Welcome to BIOLOGY 353! This course will introduce you to the remarkable world of insects and their close relatives. We will emphasize groups of economic importance (both harmful and beneficial) and cover many aspects of insect biology including identification, classification, evolution, anatomy, physiology, and ecology.

Catalog description: four semester hours, three hours lecture, three hours lab per week. Study of destructive and beneficial insects. Emphasis on recognition and control. Required lab fee. Prerequisites: BIO 131, 133 or permission of instructor.

Instructor: Dr. Dan Bennett  
Department: Biology  
Email: bennettdj@sfasu.edu  
Phone: 936-468-5163; Office: S-210  
Office hours: M, W 10:00 – 12:30; and by appointment.

Lecture: T, R 12:30 – 1:45 (McKibben Education 439); Lab: T 2:00 – 4:50 (S-211)

Required text: Marshall, S.A. 2006. Insects: Their Natural History and Diversity. 1st edition. (Bring to lab unless stated otherwise)


Student Learning Outcomes:  
1. Understand fundamentals of insect biology including aspects of physiology, anatomy, diversity, evolution, ecology, and systematics.  
2. Develop arthropod identification skills.  
3. Develop familiarity with arthropod survey methods and curatorial techniques.  
4. Develop specific knowledge of the societal impact of economically significant insects.  
5. Develop familiarity with control measures of harmful insects.  
6. Develop familiarity with beneficial insects.

Program Learning Outcomes:  
PLO 1. The student will demonstrate a good knowledge base in biological concepts. (Knowledge). The first PLO is achieved with each SLO listed above.  
PLO 6. The student will demonstrate preparation for future career and educational goals (Career Preparation). The sixth PLO is achieved with each SLO listed above.

GRADING SUMMARY
Exam I: 18%  
Exam II: 20%  
Exam III: 20%  
Exam IV (final): 22%  
Quizzes: 8%  
Lab assignments: 3%  
Insect collection: 9%

GRADING SCALE: ☺ A = 90–100%; B = 80–89%; C = 70–79%; D = 60–69%; < 60% = F ☹

EXAMS: Exams are generally not comprehensive with the following exceptions: identification of insect orders, questions from previous exams may be repeated, and some aspects of the material build on previous concepts. Questions will comprise a mixture of true/false, multiple choice, fill in the blank, and short answer questions. Exams will include both lecture and lab material. It is crucial that you do not miss an exam. In the event of an excused
absence, makeup exams will be given prior to the regularly scheduled exam, immediately after, or during finals week, at the discretion of the instructor. Only students with an excused absence will be allowed to make up an exam.

**QUIZZES:** Quizzes may occur in lab or lecture. They are typically announced ahead of time but pop-quizzes are a possibility. The lowest quiz score will be dropped. There will be no makeup quizzes. A missed quiz will comprise that which is dropped. Let your instructor know if extraordinary circumstances lead to missing multiple quizzes.

**LAB ASSIGNMENTS:** Assignments will occasionally be given in lab. The lowest lab assignment will be dropped. There will be no makeup lab assignments, though you should discuss options for reviewing missed material with your instructor. Let your instructor know if extraordinary circumstances lead to missing multiple assignments.

**INSECT COLLECTION:** A relatively modest insect collection will be prepared as a component of this course. Although significant lab time will be devoted to this project, you should be prepared to devote out-of-class time to this project as well. This entails searching, catching, preparing, and archiving specimens in accordance with biological collection techniques. Details will be provided in a separate handout.

**ATTENDANCE POLICY:** Attendance and tardiness will be monitored, and results will be assessed in the form of a penalty applied to exams for excessive absence and tardiness. Students are permitted two instances of absence and two instances of tardiness during intervals between exams without penalty (counted separately for lab and lecture). Each instance of absence and tardiness beyond the second one will result in a 2% deduction to the next exam score. If unusual circumstances lead you to excessive absence, discuss your situation with your instructor.

**ACCEPTABLE STUDENT BEHAVIOR:** Classroom behavior should not interfere with the instructor’s ability to conduct the class or the ability of other students to learn from the instructional program (see the Student Conduct Code, policy D-34.1). Unacceptable or disruptive behavior will not be tolerated. Students who disrupt the learning environment may be asked to leave class and may be subject to judicial, academic or other penalties. The instructor shall have full discretion over what behavior is appropriate/inappropriate in the classroom.

- Please do not carry on a separate conversation that might be distracting to other students.
- Keep cell phones silenced and stowed away. Texting or any use of phones may result in loss of attendance points and further reduction of one’s grade.
- No food or drink other than water is allowed in lecture or lab.

