Plant-insect interactions (BISC 579)

Instructor: Dr. Ryan Garrick, office: Room 508 Shoemaker Hall, e-mail: rgarrick@olemiss.edu

Class time & location: **Mon, Wed, Fri: 9:00–9:50am, Isom Room 203**. Regular attendance is expected. Use of **cell phones** not permitted, including taking photos and sending text messages. Please turn them off during class. Use of **laptop computers** for note-taking is fine, but it is not appropriate to be sending tweets and emails, etc.

Required texts: ***Insect-plant biology.*** Authors: Louis M. Schoonhaven, Joop J. A. van Loon, Marcel Dicke. ISBN: 9780198525950. Publisher: Oxford University Press.
The geographic mosaic of coevolution. Author: John N. Thompson. ISBN: 9780226797625. Publisher: University of Chicago Press.

Office hours: **Mon 2:30–3:30pm; Wed: 10:30-11:30am (no appointment necessary)**. If you cannot see me during the scheduled office hours, an appointment will need to be made by email. Please include the following: (1) BISC 579 in the subject line, (2) what you would like some help with in the main text of the email (that way I can be better prepared), and (3) your first and last name at the end of the message. You should receive a response from me within 24 hours.

Description: This course will provide a broad overview of the ecology and co-evolution of insect-plant interactions. Interactions will be examined from multiple perspectives, using a combination of formal lectures, and interactive discussions of highly cited papers from primary literature.

Prerequisites: Grade of C or better in BISC 160, 161, 162, and 163.

Blackboard: Log on at www.olemiss.edu. This is the first place to look for any information regarding the course during the semester, including syllabus, announcements, grades, etc. You will be notified of modifications to the syllabus, classroom locations etc. through your registered email address on Blackboard, and in class.

Grading: **Exams** (3, including the final): 20% each. For all exams, the following standard grading scheme applies: 90-100 = A, 80-89 = B, 70-79 = C, 60-69 = D, < 60 = F. However, I *may* adjust these thresholds slightly downwards (i.e., only to your benefit), depending on overall performance of the class. **In-class participation** (on-going): 25% for undergraduates vs. 15% for graduate students**. Random pop quizzes** (on assigned reading material, 4-6 of them): 15% for undergraduates vs. 10% for graduate students. **Leading paper discussion / paper presentation** (graduate students only; 2 papers each): 15%. The +/- grading scheme will not be used.

Exams: Bring your **student ID, #2 pencil, a calculator, and one Scantron form # F-289** to every exam (I will not provide these). The Scantron form # F-289 (1/2 page, red print) can be purchased at the Bookstore in the Student Union. **Other than calculators, no electronic devices are allowed to be turned on during exams.** This includes cell phones, computers, i-pads, etc. Exam grades will be posted as soon as possible. If you suspect that a question was graded improperly, you have one week (from the date of test return) to contact me about it. **Exam dates**

are non-negotiable; make-up exams are not given except (1) in the event of *serious illness*, in which case a medical doctor's letter is required, or (2) if you have a documented school function (marching band, game), in which case you will need to provide documentation *before* the day of the exam. Make-up exams must be taken at a date and time chosen by me, generally within 2–3 days of the original exam date.

Cheating: Needless to say, a bad idea. Cheaters will be assigned a zero for the exam in question.

Students with disabilities: University policy provides for reasonable accommodations to be made for students with verified disabilities on an individualized and flexible basis. It is the responsibility of any student with a disability to contact the Office of Student Disability Services (662-915-7128). SDS will then contact the instructor through the student by means of an Instructor Notification of Classroom Accommodations form.

