Advanced Empirical Analysis

University of Maryland, College Park

Fall 2022

Instructor Information

- Dr. Candace Turitto
- turitto@umd.edu
- Office Hours
    - Tuesday 1pm-2pm
    - Wednesday 11am-12pm
    - (or email me at the address below for an appt, or Zoom)
    - Tydings 1147

Teaching Assistant Information

- Katherine Pistner
- kpistner@terpmail.umd.edu
- Office Hours – TBA on ELMS

Course Information

- T/Th 11a – 12:15p
- TYD 0111

Course Overview and Goals

This class will allow students to build on the knowledge of statistical inference they gained from GVPT 201. Topics include data collection, data cleaning, data analysis, and data visualization. By the time students complete this class, they will be able to do basic statistical modeling independently, using OLS regression and logistic regression.

Upon Completion of this Course, students will:

- Reinforce and further develop a firm understanding of the theoretical foundations underlying common statistical analyses;
- Gain comfort navigating, displaying, and analyzing data using R;
- Conduct and interpret basic descriptive statistics on voter data;
- Produce sound statistical analyses and proper conclusions of relationships using advanced regression skills; and
- Independently investigate a research question employing logistic modeling techniques.

Course Requirements

By the start of October, each student will need their own personal laptop in class. Please consult your resources (the Library, your Advisor(s), Me) in securing this in time, if you need to loan one from the University.

Each student will also be required to download and utilize the statistical software, R and its user interface partner, RStudio. These programs are free to download and use on any personal or campus lab computer. **YOU SHOULD DOWNLOAD AND INSTALL EACH OF THESE PROGRAMS ASAP.** For anyone who simply needs to update these existing programs, please see the guidance document under FILES in ELMS.

R: https://cran.r-project.org/

RStudio: https://rstudio.com/products/rstudio/download/ (free desktop version)

Reading Comps

As we cover regression theory in the first part of the course, students will be required to complete readings provided on ELMS. These readings will be paired with six (6) short, graded reading comprehension worksheets.

Midterm

There will be a mid-semester exam focused on the basics of statistical theory as well as linear and logistic regression. The test will be open book and timed. There will be no R work on the midterm.

R Homework Assignments

There will be three homework assignments throughout the semester, meant to give you practice doing on your own what we have done in class. All three assignments will be in R and will cover basic commands (i.e., descriptive statistics), then linear regression, and finally logistic regression. The Basic R Commands Assignment (#1) is very time-consuming, so plan ahead, and start it early.

Game Day

Attendance will be taken on this day and there will be no Zoom option. Fear not, it's easy and fun!

Anatomy of a Journal Article

Students will read a recently published journal article in political science and complete an assignment which identifies the basic components of the research (i.e., hypotheses, variables, etc.). As a class, we will discuss these elements thoroughly, in addition to the structural components found in quality research. Note that this assignment will necessary carry a late penalty if it is not submitted before the class dedicated to discussing it in detail.

Research Design Assignment

After practice in class, students will demonstrate their understanding of the conditions necessary and ideal for an experimental design, and how to create an observation research design when an experiment is not applicable. This assignment will ask each student to briefly construct and describe a research design that would answer specific questions provided.

Individual Research Project

At the end of the semester, each student will write a short research paper to include a logistic regression with multiple independent variables, predicted probabilities, and data visualization. This project will begin with a research proposal meant to aid you in selecting the right kind of DV, and appropriate IVs. We will also have an Operationalization Workshop in class to discuss how to recode your chosen variables and plan out the predicted probabilities and visualizations to use in the final paper. This research project includes three total assignments: a research proposal, a predicted probabilities plan, and the final research paper.

Staying Informed

Any good student of anything is constantly learning. On your own throughout the semester, you are highly encouraged to stay informed with current events and political happenings. You can do this in several ways – The Washington Post (or others), Politico, FiveThirtyEight, podcasts, etc. Know your source and cast a wide net.

Grading of Assignments

The grade for this course will be determined according to the following formula:

Assignments/Activities	% of Final Grade
Reading Comps (6)	[15%]
Midterm	[20%]
R Homework Assignments (3)	[20%]
Game Day	[5%]
Anatomy of a Journal Article	[10%]
Research Design Assignment	[5%]
Research Proposal Assignment	[5%]
Predicted Probabilities Plan	[5%]
Research Paper	[15%]

Letter Grades

Letter grades for the entire course will be assigned as follows:

Letter Grade	Points	Percent
A+	4.00	97-100
A	4.00	94-96
A-	3.7	90-93
B+	3.3	87-89
B	3.0	84-86
B-	2.7	80-83
C+	2.3	77-79
C	2.0	74-76
C-	1.7	70-73
D+	1.3	67-69
D	1.0	64-66
D-	0.7	60-63
F	.00	Below 60

View Grades

Assignment grades will be made available on the UMD ELMS site. Note that the "final grade" listed on ELMS is NOT, in fact, your final grade, as assignments are weighted differently (see above).

