

INAF 320: Quantitative Methods for International Affairs  
Summer 2023

**Professor Information**

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Office Hours: Information on Canvas

Class will meet on Mondays - Thursdays from 10:50 am to 12:55 pm

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The goal of this course is to train students to perform and analyze quantitative research in International Relations and Comparative Politics. By the end of this course, students should be able to read and understand the quantitative research found in reports and articles. Students should also be able to formulate hypotheses, design a research project, and use the correct statistical method(s) to test their hypotheses. All students will work with real data using a statistical package (Stata) and learn to manage, graph, display, and analyze different types of data.

This course is divided into three parts: 1.) definition of key terms, 2.) descriptive statistics, and 3.) inferential statistics. The first week will focus on defining and discussing important terms that will allow students to understand how to plan and conduct a research project. The remaining weeks will involve understanding different statistical tools that are used for analyzing important and interesting research questions. Unlike other classes, this class will focus on quantitative methodology, which means that over 95% of this course involves math and correctly interpreting numbers. At the end of the semester, students should be able to:

1. Articulate an appreciation for the diverse application of statistics and its relevance to the field of political science and international politics.

2. Demonstrate conceptual understanding of fundamental statistical ideas such as variability, distribution, association, causation, confidence, and significance.
3. Show introductory level practical ability to choose, generate, and properly interpret appropriate descriptive and inferential methods.
4. Exhibit critical thinking about statistics (e.g., demonstrate the ability to assess the ‘validity’ of statistical arguments in the popular press and scholarly publications).
5. Demonstrate the ability to effectively communicate statistical ideas (and thus be able to knowledgeably participate in social debates).
6. Demonstrate introductory level experience by using Stata, a statistical software widely used in the social sciences, to perform data analysis.

## Academic Integrity

Students should familiarize themselves with the following University policies:

- Georgetown’s honor system <http://bulletin.georgetown.edu/regulations6.html>
- Students may not post externally or share any materials in course packet or on Canvas without permission from Professor Patel. More information about intellectual property and copyright can be found here: <https://www.library.georgetown.edu/copyright>
- Plagiarism policy <http://gervaseprograms.georgetown.edu/honor/system/53519.html>

## Recommended Text

There is not a required text for this course, however, the following text is **recommended** for those students who would like extra problems or more detail on the materials covered in lecture.

- Agresti, Alan and Barbara Finlay 2008. *Statistical Methods for the Social Sciences, 4th Edition* Pearson

In addition to this recommended text, I have also included recommended policy readings that cover each of the topics we cover in class. These readings can be found under the Readings page within Canvas.

## Required Materials:

The following materials are required for this course. Students are expected to bring the following to every class:

- Scientific Calculator. Students **MUST** bring their calculators to every lecture and to exams. The use of a calculator on your phone and/or tablet is unacceptable.
- A Course Packet, available for download. I understand that some students may not have a printer. This is fine. You can just use a plain notebook and just refer to the course packet for the examples we do in class. Others can annotate the electronic copy using their laptop or tablet. I prefer that students write out their notes since it is proven that students learn better when they actually take notes.

## Stata

In this course, we will be using a statistical software called Stata. Stata is now available to ALL students. Students must use **Stata 17 BE**.

1. Students can download the software online by visiting the following website:  
<https://georgetown.onthehub.com>.
2. Please sign in using your netid and password
3. Click on Stats and STEM and look for Stata 17
4. Follow the directions to download Stata 17 (If you have a Mac, click on Windows and choose Mac from the pull down menu)
5. Once you download it you will be asked to choose a version of Stata 17, **choose Stata 17 BE**
6. Once download is complete, open up Stata. You will be asked for registration code, authorization code, etc. You can find this information if you go back to the georgetown.onthehub.com website, sign in, and click on my orders. From here if you click details under the Stata 17 order, you will see all the information you need.
7. Note: Stata licensing with the university expires in February. Around this time, you can get updated registration information by following the previous step. You will get an email with instructions before the licensing expires.

