

Syllabus

Econ 400

Summer I 2020

Department of Economics

University of North Carolina - Chapel Hill

Course Info.

- Code: ECON 400.002
- Class Times: Mo-Fr 11:30AM - 1:00PM; May 13th - June 15th
- Final Exam Time: June 17th 11:30AM-2:30PM
- Credit Hours: 3
- Instructor: Daniel Nikolic
- Email: dnikolic@live.unc.edu
- Office Hours: Mo 10-11AM; Wed 1-2PM; Thu 1-2PM;
or by appointment any time 6:30AM-9:30PM
- Lecture Zoom Link: <https://unc.zoom.us/j/96852282552>
- Office Hours Zoom Link: <https://unc.zoom.us/j/92957551736>
- Course Website: Sakai site

Important Dates.

- 5/15 - Last day to drop (with refund)
- 5/25 - Memorial Day (no class)
- 5/28 - Midterm
- 5/29 - Last day to drop (without refund)
- 6/12 - Last day to withdraw
- 6/15 - Last day of class
- 6/17 - Final

Course Objective and Learning Goals. We will be covering descriptive statistics and statistical graphics, probability theory, distributions, parameter estimation, hypothesis testing, simple and multiple regression, and use of

powerful statistical estimation software.

Under the assumption of successful completion by you, this course will:

1. Cover the basic results of probability and econometric theory, and teach you how to think about causality.
2. Teach you to interpret and critically analyze statistical results in real studies.
3. Prepare you to test hypotheses and perform data analysis.
4. Provide the necessary building blocks in any empirical application of economic theory, and prepare you for more advanced research methodologies.

At the end of the course, students should be able to develop hypotheses tests to investigate relationships in data, draw informed conclusions based on statistical results in terms of the hypothesis, list and discuss various statistical tools and how they apply to real world data, including regression analysis, describe the probabilistic properties underpinning ordinary least squares (BLUE), and apply empirical analyses in a statistical software program and effectively communicate output.

Prerequisites for this course include ECON 101, STOR 155, and one of MATH 152, 231, STOR 112, or 113.

Course Materials.

Required:

- Stable access to the Internet, for Zoom and Sakai
- We will be learning Stata commands, so you will need Stata early on in the course. Refer to the Important Details list below for more info on obtaining Stata.

Textbooks:

- James H. Stock and Mark W. Watson, *Introduction to Econometrics*, 4th Edition, Pearson.

- Jeffrey M. Wooldridge, *Introductory Econometrics: A Modern Approach*, 4th-7th Edition, Cengage.

Important Details:

- You might be able to obtain Stata from:
<https://software.sites.unc.edu/software/stata-gradplan/> .
 Otherwise, you can use Stata on the UNC VirtualLab via the Citrix receiver for free. Check here for a better explanation than I can provide:
<https://virtuallab.unc.edu>
- Any assessments I give you will not require you to buy some sort of online access to anything.
- Gaining as much familiarity with the topics we cover is absolutely key to success in this course. Do not expect to spend less than 15-20 hours per week on this course. Read the textbook(s), and practice by doing the end-of-chapter exercises. I will record Zoom lectures but do not rely on lectures or recordings, watching recordings will not be sufficient to master the material.
- The Stock & Watson textbook is the primary reference for this class. I assign readings from this text. Get whichever edition you want - the readings I assign will be specifically based off the 4th edition.
- The Wooldridge textbook is an immensely useful reference for later topics in the course (and is also the required textbook for Econ 470, if you plan on taking that in the future)

Course Requirements and Grading.

| Assessment | Weight |
|---------------|--------|
| Participation | 20% |
| Assignments | 25% |
| Project | 20% |
| Midterm | 15% |
| Final | 20% |

Note that these weights are subject to change over the duration of the course. If any change occurs to this weighting, or any other section of the syllabus,

you will be notified at least a week in advance.

Participation. Participation in the course constitutes a significant portion of your overall grade. What it means to participate is to be engaged with the material and to help the class progress through the lecture schedule. Each day of lecture all students are expected to be prepared to recap recently covered material. For a student that is taking notes, reviewing lecture material, attending class, and otherwise performing the common tasks that a student of UNC is expected to be doing, these points are virtually automatic. This policy is subject to revision/I can be flexible if an extenuating circumstance limits your ability in some way. Here is a short summary on how to obtain participation points:

- Each day that you attend class you have a chance of earning participation credit. Conversely, if you do not attend class there is no way to earn participation points.
- I will be offering a variety of ways to earn points because your idea of participation might not be the same as mine. Either i) submit the written notes you take to me, ii) successfully summarize readings or other preparation when called upon, or iii) work exceedingly well in your group project
- If you do (i), (ii), or (iii) without attending class, you do not earn participation points.

Assignments. Assignments will either be written problem sets or Stata programming assignments. Students should submit assignments via Sakai. All homework submissions should be neat, organized, and clear responses to the questions. If the assignment requires submission of a .do file, the script must be legible and otherwise not contain erroneous code. Otherwise, the acceptable file type for assignment submissions is PDF.

Project. This will not be your typical, dreaded group project! You should think of this assessment as the major application of the content you will be learning. Students will be in groups and you will be making a report that involves statistical output generated on Stata. The project will involve multiple deliverables that will be spaced out over the duration of the course (info. on specific deadlines forthcoming), but the largest component will be

a final report. The purpose of the group is each group is assigned one dataset and every deliverable will be at the group-level (one group = one report). Students in a group are expected to collaborate and help other group members. But each member will have a different research question to answer; the underlying connection between group members is the shared dataset and shared responsibility in creating a single deliverable. More details forthcoming.

Late Policy. The expectation is work will be submitted on time. Late work will not be accepted unless an extension has been approved ahead of time. In other words, please reach out to me if there is something limiting your ability to turn an assignment in! As for missed exams, due to time constraints there will be no option to retake the midterm or final.

Academic Integrity. This course will be held to the university standard for integrity. No cheating/stealing. View this website for the full policy: <https://studentconduct.unc.edu/> . Exams will be open-note, open-textbook. Students are encouraged to consult each other on homework and project assignments.

Accessibility Resources and Services. If at all you need specific accommodations, please let me know and I'll do as much as I can. You can also contact ARS directly, which can also be really helpful to some students. I am very mindful of the adverse effect the current global crisis can have on any one of us. If you are experiencing stress, anxiety, or any other conditions please note that you can make use of university resources, particularly CAPS, remotely. Check the Student Care Hub for more resources: <https://keeplearning.unc.edu/> .

UNC-Chapel Hill facilitates the implementation of reasonable accommodations for students with learning disabilities, physical disabilities, mental health struggles, chronic medical conditions, temporary disability, or pregnancy complications, all of which can impair student success. See the ARS website for contact and registration information: <https://ars.unc.edu/about-ars/contact-us>.

Course Outline

| | Topics | Due Dates | What's Due | Midterm Date |
|--------------|--|-----------|---------------------------|---------------|
| First 3 Days | Describing Data and Prereq Review | 5/15 | HW #1, Proj. Deliv. #1 | |
| Week 2 | Probability, Distributions, and Visualizing Data | 5/22 | HW #2, Proj. Deliv. #2 | |
| Week 3 | Estimation, Hypothesis Testing, and Confidence Intervals | 5/29 | HW #3 | 5/28 (Thurs.) |
| Week 4 | Ordinary Least Squares/Linear Regressions, Inference, and Standard Errors | 6/5 | HW #4, Proj. Deliv. #3 | |
| Week 5 | Topics in Linear Regression Analysis | 6/12 | Proj. Deliv. #4 | |