COURSE SYLLABUS
EPP 530
Integrated Pest Management
Fall Semester 2016

Course Section: **0000001**
Meeting Time and Place: **9:40 am – 10:55 am T, Th**
Room 123, Ellington Plant Sci.
Course Credit Hours: **3**

FACULTY CONTACT INFORMATION:
Name of Instructor: *Jerome Grant*
Email: jgrant@utk.edu
Work Telephone: 865.974.0218 (Grant)
Office Location: 128 Plant Biotechnology Building (West Campus /Ag Campus)
Office Hours: 11:00 am to noon (T, Th; other times as needed)
Instructor Web Page URL http://eppserver.ag.utk.edu/personnel/Grant/LAB_PAGE/home.htm

Notes:
Dr. Grant's Research Laboratory is located in Room 151, Plant Biotechnology Building (West Campus/Ag Campus); if you cannot reach me by email or by office telephone, you are welcome to call me on my lab phone (865.974.6405) or my cell phone (865.803.3552).

I. ***COURSE DESCRIPTION***: This course is an introduction to the application of ecological principles to the management of pest populations. Principles and concepts of pest management will be presented and discussed, and the importance of pest management as an environmentally sound practice will be emphasized based on economic, ecological and sociological consequences. Although examples of insect pest management will be emphasized, the principles and concepts of integrated pest management (IPM) apply across disciplines. Dr. Tom Mueller (Weed Management) and Dr. Darrell Hensley (Plant Disease Management) also will share their perspectives of IPM in their respective disciplines. The concept of "pest" and the major factors that influence pest populations will be explored. Ecological influences and historical overviews (especially the influence of Rachel Carson and her book *Silent Spring*) will lay the foundation for our present understanding of IPM. Pest management will be examined in a multi-faceted approach, incorporating the use of biological, cultural, physical, chemical, behavioral, genetic, and other control tactics to suppress populations of pests. "Laboratory" periods will be used to explore several aspects of pest management,

including ecological influences, field sampling, videotape overviews of IPM programs, simulation "modeling," and economic thresholds. “Laboratory” sessions will expose the student to both the expectations and limitations of the applications of the principles of pest management to pest problems.

II. ***VALUE PROPOSITION:*** The value of this course is to provide a more knowledgeable workforce to deliver effective and cost-efficient integrated pest management decision-making to enhance environmental quality and sustainability, while improving human lives. This course will enable and prepare the student to work independently or as a team member to enhance and improve the lives of those around them and to better understand the concepts and principles of pest management, as well as apply it effectively considering economics, ecology, and societal influences.

III. ***COURSE GOALS:*** To investigate the principles, concepts and philosophy relative to integrated pest management (IPM). To examine the factors responsible for development of IPM, and to ensure the student understands the potential good and bad results from pesticide use and how the misuse, abuse and overuse of pesticides can affect ecological systems, while making pest management extremely difficult. Students will learn IPM tactics and how these tactics blend into effective IPM programs that are ecologically sound, economically justifiable, and socially acceptable.

IV. ***STUDENT LEARNING OUTCOMES:*** By the conclusion of this course, you are expected to have gained the ability to:

- Define IPM.
- Describe the economic, ecological, and sociological benefits of IPM.
- Distinguish positive and negative impacts of pesticide use.
- Understand problems resulting from misuse, overuse, and abuse of chemical pesticides.
- Define and describe pesticide resistance and how it develops.
- Identify ecological and biological characteristics important in development of pest populations.
- Identify 10 tactics commonly used in IPM and be able to distinguish them.
- Understand society’s role in IPM decisions.
- Describe different groups of pests and compare them to weeds and plant pathogens.
- Analyze and compare management tactics to determine the best approach to reducing pest populations, weeds, and disease presence.
- Locate appropriate, scientifically valid sources of information on specific tactics to manage insect pests, weeds, and diseases.
- Know and how to develop an IPM program.

