



IMPERIAL VALLEY COLLEGE

## Basic Course Information

Semester:	<b>Spring 2024</b>	Instructor Name:	<b>Shelby Drye</b>
Course Title & #:	<b>Principles of Entomology AG 170 3 Units</b>	Email:	<b>shelby.drye@imperial.edu</b>
CRN #:	<b>21023</b>	Webpage (optional):	<b>Imperial.edu</b>
Classroom:	<b>Building 2700, Room 2732</b>	Office #:	<b>TBD</b>
Class Dates:	<b>2/13-6/6</b>	Office Hours:	<b>Tuesdays &amp; Thursdays 1:00pm-1:30pm</b>
Class Days:	<b>Tuesdays and Thursdays</b>	Emergency Contact:	<b>Tisha Nelson/Kenya Sevilla 760-355-6361/760-355-6161</b>
Class Times:	<b>Lecture 10:15am-11:20am Lab 11:20am-12:45pm</b>	Class Format/Modality:	<b>Face-to-Face</b>

## Course Description

Insects are the most diverse group of animals on the planet and one of the most fascinating! This course covers the principles of the classification, Identification, anatomy, physiology, ecology, management, and collecting of arthropods (i.e., insects, spiders, mites, etc.), with an emphasis on those of importance to agriculture. This course will provide students with a conceptual framework for understanding the wonderful world of insects. We will explore the many ways in which insects affect our lives (as both pests and allies). This course will provide students with hands-on experience in insect identification and entomology lab techniques.

## Student Learning Outcomes

Upon course completion, the successful student will have acquired new skills, knowledge, and or attitudes as demonstrated by being able to:

- ☀ Identify, link and report common pests to the crop and type of damage.
- ☀ Prepare mounted specimens and label according to discipline protocol.
- ☀ Identify and discuss interrelations between host crop, pest insect & beneficial insects.

## Course Objectives

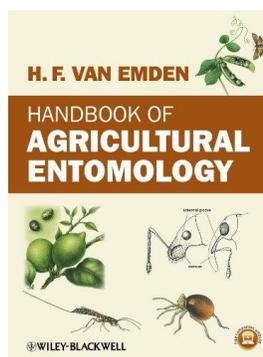
Upon satisfactory completion of the course, students will be able to:

- ☀ Describe the important ways arthropods relate to humans.
- ☀ Identify the important anatomical structures of arthropods.
- ☀ Identify the development and stages of arthropod growth.
- ☀ List the important classes and orders of arthropods.
- ☀ Identify major pest arthropods and demonstrate the principles of arthropod identification.
- ☀ Describe the key concepts in arthropod pest management and control.
- ☀ Describe the important ways that arthropods are beneficial to humans, including pollination of crops.
- ☀ Demonstrate the principles of sampling, collecting, preserving, and mounting arthropods.
- ☀ Develop an arthropod collection.

## Textbooks & Other Resources or Links

**Textbook:** This course requires the following online book, which is available for free download and viewing on canvas. We will utilize it throughout the semester. It is expected that students will complete these readings prior to the corresponding class session. If you encounter any difficulties accessing the material at the provided web address, please inform your instructor promptly and ask any questions you may have.

Van, E. H.. 2013. Handbook of Agricultural Entomology. Wiley. ISBN: 978-0470659137.



The following books are optional but recommended— it is a great resource, especially for order- and family-level insect identification:

- 🌱 Students are required to have access to the web for the following reading material:
  - [https://www.gutenberg.org/cache/epub/64677/pg64677-images.html#Page\\_5](https://www.gutenberg.org/cache/epub/64677/pg64677-images.html#Page_5)
  - <https://www.ars.usda.gov/ARSUserFiles/80420580/CollectingandPreservingInsectsandMites/collpres.pdf>

**Documentary:** During the course, students will be assigned to watch videos of National Geographic *Insects Pictures & Facts* to supplement the readings and lectures.

More information about the videos can be found here:

<https://www.nationalgeographic.com/animals/topic/insects#20f2d9af-4c3f-406e-9a94-97b2f4d81fcb>.