Course Schedule - Topics & Assignments

[Subject to change with notice from Instructor**]**

Part I – Welcome! What do you remember?

8.30.22 -- Introductions and Syllabus

9.1.22 – What do you remember from 201? Let's find out!

Part II – Regression Theory

9.6.22 – Linear Regression Theory
**Read GP Chapter 1 for next class*
Reading Comp #1* ***due by midnight on SEPT 7, 2022* *on ELMS*

9.8.22 -- Linear Regression Theory
**Read GP Chapter 2 for next class*
Reading Comp #2* ***due by midnight on SEPT 12, 2022* *on ELMS*

9.13.22 -- Linear Regression Theory
**Read GP Chapter 3 for next class*
Reading Comp #3* ***due by midnight on SEPT 14, 2022* *on ELMS*

9.15.22 – Linear Regression Theory
**Read GP Chapter 5 for next class*
Reading Comp #4* ***due by midnight on SEPT 19, 2022* *on ELMS*

9.20.22 -- Logistic Regression Theory
**Read GP Chapter 7 for next class*
Reading Comp #5* ***due by midnight on SEPT 21, 2022* *on ELMS*

9.22.22 -- Logistic Regression Theory
**Read GP Chapter 15 for next class*
Reading Comp #6* ***due by midnight on SEPT 26, 2022* *on ELMS*

9.27.22 -- Logistic Regression Theory

9.29.22 – Midterm Review

10.4.22 to 10.5.22 – MIDTERM – Take home; ***due by midnight (11:59pm) on OCT 5, 2022*** *on ELMS*

Part III – Coding in R

10.6.22 – Game Day *(Attendance required)*

10.11.22 – Basic R commands

10.13.22 – Basic R commands

10.18.22 – Basic R commands
**Start R Homework #1 – it's long…*

10.20.22 -- Basic R commands

10.25.22 – Basic R commands
R Homework #1* ***due by midnight on OCT 26, 2022* *on ELMS*

Part IV – Regression in R

10.27.22 -- Linear Regression in R

11.1.22 -- Linear Regression in R

11.3.22 -- Linear Regression in R // Logistic Regression in R
R Homework #2* ***due by midnight on NOV 7, 2022* *on ELMS*

11.8.22 -- Logistic Regression in R

11.10.22 – Logistic Regression in R
R Homework #3* ***due by midnight on NOV 14, 2022* *on ELMS*

Part V – Independent Research Projects

11.15.22 – Zoom Open Class – ask me your questions about the Midterm or anything else (link under Zoom in ELMS)
**Read journal article in ELMS*
Article Autopsy Assignment* ***due by midnight on NOV 16, 2022* *on ELMS*

11.17.22 – Anatomy of a Research Article (*this class will NOT be recorded*)

11.22.22 – Research Design, Experiments, and Observational Studies

11.23.22 – 11.27.22 – FALL BREAK

11.29.22 – Experiments and stuff!
Research Design Assignment* ***due by midnight on NOV 30, 2022*

12.1.22 – Introduction of Research Project and dataset
Research Proposal Assignment* ***due by midnight on DEC 5, 2022* *on ELMS*

12.6.22 – Evaluations & Operationalization Workshop on Zoom
Predicted Probabilities Assignment* ***due by midnight on DEC 7, 2022* *on ELMS*

12.8.22 – Zoom Open Class / Writing Day – ask me your questions about the final project (link under Zoom in ELMS)

12.14.22 – FINAL PAPER (***due by midnight*** *on ELMS*)

Course Materials

Required Textbooks & Materials

There are no required textbooks to purchase for this course. Instructor will provide excerpts for students from *Basic Econometrics* by Gujarati & Porter ("GP") and any other readings via ELMS.

Each student will also be required to download and utilize the statistical software, R (https://cran.r-project.org/) and its user interface partner, Rstudio (https://rstudio.com/products/rstudio/download/). Throughout the course, we will also utilize the "poliscidata" package created by Philip H. Pollock III & Barry C. Edwards.

Instructor will provide R scripts in class with directions on how to use an array of common commands that help us explore datasets, manipulate variables, and execute statistical tests.

Resources

- **Access your course materials**: https://elms.umd.edu
- **Databases, journal articles, and more**: https://www.lib.umd.edu/
- **Assistance with strengthening your writing**: https://www.english.umd.edu/academics/writingcenter/schedule
- **See all University course policies:** https://ugst.umd.edu/courserelatedpolicies.html
- **Obtain 24/7 technology assistance:** https://it.umd.edu/

Course Policies

ELMS:

Important communication regarding the class is conducted via ELMS. This includes posting of the syllabus, announcements, and grades. Students are required to be proficient users of ELMS and to ensure that their emails registered with ELMS are up to date and checked regularly.

