

**COURSE SYLLABUS FORMAT**  
Southeast Missouri State University

Department of           Agriculture          

Course No. AO415

Title of Course:   Crop Systems Management  

Revision           

New       X      

I. Catalog Description and Credit Hours of Course:

Crop and soil management solutions involving integration of biological, physical, chemical and economic aspects in production systems. 3 credit hours

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II. Prerequisite (s): AO120 and AO215 or permission of instructor

III. Purposes or Objectives of the Course:

- A. Students will use a systems approach to management challenges in real-world agronomic situations.
- B. Students will provide a professional recommendation for a client solution.

IV. Student Learning Outcomes (Minimum of 3)

- A. Describe and quantify the water, energy, carbon, and biogeochemical (nitrogen, phosphorus, and potassium) cycles for an individual farm
- B. Identify, obtain, evaluate, and utilize crop and soil management information from various sources.
- C. Propose solutions to the client by integrating biological, physical, chemical, and economic components using a systems approach.

V. Expectations of Students:

- A. Read required material prior to class attendance and be prepared to discuss it fully and intelligently.
- B. Attend class regularly and actively participate in class discussion.
- C. Meet all announced deadlines for assignments.
- D. Abide by University policies regarding absence from class and academic honesty as stated in the Undergraduate Bulletin.
- E. Lecture and discussion will be based on reading assignments. Please read assignments before class lectures.
- F. Class attendance is extremely important because of the group activities and class discussions. Each class and lab is unique and cannot be duplicated, so attendance is required.
- G. Professional attitude and atmosphere are required for this course. General rules of respect will apply during this course.
- H. Any papers that are handed in after the deadline will result in the penalty loss of one letter grade with each day. There will be no exceptions for the late policy.
- I. Academic dishonesty, such as plagiarism, will not be tolerated. This class is preparation for your future and requires professionalism.
- J. If you have any condition such as a physical or learning disability which will make it difficult for you to carry out the work as I have it outlined or which will require academic accommodations, please notify me immediately. I will do my best to accommodate you (if you have a documented need – See the Learning Assistance Programs & Disability Support Services for more information on this). This is also a resource to assist you.

VI. Course Content or Outline (Indicate number of class hours per unit or section):

- A. Natural resources and cycles review
  - a. Cycles (Week 1-3)
    - i. Water
    - ii. Energy

- iii. Carbon
    - iv. Nitrogen
    - v. Phosphorus
    - vi. Potassium
  - b. Soil sampling and recommendations (Week 4)
- B. Determining client needs (Week 5)
  - a. Teamwork
- C. Client consultation (Week 6)
  - a. Farm evaluation
    - i. Tillage
    - ii. Fertilization
    - iii. Residue
    - iv. Irrigation/drainage
    - v. Harvest
    - vi. Goals
- D. Mapping tools (Week 7-9)
  - a. GPS
  - b. GIS
  - c. Yield maps
- E. Nutrient management plans (Week 10-11)
- F. Manure management plans (Week 12-13)
- G. Teamwork and professional client presentations (Week 14 and 15)
- H. Final exam (Week 16)

VII. Textbook(s) and/or Other Required Materials or Equipment:

- A. Ess D. and M.Morgan. 2003. The Precision-Farming Guide for Agriculturalists. An Agricultural Primer. John Deere Publishing, Moline, IL.
- B. Other readings and handouts will be provided.

VIII. Basis for Student Evaluation:

- A. Evaluation Procedures:
  - a. Homework:
    - i. Farm and resource maps 50 pts each
    - ii. Evaluate water, energy, carbon and biological cycles 50 pts each
    - iii. Comparison of the methods of site-specific management 100 points
    - iv. Preparation of nutrient and management plan 200 points
    - v. Written/Oral presentation 200 points
  - b. Final exam 100 points
  - c. Participation Points (0-50 points): Attendance, group effort, pop quizzes, class discussions and participation, and classroom attitude will be used to assign participation points at the end of the semester.
- B. NOTE:
  - a. NO make-ups will be given on quizzes, exercises, presentations unless prior approval to reschedule has been given by the instructor.
  - b. NO take-home exams or papers will be accepted after the date and time due, unless prior approval has been given by the instructor.
  - c. NO homework assignments will be accepted after the beginning of class on the date due, unless I have given prior approval.
- C. Grading system:
  - a. A 90-100%
  - b. B 80-89%
  - c. C 70-79%
  - d. D 60-69%
  - e. F Below 60%