**Additional Readings & Videos:** Other required readings and videos will be posted on Canvas. Students are expected to review these materials before the corresponding class session.

**Computer Requirement:** All students must have regular access to a computer with a reliable internet connection to access assignments and materials on Canvas.

## Course Grading Based on Course Objectives

This grading policy provides opportunities for students to demonstrate their knowledge through exams, assignments, quizzes, and participation. It also incentivizes regular attendance and active engagement in the class.

### Exams (290 points):

- 🌟 Mid Term Exam: 140 points.
- 🌟 Final Exam: 150 points.

### Assignments and Group Project (390 points):

- 🌟 Weekly Assignments (collecting insects): 100 points (10 assignments at 10 points each)
- 🌟 Group Project Presentation and Essay (Insect mounting box and labels): 290 points.

### Quizzes (120 points):

- 🌟 In-Class Quizzes: 120 points (4 quizzes at 30 points each)

### Participation and Attendance (200 points):

- 🌟 Attendance: 160 points (5 points per class session [32 Class sessions])
- 🌟 Participation: 40 points (based on engagement in class discussions, activities, and group work)

### Grading Scale:

- 🐛 900 - 1000 points: A
- 🐛 800 - 899 points: B
- 🐛 700 - 799 points: C
- 🐛 600 - 699 points: D
- 🐛 Below 600 points: F

## Projects, Exams, and Assignments

**Exams** Throughout the course, you will be assigned **two exams, a midterm and a final exam** based on concepts we've covered in the course. These reviews will contain a mix of multiple choice, fill-in-the-blank, and free response questions. They are designed to help you keep up with the readings, review course material in preparation for the exams, and think more deeply about the course content. See the Course Schedule below for the dates of these exams.

**Assignments and Group Project:** Creating a **bug pin box** is a simple and effective way to preserve and display insect specimens. Start with a sturdy box and foam padding. Carefully pin each specimen onto the foam, labeling them with species details. Once pinned and labeled, securely close the box to protect the insects. This box serves as both an educational tool and a beautiful display of nature's diversity.

**Quizzes:** There will be **4 in-class quizzes** in the course, which will assess your knowledge as the group moves through the class. The quizzes will consist of multiple choice and fill-in-the-blank questions.



**Participation and Attendance:** To earn **200 points for attendance and participation**, consistently attend classes and actively engage in discussions and activities. Arrive on time and participate by asking questions, contributing to discussions, and completing assigned tasks.

Students are expected to come prepared and fully engaged for every session. This includes completing all assigned readings and videos, submitting assignments on time, and collaborating with classmates, which contribute towards the overall participation score.

Should an excusable absence occur, students are required to notify the instructor in advance whenever feasible to arrange for makeup work. However, failure to notify the instructor promptly or absence for non-excusable reasons will result in a zero for any in-class work. **Please note that personal travel or vacations do not qualify as excusable absences. Students are strongly encouraged to proactively communicate any difficulties they encounter in meeting deadlines, thereby enabling timely intervention and exploration of potential solutions.**

In the event of a missed class, students are encouraged to reach out to classmates for notes, as instructors do not provide class notes. If further clarification is needed, students are welcome to attend office hours or schedule a meeting with the instructor, prepared with specific questions for discussion.

### Work-Based Learning – Opportunities for Extra Credit

Work-Based Learning (WBL) allows students to apply classroom content in professional settings while gaining real-world experiences. These opportunities will provide you with a deeper, more engaging, and relevant learning environment. You are encouraged to participate in the following WBL activities to provide you with the opportunity to explore career options in Agriculture and other related fields.

WBL Activity	WBL Activity Description
<b>Guest Speakers and industry presentations</b>	Guest speakers and industry presentations provide an opportunity for students to hear firsthand about a particular occupation, the necessary preparation and required knowledge the occupation requires, and other interesting information from current practitioners in Ag.
<b>Career Fair on April 18, 2024 10AM-1PM @ IVC</b>	Students are encouraged to participate in Career Fair to meet with employers, recruiters, companies, and organizations, related to field of study.
<b>Workplace/Company Tours</b>	Visits to real workplaces that provide opportunities for students to learn first-hand about the skills required in various Agriculture and Research industries.



