



CRIME ANALYTICS

01:202:388:01

SPRING 2025

<p>Instructor: Sinan Celiksu, Ph.D.</p> <p>Modality: In-person</p> <p>Location: TIL 106J</p> <p>Course Meeting Days: Mondays and Thursdays</p> <p>Hours: 12:10 am – 1:30 Pm</p>	<p>Student Support Hours/Hours to meet with the instructor: Mondays, between 2:00 pm – 3:00 PM Thursdays between 2:00 and 4:00 pm, & by appointment.</p> <p>Office Location: Lucy Stone Hall, Room 359</p> <p>Email: sc2206@crimjust.rutgers.edu</p> <p>Preferred Communication: Canvas Messages.</p>
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Course Description:

The advent of the digital era has revolutionized data collection, analysis, and utilization, transforming various professions, including criminal justice. This course delves into crime analysis, a pivotal data analysis modality within criminal justice operations. It primarily focuses on commonly employed analytical techniques, such as strategic, tactical, and administrative analysis.

The course emphasizes developing quantitative thinking skills and proficiency in utilizing office products, particularly Excel, with real-world crime data and case studies. Additionally, it addresses ethical considerations pertinent to crime analysts.

Upon successful completion of this course, students will possess the following proficiencies:

- Conduct a time-series analysis of crime trends and assess whether interventions have mitigated or exacerbated crime rates.
- Master crime pattern analysis and geographic offender profiling methodologies.
- Identify hotspots of crime and chronic offenders, enabling students to comprehend police department strategies for addressing these issues.
- Create a portfolio showcasing their analytical abilities through the utilization of Excel, Access, and other Microsoft Office products.

DEPARTMENT LEARNING GOALS

1. COMPETENCE:

- a. **Theory.** Students who complete the major in criminal justice should understand and be able to articulate, both orally and in writing, the core theoretical concepts that form the foundation of analysis and research in criminology and criminal justice today. Core concepts are derived from explanations of crime from a variety of perspectives, including biogenic, psychological, and sociological approaches. Students should be familiar with the myriad theories of crime that are informed by these perspectives, including: classical, control, critical, ecology, labeling, learning, strain, and trait-based approaches. Theoretical literacy should extend to multicultural and international understanding.
- b. **Institutions.** Students who complete the major in criminal justice should understand the special role of three types of institutions: Police, Courts, and Corrections. In addition, students should know how institutional forms vary across jurisdictions and how these institutions interact with and influence each other.
- c. **Research Methods.** Students who complete the criminal justice major should be familiar with the tools, techniques, and data sources necessary for empirical analysis and methodological literacy, with an applied focus on crime, public safety, and justice-related contexts. Students should understand the various ways that evidence, the scientific method, and social science paradigms shape how we describe and explain CJ-related phenomena, and how theories and policies are developed, tested, and critiqued. They should be able to analyze data using computer applications and should be familiar with basic statistical principles, techniques, and quantitative literacy. They should be able to read and assess research from a wide range of sources, including general interest, academic, and government publications.
- d. **Social Justice and Diversity.** Students who complete the major in criminal justice should understand how the various axes of power and inequality affect how the criminal justice system functions and is experienced. Students should understand how diverse experiences inform theories and concepts in criminal justice and how criminal justice institutions operate differently along dimensions of race, class, gender, and other identities, across varied communities within the United States and in various parts of the world.

2. CRITICAL THINKING:

Upon completion of the major, students should be able to apply their understanding of core concepts and research tools to analyze real world problems, and evaluate alternative policy proposals on a range of criminal justice issues, from micro-level analyses relevant to particular cases, to management concerns, to macro-level analyses of legislative and other broad-scale policies. Such analyses should be sensitive to questions of diversity, equity, and inclusion. Students should be equipped with the methodological skills to critically examine how public and private interests and structures may (re)produce asymmetries of power and inequality along various axes such as race/ethnicity, gender, class, citizenship, and geography. Attaining this goal will require that students apply their theoretical, methodological, and analytic skills to criminal justice structures, policies, and dilemmas both in the U.S. and comparative contexts.

3. SCHOLARSHIP:

Qualified majors should have an opportunity, through such avenues as advanced coursework, internships, and faculty interactions, to conduct independent research on matters of central relevance to the field of criminal justice and adversely affected communities. Topics that center historically marginalized groups are welcome, along with research projects that might yield meaningful findings for historically subjugated or minoritized communities.