V. ***LEARNING ENVIRONMENT:*** The learning environment for this course will be lecture oriented, using PowerPoint presentations, in-class discussions, displays of insects and diseases, and short field trips to sample insects, weeds, and plant pathogens. The ‘hands-on’ and interactive parts of the course will complement in-class lectures and provide a real life view of items discussed in class. Other methods used as part of the learning environment are videos, animated modules, discussion boards, readings, assignments, and group projects. My role as a faculty member is to facilitate your understanding, comprehension, and application of course material in a welcoming environment; course

information will be made available in a timely manner, and I will respond to emails as quickly as possible (usually within 4 hours, but always within 24 hours, pending unforeseeable circumstances); I will be available during predetermined office hours. Your role as a student is to be engaged and active by attending and participating in class, completing all course assignments, readings, etc. in a timely manner.

VI. ***TEXTS/MATERIALS/RESOURCES FOR THE COURSE:***
Concepts in Integrated Pest Management (2003) – Norris, Caswell-Chen, and Kogan (this text is ***recommended***, not ***required***!!); this book is available via Amazon.com and other sites ($45-70 used; $88 new); if you prefer a reference book or want one available to read at your convenience, then I suggest you invest in this book. Readings from other texts (e.g., *Introduction to Insect Pest Management* [3rd ed.] [1994] - Metcalf and Luckmann) will be suggested and/or required (all of these texts will be "on reserve" in Ag. Vet. Library and/or placed in my laboratory for your convenience). I will provide copies of all texts on reserve in the library and in my laboratory; in most cases, pdfs of appropriate texts will be placed online for your use throughout the semester. Handouts and reading assignments will be distributed or made available on our course Blackboard site.

VII. ***INFORMATION LITERACY/TECHNOLOGICAL RESOURCES:*** A Blackboard Learn Tutorial is available to registered students. Other resources also are available to enhance your ability to use Blackboard and other online resources. These resources are available through Online@UT. In addition, the site answers common questions and provides student guides on the use of blogs, wikis, and podcasts in Online@UT.

VIII. ***COURSE REQUIREMENTS, ASSESSMENT AND EVALUATION METHODS:***
Grades will be earned in this online course by a combination of evaluation methods, including lecture exams, a final exam, assignments, participation in discussion forums, and a project. These methods and the corresponding percentages of the final grade are: two lecture exams (20% each, 40% total of each student's grade), a final exam (25%), laboratory and classroom assignments (20%), and a project (15%).

A review session will be scheduled prior to each exam. For further clarity, a more visual breakdown of grades is provided below:

Grading: Two Examinations (20% each x 2 exams = 40%)
Final Exam (25%)
Laboratory and Classroom Assignments (20%)
Project (15%)

Grades will be assigned using the following scale:

A..... 90 - 100
B+..... 88 - 89
B..... 80 - 87
C+..... 78 - 79
C..... 70 - 77
D..... 65 - 69
F..... <65.

A rubric will be provided for all assignments so that you can better understand my expectations for each assignment. I am very interested in your success in this course. If you are having problems, please do not hesitate to contact me.

Policy for Make-up Exams: I do not expect or require you to take an exam at the scheduled time if you are extremely ill. If you find yourself in this predicament, please contact me so that we can reach a mutually agreeable make-up schedule. Make-up exams may be different and slightly more difficult than the regularly scheduled exams.

