SOCL 4466 (GEOG 3043): Crime Mapping

Fall 2021

Instructor: Prof. Matthew Valasik
Email: mvalasik@lsu.edu
Office: 17B Stubbs Hall
Office Hours: Thursdays, 2 - 4pm or by Appointment

Graduate Assistant:
Email:
Office:
Office Hours:

Class Location/Time: Tuesdays, 3:00pm - 5:50pm, 102 Stubbs Hall

COURSE DESCRIPTION:

Geographic information systems (GIS) are computerized systems designed for the storage, retrieval, and analysis of geographically referenced data. GIS uses advanced analytical tools to explore spatial relationships, patterns, and processes of cultural, biological, demographic, economic, geographic, and physical phenomena.

This course covers underlying geographic concepts (world coordinate system and projections, vector map topology, tiled and layered maps, etc.), map design and outputs, geodatabases, importing spatial and attribute data, digitizing, geocoding, spatial data processing, and advanced spatial analysis. Additional emphasis will be on crime mapping and analysis. The technical focus of the course includes computer lab tutorials and case studies using the leading desktop GIS software, ArcGIS from ESRI.

Application areas covered in this course include city and regional planning, community planning, economic development, education, election, and environmental studies, housing and property evaluation, transit and transportation issues, land use, historic studies, crime analysis and policing, emergency management, public works utilities, census population and demographic studies, health, and business applications, including marketing, advertising, and site selection.

By the end of the course, students will have sufficient background to identify spatial characteristics of diverse application areas, enabling them to integrate spatial thinking and GIS analysis into their academic research and careers.

Service-Learning:

This course is designated as a **service-learning required course**. Please see the "Class Project" section at the end of the syllabus for more details. Service-learning is different from community service or volunteering because it knits service activities and learning outcomes together. Rather than being an "add-on," service will be an integral part of your coursework. Students learning of the course materials will be enhanced and strengthened by the intellectual and analytical connections you are asked to make between your service experiences in Baton Rouge and the course readings and concepts. With enhanced field work and the required service-learning component, you will address critical community needs, fostering a serious examination of real-world issues and concerns, which in turn encourages critical thinking about civic responsibility.

LSU has achieved status as a Carnegie Community Engaged University Community Engagement Classification. LSU's Center for Community Engagement, Learning, and Leadership (CCELL), in conjunction with LSU Campus Life, offers a unique graduation distinction through the Engaged Citizens Program. By taking this class, you are already earning part of the credit required to achieve the distinction, which supports and recognizes undergraduate students who engage significantly with their communities to address critical community needs. To become an LSU Engaged Citizen, you take a total of 7 credit hours of service-learning designated courses (3 of which you are completing here), perform 100 approved hours of direct community service, and write a reflective essay connecting your experiences to LSU's *Commitment to Community*. Engaged Citizens earn a diploma designation, a graduation medal, and a special graduation ceremony designed to mark and recognize their significant achievements. To find out more about the program, email CCELL Director Sarah Becker at sbecker@lsu.edu or CCELL staff at ccell@lsu.edu.

Follow the link for information related to service-learning insurance required by the university: **Individual Service-Learning Trip Insurance Form** (https://www.lsu.edu/riskmgt/forms/student-trip-travel-organization.php). Up to 15 travel dates can be entered at once, if the student will be traveling to the same location(s). If students are not signed up prior to a trip they will not be able to be covered in the event of an accident. For information on CCELL's risk management, visit: https://www.lsu.edu/academicaffairs/ccell/faculty_resources/trip_insurance.php

COURSE MATERIALS:

Gorr, W. L. & Kurland, K. S. (2020). *GIS Tutorial for ArcGIS Desktop 10.8*. Redlands, CA: ESRI Press. (REQUIRED)

Boba Santos, R. (2017). *Crime Analysis with Crime Mapping* (4th Edition). Los Angeles, CA. Sage. (REQUIRED)

Additional readings will be provided as pdfs on Moodle

2 Thumb drives or other backup device— to copy GIS data to and from computer labs (1645**)

COURSE REQUIREMENTS & GRADING POLICY

Students are expected to come to class on time and remain for the entire class. Attendance is mandatory. This course is homework driven and all assignments will be graded at the beginning of the lab portion of class. In addition to homework there will be two case studies. **Cases are treated as take-home exams and must be completed individually.** All work by graduate students must be done independently, except for any assistance by the instructor. Lastly, students will complete a project (assigned by the instructor) in small groups in which you will be teamed up with a community partner. The project will consist primarily of integrating data into ArcMap and preparing a presentation at the end of the quarter. Given that this class is a service-learning course stunted will have to complete several critical reflections throughout the semester

that connects the classroom learning with your first-hand experiences working with your community partner. More information on the group project is provided at the end of this syllabus.

Discussion among students on homework assignments and cases is encouraged for clarification of assignments, technical details of using software, and structuring major steps of solutions. Cheating and plagiarism are strictly forbidden. Cheating includes, but is not limited to plagiarism, submission of work that is not the student's own, submission or use of falsified data, unauthorized access to exam or assignment, use of unauthorized material during an exam, supplying or communicating unauthorized information for an assignment or exam.