	<p>Read the Syllabus! Before contacting me with questions, please consult the syllabus first to see details about the course.</p>		<p>Participation: You are expected to participate during the class sessions by asking/answering questions, taking responsibility in group discussions, and email correspondence with the instructor about the course material.</p>
	<p><u>Attendance</u></p> <p>This is an in-person class; therefore, attendance is essential. Attendance means physically coming to the class and joining the in-class session. Although I will not directly grade attendance, there are many assignments to be done during the class time. If you do not attend without an excuse, you will get zero points for those assignments.</p> <p>Please contact with the instructor about any health emergencies that may or may not be related to COVID. You SHOULD NOT submit medical reports to me.</p>		<p>Help!</p> <p>Please reach out as early as possible so that we can work out a solution together.</p> <p>If you need help, let me know when life is happening. <u>Do not wait until the end</u>, when there is nothing we can do.</p> <p><u>YOU DO NOT HAVE TO</u> tell me what your problem or situation is (if you do, I will do my best to help).</p>
	<p>Email</p> <p>Do not forget to write the name of the class you are writing about in the subject line for each email.</p> <p>Do not forget to write your full name.</p> <p>Please use proper sentences.</p> <p>Use proper ways of addressing the instructor.</p>		<p>Student Support Hours/Hours to meet with the instructor: Mondays, between 2:00 pm – 3:00 PM Thursdays between 2:00 and 4:00 pm, & by appointment. .</p>
	<p>Budget Your Time. Canvas issues are not an excuse – submit work early.</p>		<p>Check Your Email! You MUST check your Rutgers email and Canvas Announcements regularly. I strongly recommend the Canvas app for this purpose. I will use it to contact you with news related to the course..</p>

	<p>You must know how to use APA citation style properly for graded papers. See below the link for the Writing Center for help, if needed.</p>		<p>HEALTH EMERGENCIES Students are required to follow the university policies regarding vaccination, masks, social distancing.</p>
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COMMUNICATION PROTOCOL

1. Announcements will be posted regularly on Canvas. Please check them regularly for important information about upcoming assignments and class concerns.
2. To ensure that you have the resources you need to succeed, I have allocated time for office hours/student support hours. These are opportunities for you to meet with me and address any questions or concerns you may have. Some reasons you may want to meet with me during office hours include:
 1. **Clarify and ask questions about course content.** If you are confused about class material, ask your professor to explain it differently or walk through it slowly with you. Ask questions that you have about the text or what has been covered/learned in class.
 2. **Get study ideas.** There are many strategies that can be used for any class, but some subjects have specific strategies that work particularly well for that class. Your professor may have tips about ways to tailor your studying towards that particular class.
 3. **Ask questions about the syllabus, upcoming assignments, and due dates.** After carefully reading the syllabus and any assignment prompts, confirm important dates and information with your professor if you are still not certain about them.
 4. **Prepare for an upcoming assignment.** Many assignments will require you to practice new and developing skills. If you have an upcoming project or paper, office hours can be an appropriate place to discuss your ideas and your instructor's expectations.
 5. **Review an exam or a paper you wrote.** Many students do not do as well as they expected on papers and exams at least once in college. Office hours is an appropriate setting to talk about what you did wrong, what went well, and how to improve on your next paper or exam.
 6. **Talk about grades.** If you are unhappy with your grade or have questions about why your grade is what it is, office hours are the appropriate place to talk about it.
3. I will be available for office hours once per week. I encourage you to take advantage of this opportunity to get the support you need. If you have any questions about office hours, please don't hesitate to reach out. I am here to help!
4. I have also established the following **guidelines for email communication**:
 1. Please feel free to email me with any questions or concerns. I generally respond to emails within 48 hours, excluding weekends and holidays. If you don't receive a response within that timeframe, please feel free to follow up.
 2. When communicating online, please be sure to include your name and the name of the class you are writing about in the subject line. (Alternatively, you can use Canvas messages for a more streamlined experience.)
 3. Use clear and concise language and a formal writing style. Avoid slang, texting language, and emoticons, and be cautious with humor or sarcasm as tone can be lost in electronic communication.
 4. Use standard fonts and a size 12 or 14 pt. font for easy readability. Avoid using the caps lock feature as it can be interpreted as yelling.
 5. Be careful with personal information shared in your messages, both yours and others'.