**ACADEMIC INTEGRITY:** Academic integrity is expected of everyone in this course. Any form of academic dishonesty will lead to the student receiving a failing grade for the entire course. Additionally, a Report of Academic Dishonesty form will be submitted to your Dean’s office.

SFA Policy A-9.1 is summarized as follows: Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism. Definition of Academic Dishonesty: Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one’s own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one’s paper without giving the author due credit. Please read the complete policy at [http://www.sfasu.edu/policies/academic_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

**WITHHELD GRADES (Semester Grades Policy A-54):** Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students
register for the same course in future terms the WH will automatically become an F and will be counted as a repeated course for the purpose of computing the grade point average. The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

STUDENTS WITH DISABILITIES: To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, Room 325, 468-3004/468-1004 (TDD), as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodation. For additional information, go to http://www.sfasu.edu/disabilityservices/. Please note that you must visit with me outside of class time concerning your request before I will be able to provide the accommodations described in the notification from ODS.
**TENTATIVE COURSE CALENDAR: VERSION 1**

* Textbook required for lab unless stated otherwise

(“G&C” = Gullan & Cranston, suggested text; “M” = Marshall, required text)

<table>
<thead>
<tr>
<th>WEEK/DAY</th>
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| 1: Jan 16, 18| **Lecture:** Intro to insects: importance, measures of success (G&C: Ch 1; M: pp. 10-13); external anatomy: macrostructure (G&C: Ch 2; M: pp. 14-16)  
**Lab:** Biological collections; supplies; handling specimens; microscope use (textbook not needed) |
| 2: Jan 23, 25| **Lecture:** External anatomy: macrostructure cont., microstructure (G&C: Ch 2); microstructure cont.; systematics (G&C: Ch 7), Arthropoda overview  
**Lab:** External anatomy; dichotomous keys/order identification |
| 3: Jan 30, Feb 1| **Lecture:** Hexapoda overview cont., Apterygota, Paleoptera; development (G&C: Ch 6); reproduction  
**Lab:** Animal phyla, arthropoda overview, Entognatha, Archaeognatha, Thysanura, Ephemeroptera, Odonata (M: Ch 1, 2) |
| 4: Feb 6, 8   | **Lecture:** Orthopteroidea (M: Ch 3-5) (on exam 2);  
**Exam I, Feb. 8**  
**Lab:** TBA |
| 5: Feb 13, 15 | **Lecture:** Orthopteroidea (M: Ch 3-5); Internal A&P (G&C Ch 3); Hemipteroidea (M: Ch 6)  
**Lab:** Orthopteroidea |
| 6: Feb 20, 22 | **Lecture:** Hemipteroidea (M: Ch 6); Sensory system  
**Lab:** Hemipteroidea (M: Ch 6) |
| 7: Feb 27; Mar 1| **Lecture:** Neuroptera, Coleoptera: Adephaga (M: Ch 9, 10)  
**Lab:** Neuroptera; Coleoptera: Adephaga (Marshall: Ch 9, 10) |
| 8: Mar 6, 8   | **Lecture:** Coleoptera: Polyphaga (M: Ch 10) (on exam 3);  
**Exam II, Mar. 8**  
**Lab:** TBA |
| 9: Mar 20, 22 | **Lecture:** Coleoptera: Polyphaga (M: Ch 10); Diptera et al. (M: Ch 11)  
**Lab:** TBA |
| 10: Mar 27    | **Lecture:** Diptera et al. (M: Ch 11)  
**Lab:** Coleoptera: Polyphaga (M: Ch 10) |
| 11: Apr 3, 5  | **Lecture:** Diptera et al. cont.; Medical entomology  
**Lab:** Diptera (M: Ch 11) |
| 12: Apr 10, 12| **Exam III, Apr. 12**  
**Lab:** TBA |
| 13: Apr 17, 19| **Lecture:** Hymenoptera (M: Ch 12)  
Parasitoid life history; Trichoptera, Lepidoptera (M: Ch 7, 8)  
**Lab:** Hymenoptera |
| 14: Apr 24, 26| **Lecture:** Trichoptera, Lepidoptera (M: Ch 7, 8); Insect plant interactions  
**Lab:** Hymenoptera |
| 15: May 1, 3  | **Lecture:** Lepidoptera (M: Ch 7, 8)  
**Lab:** Lepidoptera  
- *Final exam: Thursday, May 10, 10:30*  
- *Collection due: Friday, May 11, 1:00* |