# Computer Applications in Criminal Justice

CRJU 582, Section 001
TH 2:00 – 3:15, Gambrell 150

**Instructor:** Bob Kaminski
**Office Hours:** TTH 1:00-2:00 & by appt.
**Phone:** 777- 1560 / 9600 (fax)
**Semester:** Spring 2008
**Office:** Currell 111
**E-mail:** kaminskb@gwm.sc.edu

**TA:** Heather Gantt
**Phone:** 777-2936
**Office:** Currell 205A
**E-mail:** gantthi@gwm.sc.edu

## Course Description

This course introduces students to crime mapping and spatial analysis techniques and associated theories of crime (hereafter jointly referred to as 'crime analysis'). The ability to conduct crime analysis is increasingly essential to criminal justice practice and research, and there is strong demand in both academia and the criminal justice field for individuals who have experience with these methods. Students will learn how crime analysis is used in the criminal justice system (especially policing), its utility and limitations, and various issues surrounding its use. Students also will learn about the theories used to explain geographic patterns of crime, such as social ecology, rational choice, criminal opportunity, and crime pattern theory. Additional topics include journey to crime, geographic profiling of serial offenders, hot spot analysis, and crime prevention. This course has a strong hands-on emphasis, and students will use software programs (e.g., ArcGIS and CrimeStat) throughout the semester to analyze, display, and explain patterns of crime.

## Required Texts / Manuals

Chainey, Spencer and Jerry Ratcliff. (2005), GIS and Crime Mapping,Wiley.
Harries, Keith (1999), Mapping Crime: Principle and Practice (PDF).
Levine, Ned (2004), CrimeStat III: A Spatial Statistics Program for the Analysis of Crime Incident Locations (PDF).

## Course Requirements

1) *Reading assignments*: Reading assignments will consist of material from the texts and other sources. You should consider all readings and material covered in class as required. Short writing assignments will be given for each reading. Reading material prior to class is expected. Failure to hand in writing assignments on time will result in a zero (unless a legitimate and verifiable excuse is provided, such as serious illness or injury).

2) *Computer Assignments*: A series of computer-based assignments that require the use of various software programs will be given throughout the semester. Most assignments will be completed in class, but some work outside of class may be necessary. Failure to hand in an assignment on time will result in a zero (unless a legitimate and verifiable excuse is provided, such as serious illness or injury).

3) *Student presentations*: All students are required to make an in-class presentation. Presentations will require the display and analysis of crime and other data, and will need to draw on theory. The

expected length is 15 minutes. In addition to a presentation, graduate students will submit a 10-15 page paper.

4) *Attendance*: Class attendance is mandatory and counts for a substantial portion of your grade. Given the complexity of the software we will use it is imperative that you show up for class on time. Students chronically late will be penalized. Furthermore, do not schedule other activities or appointments during class time (e.g., advisement appointments, job interviews). Absences due to serious illness or injury or death in the immediate family may be excused, though verification will be required. If you participate in athletics or other University activities that cause you to miss class, you will be responsible for keeping pace with the class and the completion of assignments.

5) *Grading*: Grading will be based on your presentation/paper, assignments, and attendance.

| | |
|---|---|
| Presentation / Paper | – 35% |
| Assignments | – 30% |
| Quizzes | – 20% |
| Attendance | – 15% |

Letter grades will be assigned as follows: A = 90 and above; B+ = 85-89; B = 80-84; C+ = 75-79; C = 70-74; D+ = 65-69; D = 60-64; F = 59 and below.

6) *Academic Integrity*: Cheating or plagiarism will result in a zero and possible referral to the University. The use of any electronic device (e.g., cell phone, PIM) during a quiz will be considered cheating.

7) *Data*: Datasets used in this course should not be shared or otherwise distributed without express permission of the instructor. Certain datasets are NOT to be retained by students past the end of the semester. ***Specifically, the Baltimore County (MD) Police Department (BCoPD serial offender data, provided by Ned Levine and Phil Cantor may be used by students for class exercises and assignments, but students are NOT allowed to keep or share these data and must agree to delete the BCoPD serial offender data from their hard drives, memory sticks, etc., at the completion of the course.***

8) *Communication*: I will periodically post announcements & assignments and send e-mail to the class using Blackboard. Therefore, you should make sure your Blackboard e-mail address is working. E-mail is the best way to contact me, but if for some reason you do not receive a response within a day or so you should follow up with me in person or by phone.

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9. *Important dates*:

- March 12 & 13 – no class (Spring Break)
- April 24 – last class for CRJU582

10. *Tentative Class Schedule* *(see 'key' below table)

| In-Class Topic | In-Class Work | Reading Assignment |
|---|---|---|
| Course Overview, 01/15 | | |
| Intro to GIS & Crime Mapping, 01/17 | | C&R Cs 1, 2, & 3 pp. 37-51<br>Harries C1<br>Harries 91-96 |
| Designing Maps, 01/22 – 01/31 | P&R Cs 1, 2 & 5<br>G&K, Cs 1, 2 & 3<br>***Inlay map | C&R C12<br>Harries C2 |
| Geocoding, 2/5 & 2/7 | P&R C3<br>G&K C7 | Harries 97-100<br>C&R 52-70 |
| Manipulating Data, 2/12 & 2/14 | G&K C4 | Harries136-148<br>Harries C3<br>C&R C9 |
| Finding & Importing Data, 2/19 & 2/21 | G&K C5 | C&R C10<br>C&R C11 |
| Spatial Data Processing, 2/26 & 2/28 | P&R C4<br>G&K C8 | C&R C7<br>Harries C6 |
| Proximity Analysis, 3/4 & 3/6 | P&R C6<br>G&R C9 305-9 | C&R 115-130<br>Harries 118-121 |
| Distribution Analysis, 3/18 | P&R C7 | TBD |
| Distance Analysis, 3/20 | P&R C8 | TBD |
| Hot Spot Analysis, 3/25 | P&R C9 | C&R C6<br>Harries 112-118<br>Rec: Eck et al. (2005) |
| Density Mapping, 3/27 | P&R C10 | C&R C4<br>Rec: Lersch C2 & C3 |
| Dispersion Mapping, 4/1 | P&R C11 | TBD |
| Geographic Profiling, 4/3 | TBD | TBD |
| Anselin & Kulldorff, 4/8 & 4/10 | TBD | TBD |
| PRESENTATIONS, 4/15 -24 | | |

*Key: C&R = Chainey & Ratcliff text
G&K = Gorr & Kurland workbook
Harries = Keith Harries PDF text
P&R = Paulsen and Robinson workbook
Rec = recommended reading