I am here to support you and want to make sure you have the resources you need to succeed. Please don't hesitate to reach out with any questions or concerns. I look forward to working with you!

Required Text:

Textbook: Santos, R. B. (2017). Crime analysis with crime mapping (Fourth edition). SAGE Publications, Inc. ISBN: 978-1-5063-3103-4

Grading Weights:	
1.Attendance, Participation and pop- quizzes	21 %
2. Exam 1	20 %
3. Weekly Assignments 13X3	39 %
4. Final Project	20 %
Total	100 Points

1. Attendance Participation and Pop-Quizzes (20%):

I expect you to attend in every class session throughout the semester. The topics covered in this class build on each other, so missing a class will hinder your understanding of the next topic. Attendance will be taken in every class session. In the case of extended absences, students may obtain a note from the Office of the Dean of Students to authenticate the absence with appropriate documentation. In that case, reasonable accommodations will be made to allow you to make up work that counts toward your semester grade. Absences due to religious observance, participation in university-sponsored events or activities such as intercollegiate athletics, or documented chronic illness are treated as authenticated absences. If you miss a class, please make sure to catch up by using office hours. I look forward to working with you and helping you succeed in this course.

In addition to lectures, there will be pop-quizzes. In principle, we are going to discuss one chapter for one week (2 class sessions).

Attendance and Participation grades are going to be based on the following criteria:

- Attending in-class sessions.
- Submitting assignments before the due date,
- Participation in class practice.
- Corresponding with the instructor about the contents of the course,
- Coming to office hours for make-up work and instruction,

Please make sure you sign with the same signature on all attendance sheets. You may have two unexcused absences and still get a perfect attendance score. You are strongly encouraged to attend every class session, since much of the material on the exams will be covered only in class-not in the readings or on any slides posted on the web-site. Furthermore, whether present or not, you are responsible for all information covered and any assignments made in every class. If you have an excused absence, reasonable accommodations will be made to allow you to make up work that counts toward your semester grade. Please feel free to ask me about the contents of a missed class. I prefer you consult another student first. If you have an excusable absence, you

must use the University absence reporting website <https://sims.rutgers.edu/ssra/> to indicate the date and reason for your absence. If your reason for absence is illness you need NOT provide me any supporting documentation. Although I will never require medical documentation, I may require an [absence and verification notice](#) if absences or requested accommodations are extensive. Documentation of other valid excuses (e.g. airline ticket receipt, court receipt, hospital parking receipt, funeral program) must be provided to me (please provide me a copy) for the excuse to be accepted. Excuses that cannot be verified with documentation (e.g. power outage, traffic jam, car trouble, personal issues) will not be accepted as valid. Absences due to religious observance, participation in university-sponsored events or activities such as intercollegiate athletics, or documented chronic illness are treated as authenticated absences.

Make-up Exams. Students with a valid, documented excuse (see above) who are unable to take the exams may take a make-up exam. Except under extremely unusual circumstance, you are expected to notify me of your absence and obtain approval to take the make-up exam in advance of the regularly scheduled exam. If you are sick the day of an exam, please contact me and visit the doctor (just in case you need to get a letter from a Dean). Students without a valid excuse or who miss a departmental make-up exam opportunity may not be permitted to take a make-up exam. Please DO NOT send me medical reports.

Part of the participation grade will be occasional pop-quizzes. To ensure that you get the most out of this course, it is important that you come to class prepared and ready to learn. Reading the assigned material each week will help you understand the concepts and prepare for in-class quizzes. If you are unable to take a pop-quiz due to an officially authenticated excuse, you will have the opportunity to make it up. Please note that lectures are not a replacement for the readings, and vice versa. If you miss a class, please make sure to catch up by using office hours.

2. Weekly Assignments:

Each week, we will learn a new analytical technique and analyze a piece of data. Students are responsible for keeping up with the guided practice during the class and showing their grasp of the topic by continuing the task after the class. Weekly assignments will include your class practice and homework showcasing your understanding of the subject.

3. Midterm Exam (2%)

There will be an in-class exam that will include multiple-choice, true-false and open-ended questions. To ensure that you are prepared for the exam, it is important that you come to class regularly and read the relevant materials. In addition, you can use the office hours to ask questions and review the material with me. If you have an officially authenticated excuse, you may be able to re-take the exam. Good luck!

