

# **PPPA 6002: Research Methods and Statistics**

**Semester:** Spring 2024

**CRN:** 94214 (Class), 93412 (Lab)

**In Class Info:** 1957 E Street, Room 314 (Elliot School)  
Wednesday 6:10 – 8:00 p.m.

**Lab Location:** Rome Hall, Room B104  
Wednesday 8:10-10:00 p.m.

**Instructor:** Dr. Jasmine McGinnis Johnson  
[jmcginnis@gwu.edu](mailto:jmcginnis@gwu.edu)  
Office: 601E – MPA Building  
Office Phone: 202-994-3808

**Lab Teaching Assistant:**  
Huang Chen

**Dr. Johnson's Office Hours:** Tuesday and Thursday, 4:30-7:30 p.m.  
Schedule Office Hours Here: <https://jasminejohnson.youcanbook.me/>

**Teaching Assistant Office Hours:** By appointment  
E-mail: [huangchen@gwu.edu](mailto:huangchen@gwu.edu)

## **Course Description (from bulletin):**

Development of skills and knowledge for conducting original research and critically evaluating empirical studies. Various research designs and data collection techniques are examined. Focus on computerizing data sets for quantitative analysis, analyzing the strength of relationships, selecting appropriate statistical techniques, and testing statistical hypotheses.

## **The focus of the Course:**

Having a working knowledge of research methods and statistics is essential for managers and analysts in the private, public, and nonprofit sectors to make thoughtful decisions and evaluate others' recommendations. This course introduces students to the relevant foundational concepts and tools while emphasizing quantitative applications to public policy and public administration decision-making. The primary objective of the course is

to provide students with a sound understanding of the research process, research design, and qualitative and quantitative data analysis.

### **Learning Objectives:**

By the end of the semester, students will be comfortable with many of the key concepts of statistics and be able to read, understand, and conduct basic data analysis. No prior study of research methods and statistics is necessary although some familiarity with computation and algebra is helpful. Through this course, students are exposed to concepts and tools that will allow them to build the skills to be able to:

- Identify the role of statistics in policy debates, public management, and day-to-day life.
- Formulate problem statements, research questions, and testable hypotheses that are used to conduct policy and social science research.
- Implement and evaluate the various techniques for sampling from populations and collecting data.
- Critique research by understanding how to read peer-reviewed articles
- Evaluate the methodological integrity of experimental and non-experimental research designs.
- Describe, present, and interpret data in visual and numeric forms.
- Conduct basic statistical analyses using SPSS, a widely used statistical software.
- Write a policy research report that summarizes the results of statistical analysis for a non-technical audience.

### **Course Format:**

Scientific evidence strongly supports the effectiveness of active student participation in learning activities (Ambrose et al., 2010; Armstrong, 2010; Tough, 1971). The quality of our class discussions will depend on how well-prepared you are and how willing you are to share the results of that preparation with the class. Remember that you (your unique insights and thoughts) are a source of learning for the rest of the class.

During this class, expect your beliefs to be challenged. You will be exposed to social science research that may conflict with your current beliefs or how work is currently being done in your organization (Armstrong, 2010; Batson, 1975). During discussions, my job is to co-lead (with the class) discussions on a particular topic. Your job is to actively question your own beliefs (and others including the instructor's), critically appraise evidence uncovered during class, and ask yourself under what conditions you might use this information, and if not why.

You are expected to have read the assigned material before each class. We may not discuss all of the readings explicitly in each class. Instead, we want to enhance and build on (not repeat) what you have read. Be prepared to answer questions regarding the readings and more importantly to ask them. You are not expected to have all the right answers in every class, nor are you expected to dominate every in-class discussion. However, you must be prepared and contribute regularly to our class discussions.

### **Civility in the Classroom**

Higher education works best when it becomes a vigorous and lively marketplace of ideas in which all points of view are heard. Free expression in the classroom is an integral part of this process. At the same time, higher education works best when all of us approach the enterprise with empathy and respect for others, irrespective of their ideology, political views, or identity. We value civility because that is the kind of community we want, and we care for it because civility permits intellectual exploration and growth.

