



ILLINOIS VALLEY COMMUNITY COLLEGE

COURSE OUTLINE

DIVISION: Natural Sciences Business

COURSE: AGR 1209 Crop Production and Management

Date: 10-24-2017

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:

A study of the grain and forage crop production methods used in the Midwest. Course emphasis will be on seed selection, seeding rates, fertility management, pest management, seedbed preparation, harvesting methods, and technology used in crop production and management.

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. Explain weather influences on crop growth and development.
2. Describe tillage and soil management practices used in crop production.
3. Critique seeding rates and row spacing used in grain crop production.
4. Develop a crop plan for grain and forage crops.
5. Compare and contrast production methods used to grow grain and forage crops.
6. Prepare and explain a cropping plan for nontraditional cropping systems.
7. Explain advantages and disadvantages of irrigation and drainage methods used to manage soil water.
8. Evaluate alternative crops and determine their feasibility and profitability.
9. Analyze seed data and make seed selection recommendations.
10. Propose and defend the implementation of conservation practices into crop production systems.

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. Explain weather influences on crop growth and development. 2. Describe tillage and soil management practices used in crop production. 3. Critique seeding rates and row spacing used in grain crop production. 4. Develop a crop plan for grain and forage crops.

	<ol style="list-style-type: none"> 5. Compare and contrast production methods used to grow grain and forage crops. 6. Prepare and explain a cropping plan for nontraditional cropping systems. 7. Explain advantages and disadvantages of irrigation and drainage methods used to manage soil water. 8. Evaluate alternative crops and determine their feasibility and profitability. 9. Analyze seed data and make seed selection recommendations. 10. Propose and defend the implementation of conservation practices into crop production systems.
Second Goal	
Third Goal	

COURSE TOPICS AND CONTENT REQUIREMENTS:

1. Weather and Crops
 - a. Temperature
 - b. Precipitation
 - c. Soil Moisture
 - d. Weather Forecasts
 - i. El Nino
 - ii. La Nina
2. Soil Management and Tillage
 - a. Conservation Compliance
 - b. Conservation Tillage Methods
 - c. Conventional Tillage
 - d. Soil Erosion
 - e. Tillage Considerations
3. Corn Production
 - a. Development Stages
 - b. Seed Selection
 - c. Planting Date
 - d. Planting Depth
 - e. Seeding Rates
 - f. Row Spacing
 - g. Corn Fertility Management
 - h. Potential Problems
 - i. Management for Optimal Yield
4. Soybean Production
 - a. Development Stages
 - b. Seed Selection
 - c. Planting Date
 - d. Planting Depth
 - e. Seeding Rates
 - f. Row Spacing
 - g. Soybean Fertility Management
 - h. Potential Problems
 - i. Management for Optimal Yield Yield
5. Wheat Production
 - a. Development Stages
 - b. Seed Selection
 - c. Planting Date
 - d. Planting Depth
 - e. Row Spacing
 - f. Wheat Fertility Management
 - g. Potential Problems
 - h. Management for Optimal Yield
6. Alfalfa and Hay Production
 - a. Development Stages
 - b. Seed Selection

- c. Planting Date
- d. Planting Depth
- e. Seeding Methods
- f. Alfalfa Fertility Management
- g. Companion Crops
- h. Potential Problems
- i. Management for Optimal Yield
- 7. Cropping Systems
 - a. Types of Cropping Systems
 - b. Growing Crops in Rotation
 - c. Cover Crops
- 8. Alternative Crop Production
 - a. Specialty Corn Production
 - b. Specialty Soybean Production
 - c. Growing Crops for Biofuels
 - d. Other Specialty Crops
- 9. Water Management
 - a. Benefits of Drainage
 - b. Drainage Methods
 - c. Drainage Decisions
 - d. Installing Field Drainage Tile
 - e. Benefits of Irrigation
 - f. Irrigation Methods
 - g. Irrigation Decisions
 - h. Installing Irrigation
 - i. Alternative Soil Water Management Methods
- 10. Conservation Practices
 - a. Conservation, Farming, and You
 - b. Buffer Strips
 - c. Contour Filter Strips
 - d. Waterways
 - e. Conservation Reserve Programs (CRP)
 - f. Environmental Quality Incentive Programs (EQUIP)
 - g. Conservation Planning

INSTRUCTIONAL METHODS:

- Lecture
- Discussion
- Assignments
- Field Trips
- Projects

INSTRUCTIONAL MATERIALS:

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

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

University of Illinois Extension. 2012. Growth stages of agronomic crops. University of Illinois. Champaign-Urbana, IL. X905

Iowa State University. 2011. Corn growth and development. PMR 1009. Iowa State University. Ames, IA.

Iowa State University. 2001. Corn planting guide. PM 1885. Iowa State University. Ames, IA.

Iowa State University. 2011. Alfalfa management guide. NCR 547. Iowa State University. Ames, IA.

Iowa State University. 2014. Soybean growth and development. PM 1945. Iowa State University. Ames, IA.

STUDENT REQUIREMENTS AND METHODS OF EVALUATION:

A= 90-100

B= 80-89

C= 70-79

D= 60-69

F= 0-59

Exams: 50%

Quizzes: 30%

Homework: 20%

OTHER REFERENCES

University of Illinois Extension publications.
<http://web.extension.illinois.edu/state/index.php>

Purdue University Extension publications.
<https://extension.purdue.edu/Pages/default.aspx>

Iowa State University Extension and Outreach Extension Store publications.
<https://store.extension.iastate.edu/>.

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			
Explain weather influences on crop growth and development.	D							X	X				X																						X
Describe tillage and soil management practices used in crop production.	D							X	X				X																						X
Critique seeding rates and row spacing used in grain crop production.	D							X	X				X																						X
Develop a crop plan for grain and forage crops.	D							X	X				X																						X