## Grades

The final course grade will be evaluated on quizzes, a midterm, class participation/attendance, lab exercises, and a final exam. The grade breakup is as follows:

- Attendance–10%
- Midterm 1–25%
- Midterm 2–25%
- Final Exam–40%

Final grades will be distributed as follows:

- 95 and above – A
- 90-94 – A-
- 87-89 – B+
- 83-86 – B
- 80-82 – B-
- 77-79 – C+
- 73-76 – C
- 70-72 – C-
- 60-69 – D
- below 60 – F

Note: Due to many opportunities I give throughout the semester (including extra credit), I do not round the numerical final grade. A grade of 94.99 will be an A-, while a grade of 95 will be an A.

### **In Class Activity/Attendance**

We will collect the in class activity from students **who attend class in person**. If you do not attend class in person, you cannot turn in an in class activity. This is worth 10% of the total grade. Students will get the full 10% as long as they miss **no more than 3** classes. After this, we will subtract one point for every additional class missed. For instance, if you miss four classes, the highest score you can receive is 9 points. If you miss five classes, the highest score you can receive is 8 points, and so on. **I do not record or keep track of excuses for missing class**. If you are missing class for whatever reason, you **do not** need to notify me as I will not be recording any excuses for missing classes. Please note that student **do not get credit for attending class via zoom**. Only students who need to isolate due to COVID will get credit for attending class virtually. In order to get credit for attending class virtually, students need to notify the university by filling out this form. After they fill out the form, they will receive an email from the University regarding their isolation dates. Students must email me the official email from the University. If students are attending virtually for **any other reason (other than a COVID positive test)**, they will not get credit for attendance.

### **Midterm:**

The midterm exams will cover material from lecture, lab, and the readings. Students will be allowed to bring a calculator to the exam administered during lecture. The tentative date of the midterms will be TBD.

## **Final Exam:**

The final exam is cumulative, but will mostly focus on the materials and topics covered after the 2nd midterm. The final will be on July 7. Students will be allowed to bring one page of notes (front and back) and a calculator. The final exam is worth 30% of your total grade. The date of the final exam will be the last day of class, July 7.

## **Class Schedule**

Instead of laying out the topics that we will cover in each class, I'm going to just list the different topics we will cover throughout the semester and the order in which we will cover them. After each topic, I will list the assignments that you can complete after each topic. The due dates of assignments will be on Sunday. Whichever topics we complete the assignments will be due the Sunday after the topic was covered. The last due date of assignments is going to be July 5 (two days before the final exam).

1. Introduction and Definition of Key Terms
2. Descriptive Statistics
3. Probability and Normal Curve
4. Recoding Variables
5. Midterm 1
6. Confidence Interval
7. Chi Square
8. T Test and Proportions Test
9. ANOVA
10. Midterm 2
11. Correlation and Bivariate Regression
12. Multivariate Regression
13. Multivariate Regression with Dummy IVs (Quiz 9 and Lab 7 after this lecture)
14. Multivariate Regression with interactions (Quiz 10 and Lab 8 after this lecture)
15. Final Exam

## Canvas

Everything you need for this class will be on the Canvas Course site. This section will go over the different course content on Canvas.

- Home and Syllabus–Both these sections include the syllabus and important information about the course.
- Assignments–You will find under this section, all of the quizzes, lab exercises, class activities, exams, etc. The due dates for assignments right now is left blank (see below). I will update the due dates as we progress through the course.
- Panopto–This section will include the recorded lectures. I will try (if technology cooperates and there are no issues) to record all lectures and post them on panopto. If you don't see the lecture posted after the evening of the lecture, send me an email.
- Pages–This section includes all the documents you will need including handouts for each lecture, statistical tables, etc.
- Modules–This section includes the link to access the online modules.
- Announcements–I will use this section to post any important announcements. Please make sure that you change the settings so that you get an email once a new announcement is posted or that you check this section frequently.