Econ 307
Principles and Methods of Statistics
Spring 2021

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Overview & Goals

Economics 307 is an introductory course in statistics for economists. Statistics is a mathematical tool for analyzing data. This course covers descriptive statistics, probability, basic inferential statistics (estimation and hypothesis testing) and regression analysis (econometrics).

The goal of the course is to help you learn how to use statistical methods to describe data and to test theories about relationships among variables that are policy or business relevant, or that are key to understand social science issues. The course is focused on economics and public policy.

It is important that you read the chapter assignments before the lectures on the assigned chapters. Even if you don't always have time to read the entire reading assignment carefully, you should at least skim through the material before class to become familiar with the terms and concepts that will be discussed. This will make the lectures more meaningful and easier to follow.

The learning goals in this course are that each student will develop skills and abilities:
• To use quantitative, economic and statistical reasoning to ask and answer questions that you care about, especially questions related to social and economic issues.
• To be able to identify erroneous statistical conclusions in newspaper articles, policy documents, and popular reporting of science.

Course Format

This course is taught in person (except for the first two weeks), but the class and lab office hours will be virtual.

There are two types of office hours: "standard office hours" for theoretical questions and any issues regarding the class. The week before a lab is due, I will hold lab "office hours".

I will record all the classes, both the ones taught via Zoom and the ones taught in person. The classes will be available online the same day that the class is taught.

Study Groups

You will be assigned into a consistent study group, for in-class discussions and lab sessions. I also encourage working together in groups on theory and code assignments. Each student must prepare and submit their own answers for the theory assignments. The code assignments will be submitted in groups.

I encourage each study group to stay in contact throughout the week, either via small group Zoom chats, small group Slack chats, texting, or other messaging tools.

Recommended Textbook:

Essential Statistics, Regression, and Econometrics, 2nd Edition; Gary Smith; 2015 Academic Press.

Lectures*:

MWF 1:00 – 1:50 pm EST

- Via Zoom (January 27th to February 10th)
Note: Check Blackboard for the password.
- In person (February 10th to May 7th), McGothlin 20

Grading:

• Participation, attendance, teamwork.	10%
• Code assignments:	25%
• Theory assignments:	20%
• Midterm	20%
• Final:	25%

Professor Office hours:

Monday, 2:00 – 3:00 pm
Wednesday, 2:00 – 3:00 pm
Zoom link, W&M authentication required.

Code advising hours (not required to attend,)

• 1-hour on the Friday afternoon before the code assignments are due.
• Exclusively for issues related to RStudio and code.
• Not required to attend.

Prerequisites

Econ 101 (Principles of Microeconomics) and Econ 102 (Principles of Macroeconomics). Note: you cannot enroll in Econ 307 after taking or while taking Econ 308. Students may receive credit for only one of the following introductory statistics courses: BUAD 231, ECON 307, and MATH 106.

Requirements & Evaluation

The course requirements are participation, weekly lab assignments, problem sets, two midterms, and a final.

Participation, attendance, cooperation: I assign 10% of your grade to participation. My expectation is that each week each student will make at least one content-related question in class, in office hours, or in the code advice hours. The question could be about lecture material, theory assignments, or code assignments. I will also tale attendance. Lastly, your capacity to do teamwork will also be evaluated by an anonymous evaluation submitted by your study group classmate. Hence, if you do not put enough group effort in your code assignments, that lack of effort will be reflected in your grade.

Theory assignments: There will be roughly 6 theory assignments in the course. These are due at the beginning of class on the date indicated (unless otherwise noted on the problem set). In calculating the average grade for your problem sets I will drop the lowest homework grade. To submit your problem sets, please take a photo of each page of your work. Please use a scanning app, such as Camscanner or similar, to improve the quality of the photographs. Submit the assignment as a single pdf. Lastly, upload the assignment to Blackboard by the due date.

