

**Department of Criminology and Criminal Justice**  
**University of Maryland**

CCJS 620: Fundamentals of Criminological Research  
Syllabus – Fall 2024

Tuesdays 4:00-6:45pm, 2165E LeFrak  
Discussion: Thursdays 1:00-2:15pm

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**Instructor**

Sarah Tahamont  
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2220J LeFrak Hall  
Email: [tahamont@umd.edu](mailto:tahamont@umd.edu)  
Office Hours:  
Mondays 2:30pm-3:45pm (drop-in)  
Tuesdays 12:00pm-1:15pm ([by appointment](#))

**Teaching Assistant**

Frank Donohue  
Pronouns: he/him/his  
2220AA LeFrak Hall  
Email: [fdonohue@umd.edu](mailto:fdonohue@umd.edu)  
Office Hours: Thursdays after lab until  
3:00pm  
Lab Location: LeFrak 0227 (Lab 2)

**Course Prerequisites:** Working familiarity with simple mathematical and algebraic computations. Prior knowledge of calculus is not required.

**Course Objectives:** Specific course objectives are as follows:

1. understand the fundamentals of statistical inference – what it is and, importantly, what it is not;
2. identify and interpret patterns in raw data;
3. understand basic ideas of probability;
4. make and interpret elementary statistical inferences; included here is the capability to compute and interpret hypothesis tests and confidence intervals;
5. execute and interpret rudimentary regression analysis;
6. recognize limitations of statistical analyses and identify pitfalls in their interpretations;
7. gain basic familiarity and competency analyzing data using Stata.

This course fulfills a core requirement. It is designed to help students understand and apply three important components of statistics: descriptive statistics (including probability theory), fundamentals of statistical inference, and regression analysis. I assume that you already have some familiarity with basic descriptive statistics. The emphasis of the classes on descriptive statistics is the calculation and interpretation of summary statistical measures for describing raw data. Further, we will spend a good amount of time discussing probability theory since you will spend much of your careers dealing with uncertainty. The sessions on the fundamentals of statistical inference are designed to provide you with the background for executing and interpreting hypothesis tests and confidence intervals. The latter portion of the course focuses on regression analysis, a widely used statistical methodology in our field. It will serve to provide you with a beginning flavor of the material you will be learning next semester in CCJS 621. Throughout the course, we will regularly use the statistical software Stata. Stata is relatively straightforward to use and no prior experience with coding is required “to get you going.”

**Course Requirements:** Your grades will be based on your performance on the three examinations and your homework assignments, according to the weighting listed below.

<p><b>Problem Sets</b> 40%</p>	<p>Everything I know about statistics, I learned doing a problem set.</p> <p>With problem sets, you get out what you put in.</p> <p>Enough platitudes about problem sets? Never.</p> <p>Problem sets will be assigned regularly and will be due at the beginning of the following class unless otherwise noted.</p> <p><b><u>You will complete your problem sets in pairs.</u></b> Meaning that you will turn in one problem set for you and your partner. You will switch problem set partners once during the semester. You and your partner are welcome to work with any of your classmates on the problem sets, although you will be responsible for turning in a complete problem set that is entirely your own group's work. My strong recommendation is that you attempt the entirety of a problem set individually before you start to work with others (even your partner).</p> <p>Importantly, I consider problem sets to be professional work product and as a consequence they should always be typed, clearly labeled (and otherwise easy to navigate), and contain polished tables and figures. I will provide a template that you <b>must use</b> to document your code.</p> <p>Problem sets will be graded on a 5-point scale ranging from Phenomenal (5) to Unacceptable (1). By grading the problem sets in this way, the goal is to take off much of the grading pressure, while still rewarding effort. The lowest scoring of the problem sets will not count toward your final grade.</p>
<p><b>Weekly Cogitation Worksheet</b> 10%</p> <p><b>Due Tuesdays @ NOON</b></p>	<p>Every week you will complete a weekly worksheet consisting of two sections: key takeaways and lingering questions. I will ask you to summarize the key takeaways from the week concisely (the equivalent of 2 tweets – 480 characters max). You will submit these via ELMS under Quizzes (we are capitalizing on ELMS functionality for logistical purposes – these aren't quizzes).</p> <p>Importantly, you <b>must</b> complete these notes on your own without consultation from your classmates or anyone else. By requiring you to complete these on your own, I will have a better understanding of how each person is understanding and engaging with the material. Gauging individual understanding will be key to ward against any unpleasant surprises come exam time.</p> <p>The weekly worksheets will be graded on a 3-point scale from Phenomenal to Unacceptable. By grading the notes in this way, the goal is to take off much of the grading pressure, while still rewarding effort. The lowest scoring of your worksheets will not count toward your final grade.</p>
<p><b>Exams</b> 50%</p> <p><b>Exam 1: 12.5%</b> <b>Exam 2: 17.5%</b> <b>Final Exam: 20%</b></p>	<p>All examinations are open book, open note and must be completed by the student without assistance or input from others (unless as indicated by ADS). Exam 2 will focus on the material covered since the prior exam. However, statistics by its nature is cumulative. Thus, the latter two exams draw upon prior material and, as a consequence, may be considered cumulative. The final exam will cover all of the material in the course, with a strong emphasis on the material since the second exam.</p>

