

APPLICATION FOR NEW COURSE

1. Submitted by the College of _____ Date: _____

Department/Division proposing course: _____

2. Proposed designation and Bulletin description of this course:

a. Prefix and Number _____

b. Title* _____

*If title is longer than 24 characters, write a sensible title (24 characters or less) for use on transcripts:

c. Courses must be described by at least one of the categories below. Include the number of actual contact hours per week for each category, as applicable.

(___) CLINICAL (___) COLLOQUIUM (___) DISCUSSION (___) LABORATORY (___) LECTURE

(___) INDEPEND. STUDY (___) PRACTICUM (___) RECITATION (___) RESEARCH (___) RESIDENCY

(___) SEMINAR (___) STUDIO (___) OTHER – Please explain: _____

d. Please choose a grading system: Letter (A, B, C, etc.) Pass/Fail

e. Number of credit hours: _____

f. Is this course repeatable? YES NO If YES, maximum number of credit hours: _____

g. Course description:

h. Prerequisite(s), if any:

i. Will this course be offered through Distance Learning? YES NO

If YES, please circle one of the methods below that reflects how the majority of the course content will be delivered:

Internet/Web-based Interactive video Extended campus Kentucky Educational Television (KET/teleweb) Other

Please describe "Other": _____

3. Teaching method: N/A or Community-Based Experience Service Learning Component Both

4. To be cross-listed as: _____
Prefix and Number Signature of chair of cross-listing department

5. Requested effective date (term/year): _____ / _____

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6. Course to be offered (please check all that apply): Fall Spring Summer
7. Will the course be offered every year? YES NO
If NO, please explain: _____
8. Why is this course needed?

9. a. By whom will the course be taught? _____
- b. Are facilities for teaching the course now available? YES NO
If NO, what plans have been made for providing them?

10. What yearly enrollment may be reasonably anticipated?

11. a. Will this course serve students primarily within the department? Yes No
- b. Will it be of interest to a significant number of students outside the department? YES NO
If YES, please explain.

12. Will the course serve as a University Studies Program course[†]? YES NO
If YES, under what Area? _____
- [†]AS OF SPRING 2007, THERE IS A HIATUS ON APPROVAL OF NEW COURSES FOR USP.
13. Check the category most applicable to this course:
- traditional – offered in corresponding departments at universities elsewhere
- relatively new – now being widely established
- not yet to be found in many (or any) other universities
14. Is this course applicable to the requirements for at least one degree or certificate at UK? Yes No
15. Is this course part of a proposed new program? YES NO
If YES, please name: _____
16. Will adding this course change the degree requirements for ANY program on campus? YES NO
If YES[‡], list below the programs that will require this course:

[‡]In order to change the program(s), a program change form(s) must also be submitted.

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17. The major teaching objectives of the proposed course, syllabus and/or reference list to be used are attached.
18. Check box if course is 400G or 500. If the course is 400G- or 500-level, *you must include a syllabus showing differentiation* for undergraduate and graduate students by (i) requiring additional assignments by the graduate students; and/or (ii) the establishment of different grading criteria in the course for graduate students. (See *SR 3.1.4*)

19. Within the department, who should be contacted for further information about the proposed new course?

Name: _____ Phone: _____ Email: _____

20. Signatures to report approvals:

DATE of Approval by Department Faculty	/	<div style="display: flex; justify-content: space-between;"> printed name Reported by Department Chair signature </div>
DATE of Approval by College Faculty	/	<div style="display: flex; justify-content: space-between;"> printed name Reported by College Dean signature </div>
* DATE of Approval by Undergraduate Council	/	<div style="display: flex; justify-content: space-between;"> printed name Reported by Undergraduate Council Chair signature </div>
* DATE of Approval by Graduate Council	/	<div style="display: flex; justify-content: space-between;"> printed name Reported by Graduate Council Chair signature </div>
* DATE of Approval by Health Care Colleges Council (HCCC)	/	<div style="display: flex; justify-content: space-between;"> printed name Reported by Health Care Colleges Council Chair signature </div>
* DATE of Approval by Senate Council		Reported by Office of the Senate Council
* DATE of Approval by University Senate		Reported by Office of the Senate Council

*If applicable, as provided by the *University Senate Rules*

Course Syllabus
FOR 330
GIS and Spatial Analysis

Class Period

Lecture: 2 hours per week

Lab: 3 hours per week

Instructor

Dr. Songlin Fei

Room 204 T.P. Cooper Building

songlin.fei@uky.edu

COURSE OVERVIEW

Course Description

Principles and operations of Geographic Information Systems (GIS) applied to forestry and natural resource problems. Students will learn to collect necessary field data to create GIS maps and digital spatial data sets, perform basic spatial analysis, and integrate social and economic data to solve spatially related natural resource problems. *Prerequisites: MA 109 or Calculus, FOR 150, and FOR 200.*

Student Learning Outcomes

At the end of this course, the student will be able to demonstrate the following skills.

