



## ENY 4932 Honey Bees of Asia

Summer A	Meeting Times
Credits: (3) See UF Dates and Deadlines website for Summer A dates	In U.S.: early May In Person Meeting Times Bee Laboratory, Building 0964.  In Thailand: mid-May Class times vary

### COURSE DESCRIPTION AND LEARNING OBJECTIVES:

The western hemisphere is home to only one honey bee species, but all other honey bee species can be found in southeast Asia. This course will allow students to discover the amazing diversity of honey bee species and explore the different environments in which these bees may be found. Students will participate in laboratory and field experiences in Thailand to study both the biology and threats to these species. Students will travel throughout the coastal regions of Thailand and be immersed in the local culture.

Successful students will be able to:

1. Compare the honey bee species found in Asia to the western honey bee, *Apis mellifera*,
2. Explain the risks associated with the spread of invasive honey bees and their pests,
3. Summarize the biology of the different honey bee species,
4. Identify the distinguishing phenotypic traits and characteristics between the honey bee species,
5. Report on how honey bee diversity benefits the ecosystems in which they are found.

### INSTRUCTOR:

Dr. Cameron Jack ([cjack@ufl.edu](mailto:cjack@ufl.edu)), Rm 114 Entomology and Nematology (Honey Bee Lab – Bldg 964)  
Dr. Jamie Ellis ([jdellis@ufl.edu](mailto:jdellis@ufl.edu)), Rm 116 Entomology and Nematology (Honey Bee Lab – Bldg 964)  
Dr. Guntima Suwannapong ([beefambuu@gmail.com](mailto:beefambuu@gmail.com)) Burapha University, Chon Buri, Thailand.

**MEETING TIMES:** Students will meet in person in Gainesville during the week of May 9<sup>th</sup> and we will begin class in Thailand on May 18<sup>th</sup>. We will be in Thailand from May 16<sup>th</sup> – June 10<sup>th</sup>. During this time, we will meet as a class for in class lectures and many field learning experiences. Please pay attention to the schedule, as our class meeting times change from week to week.

**REQUIRED TEXT:** Suwannapong, G. (2019). *Honeybees of Thailand*. ISBN: 978-1-53616-159-5

Recommended Text: Oldroyd, BP and S. Wongsiri. (2006). *Asian honey bees: biology, conservation and human interactions*. ISBN: 978-1-53616-159-5

**OFFICE HOURS:** Office hours will be held immediately after each class while in the U.S. Meetings are available only by email appointment. Given the uncertainty of the course location and timing once in Thailand, please call if you are having a problem or require immediate assistance. Instructor’s cell numbers will be provided during the first day of class.

## COURSE POLICIES:

### APPROPRIATE ATTIRE:

Students will interact with honey bees regularly throughout our time in Thailand. Protective equipment, such as beekeeping suits, veils and gloves will be provided. Students are required to wear closed toed shoes. Shoes that cover the ankles (such as hiking boots) provide the most protection from stings around the ankle area. We also recommend that students wear pants (rather than shorts, dresses, skirts, etc.) to class.

### HONEY BEE STINGS:

Stings are likely to occur when working in/around honey bee colonies. Working directly with live honey bee colonies is a significant component of the course. Students with severe (anaphylactic) allergies to honey bee stings should not take this course. If you have never been stung and are unsure of your allergy status, we recommend that you visit an allergist to obtain precautionary allergy response training/treatment (e.g. an EpiPen). All students are required to read the provided document on honey bee stings prior to attending the first day of class. Questions related to this assignment will be included in the first quiz.

## GRADING:

Assignment	Points	% of grade
Attendance/Participation (15 class meetings, 10 points/meeting)	150	50

Weekly Online Quizzes (3 quizzes, 25 points each)	75	25
Reflection Essays (3 Reflections, 20 points each; 5 point for each review)	75	25

**GRADES AND GRADE POINTS:**

For information on current UF policies for assigning grade points, see [catalog.ufl.edu/UGRD/academic-regulations/grades-gradingpolicies/](http://catalog.ufl.edu/UGRD/academic-regulations/grades-gradingpolicies/).

