I. **TITLE:**

Integrated Pest Management

II. **CATALOG DESCRIPTION:**

Principles of plant pest control as related at developmental stages of crop plants. Evaluation of pest problems, alternative control methods and effects on the ecosystem. Emphasis on economic control of insect and disease vectors that affect agricultural crops. Prerequisites: Junior Standing (Spring only)

*To receive graduate credit for this course, a student must be admitted to graduate studies prior to registering for the course.*

III. **PURPOSE:**

To emphasize the advantages of multiple methods of pest control.

IV. **COURSE OBJECTIVES:**

A. To understand the multi-faceted approach used in integrated pest management.
B. To understand the ecological principles involved in pest control.
C. To develop skills in pest detection and identification.
D. To assess pest problems in terms of economic thresholds, and to recommend safe, effective control measures.

V. **CONTENT OUTLINE:**

A. Introduction
B. Arthropods and their development
   1. Nomenclature
   2. Insect development
   3. Pheromones
   4. Using a key to identify a lepidoptera pest
C. Beneficial Insects
D. Principles of plant pathology
E. Lepidoptera insect pests
   1. European Corn Borer
2. Southwestern Corn Borer
3. BT Crops
F. Fungal-like plant diseases, including downy mildews
G. Beetle insect pests
   1. Corn root worms
   2. Bean leaf beetles
H. Soybean Cyst Nematode
I. Bacterial Diseases, including fire blight
J. Fungal Diseases, like Gray Leaf Spot and Sudden Death Syndrome

VI. INSTRUCTIONAL ACTIVITIES:

   A. Lecture
   B. Library reports
   C. Pest collection

VII. FIELD AND CLINICAL EXPERIENCES:

   Field trip to the Entomology and Plant Pathology labs at Princeton. For this
   field trip, we will leave at 1pm and will be back by 5pm.

VIII. RESOURCES:

   A. Prepared course handouts
   B. Commercial literature
   C. MSU library

IX. GRADING PROCEDURES:

   Grading: Three Regular Exams 300 points
   Final Exam 150 points
   Pest Collection 100 points
   Research Paper 100 points
   Total: 650 points

   Students obtaining the following amounts of total points are guaranteed the
   following grades:

   Grading Scale:
   > 585 A
   > 520 B
   > 455 C
   > 390 D
   <390 E

   The instructor reserves the right to lower this scale on a linear basis, as the need
   arises. Graduating Seniors are expected to take the final along with other
   students during finals week.
Three mid-semester exams will be given with each being worth 100 points. The final exam will draw on all of the knowledge gained during the semester and be worth 150 points.

A pest collection including 15 specimens will be required and be worth 100 points. Costs associated with this pest collection include the following: a box for the collection, vials and pins for the preserved samples. The Agronomy Club will provide vials for 45 cents each, labels for vials for 5 cents, and entomology pins for 5 cents each.

Each student will write a research paper about a pre-approved topic within the field of Integrated Pest Management. This paper must be five or more pages in length. Allowing for possible changes, the class will follow the following timetable in the development of this paper. By the third week, topics of interest must be selected and brought to class for discussion. By the fifth week, each student must present a five to eight minute PowerPoint presentation on their topic. By the tenth week, rough drafts of each student’s essay must be submitted for general suggestions. The instructor will give each paper a brief evaluation at this time. Students must reference their sources of information throughout the paper and list the full reference at the end of the paper in a “Cited Works” section. Part of the final grade will include whether or not reputable sources of information were utilized. At least two journal articles must be used as references. Websites are OK, if they are from reputable sources; however, there are many questionable websites. By the fourteenth, the final research paper must be submitted both as a hardcopy and as a Microsoft Word computer file. To prevent past problems, all papers will be searched for plagiarism from the Internet. Please write the papers in your own words!!! This research paper will be graded as follows: selecting the topic and submitting it on time – 5 points, giving a PowerPoint presentation to the class on a topic at the assigned time – 5 points, submitting the rough draft on time – 10 points, ideas clearly explained and topic adequately covered – 40 points, quality of writing – 20 points, and use of reputable sources or cited works and correct referencing of paper – 20 points.

X. **ATTENDANCE POLICY:**

Please refer to the most current copy of the *Murray State University’s Undergraduate Bulletin and Graduate Bulletin.*

XI. **ACADEMIC HONESTY POLICY:**

Please refer to the most current copy of the *Murray State University’s Undergraduate Bulletin and Graduate Bulletin.*
NOTE: The School of Agriculture Faculty have adopted and implemented an Academic Honesty Policy in addition to the University Honesty Policy, which can be found in the current Undergraduate Bulletin and Graduate Bulletin. The policy sets guidelines regarding acts of dishonesty and the procedure to follow should an event occur. It is each Agriculture student’s responsibility to obtain and read a copy of this document. The School’s Academic Honesty Policy can be obtained by asking for a copy from any Agriculture Faculty member or the Secretary.

XII. TEXT AND REFERENCES:

Field Crop Scouting Manual (2010) Board of Trustees of the University of Illinois, X880e edition

XIII. PREREQUISITES:

Junior standing.

XIV. OTHER INFORMATION

Any change in the syllabus or in the schedule of class activities or meetings will be clearly announced during regular class time. The instructor reserves the right to make any changes in the course, which in his judgement are necessary.

XV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact Sabrina Y. Dial, Director of Equal Opportunity, Murray State University, 103 Wells Hall, Murray, KY 42071-3318. Telephone: 270-809-3155 (voice), 270-809-3361 (TDD).

XV. MSU SCHOOL OF AGRICULTURE CELL PHONE POLICY

The School of Agriculture recognizes that in today’s world cell phones are a familiar and often necessary form of communication for students.
It shall be the policy of the School that no cell phone usage shall be allowed in class and/or labs without the prior consent of the course instructor. This shall include verbal calling, incoming calls, email, text messaging, and use of cell phone calculators on tests and quizzes.

Cell phones must be kept off and out of sight (i.e. secured to a person’s belt or kept in a bag or purse away from desks and lab counters).

Should a student’s cell phone be visible, ring, or other form of unauthorized usage that is interruptive to the class or lab, the student may be asked to leave class and not return for that class/lab period.

Upon prior consent of the instructor, a student may obtain permission to have their phone on in case of an emergency or in critical family situations.

This policy also includes pagers and other electronic equipment such as blackberries and/or computers/laptops.