4. Final Project (20%)

Students are required to showcase their analytical and software skills by solving real-world problems through data analysis, presenting their results, and creating usable dashboards. Task distribution and further guidance will be given throughout the semester.

Grade	Range
A	90 – 100
B+	85 – 89
B	80 – 84
C+	75 – 79
C	70 – 74
D	60 – 69
F	Below 60

	Day	Date	Topic	Preparation
1	Thursday	January 23 rd	Introduction to the Course Crime Analysis and the Profession	Read Syllabus: Available on Canvas. Readings: Santos Chapter 1, Crime Analysis and Profession
2	Monday	January 27 th	MS Excel Basics	Links on Canvas
	Thursday	January 30 th	Descriptive Analysis	Readings: Santos Chapter 4, Crime Analysis Process and Application
3	Monday	February 3 rd	Pivot Tables in MS Excel	Readings: Santos Chapter 4, Crime Analysis Process and Application
	Thursday	February 6	Introduction to Time Series Analysis	Santos Chapter 7, Crime Analysis Purpose and Audience
4	Monday	February 10 th	Introduction to Formulas in Excel	Santos Chapter 7, Crime Analysis Purpose and Audience
	Thursday	February 13 th	Geographic Hotspots of Crime	Readings: Santos Chapter 6, Geographic Data and Crime Mapping
5	Monday	February 17 th	Cleaning strings, repeat address mapping in Excel	Readings: Santos Chapter 6, Geographic Data and Crime Mapping
	Thursday	February 20 th	Within day analysis & Near-repeat analysis	Readings: Santos Chapter 11, Describing and disseminating known patterns
6	Monday	February 24 th	Near-repeat calculator, writing up findings in Word	Readings: Santos Chapter 11, Describing and disseminating known patterns
	Thursday	February 27	Analysis to see whether intervention reduced crime	Readings: Santos Chapter 3, Evidence based policing and the role of crime analysis

7	Monday	March 3 ^h	Weighted displacement analysis, creating PowerPoint presentations.	Readings: Santos Chapter 3, Evidence based policing and the role of crime analysis
	Thursday	March 6 th	Tactical analysis of serial crimes	Readings: Santos Chapter 8, Repeat incidents and tactical data collection
8	Monday	March 10 th	Conduct analysis and create bulletin in Publisher	Readings: Santos Chapter 8, Repeat incidents and tactical data collection
	Thursday	March 13 th	Problem solving (SARA, Crime Triangle)	Readings: Santos Chapter 12, SARA process
9	Monday	March 17 th	Spring Break	
	Thursday	March 20 th	Spring Break	
10	Monday	March 24 th	Practice SARA	Readings: Santos Chapter 12, SARA process
	Thursday	March 27 th	Chronic Offenders	IACA White paper on Social Network Analysis for Law Enforcement
11	Monday	March 31 st	Creating weighted offender scores in Access	IACA White paper on Social Network Analysis for Law Enforcement
	Thursday	April 3 rd	Officer level metrics (outputs vs outcomes)	Readings: Bonkiewicz, L. (2015). Bobbies and baseball players: Evaluation Patrol Officer Productivity Using Sabermetrics. <i>Police Quarterly</i> 18(1): 55-78.
12	Monday	April 7 th	Dashboard in Excel	Readings: Bonkiewicz, L. (2015). Bobbies and baseball players: Evaluation Patrol Officer Productivity Using Sabermetrics. <i>Police Quarterly</i> 18(1): 55-78.

	Thursday	April 10 th	Applications of Predictive Analytics in Policing & Ethics	Readings: Ferguson, Rise of Big Data Policing, Chapters 3 & 4
13	Monday	April 14 th	Technology in crime analysis & Ethics	Readings: Ferguson, Rise of Big Data Policing, Chapters 3 & 4
	Thursday	April 17 th	Telephone call log analysis	Readings: Ferguson, Rise of Big Data Policing, Chapters 8 and 9
14	Monday	April 21 st	Social Media network analysis	Readings: Ferguson, Rise of Big Data Policing, Chapters 8 and 9
	Thursday	April 24 th	Guided Group work on final projects	None
15	Monday	April 28 th	Guided Group work on final projects .	None
	Thursday	May 1 st		
		May 10 th	Final Project Due	

* This syllabus and the course schedule may be subject to change at any time during the semester with notice given to the students reasonably early.