## Course Policies

### Attendance

A student who fails to attend the first meeting of a class or does not complete the first mandatory activity of an online class will be dropped by the instructor as of the first official meeting of that class.

It is the student's responsibility to drop or officially withdraw from the class. See [General Catalog](#) for details.

### Academic Honesty

Academic honesty in the advancement of knowledge requires that all students and instructors respect the integrity of one another's work and recognize the importance of acknowledging and safeguarding intellectual property. There are many different forms of academic dishonesty. The following kinds of honesty violations and their definitions are not meant to be exhaustive. Rather, they are intended to serve as examples of unacceptable academic conduct.

Plagiarism is taking and presenting as one's own writings or ideas of others, without citing the source. You should understand the concept of plagiarism and keep it in mind when taking exams and preparing written materials. If you do not understand how to "cite a source" correctly, you must ask for help.

Cheating is defined as fraud, deceit, or dishonesty in an academic assignment, or using or attempting to use materials, or assisting others in using materials that are prohibited or inappropriate in the context of the academic assignment in question.

Anyone caught cheating or plagiarizing will receive a zero (0) on the exam or assignment, and the instructor may report the incident to the Campus Disciplinary Officer, who may place related documentation in a file. Repeated acts of cheating may result in an F in the course and/or disciplinary action. Please refer to the [General Catalog](#) for more information on academic dishonesty or other misconduct. Acts of cheating include, but are not limited to, the following: (a) plagiarism; (b) copying or attempting to copy from others during an examination or on an assignment; (c) communicating test information with another person during an examination; (d) allowing others to do an assignment or portion of an assignment; (e) using a commercial term paper service.

### Academic Honesty (Artificial Intelligence -AI)

IVC values critical thinking and communication skills and considers academic integrity essential to learning. Using AI tools as a replacement for your own thinking, writing, or quantitative reasoning goes against both our mission and academic honesty policy and will be considered academic dishonesty, or plagiarism unless you have been instructed to do so by your instructor. In case of any uncertainty regarding the ethical use of AI tools, students are encouraged to reach out to their instructors for clarification.

## IVC Student Resources

IVC wants you to be successful in all aspects of your education. For help, resources, services, and an explanation of policies, visit <http://www.imperial.edu/studentresources> or click the heart icon in Canvas.

## Anticipated Class Schedule/Calendar

Imperial Valley College is dedicated to helping students skillfully discover, evaluate, and use information from all sources. The IVC library department provides numerous information literacy tutorials to assist students in this endeavor.

Below is a tentative schedule of topics & assignments for the semester. Readings/videos for each session will be posted on Canvas or given to you in class as a take home assignment and must be completed before the start of the following class.

Course Dates	Module	Activity, Assignment, and/or Topic
2/13 2/15		<b>Orientation</b> <ul style="list-style-type: none"> <li>✿ Syllabus, Course, and canvas!</li> <li>✿ Meet and greet discussion!</li> <li>✿ Student Questionnaire!</li> <li>✿ Tent Cards/Student Names!</li> </ul>
2/20 2/22	Module 1	<b>Introduction to the World of Insects</b> <ul style="list-style-type: none"> <li>✿ 1.1 The Diversity of Insects</li> <li>✿ 1.2 The Impact of Insects on Us</li> <li>✿ 1.3 The Impact We Have on Insects</li> <li>✿ 1.4 Exploitation of Insects</li> <li>✿ 1.5 Other Uses Humans Make of Insects</li> <li>✿ 1.6 Insect Classification</li> </ul> <b>Group Assignment/Lab:</b> Collecting, mounting, labeling, displaying, and storing arthropods (Ongoing assignment from Module 1 until presentation 5/28 & 5/30)
2/27 2/29	Module 2	<b>External Features of Insects – Structure and Function</b> <ul style="list-style-type: none"> <li>✿ 2.1 Introduction</li> <li>✿ 2.2 The Exoskeleton</li> <li>✿ 2.3 The Basic Body Plan of the Insect</li> <li>✿ 2.4 The Head</li> <li>✿ 2.5 The Thorax</li> <li>✿ 2.6 The Abdomen</li> </ul>
3/5 3/7	Module 3	<b>Major Divisions of the Insecta</b> <ul style="list-style-type: none"> <li>✿ 3.1 Introduction</li> <li>✿ 3.2 Class Insecta, Subclass Apterygota or Phylum Arthropoda, Class Entognatha</li> <li>✿ 3.3 Subclass Pterygota</li> <li>✿ 3.4 Subclass Apterygota</li> </ul> <b>Quiz 1 in-class! 3/7</b>
3/12 3/14	Module 4	<b>Orders of Exopterygota</b> <ul style="list-style-type: none"> <li>✿ 4.1 Introduction</li> <li>✿ 4.2 Orders Diplura, Protura, Thysanura, and Collembola</li> </ul>