### **Time Devoted to Course:**

The university has adopted a policy on contact time and independent work time required for each credit hour earned. The policy requires me to advise you on how the time will be allocated for this course. Over 14 weeks, students will spend 1 hour and 50 minutes (110 minutes) per week in class (including pre-recorded lectures) and 1 hour and 50 minutes in the lab. Required readings and assignments are expected to take up, on average, 8 hours (480 minutes) per week. Over the semester, students will spend 25.67 hours in instructional time and 112 hours preparing for class, for a total of 137.67 hours.

**Basic Needs Statement:**

Any student who faces challenges affording groceries or accessing sufficient food to eat every day, who lacks a safe and stable place to live, and who believes this may affect their performance in class is encouraged to contact the Dean of Student Affairs for support. Furthermore, please get in touch with your Professor if you feel comfortable doing so. This will enable me to provide resources I may know about. Other resources you may find helpful.

- Food Pantry on Campus - [students.gwu.edu/store](http://students.gwu.edu/store)
- Foggy Bottom Food Pantry - [sites.google.com/site/neighborsprojecthhp/the-foggy-bottom-food-pantry](http://sites.google.com/site/neighborsprojecthhp/the-foggy-bottom-food-pantry)
- Emergency Funding - [financialaid.gwu.edu/emergency-funding](http://financialaid.gwu.edu/emergency-funding)
- Mental Health Counseling - [healthcenter.gwu.edu/mental-health](http://healthcenter.gwu.edu/mental-health)

**Grading:**

Grades will be based on the following standard percentages.

94-100	A
90-93	A-
87-89	B+
84-86	B
80-83	B-

**Assignments:** Quizzes and Group Work will not be graded and will receive feedback.

<i>Assignment</i>	<i>% of Grade</i>	<i>Due Date</i>	<i>Individual or Group Assignments</i>
Research Methods Problem Sets	10%	5 p.m. on Wednesday	Group (max. 3 people) or Individual
Critique of Everyday Stats Presentation	5%	Sign Up Sheet on Blackboard	Group (max. 3 people) or Individual
SPSS Homework	10%	5 p.m. on Wednesday	Group (max. 3 people) or Individual
Midterm Exam	25%	March 15 <sup>th</sup> , 5 p.m.	Individual
Final Exam	25%	May 3 <sup>rd</sup> , 5 p.m.	Individual
Semester Project	25%		Group (max. 3 people) or Individual
● Paper Topic	Check	February 14 <sup>th</sup> , 5 p.m. on Wednesday	
● Memo 1	5%	February 28 <sup>th</sup> , 5 p.m. on Wednesday	
● Memo 2	10%	March 27 <sup>th</sup> , 5 p.m. on Wednesday	

• <i>Memo 3</i>	<i>10%</i>	April 17 <sup>th</sup> , 5 p.m. on Wednesday	
-----------------	------------	--	--

### I. Research Method Problem Sets

General Instructions: There will be five problem sets over the semester. These will help you get more comfortable with the research methods component during the semester.

The top four will be counted in computing your final grade. Thus, you can choose to skip one assignment, or if you decide to turn in all five, the one with the lowest grade will be dropped.

To the extent you find it useful, you should feel free to work on these assignments with classmates. However, if you do decide to work with other students, you must still turn in your solutions and list the names of those individuals at the top of your homework.

Each assignment is scored complete or not complete.

For a problem set to be scored complete, students must answer all questions, and there may be a few small mistakes in the solution, or some mistakes in the explanation. Students should show all the work, if necessary. For a problem set to be scored as not complete, students will fail to present a solution that correctly solves the problem solution is missing work, lacks clarity, and leaves much to be desired.