Resources for Students:

The faculty and staff at Rutgers are committed to your success. Students who are successful tend to seek out resources that enable them to excel academically, maintain their health and wellness, prepare for future careers, navigate college life and finances, and connect with the RU community. Resources that can help you succeed and connect with the Rutgers community can be found at success.rutgers.edu, and nearly all services and resources that are typically provided in-person are now available remotely.

Disability Accommodations:

If you have a disability that may impact your ability to fully participate in this course, please contact the appropriate disability services office at your campus to discuss reasonable accommodations. The staff at these offices can help you navigate the process of obtaining documentation and requesting accommodations. They are there to support you and ensure that you have equal access to all course materials and activities. Please don't hesitate to reach out to them for assistance.

“In order to receive consideration for reasonable accommodations, a student with a disability must contact the appropriate disability services office at the campus where you are officially enrolled, participate in an intake interview, and provide documentation.”

I commit to making course materials accessible to all students. These include captions on all videos, transcripts for audio, alt text on provided images, and providing only documents in searchable formats (not image-scans) with minimal use of color and highlights for emphasis. Please do not hesitate to reach out if any of the course material fall below this standard and impede your learning.

Counseling Services:

It is important to take care of your mental health and wellbeing. Should you consider seeking help from Rutgers Counseling, Alcohol and Other Drug Assistance Program & Psychiatric Services (CAPS), CAPS can provide you with the support you need. CAPS offers a wide range of services, including individual and group counseling, crisis intervention, and workshops. To learn more, please visit their website at <http://rhscaps.rutgers.edu/home-2/>.

Student Support and Mental Wellness

- Student Success Essentials: <https://success.rutgers.edu>
- Student Support Services: <https://www.rutgers.edu/academics/student-support>
- The Learning Centers: <https://rlc.rutgers.edu/>
- Rutgers Libraries: <https://www.libraries.rutgers.edu/>
- Bias Incident Reporting: <https://studentaffairs.rutgers.edu/bias-incident-reporting>
- Dean of Students – Student Support Office: <https://success.rutgers.edu/resource/dean-students-student-support-office>
- Office of Veteran and Military Programs and Services: <https://veterans.rutgers.edu>
- Student Health Services: <http://health.rutgers.edu/>
- Counseling, Alcohol and Other Drug Assistance Program & Psychiatric Services (CAPS): <http://health.rutgers.edu/medical-counseling-services/counseling/>
- UWill: free immediate access to teletherapy; you can choose a therapist based on your preferences including issue, gender, language, ethnicity. <http://health.rutgers.edu/uwill/>
- Office for Violence Prevention and Victim Assistance: www.vpva.rutgers.edu/
- Office of Disability Services: <https://ods.rutgers.edu/>
- Basic Needs Assistance (food, housing, and other essentials): <https://ruoffcampus.rutgers.edu/basic-needs>
- Rutgers Student Food Pantry: <https://ruoffcampus.rutgers.edu/food-pantry>

Academic Integrity:

Rutgers University takes academic integrity seriously, and it is important that all students are aware of the university's academic integrity policy. Academic dishonesty, including cheating, plagiarism, and fabrication, can result in serious consequences, including suspension and expulsion. If you have any questions about what constitutes academic dishonesty, please consult your instructor and/

Academic dishonesty includes (but is not limited to):

- Cheating
- Plagiarism
- Aiding others in committing a violation or allowing others to use your work
- Failure to cite sources correctly
- Fabrication
- Using another person's ideas or words without attribution, including re-using a previous assignment
- Unauthorized collaboration
- Sabotaging another student's work

If you are ever in doubt, consult your instructor.

Please review the University's Academic Integrity Policy:
<http://nbacademicintegrity.rutgers.edu/home-2/academic-integrity-policy/>

Technical Support:

In an effort to streamline and simplify technical help for students, the university is consolidating support for Canvas, Sakai, and Blackboard within the Office of Information Technology (OIT). Starting Monday, January 12, students should contact the OIT Help Desk for help with Canvas or Sakai. Technical support for Canvas and Sakai is transitioning from Teaching and Learning with Technology (TLT) to OIT.