IX. ***HOW TO BE SUCCESSFUL IN THIS CLASS:***

- Attend each lecture and participate in classroom discussions and activities.
- Set aside time every day to work in a quiet location that encourages study. Put away all distractions such as TV, social media, cell phone, etc.
- Read the assigned reading, watch all assigned videos, take notes, and ask questions.
- Use a calendar to plan ahead so that you can meet all deadlines and finish assignments on time.
- Do all of your assignments by the given deadlines. A typical successful student spends 15 to 20 hours per week reading, watching videos, doing homework and studying for this class.
- Spend extra time studying for exams.
- If you have any questions or experience difficulty in this course, please contact us by email, call us, visit during Office Hours, or arrange a separate time to meet. We will respond to all emails before the end of the next business day.
- Writing Center: writingcenter@utk.edu,
  - HSS 212, 865-974-2611, Monday -Thursday 9:00 am - 6:30 pm; Friday 9:00 am-3:00 pm
  - Hodges Library, 220G North Commons:
    Monday and Wednesday: 5:00 pm - 7:00 pm; Sunday: 5:00 pm - 7:00 pm
  - Pendergrass Library (Agriculture Campus), A113 - Study Room E:
    Wednesday: 12:00 pm - 2:00 pm
- Office of Disability Services: 2227 Dunford Hall, 865-974-6087, ods@utk.edu
- Student Success Center: 821 Volunteer Boulevard, Greve Hall Room 324, 865-974-6641, studentsuccess@utk.edu
- Office of Information Technology (OIT) Walk-in HelpDesk: 2nd Floor at the Commons, Hodges Library, 865-974-9900, http://help.utk.edu/footprints/contact/

X. ***COURSE FEEDBACK:*** Students are strongly encouraged to participate in the Student Assessment of Instruction System, which provides for student evaluation of teaching at the University of Tennessee.

XI. The most common policies are found in the "UT Campus Syllabus" (http://tenntlc-utk-edu.wpengine.netdna-cdn.com/files/2012/11/CAMPUS-SYLLABUS1.pdf). Additional academic policies can be found in the online Graduate Catalog (http://catalog.utk.edu/content.php?catoid=17&navoid=1763).

UNIVERSITY POLICIES:

Discrimination: The University of Tennessee is an EEO/AA/Title VI/Title IX/Section 504/ADA/ADEA institution in the provision of its education and employment programs and services. The university prohibits discrimination on the basis of race, color, national origin,

religion, sex, pregnancy, marital status, sexual orientation, gender identity, age, physical or mental disability, or covered veteran status. Inquiries and charges of violation of Title VI (race, color, national origin), Title IX (sex), Section 504 (disability), ADA (disability), Age Discrimination in Employment Act (age), sexual orientation, or veteran status should be directed to the Office of Equity and Diversity (OED), 1840 Melrose Avenue, Knoxville, TN 37996-3560, telephone (865) 974-2498.

Plagiarism: The two most common errors are quoting assigned readings word for word without putting the borrowed words or phrases in quotation marks, and quoting information from a website without quotation marks and/or any reference to the website(s). Review the discussion of Academic Dishonesty that is found in *Hilltopics* (http://dos.utk.edu/files/Hilltopics2014-2015.pdf), and familiarize yourself with the proper ways to cite texts. Ask us at any time if you have any questions. It is much better to ask for help than to plagiarize and risk expulsion from the university. A grade of zero may be assigned to any assignment that breaks the code of Academic Honesty.

Academic Standards of Conduct: All students are expected to abide by the University **Honor Statement**: *An essential feature of the University of Tennessee is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the University, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity.* All students who have been accepted at the University of Tennessee signed this statement when they matriculated to the university.

XII. ***STUDENTS WITH DISABILITIES POLICY:*** Students who feel they may need an accommodation based on the impact of a disability should contact us as soon as possible to discuss their needs, and should contact the Office of Disability Services to coordinate accommodations (http://ods.utk.edu/).

XIII. ***DEPARTMENT OR PROGRAM MISSION STATEMENT:*** The mission of the Department of Entomology and Plant Pathology (EPP) is to advance scientific knowledge and to provide science-based information to improve the sustainability of food and fiber production, protection of natural resources, and the lives of all people in Tennessee and across the world. We aim to fulfill this mission through innovative evidence-based research, knowledge-based outreach, and excellence in teaching. The departmental mission is fulfilled through discovery, development, application, and dissemination of research-based information from the perspective of the land grant philosophy of teaching, research, Extension, and other outreach. The department strives to adhere to the highest ethical standards of integrity, equality, and respect in the performance of our duties and interactions with colleagues, students, stakeholders, and cooperators.