Grades will be distributed as follows:

		Grading Scale:	
Class Attendance (**Mandatory**)	10%	**97% - 100%**	**A+**
Homework	30%	**94% - 96.99%**	**A**
• Tutorials		**90% - 93.99%**	**A-**
• Writing Assignments		**87% - 89.99%**	**B+**
• Reflections		**84% - 86.99%**	**B**
Cases	20%	**80% - 83.99%**	**B-**
Project	40%	**77% - 79.99%**	**C+**
		74% - 76.99%	**C**
		70% - 73.99%	**C-**
		67% - 69.99%	**D+**
		64% - 66.99%	**D**
		60% - 63.99%	**D-**
		0% - 59.99%	**F**

COURSE POLICIES

Academic Misconduct and Classroom Etiquette: Students are expected to abide by the LSU student code of conduct. Students who are caught cheating on an exam will fail the course, with no exceptions. Students are also expected to abide by the basic rules of classroom etiquette including: getting to class on time and coming prepared to engage; turning off all electronic devices; not talking during lectures; and remaining respectful of diverse views when engaging in classroom debate. All views are allowed and welcome; however, expressing them in a respectful way is required. Reasonable people can disagree, but disagreement needs to be expressed in ways that are conducive to the free exchange of ideas, productive dialogue, and meaningful learning.

Missed Classes: If you miss a class, you will be required to provide written documentation of a valid reason for your absence within one week of the day (see LSU Policy Statement 22, posted on the course website, for examples of valid reasons for absences). Missing class more than once or twice is likely to compromise your grade.

Missed Exams: If you miss an exam, you will be required to provide written documentation of a valid reason for your absence within one week of the exam day (see LSU Policy Statement 22, posted on the course website, for examples of valid reasons for absences). All make-up exams will be administered at my discretion and at a time and place of my choosing. If you miss a scheduled make-up exam you will receive a zero for your exam grade, which will make it very difficult to pass this course.

Disability: Any student who feels he/she may need an accommodation based on the impact of a disability should contact the professor privately to discus specific needs. Also, contact the LSU Disability Services at (225) 578-5919 as soon as possible to better ensure that accommodations are implemented in a timely fashion.

OUT OF CLASS EXPECTATIONS

It is expected that the students have read the assigned chapters or pages prior to class for the background necessary to properly participate in the discussion and think critically about the concepts addressed. As a general policy, for each hour you are in class, you (the student) should plan to spend at least two hours preparing for the next class. Since this course is for three credit hours, you should expect to spend around six hours outside of class each week reading or writing assignments for the class.

COURSE SUGGESTIONS:

Although it is not required, you are encouraged to:

1. Raise your hand in class, question the professor, and engage with the material via discussion!
2. Get acquainted with one another. Exchange e-mail addresses and phone numbers. Form study groups. Engage in collaborative learning. Studies show that students who engage in collaborative learning tend to do better in college and beyond.
3. See the professor and/or the GA as often as is necessary to do well in this course. Do not wait until problems are irreparable or concerns are outdated to seek assistance. Try to make it to our office hours but if that is not possible make an appointment. If you extend the effort, we will be available and willing to help you do well in this class.

COURSE SCHEDULE (Subject to Change):

WEEK 1 - August 24th: INTRODUCTION

Readings: Chapter 2: *Mapping It Out - "Scale, Perspectives & Generalizations"* by Mark Monmonier

Lab: GIS Tutorial 1-1 through 1-9

Homework: GIS Assignments 1-1 & 1-2
Pre-Course Assessment

WEEK 2 - August 31st: MAP DESIGN

Readings: Chapter 4: *Design Principles to Guide GIS Use "Beyond Maps – GIS and Decision Making in Local Government"* by John O'Looney

Chapter 2: *Cartographic Language in "Some truth with maps: A Primer on Symbolization and Design"* by Alan M. MacEachren

Lab: GIS Tutorial 2-1 through 2-8

Homework: GIS Assignments 2-1, 2-2 & 2-3

WEEK 3 - September 7th: GIS OUTPUTS & LAYOUTS

Readings: Boba Santos - Chapter 1

Lab: GIS Tutorial 3-1 through 3-8

Homework: GIS Assignments 3-1, 3-2 & 3-4

Boba Santos Chapter 1 Exercises 2 & 4

WEEK 4 - September 14th: FILE GEODATABASES

Readings: Boba Santos - Chapter 2

Lab: GIS Tutorial 4-1 through 4-6

Homework: GIS Assignments 4-1 & 4-2

Boba Santos Chapter 2 Exercise 3

WEEK 5 - September 21st: SPATIAL DATA

Readings: Boba Santos - Chapter 3

Lab: GIS Tutorial 5-1 through 5-11

Homework: GIS Assignments 5-1 & 5-2

Boba Santos Chapter 3 Exercises 2 & 3

Case #1 Assigned (Due Week 7 - October 5th)