**GRADING SCALE:**

FINAL GRADING		
% grade	Letter grade	Points needed to achieve letter grade
100-93	A	≥ 279
90-92	A-	270-278
87-89	B+	261-269
83-86	B	249-260
80-82	B-	240-248
77-79	C+	231-239
73-76	C	219-230
70-72	C-	210-218
67-69	D+	201-209
63-66	D	189-200
60-62	D-	180-188
0-59	E	0 – 179

**ATTENDANCE/PARTICIPATION:**

Attendance and participation are mandatory for this course. Cumulatively, attendance and participation for each day of class will be worth 150 points. Students are expected to arrive to designated meetings on time and tardiness will result in a reduction of attendance points for that day. This course is designed to provide students with hands on learning experiences. Therefore, students are expected to participate and be engaged in all activities for the duration of the class period; failure to do so will result in a reduction of 5 participation points for that day up to 10 points. No make-up opportunities are available for attendance/participation without a university excused absence. No family, friends, spouses, etc. are allowed to attend any of the classes.

**CLASS QUIZZES:**

There is an online quiz associated with each week of the class. Each quiz is worth 25 points and will include Approximately 15 questions. Quizzes are open note, but individual. Students are required to

complete the readings before taking the quizzes. **Quizzes are due by 11:59 pm the Friday of each week.** No late quiz submissions will be accepted without a university excused absence.

**REFLECTION ESSAYS:**

Students are required to write a reflection essay once per week. This means that students must, in their own words:

- 1) provide a description of what was learned and experienced from the lectures and class and
- 2) review another student’s essay, providing constructive feedback.

Each essay must be between 300 - 500 words. Proper terminology, spelling, and grammar are expected in all posts. Each Reflection Essay is worth 20 points and each review is worth 5 points. A rubric for writing the essays will be provided. **Reflection Essays are due by 11:59 pm the Friday of each week.**

**ABSENCES AND MAKE-UP WORK:**

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: [catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/](http://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/)

**COURSE SCHEDULE:**

\*Bold times are dedicated class time. Underlined times indicate time spent together traveling.

Week	Class	Topic/Activity
1	1	<b>9:00 am – 12:00 pm:</b> Review the online syllabus. Overview of course assignments, expectations and conduct. Networking and travel discussion. Why are Honey Bees Important?
	2	<b>9:00 am – 12:00 pm:</b> EPortfolio discussion. Intro to honey bee biology. Caste members, anatomy/physiology, life cycle.
		<b>Quiz 1 and Reflection Essay 1 due by 11:59 pm</b>
		Depart for Thailand. Arrive in Bangkok, Thailand
2		Stay in Chon Buri, Thailand
		Acclimate day
	3	<b>9:00 am – 12:00 pm:</b> Intro to honey bee species of Thailand. <i>Apis mellifera</i> , <i>A. cerana</i> , <i>A. florea</i> , <i>A. andreniformis</i> , <i>A. dorsata</i> . <b>1:30 – 4:30 pm:</b> Tour of Suwannapong lab and Burapha University
	4	<b>9:00 am – 12:00 pm:</b> Honey bee anatomy lab activity <b>1:30 – 4:30 pm:</b> Honey bee communication