XIV. ***TARGETED AUDIENCE:*** This course is intended to provide information for students pursuing careers in agriculture, forestry, entomology, weed science, plant pathology, sustainability, ecology, and related fields. This course should also be beneficial to students interested in identifying and managing pest problems.

XV. ***IMPORTANT DATES IN THE ACADEMIC CALENDAR SPRING 2016:***
(once confirmed, important calendar information will be included to inform students of university deadlines, due dates, etc.)

Deadline to Add, Change Grading Options or Drop without a W – August 26
Administrative Closing (UT Closed) – September 1
Labor Day (UT Closed) – September 5
Fall Break (UT Closed) – October 6 and 7
Thanksgiving Holidays (UT Closed) – November 24 and 25
Study Day – November 30
Last Day of Classes – December 1
Study Day – December 2
Final Exam – December 6 (8:00 am to 10:00 am)

(***Please Note:*** Please view the UT online Academic Calendar for additional key dates.)

XVI. ***COURSE OUTLINE/ASSIGNMENT/UNITS OF INSTRUCTION OR CLINIC SCHEDULE:*** [This outline was provided when the course was last taught in Fall 2014; this outline will be modified before the course is taught again in Fall 2016]

INTEGRATED PEST MANAGEMENT
Entomology and Plant Pathology 530/Plant Sciences 530
Fall Semester 2016

Tentative Lecture Outline

August	18	Course Introduction
	23	Integrated Pest Management: An Overview
	25	What Are Pests and Why Worry about Them? Factors Responsible for Development of IPM Philosophy
	30	Chemical Pesticides ["The Good, the Bad, and the Ugly"]
September	1	***No Class – Administrative Closing***
	6	Ecological Aspects as Foundation for IPM
	8	Ecological Aspects as Foundation for IPM (continued)
	13	Ecological Aspects as Foundation for IPM (continued)
	15	Principles of IPM; Guidelines for Developing IPM Programs Pest Types, Thresholds, and Injury Levels
	20	Plant Pathology and IPM (Dr. Darrell Hensley)
	22	Plant Pathology and IPM (continued)
	27	***EXAM***
	29	The Environmental Movement and IPM
October	4	Economic Thresholds
	6	***No Class -- Fall Break***
	11	Economic Thresholds (continued)
	13	Sampling and Monitoring -- Assessing Pest Populations

	18	IPM Tactics - An Overview of Different Management Tactics; Cultural Control
	20	Biological Control (Definitions and Concepts)
	25	Biological Control (continued)
	27	***EXAM***
November	1	Pesticides In IPM/Pesticide Management
	3	Pesticide Management (continued)
	8	Host Plant Resistance
	10	Host Plant Resistance (continued)
	15	Attractants, Repellents, and Pheromones in IPM
	17	Legal, Regulatory, and Other Tactics (e.g., physical and mechanical control)
	22	Genetic Control/Transgenic Plants (Dr. Tom Mueller)
	24	***No Class -- Thanksgiving Break***
	29	Use of Economic Thresholds in Weed Management/ Weed Management Tactics (Dr. Tom Mueller)
December	1	IPM and Sustainable Agriculture/IPM and the Future Class Projects/Course Summary

FINAL EXAM: 8:00 am - 10:00 am, Tuesday, December 6, 2016

XVII. ***THE INSTRUCTOR RESERVES THE RIGHT TO REVISE, ALTER AND/OR AMEND THIS SYLLABUS, AS NECESSARY. STUDENTS WILL BE NOTIFIED IN WRITING AND/OR BY EMAIL OF ANY SUCH REVISIONS, ALTERATIONS AND/OR AMENDMENTS.***