

Check Appropriate Boxes: Undergraduate credit  Graduate credit  Professional credit

1. School/Division CLAS/Dept. of Criminal Justice 2. Academic Subject Code CJUS  
3. Course Number P424 (must be cleared with University Enrollment Services) 4. Instructor Qiang Xu  
5. Course Title Crime Mapping and Geographic Information Systems

Recommended Abbreviation (Optional) \_\_\_\_\_  
(Limited to 32 Characters including spaces)

6. First time this course is to be offered (Semester/Year): SP 09  
7. Credit Hours: Fixed at 3 or Variable from \_\_\_\_\_ to \_\_\_\_\_  
8. Is this course to be graded S-F (only)? Yes \_\_\_\_\_ No x  
9. Is variable title approval being requested? Yes \_\_\_\_\_ No x  
10. Course description (not to exceed 50 words) for Bulletin publication: \_\_\_\_\_

This course provides a general introduction to geographic information systems and the application to criminal justice field research with special focus on crime mapping techniques.

11. Lecture Contact Hours: Fixed at 3 or Variable from \_\_\_\_\_ to \_\_\_\_\_  
12. Non-Lecture Contact Hours: Fixed at \_\_\_\_\_ or Variable from \_\_\_\_\_ to \_\_\_\_\_  
13. Estimated enrollment: 30 of which 0 percent are expected to be graduate students.  
14. Frequency of scheduling: Every third semester Will this course be required for majors? No  
15. Justification for new course: Elimination of SPEA  
16. Are the necessary reading materials currently available in the appropriate library? \_\_\_\_\_  
17. Please append a complete outline of the proposed course, and indicate instructor (if known), textbooks, and other materials.  
18. If this course overlaps with existing courses, please explain with which courses it overlaps and whether this overlap is necessary, desirable, or unimportant.  
19. A copy of every new course proposal must be submitted to departments, schools, or divisions in which there may be overlap of the new course with existing courses or areas of strong concern, with instructions that they send comments directly to the originating Curriculum Committee. Please append a list of departments, schools, or divisions thus consulted.

Submitted by:

Burhan Pent Date 2/15/08  
Department Chairman/Division Director

Approved by:

[Signature] Date 5/8/08  
Dean Assoc Dean CLAS

\_\_\_\_\_  
Date \_\_\_\_\_  
Dean of Graduate School (when required)

\_\_\_\_\_  
Date \_\_\_\_\_  
Chancellor/Vice-President

\_\_\_\_\_  
Date \_\_\_\_\_  
University Enrollment Services

After School/Division approval, forward the last copy (without attachments) to University Enrollment Services for initial processing, and the remaining four copies and attachments to the Campus Chancellor or Vice-President.

P424: Crime Mapping and Geographic Information Systems  
Spring 2009

Instructor: Dr. Qiang Xu  
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Office Phone: 574-520-4592  
E-mail: qiaxu@iusb.edu

### Course Description

This course provides an introduction to GIS information systems and how to apply GIS techniques in criminal justice research. Lecture content will incorporate data acquisition, preprocessing, critical representation and other important aspects in crime mapping. Classroom activities consist of lecture and lab exercises. Following each lecture there will be a guided lab exercise for students to get familiar with Arc GIS software and apply GIS concepts and techniques to practical problems.

### Course Objectives

1. Be familiar with the historical backgrounds of spatial analysis of crime.
2. Acquire basic concepts of cartography and geographic information system.
3. Be aware of the issues in the research process using GIS techniques.
4. Be familiar with existing sources of GIS data and how to adopt them in research.
5. Develop the ability to critically interpret visual presentations and enhance the awareness of visual misrepresentation.

### Prerequisites:

Although there is no rigid prerequisite, basic knowledge of the processes of empirical research is necessary for success in this course.

### Required Textbooks:

Kang-tsung Chang. (2004). *Introduction to Geographic Information Systems*. McGraw-Hill. ISBN 0-07-286121-5.

### Recommended Supplemental Reading:

Marcia F. Muth and Karla Saari Kitalong. (2004). *Getting the Picture: A Brief Guide to Understanding and Creating Visual Texts*. Bedford/St. Martin's. ISBN: 031241850.