Code assignments: There will be between 7 to 9 graded coding assignments in the course. You will do these assignments and submit them in groups. They should be done in RStudio. Instructions in the code assignments are such that, they are self-contained. Each week, the TA will hold office hours where they will answer general questions about code or the assignment itself.

Code assignments are due on Sunday at 11:59 pm. I do not accept late assignments. I will hold office hours that will be exclusive for the code assignment the Friday afternoon before a coding assignment is due.

Note on homework solutions. I will post the solutions to the theory and code assignments 24-36 hours after the deadline. I am happy to provide specific feedback regarding the problem sets during my office hours. It is your responsibility to verify the answers of the problem sets.

Exams. They will be in person and will be take-home and open book. Dates for the two midterms are listed in the course schedule, and you will be given a 24-hour window to finish the midterms, during which you may download the exams from Moodle, print it and complete it, and then upload it to Moodle following the steps described in the PS section. You will be under the honor code not to discuss the exam with any other student, not to use any materials for the exam (besides what is permitted), and not to take longer time that allowed for the exam. Final exam will take place between the final period, and it is cumulative and similar in format to the midterms. You may not use any of the built-in functions on your calculator (e.g. related to the normal distribution, or the binomial formula) on the exams. I will distribute a sample exam and hold a review session in advance of each examination

TA Office Hours:
TBD

TA Labs (not required to attend)
TBD

Exam Dates (subject to change):

Midterm: Monday, March 15th, 2021

Final exam (cumulative): Friday, May 14th, 2021

Policies during the pandemic

Life is very difficult right now. I'm fully committed to making sure that you learn everything you were hoping to learn from this class. I will make whatever accommodations I can to help you finish your exercises and learn and understand the class material.

If you feel this course is challenging and you're having trouble, I will not judge or think less of you. I hope you extend the same grace to your study group members and to me. You are always welcome to talk with me about difficulties that you are facing.

Communication is key. If you are facing difficulties, please talk with me. You can make an appointment with me via email. My objective is that you enjoy learning Statistics during this course, but the number one priority in these times is that you stay well during the pandemic. This is especially true if this is either your freshman or sophomore year.

I have a flexible policy for code and theory assignments (not for exams though). If you know 24-hours in advance that an assignment cannot get done, email me at least 24 hours before the deadline, and I can grant you a 24-hour extension with no penalties. You can use this policy no more than three times with no questions asked. Please do not abuse the late policy, mainly because work can accumulate easily, and it can lead to the accumulation of pending assignments (from this class and others) which will increase your stress a lot.

If you get sick or you are going through a personal situation that might last two weeks or more I can do adjustments to the deadlines of the assignments, but this will require you to contact the Student Health Center or the Office of the Dean of Students. Also, I kindly ask you to contact me as soon as possible, so we can find a way to help you.

Lastly, I cannot move exams. If an unprecedented situation occurs that impedes you from taking one of my exams, please contact me ASAP, as well as the Student Health Center or the Dean of Students.

Mental Health

The current pandemic can impact the mental health of any student. If you are experiencing distress, I encourage you to contact the Counseling Center. It is completely normal to talk with a mental health expert and I encourage you to do so if you feel overwhelmed or anxious by the current circumstances.

Academic accommodations:

William & Mary accommodates students with disabilities in accordance with federal laws and university policy. Any student who feels they may need an accommodation based on the impact of a learning, psychiatric, physical, or chronic health diagnosis should contact Student Accessibility Services staff at 757-221-2512 or at sas@wm.edu to determine if accommodations are warranted and to obtain an official letter of accommodation. For more information, please see www.wm.edu/sas.

Academic honesty:

I take very seriously the Honor Code in this class. If I suspect plagiarism or cheating in any of the assignments, I will follow the guidelines established by the Dean of Students.

Policy on video contents:

All content posted in Canvas is for the exclusive use of William & Mary students signed into this class.

You are not allowed to forward the Zoom link or to provide passwords to other students.