**Late/Make-up Assignments:** Make sure you complete your assignments on time!

However, I realize that we are all humans with full lives and sometimes we need a bit more time to get everything done. In recognition of that I am going to give you all a budget of three (3) days to get a **no questions asked extension** on any of the assignments in class. You must notify both me AND Frank by email to use your extension days and you must tell us how many you want to use. Once you exhaust the extension days (or if you opt to use them to cover some, but not all, of an assignment late period) your grade will be adjusted according to the policy on late work described below. **Note:** If you choose to use your extension days on a problem set both problem set partners will be charged an extension day. Be sure to agree on your plan to use your extension days on a problem set with your partner in advance.

Students will automatically lose 1 point on the grading scale for every day that their problem set is late. Problem sets turned in more than 5 days past due will not be considered. Weekly worksheets will lose one point on the grading scale if they are not turned in by the due date. Weekly worksheets more than 1 day late will not be considered. If you are unable to complete your assignments on time due to a documented illness, please contact me as soon as possible to arrange an accommodation.

In the exceptional circumstance that would make exam participation impossible, notify me via email as soon as possible but no later than 1 week prior to the exam in the case of advanced notice and as soon as possible in the event of an emergency proximate to an exam. We will make other arrangements in compliance with University policy and at the instructor’s discretion. If there is a circumstance that would require you to miss an exam you must be prepared to provide documentation in accordance with University policy.

**Grade Distribution:** Final grades will be assigned according to the distribution below. I will round up from .5 to the closest letter grade; for example, an 89.4% is a B+ and an 89.5% constitutes an A-. Students must earn a B- or better in this course for progress toward the Master’s or Ph.D. in Criminology and Criminal Justice.

A+	97% - 100%	B-	80% - 82%	D	63% - 66%
A	93% - 96%	C+	77% - 79%	D-	60% - 62%
A-	90% - 92%	C	73% - 76%	F	Less than 60
B+	87% - 89%	C-	70% - 72%		
B	83% - 86%	D+	67% - 69%		

**Course Meetings:** This class will meet in the Wellford Conference Room on Tuesdays from 4pm-6:45pm.

**Covid-19 Compliance:** It is our shared responsibility to comply with University’s Covid-19 safety guidelines. Please be sure to stay up to date with the current guidelines by visiting <https://umd.edu/4Maryland>. Any student not in compliance with the University’s Covid-19 safety guidelines may be in violation of the Code of Student Conduct, Part 10(e)(3): Failure to comply with a directive of University officials. University policy describes the minimum precautions, but I hope you will feel comfortable maintaining any additional precautions that you wish in the classroom.

**Weekly Discussion Section/Lab:** Weekly discussion sections are designed to be an opportunity for you to review material from lecture and provide extra guidance for using Stata. Please note that discussion section is not a lecture setting and the content will be largely driven by student questions about current and past material. Like problem sets, you will get out of lab what you put into it. Before lab each week you should do the following:

1. Review class notes and come prepared with questions regarding that material.
2. Review previous problem sets and answer keys and bring your questions.
3. Make sure you have started the current problem set and bring questions to help you complete it.

**Warning: Do not wait until discussion section to look at the problem set.**

**Students with ADS Accommodation:** If you have a documented condition that requires accommodation in this course, I am willing to make the necessary accommodations. Please contact me immediately but no later than the second week of the semester, so that we can discuss your ADS accommodation letter and how to best implement your accommodations for this course. If you have a condition that you believe may affect your ability to meet the course expectations, but do not have the associated documentation and accommodations through ADS, please contact ADS immediately so that you can obtain the necessary documentation to put appropriate accommodations in place.

**Course Expectations:**

I expect all students to:

- a) Attend class regularly, on-time and prepared to learn!
- b) Ask for clarification when you don't know what I am saying. Seriously.
- c) Be prepared to answer and ask questions during class. We all learn better when we discuss the material instead of just listening to me talk.
- d) Be prepared to participate in in-class activities and consider bringing a laptop with you to class. When there are in-class activities, often access to Stata or Excel will be a necessary component.
- e) Attend weekly lab sections.
- f) Come to office hours for assistance or if you just want to chat.