1. Describe the principles of geographic information systems (GIS) including data layers, data models, and map projections.
2. When given a natural resource problem, you will be able to create digital spatial data sets, perform basic spatial analysis, and integrate social and economic data to solve spatially related natural resource problems.
3. Locate and retrieve spatial data sets from public domain sources.
4. When given a field site, you will be able to use a global positioning unit to collect data and integrate the field data into a GIS map.
5. Explain trends in GIS technology and recognize challenges and opportunities related to GIS.

Grading Procedures – Assignments, Grading Criteria, Letter Grades

Course grades will be based on a weighted average of results as follows:

Homework/Lab – 50%

Weekly Quizzes – 10%
Midterm Exam – 20%
Term Project – 20%

Homework assignments are due at the beginning of the class one week after they are assigned, unless otherwise noted. Late homework will not be accepted for a grade. If your homework is late (without excused absence), I will be happy to review the homework but you will not receive credit for the assignment. Makeup labs are possible if the instructor has advance notice. Labs are generally turned in as printed maps and/or tables. If you are working at home it is possible to submit the printed lab assignments via email as a PDF. Please do not send .mdx or shapefiles. Your grade is for individual effort; copied files/maps from other students will be construed as cheating.

Weekly quizzes are to test your knowledge about the broad topics we are covering in class. Typically, I draw from what has been covered during previous classes or readings. I will give the quiz during the first few minutes of class. The quizzes are usually made up of a few multiple choice, short answer, true/false questions. Weekly quizzes are also designed to check your attendance. Your attendance in class is expected. Attendance will start counting on the first day of class following the end of the Drop/Add period. Three or more unexcused absences can result in your being removed from the class role. University closures will prevail.

The midterm exam will be a *Keyboard Exam*. This will be an open notes/book/help file exam. You will NOT be able to utilize any help from other people. You will be given a problem or a series of problems, data, and time to produce a product or a series of products based on concepts we have covered in the course.

Late homework, make-up quizzes and exams will only be given with an excused absence (S.R. 5.2.4.2). It is the student's responsibility to inform the instructor of the absence, preferably in advance, but no later than one week after the absence.

The purposes of the term project are 1) to enable you to explore in-depth an analysis performed with GIS and 2) to make an oral presentation that will be informative to you and to your classmates. Undergraduate student and graduate student will receive different assignments on term projects. Detailed instruction of the term project will be handed out in the fifth week of the semester.

I will try to grade all lab exercises and exams in a one-week period, for quick turn around. However, this won't happen in all cases. ***Grading will be on a straight scale, not on a curve.*** If you all do well, you will all get an A. The scale is:

A 90 – 100 B 80 - 89 C 70 – 79 D 60 - 69

Course Outline

Week 1 - Introduction to GIS & ArcGIS. Introduction to raster, vector data structure.

Lab - Introduction to ArcGIS

Week 2 - Data models, map basics, vector data – point, line and area. Data models, raster data, tin, quadtree.

Lab - Displaying Data

Week 3 - Data format, coverage, shapefile. Data format, Geodatabase.

Lab - Getting information about features.

Week 4 - Relations databases, table manipulation. Data sources, entry and editing, metadata.

Lab - Analyzing feature relationships

Week 5 - Data sources, entry and editing. Basic geodesy, datum, coordinate systems, map projections

Lab - Analyzing feature relationships

Week 6 - Map transformation. Presenting data.

Lab - Creating and editing data

Week 7 – Exam. GPS.

Lab – Study for exam

Week 8 - Photos and satellite images digital data. Photos and satellite images digital data.

Lab – GPS

Week 9 - Basic spatial analysis. Raster analysis and modeling

Lab - Creating Models

Week 10 - Terrain analysis. Interpolation geostats.

Lab - Vector analysis

Week 11 - Interpolation geostats. Habitat modeling.

Lab - Spatial analysis

Week 12 - Habitat modeling. Cartographic modeling.

Lab - Spatial analysis. Raster Analysis

Week 13 - Data quality and future trends. Presentation preparation.

Week 14 - Oral Presentations

COURSE POLICIES

Attendance and Excused Absences

Your attendance in class is expected. Attendance will start counting on the first day of class following the end of the Drop/Add period. Three or more unexcused absences can result in your being removed from the class role. University closures will prevail.

Late homework, make-up quizzes and exams will only be given with an excused absence (S.R. 5.2.4.2). It is the student's responsibility to inform the instructor of the absence, preferably in advance, but no later than one week after the absence.

Academic Integrity, Cheating and Plagiarism

Cheating of any form, including plagiarism, will not be tolerated. Cheating will be dealt with in accordance with University regulations. (See <http://www.uky.edu/StudentAffairs/Code/>)

Professional Preparation

This course helps prepare you for your professional career. You are expected to attend class, be on time, participate in class discussions, and be respectful of your instructor and fellow classmates.

Disability Statement

Students with a disability that need classroom or exam accommodations should contact the Disability Resource Center, 257-2754, room 2 Alumni Gym, jkarnes@uky.edu .