



ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Natural Sciences Business

COURSE: AGR 1218 Crop Pest Management

Date: 10-22-2017

Credit Hours: 3 Credit Hours

Prerequisite(s): None

Delivery Method: **Lecture** **3 Contact Hours (1 contact = 1 credit hour)**
 Seminar **0 Contact Hours (1 contact = 1 credit hour)**
 Lab **0 Contact Hours (2-3 contact = 1 credit hour)**
 Clinical **0 Contact Hours (3 contact = 1 credit hour)**
 Online
 Blended

Offered: **Fall** **Spring** **Summer**

IAI Equivalent –**Only for Transfer Courses**-go to <http://www.itransfer.org>:

CATALOG DESCRIPTION:

The study of the principles of weed, insect, and disease identification and management techniques used in agriculture and closely related fields. The emphasis of the course will be identification, prevention, and management of agricultural pests.

GENERAL EDUCATION GOALS ADDRESSED

[See last page for Course Competency/Assessment Methods Matrix.]

Upon completion of the course, the student will be able:

[Choose up to three goals that will be formally assessed in this course.]

- To apply analytical and problem solving skills to personal, social, and professional issues and situations.
- To communicate successfully, both orally and in writing, to a variety of audiences.
- To construct a critical awareness of and appreciate diversity.
- To understand and use technology effectively and to understand its impact on the individual and society.
- To develop interpersonal capacity.
- To recognize what it means to act ethically and responsibly as an individual and as a member of society.
- To recognize what it means to develop and maintain a healthy lifestyle in terms of mind, body, and spirit.
- To connect learning to life.

EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

[Outcomes related to course specific goals. See last page for more information.]

Upon completion of the course, the student will be able to:

1. Select and explain appropriate crop scouting methods for grain and forage crops.
2. Prepare and justify a crop pest monitoring and management plan.
3. Identify growth stages of grain and forage crops important to the Midwest.
4. Identify common crop pests including; insects, weeds, and diseases.
5. Estimate economic and action thresholds of crop pests.
6. Evaluate and recommend crop pest prevention and management strategies.
7. Identify and explain factors that influence pest levels within the field.
8. Evaluate pest injury levels and make management recommendations to minimize economic damage.
9. Determine timing of pesticide applications and make defensible pesticide product recommendations.

MAPPING LEARNING OUTCOMES TO GENERAL EDUCATION GOALS

[For each of the goals selected above, indicate which outcomes align with the goal.]

Goals	Outcomes
First Goal	
To apply analytical and problem solving skills to personal, social, and professional issues and situations.	<ol style="list-style-type: none"> 1. Select and explain appropriate crop scouting methods for grain and forage crops. 2. Prepare and justify a crop pest monitoring and management plan. 3. Identify growth stages of grain and forage crops important to the Midwest.

	<ol style="list-style-type: none"> 4. Identify common crop pests including; insects, weeds, and diseases. 5. Estimate economic and action thresholds of crop pests. 6. Evaluate and recommend crop pest prevention and management strategies. 7. Identify and explain factors that influence pest levels within the field. 8. Evaluate pest injury levels and make management recommendations to minimize economic damage. 9. Determine timing of pesticide applications and make defensible pesticide product recommendations.
Second Goal	
Third Goal	

COURSE TOPICS AND CONTENT REQUIREMENTS:

- 1. Crop Scouting Basics**
 - 1.1. Fundamental Concepts of Integrated Pest Management**
 - 1.1.1. Patterns of Crop Protection**
 - 1.1.2. Scouting Fields for Pests**
 - 1.1.3. Economic Thresholds and Injury Levels**
 - 1.1.4. Integrated Pest Management**
 - 1.2. Basic Principles of Crop Monitoring**
 - 1.2.1. Plant Sample Collection and Submission**
 - 1.2.2. General Scouting Reports**
 - 1.2.3. Collection and Shipment of Insect Specimens**
 - 1.2.4. Collection and Shipment of Soil Samples**
 - 1.2.5. Collecting Plant Tissues for Nutrient Analysis**
- 2. Crop Production**
 - 2.1. Corn Management**
 - 2.1.1. Growth Stages**
 - 2.1.2. Symptoms of Plant Damage and Deficiencies**
 - 2.1.3. Corn Pest Management Calendar**
 - 2.1.4. Nutrient Deficiencies**
 - 2.1.5. Diagnostic Guide for Corn Problems**
 - 2.2. Soybean Management**
 - 2.2.1. Growth of Soybean Plant**
 - 2.2.2. Soybean Nutrient Deficiencies**
 - 2.2.3. Soybean Pest Management Calendar**
 - 2.2.4. Diagnostic Guide for Soybean Problems**
- 3. Insect Management**
 - 3.1. Entomology**
 - 3.1.1. Basic Insect Scouting Procedures**
 - 3.1.2. Identifying Injury**
 - 3.1.3. Field Scouting Equipment**
 - 3.1.4. Economic Thresholds**
 - 3.2. Identification of Corn Insects**
 - 3.3. Identification of Soybean Insects**
 - 3.4. Identification of Forage Crop Insects**
 - 3.5. Identification of Wheat Insects**
 - 3.6. Identification of Beneficial Insects**
 - 3.7. Insecticide Use Theory**
- 4. Plant Disease Management**
 - 4.1. Management of Disease**
 - 4.1.1. Economic Thresholds**
 - 4.1.2. Use of Pesticides**
 - 4.1.3. Seed Selection**
 - 4.2. Corn Diseases**
 - 4.2.1. Corn Seed Rots**
 - 4.2.2. Corn Seedling Diseases**
 - 4.2.3. Corn Leaf Diseases**

- 4.2.4.Storage Rots
- 4.2.5.Corn Nematodes
- 4.3.Soybean Diseases
 - 4.3.1.Soybean Seed Rot
 - 4.3.2.Soybean Seedling Diseases
 - 4.3.3.Soybean Foliar Diseases
 - 4.3.4.Soybean Stem Diseases
- 4.4.Wheat Diseases
 - 4.4.1.Wheat Seed and Seedling Diseases
 - 4.4.2.Wheat Leaf Diseases
 - 4.4.3.Head Diseases
 - 4.4.4.Crown and Root Rots
 - 4.4.5.Viral Diseases
- 4.5.Forage Diseases
 - 4.5.1.Seed and Seedling Diseases
 - 4.5.2.Foliar Diseases
 - 4.5.3.Stem, Crown, Root, and Wilt Diseases
- 5. Weed Management
 - 5.1.Weed Scouting and Management
 - 5.1.1.Basic weed scouting procedures
 - 5.1.2.Economic Thresholds of Weeds
 - 5.2.Weed Identification and Biology
 - 5.2.1.Annual Grass Weeds
 - 5.2.2.Perennial Grass Weeds
 - 5.2.3.Annual Broadleaf Weeds
 - 5.2.4.Biennial Broadleaf Weeds
 - 5.2.5.Perennial Broadleaf Weeds
 - 5.3.Herbicide Use
 - 5.3.1.Mode of Action
 - 5.3.2.Product Selection
 - 5.3.3.Soil Applied Herbicides
 - 5.3.4.Foliar-Applied Herbicides
 - 5.3.5.Herbicide injury
 - 5.3.6.Herbicide Resistance
- 6. Current issues in pest management

INSTRUCTIONAL METHODS:

- Lecture
- Discussion
- Projects
- Field Trips

INSTRUCTIONAL MATERIALS:

University of Illinois Extension. 2010. Field crop scouting manual. University of Illinois. X880e.

Crop Sciences Extension and Outreach. 2017. Illinois agronomy handbook. University of Illinois. <http://extension.cropsciences.illinois.edu/handbook/> (accessed 22 Oct. 2017).

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

A= 90-100

B= 80-89

C= 70-79

D= 60-69

F= 0-59

Tests: 50%

Quizzes: 30%

Homework Assignments: 20%

OTHER REFERENCES

Pedigo, L.P., and M.E. Rice. 2009. Entomology and pest management. Waveland Press, Inc. ISBN 10:1-4786-2285-7.

University of Illinois Extension publications.

<http://web.extension.illinois.edu/state/index.php>

Iowa State University Extension and Outreach Extension Store publications.

<https://store.extension.iastate.edu/>.

Purdue University Extension publications.

<https://extension.purdue.edu/Pages/default.aspx>

Course Competency/Assessment Methods Matrix

(Dept/# Course Name)	Assessment Options																																			
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment				
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D							D				
Select and explain appropriate crop scouting methods for grain and forage crops.	D							X	X				X																							X
Prepare and justify a crop pest monitoring and management plan.	D							X	X				X																							X
Identify growth stages of grain and forage crops important to the Midwest.	D							X	X				X																							X
Identify common crop pests including; insects, weeds, and diseases.	D							X	X				X																							X