Recordings of Class:

Each class session will be recorded on Panopto and stored on our ELMS course site. Use this as a resource when you have questions. Also note that when we are in class, while you will not

be seen on the recording, you may be heard. I will remind us in each class about the recording, but know that by attending you are providing consent. I will not share these recordings outside of our ELMS site.

If you miss a class meeting, this is your primary resource. I will not record our class meeting on the Article Autopsy assignment.

Attendance and Tardiness:

We will largely use “synchronous”, in person classes. I hope you come to class, but if you feel under the weather, or uncomfortable, know I don’t take attendance for a grade (apart from Game Day). While you all technically have an option to watch recordings asynchronously apart from attending class in person, also know that I will not be teaching to the recording. That is to say, your experience will be much richer in person than via the recordings.

There are a few classes noted on the schedule as Virtual Office Hours – these classes are optional, but you should definitely consider using them. If you have any questions or doubts about your understanding of our current topic, show up (at any point during normal class time) and ask me about it.

Students should plan to attend class as is typical and inform the instructor of any foreseen absences.

In the instance where I get sick, one of two things will occur. If I am just germy, I will create a Zoom link in our ELMS course site for class that day, and we’ll proceed as “normal”, just online for that class period. Students can feel free to use the classroom space to stream the class if necessary or desired. If I’m down for the count, I will send an announcement on ELMS to cancel class, and we will make any necessary adjustments to the syllabus after that.

Major Grading Events:

In this course, there are two major grading events – the Midterm and the Final Paper. You cannot “miss” these events with a self-signed note.

Teaching Assistant:

You have a super awesome TA this semester, Katie! Katie is another major resource for you. If you have a question about homework, or class concepts, or R code, ask her via email first. I promise I will help if needed, but she’s great! As a matter of conduct, you should address and treat Katie as my appointed proxy – don’t say or do anything that you would not say or do with me.

Late Assignments:

Late submission of assignments will lose a letter grade for each day it is late, including weekends (i.e., and A+ becomes an A, then an A-, then a B+, etc.). If you have reason to request an extension on any assignments, please communicate that need directly to me as soon as possible via email. The deadlines for Major Grading Events cannot be altered.

Absence due to illness:

Any student missing a Major Scheduled Grading Event is required to provide documentation from the Health Center or from an outside health care provider that verifies the dates of treatment and time frame during which the student was unable to meet academic responsibilities. This documentation should be sent to me as soon as possible – keep an open line of communication.

Grade Challenges:

Any challenges to a grade must be submitted *in writing* ***no sooner*** than one week after the grades have been released online. That 1-week buffer is there so you have time to digest and better understand the grade and any corrections. Any challenge to a grade needs a substantive explanation of why you were improperly graded.

Extra Credit and Incompletes:

Graded assignments in the class provide students with ample opportunity to demonstrate mastery of the materials. **No extra credit assignments** will be assigned in the class.

Important Note about Class Communication:

Please allow the professor 24 hours to respond to emails (48 to 72 hours on weekends).

Code of Conduct:

It is assumed that all students are familiar with and adhere to the code of academic integrity. See http://www.studenthonorcouncil.umd.edu/index.html

Statement on Diversity and Inclusivity:

The Government and Politics department deeply values the voices and perspectives of all people. We are committed to having a diverse department that recognizes and appreciates the differences in race, ethnicity, culture, gender, sexual orientation, religion, age, abilities, class, nationality, and other factors. Our department prioritizes diversity and seeks to foster a diverse community reflected in its faculty, staff, and students.

In this class, students are invited to share their thoughts and a diversity of opinions is welcome. Respectful communication is expected, even when expressing differing perspectives. Supporting one's statement with research findings is encouraged. In accordance with free speech statues, speech that contains threats of violence is prohibited.

Reporting Racism and Other Forms of Hate and Bias:

If you experience racism or other forms of bias in this class or any GVPT course, we encourage you to do at least one of the following:

· Please report the experience to the instructor or teaching assistant

· Report the experience to David Cunningham, the GVPT Director of Undergraduate Studies at dacunnin@umd.edu

· Report the experience to the GVPT Diversity, Equity, and Inclusion committee, led by Professor Antoine Banks at abanks12@umd.edu

Please also report all incidents of hate and bias to the Office of Diversity and Inclusion at https://diversity.umd.edu/bias/.

Religious Observances:

In accordance with the University's policy on the observance of religious holidays, it is the student's responsibility to inform me of any absences due to these holidays well in advance and **in writing** within the first two weeks of the semester. I am serious about the "in writing" part.

Students with disabilities:

I will make every effort to accommodate students who are registered with the Disability Support Services (DSS) Office. I am not able to accommodate students who are not registered with DSS or who do not provide me with documentation that has been reviewed by DSS.