### II. Critique Everyday Statistics

General Instructions: We all read about statistics every day. Is coffee good or bad for you? Why is the maternal mortality rate so high, especially for women of color? Is the divorce rate of 50%? We read about many of these ‘facts’ in various media outlets. Once a semester students will read one of these media reports and then read the original paper. Then each student will present for 5 minutes in class about the differences and similarities between the original paper and media focusing on research methods.

Oral Discussion Requirements:

1. Provide a quick overview of the major discrepancies or similarities between what the media describes as the paper's main finding and what the authors of the original article wrote. Since you're focusing on research methods you could describe differences or similarities between survey design, sampling, experimental designs, or other research methods choices.

Typical Questions

*1. I don't understand the article.*

Answer: That is exactly why your professor is here. Come to office hours or schedule an appointment to meet with your professor.

*2. How much time do I need to spend summarizing the article during the oral presentation?*

Answer: Very little. Provide a quick summary.

### III. SPSS Homework Assignments

General Instructions: There will be five homework assignments over the semester. These homework assignments help you learn SPSS.

The top four will be counted in computing your final grade. Thus, you can choose to skip one assignment, or if you decide to turn in all five, the one with the lowest grade will be dropped.

To the extent you find it useful, you should feel free to work on these assignments with classmates. However, if you do decide to work with other students, you must still turn in your solutions and list the names of those individuals at the top of your homework.

Three out of four homework assignments must be completed by April 22<sup>nd</sup>, so students don't try to complete all homework assignments at the end of the class. Each assignment is scored complete or not complete.

Each assignment is scored complete or not complete.

For a problem set to be scored complete, students must answer all questions, and there may be a few small mistakes in the solution, or some mistakes in the explanation. Students should show all the work, if necessary. For a problem set to be scored as not complete, students will fail to present a solution that correctly solves the problem solution is missing work, lacks clarity, and leaves much to be desired.

#### **IV. Midterm and Final Exams**

Midterm Exam: The midterm will be an open book and open note exam. The exam will cover all course material up to that point. You will not be required to memorize formulas. You should plan to use a calculator for the exam, but you are not allowed to use the programming function of the calculator if it has one.

Final Exam: The final is comprehensive and will be an open book and open note exam. You will not be required to memorize formulas. You should plan to use a calculator for the exam, but you are not allowed to use the programming function of the calculator if it has one.

#### **V. Final Paper**

General Instructions: A short paper assignment (which is broken into three memos) will allow you to demonstrate that you have learned how to use statistics in policy analysis including how to choose appropriate statistics to answer questions, how to interpret those statistics, and how to write about your findings. All information on the final project is currently posted on Blackboard in the final project folder. There are three datasets that you can use (there is an option to choose your dataset, but the professor must approve it). I provide extensive feedback on each memo.

#### **Course Materials:**

##### **I. Reading Materials**

Statistics Text: Greg Lewis, Chair of Andrew Young School of Public Policy and Public Administration

(Available for free on Blackboard)

If you want to access to a text please purchase Healey, Joseph F. *Statistics: A Tool for Social Research*. 9<sup>th</sup> or 10<sup>th</sup> ed. Belmont, CA: Wadsworth, 2012.

## II. SPSS Information:

The course requires you to have access to SPSS. While it is widely used, SPSS is not necessarily the same software used in the more advanced statistics courses at GW such as PPPA 6013. The idea is to expose you to different types of software especially given that once you learn the language of one, it is easier to learn the language of the others. Your Teaching Assistant will help you learn how to download SPSS.

### How to Succeed in this Course

#### *Read the Lecture Notes*

Lecture notes not only cover all the topics systematically but are easy to understand. Be sure to read lecture notes before each class even if you don't immediately understand the material. Having seen the subject before class will help your understanding in class.

#### *Watch and take notes on the recorded Lectures*

Before each class, I will upload a recorded lecture of the same content we go over during class. Please watch these recorded lectures. They will be posted on Blackboard each Friday by 6 p.m.

#### *Do the Homework*

You are expected to put in the necessary hours to complete the homework. The homework is essential for understanding the material and doing well on the handouts, papers, and examinations.

