

COURSE SYLLABUS FORMAT
Southeast Missouri State University

Department of Agriculture Course No. AG444/GO644
Title of Course: Spatial Analysis in GIS Revision _____
New x

I. Catalog Description and Credit Hours of Course:

Develop an understanding of spatial relationships and methods to analyze those relationships by using GIS and geostatistics for model development. 3 credit hours

II. Prerequisite (s): Previous introductory GIS course or permission of instructor

III. Purposes or Objectives of the Course:

- A. Understand spatial relationships around you at varying scales
- B. Apply geostatistics to spatial patterns to analyze GIS models

IV. Student Learning Outcomes

- A. Students will be able to recognize spatial variation and real-world applications
- B. Students will be able to critique an example GIS model for validity regarding spatial variation
- C. Students will be able to demonstrate ability to calculate slope

V. Expectations of Students:

- A. Read required material prior to class attendance and be prepared to discuss it fully and intelligently. Lecture and discussion will be based on reading assignments. Please read assignments before class lectures.
- 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 and Graduate Bulletin.
- E. 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. Participation points will be assigned based on your attendance, pop quizzes, cooperative discussions, and classroom attitude.
- F. Professional attitude and atmosphere are required for this course. General rules of respect will apply during this course. NO tobacco products of any kind may be used in this room.
- G. 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.

VI. Course Content or Outline:

Approximate Course Outline	Tentative Class Hours
A. Spatial Variability described	3
B. Grid Sampling	3
C. GPS and Differential correction	3
D. Map data, comparison, errors, distance (e.g. IDW)	3
E. Data mining	3

F. GIS Modeling	3
G. Neighborhood statistics	3
H. Geostatistics	6
I. Semivariance	6
J. Kriging	6
K. Correlation/Calibration/Recommendation	3
L. Analyzing and displaying spatial data	<u>3</u> 45

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

- A. Berry, Joseph K. 2007 (current edition is online). Map Analysis: Understanding Spatial Patterns and Relationships
- B. Other readings and handouts will be provided.

VIII. Basis for Student Evaluation:

- A. Evaluation Procedures:
 - a. Homework:
 - i. Weekly homework exercises (10-20 pts each)
 - ii. Analysis and Modeling Project (100 points)
 - iii. Written/Oral presentation (100 points)
 - b. Quizzes (weekly quizzes @ 10 pts each)
 - c. Exams (4@ 100 pts each)
 - d. 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.
 - e. Graduate students will have to complete an additional semester assignment (as written paper) using real-world data in order to earn graduate level credit for this course. Grading rubric for all projects includes expectation of interpretation and analysis (graduate students will be expected to demonstrate further level of analysis than undergraduate students).
- 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:
 - Undergraduate Students AG444:
 - a. A 90-100%
 - b. B 80-89%
 - c. C 70-79%
 - d. D 60-69%
 - e. F Below 60%
 - Graduate Students GO644:
 - a. A 90-100%
 - b. B 80-89%
 - c. C 70-79%
 - d. F Below 70%

- IX. Academic dishonesty, such as plagiarism, will not be tolerated. This class is preparation for your future and requires professionalism.
- X. 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.)
- XI. This course will be taught by faculty possessing academic background and core competencies of proficiency in spatial analysis and GIS technology.