Date	***Topic(s)***	***Chapters*** *
Week 1. Jan 21	Course overview; **Introduction**: Diversity	**SVD 2.4** (p13-14)
Jan 23	**Introduction**: Types of insects & plants	**SVD 3.1-3.3, 3.6** (p29-31, 36, 42)
Week 2. Jan 26	**Introduction**: How insects find plants	**SVD 6.1, 6.4, 6.6, 7.1-7.3** (p136, 143-151, 158-159, 169-170, 172)
Jan 28	**Ecology**: Basic interactions	**SVD 10.1, 10.3, 10.7** (p235-252, 259)
Jan 30	**Ecology**: Assemblages	**SVD 10.10-10.11** (p264-268)
Week 3. Feb 02	**Host races & speciation**: Host plant selection & evolution	**SVD 8.1-8.2, 11.2-11.4** (p209-211, 282-290)
Feb 04	**Host races & speciation**: Evolution	**SVD 11.5, 11.7** (p291, 293-295) **Paper #1 discn:** TBD
Feb 06	**Host races & speciation**: Evolution	**Paper #1 discn v2:** TBD
Week 4. Feb 09	**Mutualism**: Plant stems & flowers	**SVD 3.4-35., 12.1-12.3** (p40-41, 308-320)
Feb 11	**Mutualism**: Plant flowers	**SVD 12.5-12.6** (p322-328) **Paper #2 discn:** TBD
Feb 13	**Mutualism**; In-class review session	**Paper #2 discn v2:** TBD
Week 5. Feb 16	**EXAM 1. Bring Scantron form F-289**	
Feb 18	Exam 1 recap; **Commensalism**	**SVD 2.7** (p7)

Feb 20	**Parasitism**: Herbivorous insects	**SVD 2.1-2.3, 2.6, 13.1** (p6-13, 16, 337-338)
Week 6. Feb 23	**Parasitism**: Plant chemistry	**SVD 4.1, 4.7-4.9, 4.12** (p49-50, 58-59, 63, 68-71)
Feb 25	**Parasitism**: Plant chemistry; Carnivorous plants	**SVD 4.14, 4.15 (**p74-84) **Paper #3 discn:** TBD
Feb 27	**Parasitism**: Carnivorous plants	**Paper #3 discn v2:** TBD
Week 7. Mar 02	**Co-evolution**: Arms races; GMT: Overall argument	**SVD 11.8** (p296-298); **THOM 1** (p 3-10)
Mar 04	**Co-evolution**: GMT: Raw materials 1	**THOM 2** (p11-33) **Paper #4 discn:** TBD
Mar 06	**Co-evolution**: GMT: Raw materials 2	**THOM 3** (p34-39) **Paper #4 discn v2:** TBD
Week 8. Mar09-13	**SPRING BREAK (no class)**	
Week 9. Mar 16	**Co-evolution**: GMT: Local adaptation 1	**THOM 4** (p50-71)
Mar 18	**Co-evolution**: GMT: Local adaptation 2	**THOM 5** (p72-96) **Paper #5 discn:** TBD
Mar 20	**Co-evolution**: GMT: Conceptual framework	**THOM 6** (p97-135) **Paper #5 discn v2:** TBD
Week 10. Mar 23	**Co-evolution**: GMT: Diversification	**THOM 7** (p136-162)
Mar 25	In-class review session	
Mar 27	**EXAM 2. Bring Scantron form F-289**	
Week 11. Mar 30	Exam 2 recap; **Co-evolution**	**Paper #6 & 7 discn**: TBD
Apr 01	**Co-evolution**	**Paper #6 & 7 discn v2**: TBD
Apr 03	**GOOD FRIDAY (no class)**	
Week 12. Apr 06	**Co-evolution**	**Paper #8 & 9 discn**: TBD
Apr 08	**Co-evolution**	**Paper #8 & 9 discn v2**: TBD
Apr 10	Open (TBD)	
Week 13. Apr 13	**Tri-trophic interactions**	**SVD 10.4, 10.6** (p252-258)
Apr 15	**Tri-trophic interactions**	**Paper #10 & 11 discn**: TBD
Apr 17	**Tri-trophic interactions**	**Paper #10 & 11 discn v2**: TBD

Week 14. Apr 20	**Climate change & biodiversity conservation**	**SVD 12.7, 13.3, 13.6** (p329, 345-350, 357)
Apr 22	**Climate change & biodiversity conservation**	**Paper #12 & 13 discn:** TBD
Apr 24	**Climate change & biodiversity conservation**	**Paper #12 & 13 discn v2:** TBD
Week 15. Apr 27	Presentations (15 mins per grad student)	**Paper #14, 15 & 16**
Apr 29	Presentations (15 mins per grad student)	**Paper #17, 18 & 19**
May 01	In-class review session	
May 06	**FINAL, 8:00–11:00am. Bring Scantron form F-289**	

* From **Schoonhaven, van Loon & Dicke (SVD**) or **Thompson (THOM**) – check Blackboard for additional reading material (i.e., peer-reviewed papers "**Paper #*n***") that I will upload as PDF files, and flag via 'announcements'.