**Weekly Course Schedule:**

Monday	Tuesday	Wednesday	Thursday	Friday
	<p><b>WCW Due @ Noon</b></p> <p>Sarah's Appointment Slots                      12:00pm-1:15pm</p> <p><b>Problem Sets Due @ 4pm</b></p> <p>Class Session 4pm-6:45pm</p>		<p>In Person Lab Meeting w/Frank                      1:00pm-2:15pm</p> <p>Frank's Open Office Hour                      2:15-3:00pm</p>	
<p>Sarah's Drop-In Office Hours                      2:30pm – 3:45pm</p>				

**Office Hours:** I strongly encourage you to take advantage of my office hours throughout the semester. Office hours are a wonderful opportunity for us to get to know each other better and for you to get some personalized learning time.

If you cannot participate in office hours because of a structural impediment, you are welcome to request an appointment outside the hours that are listed on the syllabus. I encourage you to take advantage of all the types of office hours we are offering throughout the course of the semester.

Between my office hours on Mondays and Tuesdays, and Frank's lab session & office hours on Thursdays you will have access to more than 4 hours of supplemental, student-led learning time outside of class each week. We provide such extensive access to you because it is often the case that students need quite a bit of assistance mastering this material. Part of the transition to graduate school is that you will need to be proactive about using these resources to your advantage. It is also important to maintain healthy boundaries with our time. Consequently, we ask that you refrain from emailing us about your substantive questions and instead ask them in office hours or lab.

**Required Text:** None. There is no required textbook for this course. The bulk of the reading will come from my lecture notes, which I will post on ELMS. Any other required readings will be posted on ELMS or otherwise available online.

**Optional Supplementary Text:** Students often find statistics courses without a textbook to be somewhat unsettling. If you would like a supplementary volume for reference, this one should work:

Agresti, A. *Statistical Methods for the Social Sciences, 5<sup>th</sup> edition*. Boston, MA: Pearson, Prentice Hall, 2018.

Should you find yourself looking for additional Stata help, this book might be of use.  
Longest, Kyle C., *Using Stata for Quantitative Analysis*, Sage Publications, Inc.

**E-mail and Technology:** I will generally respond rather quickly to your emails, but there may be times when I am unable to do so. I ask that you save substantive questions for class or office hours.

Please do not take audio or video recordings of class sessions without my express consent and the consent of your classmates.

Please bring a laptop or tablet to class that has Excel and Stata functionality. However, if you do not have access to a laptop, please do not worry it will not affect your ability to participate in the course. Please do situate yourself in proximity to someone with whom you feel comfortable working together so that you can work together during in class activities.

**Religious Observances:** The University of Maryland policy on religious observances provides that a student will not be penalized because of observances of their religious beliefs; students will be given an opportunity, whenever feasible, to make up within a reasonable time any academic assignment that is missed due to individual participation in religious observances. When possible, assignments should be completed in advance of their due date. If your participation in class will be interrupted by a religious observance you should contact me well in advance to arrange an accommodation.

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### **Graduate Course Related Policies and Graduate Student Rights and Responsibilities**

The Graduate School has prepared a guide to provide you with information about graduate course policies, other policies related to graduate study, and relevant on-campus resources. Your syllabus applies specifically to a given course. The guide at the following link applies in general to your graduate coursework and experience at UMD: <https://gradschool.umd.edu/course-related-policies>.

**Academic Integrity:** It is essential that you follow guidelines for originality and attribution in your work. In brief, this means submitting your own work unless otherwise specified and properly citing source material you use to produce your work. A useful resource can be found at: <http://deanofthecollege.vassar.edu/documents/originality/originalityandattribution.pdf>

The University of Maryland, College Park has a nationally recognized Code of Academic Integrity, administered by the Student Honor Council. The Code sets forth the standards for conduct at Maryland for all students.

It should go without saying that cheating, plagiarism, or other violations of the University of Maryland Code of Academic Integrity will not be tolerated. Potential violations will be reported to the Honor Council. For more information on the Code of Academic Integrity or the Honor Council, see: <http://shc.umd.edu/SHC/Default.aspx>.

### **Self-Identification & Inclusive Learning Environments**

The University of Maryland has expressed a recognition of the importance of a diverse student body and has articulated a commitment to fostering equitable classroom environments.

In service of that goal, I want to recognize that we bring multi-dimensional identities to the classroom with us. These identities shape how we engage with the substantive course material and our interaction with one another. My office hours provide space for any conversations you may wish to have with me about your experiences engaging with the course material. I am always open to feedback on how I can better foster an inclusive learning environment.

Importantly, how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity, is your choice whether to disclose (e.g. should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed.

It is also important that we respect each other's identities and I will expect all of the members of our class community to do so. I invite you to tell us how you want to be referred to both in terms of your name and your pronouns (ze, they/them, she/her, he/him etc.). The pronouns someone indicates are not necessarily indicative of their gender identity. Visit [trans.umd.edu](https://trans.umd.edu) to learn more. I will do my best to address and refer to all students accordingly and will support you in doing so as well.