#### *Come to Class*

This class builds steadily on material learned in previous class sessions. If you fall behind because of absences, you will have difficulty catching up. If you do have to miss a class, please arrange to get notes from another student.

#### *Collaborate with classmates*

Consider your classmates as one of your best resources. I strongly encourage you to work with a partner or a group to complete and/or check your homework assignments. However, this comes with a note of caution: do not rely too heavily on your group members because tests are taken individually. Also, remember that you must turn in your homework individually, not as a group.

#### *Have Patience*

Please be patient with your classmates when they need more time than you do to understand concepts and figure out the software. Furthermore, have patience with yourself.

#### *Extensions*

Students can have three extensions throughout the semester. Just e-mail your faculty member the date/time you wish to turn in your assignment.

Date	Topic	Readings	Assignments Due	Lab
January 17 <sup>th</sup>	Variables and Hypotheses	C&S Chapter 1	None	
January 24 <sup>th</sup>	Measurement and Validity	C&S Chapter 4	Problem Set #1	
January 31 <sup>st</sup>	Sampling and Data Collection Methods	C&S Chapter 9 O'Sullivan et a. Chapters 6 and 7	Problem Set #2	
February 7 <sup>th</sup>	Causal Designs and Internal validity	C&S Chapter 6	Problem Set #3	
February 14 <sup>th</sup>	Frequency Distribution and Basic Univariate Statistics	Lecture 1	Paper Topic Idea due Problem Set #4	
February 21 <sup>st</sup>	Contingency Tables	Lecture 2 Bring a calculator	Problem Set #5 SPSS Homework #3	
February 28 <sup>th</sup>	Measures of Central Tendency <ul style="list-style-type: none"> <li>• Standard Error</li> </ul>	Lecture 5	SPSS Homework 4 (Contingency Table) Memo #1	
March 6 <sup>th</sup>	Midterm			
March 13 <sup>th</sup>	SPRING BREAK			

March 20 <sup>th</sup>	Scatterplots and Correlation Coefficients	Lecture 6	SPSS Homework 5 (Central Tendency)	
March 27 <sup>th</sup>	Normal Curve and Sampling Distribution	<ol style="list-style-type: none"> <li>1. <a href="#">Khan Academy Density Curves</a></li> <li>2. <a href="#">Z Scores</a></li> <li>3. <a href="#">Normal Distribution</a></li> </ol>	Memo #2 SPSS Homework #6 (Scatterplots)	
April 3 <sup>rd</sup>	Bivariate Regression <ul style="list-style-type: none"> <li>• Slopes and Intercepts</li> </ul>	Lecture 7		
April 10 <sup>th</sup>	Bivariate Regression <ul style="list-style-type: none"> <li>• Dummy Variables</li> </ul>	Lecture 7		
April 17 <sup>th</sup>	Hypothesis Testing <ul style="list-style-type: none"> <li>• P value</li> <li>• Sig. Confidence Intervals</li> </ul>	Lectures 10 and 11	Memo #3 SPSS Homework #7 (Regression)	
April 24 <sup>th</sup>	Chi-Square Test	Lecture 4	Final Exam Sent on April 26th. Final Exam Due May 3rd	

## Course Policies: Grades

**Late Assignments:** Once a year students can take an extension on any assignment. On Blackboard there is an extension area where students will see the requirements of taking an extension.

**Participation Policy:** This course relies on student participation to function properly. Please understand that I will be calling on students (randomly throughout the semester) to answer questions. The aim of participation is not to determine if you are getting the answers 'right' or 'wrong' but rather for your benefit to comprehend this material.

**Extra Credit Policy:** There is no extra credit.

**Rewrite Policy:** No assignments or exams are eligible for rewrites.

**Grade Dispute:** If students have questions about an assignment or exam grade, they must write a detailed e-mail to the Professor with concerns. The Professor has 1 week to respond and will annotate a student's assignment or exam. If questions remain after that the student and Professor will meet in person.

