University of Maryland
Department of Criminology and Criminal Justice

CCJS 620
Fundamentals of Criminological Research

Fall 2015

Time and Place:

Class: Thursday, 4:00 – 6:45 PM, Room 1105 Susquehanna Hall
Discussion: 4:00-6:00 PM, Friday, Room TBA

Instructor:

Laura Dugan
2131 LeFrak Hall
Telephone: 301-405-4070
Email: ldugan@umd.edu
Office Hours: Thursdays 1:30 to 3:30 and by appointment.

Teaching Assistant:

Daren Fisher
2139 LeFrak Hall
Telephone: 301-405-4781
Email: dgfisher@umd.edu
Office Hours: by appointment

Course Prerequisites: Working familiarity with simple mathematical and algebraic computations. Calculus is not required.

Required Text: Hildebrand, David H. and R. Lyman Ott, Statistical Thinking for Managers, Duxbury Press.

Optional Supplementary Text:
Longest, Kyle C., Using Stata for Quantitative Analysis, Sage Publications, Inc.

This *required text* is a graduate statistics book for business students. While you are not business students, I find that this book covers technical material in a way that can only enhance criminological and criminal justice research. While the lectures will follow (but not match) this book, examples will be drawn from our field as much as possible. The *optional supplementary text* is a user's guide for understanding Stata. I highly recommend getting this book because you will be using Stata quite a bit during your graduate career.

Course Objectives: This course fulfills a CORE requirement. It is designed to help criminology 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 a 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 much time discussing probability theory since much of your careers will be dealing with uncertainty. We will learn the basic rules of probability and then discuss many different probabilistic processes that could describe criminal activity. The sessions on fundamentals of statistical inferences 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 easy to use and no prior experience with computing is required "to get you going."

The objectives are as follows:

1. execute a software package called Stata;
2. identify and interpret patterns in raw data;
3. understand basic ideas of probability;
4. become familiar with different probabilistic processes that describe criminal behavior;
5. make and interpret elementary statistical inferences; included here is the capability to compute and interpret hypothesis tests and confidence intervals;
6. execute and interpret rudimentary regression analysis;
7. recognize limitations of statistical analyses and identify pitfalls in their interpretations.

Course Requirements: Your grades will be based on your performance on the three examinations and your homework assignments, according to the weighting listed below. Exam 2 will focus on the material covered since the prior exam. However, statistics by its nature is cumulative. Thus, exam 2 will draw upon prior material from which statistical inference builds. The final exam will cover all of the material in the course, with a strong emphasis on the material since the second exam. *All exams will be open notes and books.*

Generally, homework assignments will be assigned weekly. They will be due at the beginning of the following class.

10%, Homework*

90%, Three Exams (each exam 30%)

---

*The lowest homework grade will be dropped.

Grade Distribution:

A+	98% - 100%	B-	80% - 81%	D	62% - 67%
A	92% - 97%	C+	78% - 79%	D-	60% - 61%
A-	90% - 91%	C	72% - 77%	F	Less than 60
B+	88% - 89%	C-	70% - 71%		
B	82% - 87%	D+	68% - 69%		

In Class Expectation:
I expect all students to:

a) Attend class regularly.
b) Read the assigned material before class.
c) Ask for clarification when you don't know what I am saying.
d) 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.
e) Attend weekly discussion.
f) Come to office hours if you need assistance or if you just want to chat.

Optional Activity: Because I believe that a large barrier to understanding this material is fear, I am planning an informal activity on first or second Thursday of each month after class starting on September 10th. You are all invited to meet me at Board & Brew (US Rt. 1) around 7:00 or 7:15 for food and conversation.

Late/Make-up Assignments: No late homework assignments will be accepted. I will, however, accept homework assignments sent by email if the sent date/time is no later than 4:00 on the homework due date. If circumstances make exam participation impossible, the student should provide a written excuse to me as early as possible, and we will make other arrangements.

Students with Disabilities: If you have a documented physical or learning disability, I am willing to make the necessary accommodations. Please contact me by September 24, 2015, so that we can discuss these accommodations.

Religious Observances: The University System 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.

Weekly Outline:

Class	**Date**	**Topic**	**Readings**
			H & O
1	9-3	Introduction and Descriptive Statistics	2.1-2.4
2	9-10	Descriptive Statistics (cont.) Introduction to probability and random variables ***Board & Brew: 7:15***	Ch. 3, 4.1
3	9-17	**Self-assessment quiz Take Home (just for fun)** Introduction to Probability and Random Variables (cont.). Probability distributions	4.2-4.4, 4.6, 5.1-5.2
4	9-24	Probability Distributions (cont.)	
5	10-1	Special Probability Distributions ***Board & Brew: 7:15***	
6	10-8	**First Exam**	
7	10-15	Special Probability Distributions (cont.)	5.3-5.8
8	10-22	Sampling Distributions & Estimation	Ch. 6, Ch. 7
9	10-29	Estimation and Hypothesis Testing	Ch. 8, Ch 9.
10	11-5	Hypothesis Tests (cont.) ***Board & Brew: 7:15***	
11	11-12	**Second Exam**	
	11-19	**No Class – ASC**	
	11-26	**No Class – Thanksgiving Break**	
12	12-3	Introduction to Regression and Simple Regression ***Board & Brew: 7:15***	Ch. 12,
13	12-10	Regression (cont.)	Ch. 13
14	12-17	**Final Exam**	

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