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3/19 3/21	Module 5	<b>Palaeopteran Orders</b> <ul style="list-style-type: none"> <li>☀ 5.1 Introduction</li> <li>☀ 5.2 Orders Ephemeroptera and Odonata</li> </ul> <b>Quiz 2 in-class! 3/21</b>
3/26	Module 6	<b>Orthopteroid Orders</b> <ul style="list-style-type: none"> <li>☀ 6.1 Introduction</li> <li>☀ 6.2 Orders Plecoptera, Grylloblattodea, Mantophasmatodea, Zoraptera, and Orthoptera</li> </ul>
3/28		<b>MID TERM EXAM</b>
4/1-4/6		<b>Spring Recess</b>
4/9 4/11	Module 7	<b>Hemipteroid Orders</b> <ul style="list-style-type: none"> <li>☀ 7.1 Introduction</li> <li>☀ 7.2 Orders Psocoptera, Mallophaga, Anoplura, and Hemiptera</li> </ul>
4/16 4/18	Module 8	<b>Thysanoptera and Lesser Orders of Endopterygota</b> <ul style="list-style-type: none"> <li>☀ 8.1 Introduction</li> <li>☀ 8.2 Orders Thysanoptera, Mecoptera, Siphonaptera, and Neuroptera</li> </ul> <b>Quiz 3 in-class! 4/18</b>
4/23 4/25	Module 9	<b>Order Lepidoptera</b> <ul style="list-style-type: none"> <li>☀ 9.1 Introduction</li> <li>☀ 9.2 Orders of Glossata</li> </ul>
4/30 5/2	Module 10	<b>Order Diptera</b> <ul style="list-style-type: none"> <li>☀ 10.1 Introduction</li> <li>☀ 10.2 Suborders Nematocera and Brachycera</li> <li>☀ 10.3 Suborder Cyclorrhapha</li> </ul>
5/7 5/9	Module 11	<b>Order Hymenoptera</b> <ul style="list-style-type: none"> <li>☀ 11.1 Introduction</li> <li>☀ 11.2 Suborder Symphyta</li> <li>☀ 11.3 Suborder Apocrita</li> </ul>
5/14 5/16	Module 12	<b>Order Coleoptera</b> <ul style="list-style-type: none"> <li>☀ 12.1 Introduction</li> <li>☀ 12.2 Suborders Adephaga and Polyphaga</li> </ul> <b>Quiz 4 in-class! 5/16</b>
5/21 5/23	Module 13	<b>Class Arachnida</b> <ul style="list-style-type: none"> <li>☀ 13.1 Introduction</li> <li>☀ 13.2 Subclasses Araneida and Acarina</li> <li>☀ 13.3 Orders Mesostigmata, Ixodida, Prostigmata, Astigmata, and Cryptostigmata</li> </ul> <b>Forensic entomology</b>
5/28 5/30		Students present lab projects and findings to the class
6/4		Lab Report Due (essay)!
<b>6/6</b>		<b>Final Exam</b>

\*\*\*Subject to change without prior notice\*\*\*