**Returned Assignments and Exams:** Please be patient as it takes approximately 2 weeks to grade across both classes.

## Course Policies: Technology and Media

**Email:** I will respond to all e-mails within 72 hours.

**Blackboard:** This course exclusively relies on Blackboard for all assignment uploads, grading, readings, and other classroom information. Please expect to log onto Blackboard at least once a week.

**Laptop and Cellphone Usage:** If you use a laptop during class to take notes, please only take notes. However, you may want to read the emerging evidence about taking notes on laptops

[https://hbr.org/2015/07/what-you-miss-when-you-take-notes-on-your-laptop?utm\\_source=Socialflow&utm\\_medium=Tweet&utm\\_campaign=Socialflow](https://hbr.org/2015/07/what-you-miss-when-you-take-notes-on-your-laptop?utm_source=Socialflow&utm_medium=Tweet&utm_campaign=Socialflow)

If the Professor notices that a student is frequently conducting outside classroom activities on a cellphone or laptop the Professor will individually ask the student to refrain from using these devices. If you must take a phone call, check texts or e-mails please exit the classroom. It is extremely distracting to your classmates.

**Recording Classroom Lectures:** Lectures can only be recorded with the permission of the Professor.

## Course Policies: Student Expectations

**Attendance Policy:** Excused absences must be communicated with the Professor before class.

**Professionalism Policy:** Per university policy and classroom etiquette; mobile phones, iPods, *etc.* **must be silenced** during all classroom lectures. Those not heeding this rule will be asked to leave the classroom immediately so as to not disrupt the learning environment.

Students who habitually disturb the class by talking, arriving late, *etc.*, and have been warned will result in a letter grade reduction to their final grade.

### **Department Policies in Public Administration and Public Policy Courses**

1. **Incompletes:** A student must consult with the instructor to obtain a grade of I (incomplete) no later than the last day of classes in a semester. At that time, the student and instructor will both sign the CCAS contract for incompletes and submit a copy to the School Director.

Please consult the TSPPPA Student Handbook or visit [http://www.gwu.edu/~ccas/faculty/files/Incomplete\\_poli0.pdf](http://www.gwu.edu/~ccas/faculty/files/Incomplete_poli0.pdf) for the complete CCAS policy on incompletes.

2. **Submission of Written Work Products Outside of the Classroom:** It is the responsibility of the student to ensure that an instructor receives each written assignment. Students can submit written work electronically only with the express permission of the instructor.
3. **Academic Honesty:** All examinations, papers, and other graded work products and assignments are to be completed in conformance with the George Washington University Code of Academic Integrity. (see <http://www.gwu.edu/~ntegrity/code.html> )

Note especially the definition of plagiarism: “intentionally representing the words, ideas, or sequence of ideas of another as one’s own in any academic exercise; failure to attribute any of the following: quotations, paraphrases, or borrowed information.”

5. **Changing Grades After Completion of the Course:** No changes can be made in grades after the conclusion of the semester, other than in cases of a clerical error.
6. **The Syllabus:** This syllabus is a guide to the course for the student. Sound educational practice requires flexibility and the instructor may, therefore, at her/his discretion, revise content and requirements during the semester.
7. **Accommodation for Students with Disabilities:** Any student who may need accommodation based on the potential impact of a disability should contact the Disability Support Services office at 202-994-8250 in Rome Hall, Suite 102, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: <http://gwired.gwu.edu/dss/>
8. **University Counseling Center:** The University Counseling Center (UCC), 202-994-5300, offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include:

- crisis and emergency mental health consultations
  - confidential assessment, counseling services (individual and small group), and referrals
- <http://gwired.gwu.edu/counsel/CounselingServices/AcademicSupportServices>

### **9. Emergency Preparedness Information.**

[https://campusadvisories.gwu.edu/sites/campusadvisories.gwu.edu/files/2015\\_2016\\_Syllabus\\_In\\_sert.pdf](https://campusadvisories.gwu.edu/sites/campusadvisories.gwu.edu/files/2015_2016_Syllabus_In_sert.pdf)