

**FORS 8220-8220L ADVANCED FOREST ENTOMOLOGY: Linking Organisms,  
Population, and Community Insect Biology – Fall 2012**

*The course syllabus is a general plan for the course;  
Deviations announced to the class by the instructors may be necessary.*

**Lead Instructor**

**Dr. Kamal J.K. Gandhi**

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If you would like to meet with the instructor outside of class, please make an appointment to do so via email, or in-person after class.

**Class Time**

Every Thursday: 8:30- 11:30 AM in Room 4-132

**Prerequisites**

General Entomology (ENTO 4000/6000); Forest Health and Protection (FORS 4210/6210); By permission of the instructor

**Course Objectives and Description**

The objective of this graduate-level course is to provide each student with a well-rounded and detailed information about the current topics and critical papers in forest entomology. We will cover information about the importance, ecology, and management of forest insects and their allies. The course will focus heavily on peer-reviewed literature such as journal and book chapters that are core readings in the field of forest entomology. Students will be required to participate during discussions in each class as related to these readings, and be ready to make presentations if requested by the instructor. The discussions on each paper will continue until relevant sections in the paper have been understood, the paper is well-critiqued by the group, and future research directions for the topic are provided.

**Course Materials**

Required readings will be emailed to all the students about a week/class in advance (as depending upon how the discussions proceed each day). Material will also be placed on ELC. Most class periods will include discussion of an assigned reading. Students will be called on at random in order to participate in these class discussions, and it is expected that students would have completed any study questions or worksheets associated with the reading assignment before the class.

**Assignments**

**Class Participation – 50 points**

Students are expected to attend all classes, and participate heavily in the class discussion. Students may be requested to make presentations, primarily using chalkboard as presentation material. The objective of the discussion is to teach students how to think independently,

critically, and on one's feet; this is an important step to becoming a researcher in addition to learning core material about forest entomology.

**Written Assignments – 50 points**

The graduate students will also independently review and critique two recent papers on forest insects, and make presentations of these papers in the class. Each paper is worth 25 points. The papers should have been published in the last 2-3 years (2010-2012), and may be related to student's dissertation topic. The papers should not be a review, but have an empirical approach (i.e., have introduction, methods, results, and discussion sections). A copy of the paper will be provided to the instructor for initial feedback, before the final paper is submitted. More detail on the review and critique expectations and process will be provided.

**Missed classes and late assignments**

Reason(s) for missed classes and late assignments will need to be provided to the instructor, and has to be valid (i.e., conference/field-work travel, illness, death in the family, etc.). You may either call and leave a message on Dr. Gandhi's office answering machine (706-542-4614) or email her ([kgandhi@warnell.uga.edu](mailto:kgandhi@warnell.uga.edu)). To acknowledge your understanding of this policy, complete the form on the last page of this syllabus, and return it to Dr. Gandhi as soon as possible. Completion of this assignment is required; a grade will not be provided without signing this form.

**Course Grading**

94 – 100 %	= A
90 – 93 %	= A-
87 – 89 %	= B+
83 – 86 %	= B
80 – 82 %	= B-
77 – 79 %	= C+
73 – 76 %	= C
70 – 72 %	= C-
60 – 69 %	= D
≤ 59 %	= F

**Academic honesty**

All academic work must meet the standards contained in UGA's academic honesty policy, which is titled "A Culture of Honesty." Each student is responsible for informing themselves about these standards before performing any academic work. Students should not complete all, or part, of another student's assignment unless the project has been specifically designated by the instructor as a group assignment. "A Culture of Honesty" is available at the Vice President for Instruction's website at <http://www.uga.edu/ovpi>, under "Academic Honesty". Any suspected violations of academic honesty will be investigated according to University procedures. Students who are guilty of violating the academic honesty policy will typically receive a grade of "F" and a numerical score of zero on the assignment in question, as well as a course grade of "F".

## FORS 8220: Advanced Forest Entomology - Fall 2012 - Course Schedule

Deviations to the course material will be announced in the class. Preliminary list of core readings are listed below, and additional or other readings may be assigned as necessary

<b>Dates</b>	<b>Topic #</b>	<b>Class Topics &amp; Subtopics</b>	<b>Reading Assignments (general list- may be modified)</b>
8/23	1	<i>Introduction to course organization and objectives</i>	
8/23	2	<i>Introduction to forest insects and forest health concepts</i>	Coulson and Stephen 2008 Raffa et al. 2009
	3	<i>Disturbances and forest insects</i>	
8/30	3A	Forest insects as drivers of primary productivity	Mattson and Addy 1975
8/30	3B	Forest insects as disturbance agents	Raffa et al. 2008
<b>9/6</b>		<b>No Class</b>	
9/13	3C	Interaction of forest insects with weather disturbances and fires	McCullough et al. 1998 Gandhi et al. 2007
9/13 & 9/20	3D	Interaction of forest insects with drought	Mattson and Haack 1987 Huberty and Denno 2004
	4	<i>Insect and plant interactions</i>	
9/20	4A	Herbivory and plant nutrition	Mattson 1980
9/27	4B	Dilemma of plants: grow or defend from insects	Herms and Mattson 1992
9/27	4C	Defensive strategies of plants against insects	Mattson et al. 1988 (chapter)
	5	<i>Invasion biology of exotic insects</i>	
10/4	5A	Patterns of invasion by exotic insects	Niemelä and Mattson 1996
10/4	5B	Ecological impacts of exotic insects	Gandhi and Herms 2010 a, b
<b>10/11</b>		<b>First paper due with class presentations</b>	
	6	<i>Linking above and belowground dynamics</i> Dr. David Coyle	
10/18	6A	Effects of belowground soil webs on aboveground dynamics	Wardle 2002, Chapter 5 (chapter)
10/18	6B	Plant mediated above and belowground dynamics	Masters et al. 1993
	7	<i>Forest insects and global climatic changes</i>	

10/25	7A	Effects of raising temperatures on herbivory	Bale et al. 2002
10/25	7B	Changes in damage from forest insects ensuing from global changes	Ayres and Lombardero 2000 Logan et al. 2003
	8	<i>Chemical ecology of forest insects</i>	
11/1	8A	Insect hydrocarbons and chemical ecology	Howard and Bloomquist 1982
11/1	8B	Chemical defense by arthropods	Pasteels and Gregoire 1983
	9	<i>Forest arthropod guild specific topics</i>	
11/8	9A	Shoot and reproduction insects; Sap-sucking insects	Havill and Footit 2007 Zvereva et al. 2010
11/8	9B	Seed and cone insects; Gall-making insects; Defoliators	Turgeon et al. 1994 Weiss et al. 1988 Haack and Mattson 1993
11/15	9C	Bark and woodboring insects	Lorio 1988 (chapter)
11/15	10	<i>Insects of ornamental plants in urban landscapes</i>	Raupp et al. 2010
<b>11/22</b>		<b>Thanksgiving Holiday- No Class</b>	
<b>11/29</b>		<b>Second paper due with class presentations.</b>	