IUSB Email Account Requirements: IUSB issued email address is an official means of communication between students and faculty. You will also need this email account to access the Oncourse website where you can access the course learning material and your grade progress.

### Grading:

Your course grade will be determined by performance on one exam (30%), lab exercises (50% for undergraduates), and one research project (20%).

Final course grades are assigned as follows: below 60% = F, 60-62 = D-, 63-66 = D, 67-69 = D+, 70-72 = C-, 73-76 = C, 77-79 = C+, 80-82 = B-, 83-86 = B, 87-89 = B+, 90-92 = A-, 93-96 = A, 97-100 = A+

### Guidelines for Research Projects:

Through lab exercises, we will gradually develop the ability to utilize Arc GIS software to develop maps that fit various research needs. Two important components of the research project are: 1) maps generated from the software and 2) a project report, including: introduction of the research topic, description of the data and methods, interpretations of the result, and conclusion/evaluation. Details and sample projects will be illustrated during the second week of our class.

In order to make the project more meaningful and relevant to our real life, I encourage you to select a research topic related to issues in our region or nearby areas.

Grade for the project will be based on the overall quality of the maps, validity of research design, and incorporation of the critical aspects of visual culture into the project.

### Academic Honesty:

Students are expected to maintain the highest level of integrity in their academic work. IUSB has specific requirements for record-keeping and for notification of the student and academic dean. **It is the responsibility of the student to know of the prohibited actions such as cheating, fabrication, plagiarism, academic, and personal misconduct, and thus, to avoid them.** All students are held to the standards outlined in the code. Please reference the entire code for a complete listing (<http://www.dsa.indiana.edu/Code/>). Any violation may result in serious academic penalty, ranging from receiving a warning, to failing the assignment, to failing the course, to expulsion from the University.

**Disability Statement:** If you have a disability and need assistance, special arrangements can be made to accommodate most needs. Contact the Director of Disabled Student Services (Administration Building, room 149, telephone number 520-4832), as soon as possible to work out the details. Once the Director has provided you with a letter attesting to your needs for modification, bring the letter to me. For more information, please visit the web site for Office of Disabled Student Services [www.iusb.edu/~sbdss/services.shtml](http://www.iusb.edu/~sbdss/services.shtml)

**Accommodations For Religious Observances Statement:** If any student will require academic accommodations for a religious observance, please provide me with a written request to consider a reasonable modification for that observance by the end of the second week of the course. Contact me after class, during my office hours, or by individual appointment to discuss the issue. If after discussion we reach no consensus, either party or both should seek the advice of the Department Chair or the Dean, and if no consensus is reached, then the advice of the Vice Chancellor of Academic Affairs (“VCAA”). Either the instructor or the student may appeal the VCAA’s decision to the Office of Affirmative Action within ten business days of the determination.

### Make-up Exam Policy:

Exams may be “made-up” with a written explanation. You need to have extraordinary handicap and provide necessary documentations to justify your absence from the exam.

### Attendance and Participation

Please make efforts to attend each lecture and class practice. Previous statistics suggest that participation is positively related to final course grade.

When you voice your opinions on relevant topics, keep an open mind and be respectful to other class participants.

**Cell phones and pagers should be turned off before entering the classroom.**

### **Tentative Lecture Schedule**

Week 1.

Introduction to GIS

Lab 1.

Week 2.Geographic Data

Lab 2.

Week 3. Raster Data

Lab 3.

Week 4. Vector Data.

Lab 4.

Week 5 Data Acquisition

Lab 5.

Week 6. Data Preprocessing.

Lab 6.

Week 7. GIS Data Database Management System

Lab 7.

Week 8. Data Manipulation

Lab 8.

Week 9 Overlay

Lab 9.

Week 10. Neighborhood Analysis

Lab 10.

Week 11. Application 1

Lab 11

Week 12. Application 2

Lab 12

Week 13 Project Design

Week 14 Project Time

Week 15 Project Assessment

Week 16 Research Presentation.