	5	<b>9:00 am – 12:00 pm:</b> Honey bee pheromones lab activity <b>Quiz 2 and Reflection Essay 2 due by 11:59 pm</b>
		Pattaya – Thai Culture Show Free day
3	6	<u>6:30 – 9:30 am</u> Travel to Mae Klong, Samut Songkram province (13.24403, 99.58211): <b>9:30 am – 12:30 pm:</b> Honey bee diversity (sample collection) <b>2:00 – 4:00 pm:</b> Honey bee ecology
	7	<b>1:30 – 4:30 pm:</b> Introduction to Bee Flora and Pollination
	8	<b>9:00 am – 12:00 pm:</b> <i>Nosema</i> research on Thai honey bees. <b>1:30 – 4:30 pm:</b> <i>Nosema</i> identification and quantification lab activity
	9	<b>9:00 am – 12:00 pm:</b> Parasitic mites of Thai honey bees. <b>1:30 – 4:30 pm:</b> <i>Varroa</i> and <i>Tropilaelaps</i> mite identification and quantification lab activity
	10	<b>9:00 am – 12:00 pm:</b> Honey bee development <b>Quiz 3 and Reflection Essay 3 due by 11:59 pm</b>

**SCHEDULE DISCALIMER:** This schedule represents current plans and objectives. These plans may need to change throughout the semester due to unforeseeable circumstances (i.e. inclement weather). Such changes will be communicated through announcements on Canvas and in person.

## UF POLICIES:

### ONLINE COURSE EVALUATION PROCESS:

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at [gatorevals.aa.ufl.edu/students/](http://gatorevals.aa.ufl.edu/students/). Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their canvas course menu under GatorEvals, or via [ufl.bluera.com/ufl/](http://ufl.bluera.com/ufl/). Summaries of course evaluation results are available to students at [gatorevals.aa.ufl.edu/public-results/](http://gatorevals.aa.ufl.edu/public-results/).

### ACADEMIC HONESTY:

UF students are bound by the honor pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the honor code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The honor code ([sccr.dso.ufl.edu/process/student-conduct-code/](http://sccr.dso.ufl.edu/process/student-conduct-code/)) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### **SERVICES FOR STUDENTS WITH DISABILITIES:**

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, [dso.ufl.edu/drc](http://dso.ufl.edu/drc)) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

### **CAMPUS RESOURCES:**

#### Health and Wellness

*U Matter, We Care:* If you or someone you know is in distress, please contact <mailto:umatter@ufl.edu>, 352-392-1575, or visit [umatter.ufl.edu](http://umatter.ufl.edu) to refer or report a concern and a team member will reach out to the student in distress.

*Counseling and Wellness Center:* visit [counseling.ufl.edu/](http://counseling.ufl.edu/) or call 352-392-1575 for information on crisis services as well as non-crisis services.

*Student Health Care Center:* call 352-392-1161 for 24/7 information to help you find the care you need, or visit [shcc.ufl.edu/](http://shcc.ufl.edu/).

*University Police Department:* visit [police.ufl.edu/](http://police.ufl.edu/) or call 352-392-1111 (or 9-1-1 for emergencies).

*UF Health Shands Emergency Room / Trauma Center:* for immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer road, Gainesville, FL 32608; [ufhealth.org/emergency-room-trauma-center](http://ufhealth.org/emergency-room-trauma-center).

#### Academic Resources

*E-Learning Technical Support:* contact the [uf computing help desk](#) at 352-392-4357 or via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

*Career Connections Center:* Reitz Union Suite 1300, 352-392-1601. career assistance and counseling services [career.ufl.edu/](http://career.ufl.edu/).

*Library Support:* [cms.uflib.ufl.edu/ask](http://cms.uflib.ufl.edu/ask) various ways to receive assistance with respect to using the libraries or finding resources.

*Teaching Center:* Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring. [teachingcenter.ufl.edu/](http://teachingcenter.ufl.edu/)

*Writing Studio:* 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers. [writing.ufl.edu/writing-studio/](http://writing.ufl.edu/writing-studio/)

*Student Complaints On-Campus:* [SCCR.DSO.UFL.EDU/POLICIES/STUDENT-HONOR- CODESTUDENT- CONDUCT-CODE/](http://SCCR.DSO.UFL.EDU/POLICIES/STUDENT-HONOR-CODESTUDENT-CONDUCT-CODE/)

*On-Line Students Complaints:* [distance.ufl.edu/student-complaint-process/](http://distance.ufl.edu/student-complaint-process/)