WEEK 6 - September 28th: GEOPROCESSING

Readings: Boba Santos - Chapter 4

Lab: GIS Tutorial 6-1 through 6-7

Homework: GIS Assignments 6-1 & 6-2

Boba Santos Chapter 4 Exercises 1 & 2

WEEK 7 - Ocotber 5th: DIGITIZING

Lab: GIS Tutorial 7-1 through 7-5

Homework: GIS Assignments 7-1 & 7-2

WEEK 8 - October 12th: GEOCODING & GEOREFERENCING

Readings: Boba Santos - Chapter 5

Lab: GIS Tutorial 8-1 through 8-5

Georeferencing Tutorial

Homework: GIS Assignments 8-1, 8-2 & 8-3

Boba Santos Chapter 5 Exercise 2

Case #2 Assigned (Due Week 10 - October 26th)

WEEK 9 - October 19th: SPATIAL ANALYSIS

Readings: Boba Santos - Chapter 6

Chapter 1: *Introduction to Service-Learning* by Barbara Jacoby

Lab: GIS Tutorial 9-1 through 9-4; Apportion Tutorial

Homework: GIS Assignments 9-1, 9-2 & 9-3

Boba Santos Chapter 6 Exercises 1 & 2

WEEK 10 - October 26th: ArcGIS Spatial Analyst for Desktop

Readings: Boba Santos - Chapter 7

Lab: GIS Tutorial 11-1 through 11-6

Homework: GIS Assignments 11-1 & 11-2 / **PROJECTS ASSIGNED**

Boba Santos Chapter 7 Exercise 1

Pre-flection Assignment

"What do you hope to gain from applying spatial analysis techniques to assist your community partner?"

WEEK 11 - November 2nd: ArcGIS Network Analyst for Desktop

Readings: Boba Santos - Chapter 13

Lab: GIS Tutorial 12-1 through 12-5

Homework: GIS Assignments 12-1 & 12-2 / WORK ON PROJECTS

Boba Santos Chapter 13 Exercises 1, 2 & 3

WEEK 12 - November 9th: WORK ON PROJECTS

Readings: Boba Santos - Chapter 14

Homework: WORK ON PROJECTS

Boba Santos Chapter 14 Exercises 1 & 2

Reflection Assignment

"What have you learned about yourself and applying GIS to assist your community partner?"

WEEK 13 - November 16th: WORK ON PROJECTS

Homework: WORK ON PROJECTS

WEEK 14 - November 23rd: WORK ON PROJECTS

Homework: WORK ON PROJECTS

WEEK 15 - November 30th: WORK ON PROJECTS

Homework: WORK ON PROJECTS

WEEK 16 - December 7th: FINAL PRESENTATIONS & PIZZA PARTY

Homework: Final Reflection Assignment

"How has your thinking about the usefulness for spatial analysis and its application changed over the semester?"

** YOU MUST ATTEND THE FINAL PRESENTATION TO PASS THIS COURSE!**

Class Project

Overview

While the independent application of GIS in a professional field is possible (e.g., Case #1 & #2), it is unlikely in a practical setting. Routinely many projects are team based, with multiple users contributing to common output (e.g., report, map, etc.). Therefore, to provide students with a real world experience of applying GIS in professional manner a group project will be employed. The project will consist primarily of integrating data into ArcMap and preparing a report and giving a presentation on the project and the results. All group members are required to contribute to the creation of maps and subsequent spatial analysis.

Project Sponsors

Each project group will have a project sponsor. Project sponsors maybe LSU faculty or local stakeholders (e.g., East Baton Rouge District Attorney's Office, East Baton Rouge Public Library, Bike Baton Rouge, Companion Animal Alliance of Baton Rouge). Prior project examples include:

- Mapping the locations of confederate monuments in the South
- Examining the impact of license plate readers on crime in Tigerland
- Mapping the relationship between urban blight & crime
- Mapping where animals are rescued from & assessing patterns
- Examining dollar stores' spatial vulnerability to crime

Work Products

There will be three work products that you will be produce for this project.

1.) **Project Memo** - A contract between the group, the client and me that outlines the broader research topic, data needed, data available, the research question(s), and the steps the group will do to complete the analysis

2.) **Report Brief** - Structured like a research article (Introduction, previous research, rich description of the data and the major steps used to create the variables being examined, analysis, results & policy implications

3.) **Presentation** - Give a 15 minute presentation of the project, providing particular attention to the project description and showcasing the groups' spatial analysis through creative maps.

** All finalized project data will be provided to the client along with copies of the report brief and presentation.

CAPER Fact Sheet Option

Following the completion of the group project, students that are interested in converting their report and presentation into technical report for the Department of Sociology's Crime and Policy Evaluation Research Group (CAPER) are able to take SOCL 3911: Research Practicum in Sociology (3 credit hours) in the subsequent semester. This allows students to created a more polished and professional report that can be shared with local agencies and stakeholders (e.g., law enforcement, news media, etc.).