**Course Plan (Topics & Associated Readings)**

<u>Section</u>	<u>Topic</u>	<u>Lecture Notes/ Supplementary Readings</u>
<b>Section I. Distributions</b>		
1.1	Introduction & Data Structures	Chapters 1 & 2 / Agresti 1-2.1; (additional 2.2-2.5)
1.2	Measures of Location & Dispersion	Chapter 3 / Agresti 3.2-3.7
1.3	Probability	Chapter 4 / Agresti 4.1
1.4	Theoretical Distributions	Chapter 5 / Agresti 3.1; 4.2-4.3
1.5	Sampling & CLT	Chapter 6 / Agresti 4.4-4.6
<b>Section II. Hypothesis Testing</b>		
<u>Section</u>	<u>Topic</u>	<u>Lecture Notes/ Supplementary Readings</u>
2.1	Confidence Intervals	Chapter 7 / Agresti 5.1-5.3 (to p. 118); 5.4
2.2	Introduction to Hypothesis Testing Type I & II Errors	Chapter 8 / Agresti 6.1-6.7
2.3	t-tests	Chapter 9 / Agresti 5.3; 6.2; 7.1-7.6
2.4	ANOVA & F-tests	Chapter 10 / Agresti 12.2-12.3
<b>Section III. Regression</b>		
3.1	Measures of Association	Chapter 11 / Agresti 9.4 (to p. 263)
3.2	Linear Regression	Chapter 12 / Agresti 9.1-9.3; 9.5-9.6
3.3	There is No Santa Claus: Linear Regression continued.	Chapter 13 / Agresti 10.1

**Course Calendar & Assignment Due Dates:**

<b>Week</b>	<b>Date</b>	<b>Topic</b>	<b>Reminders/Assignments</b>
1	8/27	Introduction & Data Structures	
	8/29	Lab 1	Stata Primer
2	9/3	Measures of Location & Dispersion	<b>Worksheet 1 Due @ NOON</b> <b>PS 1 Due @ 4pm</b>
	9/5	Lab 2	
3	9/10	Probability & Bernoulli Distribution	<b>Worksheet 2 Due @ NOON</b> <b>PS 2 Due @ 4pm</b>
	9/12	Lab 3	
4	9/17	Theoretical Distributions & Normal Distribution	<b>Worksheet 3 Due @ NOON</b> <b>PS 3 Due @ 4pm</b>
	9/19	Lab 4	
5	9/24	Sampling & CLT	<b>Worksheet 4 Due @ NOON</b> <b>PS 4 Due @ 4pm</b>
	9/26	Lab 5	
6	10/1	<b>Exam 1 Review</b>	<b>Worksheet 5 Due @ NOON</b> <b>PS 5 Due @ 4pm</b>
	10/3	Lab 6	<b>Take Home Exam 1 Distributed after Lab</b>
7	10/8	Confidence Intervals	<b>Take Home Exam 1 DUE @ 4pm</b>
	10/10	Lab 7	
8	10/15	Hypothesis Testing I	<b>Worksheet 6 Due @ NOON</b>
	10/17	Lab 8	
9	10/22	Hypothesis Testing II	<b>Worksheet 7 Due @ NOON</b> <b>PS 6 Due @ 4pm</b>
	10/24	Lab 9	



10	10/29	Hypothesis Testing III	<b>Worksheet 8 Due @ NOON PS 7 Due @ 4pm</b>
	10/31	Lab 10	
11	11/5	<b>Exam 2 Review</b>	<b>Worksheet 9 Due @ NOON PS 8 Due @ 4pm</b>
	11/7	Lab 11	<b>Take Home Exam 2 Released on ELMS after Lab</b>
12	11/12	<b>ASC – No Class!</b>	<b>Take Home Exam 2 Due @ 4pm (submitted via ELMS)</b>
	11/14	<b>ASC – No Lab!</b>	
13	11/19	Measures of Association & Introduction to Linear Regression	
	11/21	Lab 12	
14	11/26	Linear Regression II	<b>Worksheet 10 Due @ NOON</b>
	11/28	<b>No Lab – Happy Thanksgiving!</b>	
15	12/3	Linear Regression III & Final Exam Review	<b>Worksheet 11 Due @ NOON PS 9 Due @ 4pm</b>
	12/5	Lab 13 – Final Lab!	<b>Take Home Final Released on ELMS after Lab</b>
16	12/11	<b>Take Home Final</b>	<b>Take Home Final Due Wednesday, 12/11 @ 4pm (submitted via ELMS)</b>

**NOTE:** This syllabus provides a general plan for the course; deviations may be necessary.