11 | **QUIZ 4**  Collection review (mandatory)  Order: Lepidoptera |
| Nov. 4 | 12 | **QUIZ 5**  Orders: Hymenoptera |
| Nov 11 | 13 | **QUIZ 6**  Orders: Neuroptera, Mecoptera, Tricoptera, Thysanoptera, Siphonaptera |
| Nov 18 | 14 | Free lab: No new material; work on collection in lab; study for exam II |
| Dec 2 | 15 | **Lab Exam II**. |
| Dec 9 |  | Insect Collection Due |