Economics 30340 Statistics for Economics Fall 2022

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Office Hours: Tuesday 2:15-3:15, Thursday 11:00-12:00, and by appointment.

Course Description: This course will introduce students to a core set of topics in statistics. The class will be composed of four areas of study: (1) describing, presenting and analyzing data; (2) probability theory, distributions (discrete and continuous), and random variables; (3) sampling theory, estimation and hypothesis testing; (4) linear regression analysis. The objectives of the course are to provide students with a practical knowledge of statistics in order to better understand current events and policy discussions; to introduce students to the data analysis, formal models and problem-solving methods used by statisticians and econometricians; to enable students to read and understand basic economic research that uses statistical methods; to prepare students for further study in econometrics; and to teach students how to use and perform statistical analysis using Stata – a statistical package.

Tutorials: Each student must be enrolled in a tutorial section (Econ 32340). Tutorials will focus on supplementary materials, problem solving and Stata programming. **Attendance at tutorials will be required.** Tutorial classes will not be recorded. The tutorial instructors and section info are given below and instructors will post office hours in the first tutorial class. Tutorials meet on every Friday during the course of the semester.

Name	Section	Time	Classroom	Email
Victoria Consolvo	02	F: 12:50-1:40	JNH B062	vconsolv@nd.edu
Brianna Felegi	03	F: 11-11:50	JNH B062	bfelegi@nd.edu
Andres Perez	07	F: 2:00-2:50	JNH B062	aperez22@nd.edu

Prerequisites: Economics 10010/20010 or 10020/20020 are the prerequisite for the class. The material covered is quantitative and the class will utilize standard tools and methods from high school algebra and a bit of calculus.

Required and Recommended Materials:

Essentials of Statistics for Business and Economics, Anderson, Sweeney, Williams, Camm and Cochran, Cengage Publishing, any recent edition. (Highly Recommended). You do not need a version with an access code. Get the least expensive option you can.

There are also a number of free on-line texts that you can use as well. Some of these on-line resources do not cover everything we will but are reasonable substitutes for the *Essentials* text. During the course of the semester, a set of alternative readings will be posted along with the relevant sections from the *Essentials* text. These include:

OpenIntro Statistics:

https://www.openintro.org/book/os/

Introductory Statistics (Shafer and Zhang):

https://stats.libretexts.org/Bookshelves/Introductory_Statistics

Online Statistics Education:

http://onlinestatbook.com/

Go to the Web Version 2.0 link.

Stata Student Single User License (Stata/BE: (6 months) $48.00):

https://www.stata.com/order/new/edu/gradplans/student-pricing/

Stata a **required resource**. This software will not run on Chromebooks. The details of computer requirements for Stata can be found here:

https://www.stata.com/products/compatible-operating-systems/

Additional readings may be assigned during the course of the semester.

Optional Material: A second book -- Introduction to Mathematical Statistics with its Applications by Larson and Marx is **optional**. It is more advanced mathematically. I cover some of this material in class, but the lectures will contain all the needed details. To be sure, some of the math contained in this book is well beyond what we will cover in this class -- we will only use some basic calculus -- and that occurs rarely.

Course Webpage: Homework assignments, solutions, course handouts, data sets, programs, and other materials will be posted on Canvas. Students should check the website regularly for updates. The site is FA22-ECON-32340-SS-07.

Grades: Grades will be based on 10 homework assignments (15%), a data analysis project (5%), 6 tutorial exercises (5%), two in-class exams (22% each), and a comprehensive final exam (31%).

Homework assignments (HW1-HW10) will include numerical, short answers, and STATA programming problems. HW assignments will be posted on Thursdays of most weeks. Homework assignments are designed to prepare students for the types of questions that will appear on exams and to develop expertise in using STATA to analyze data. Assignments will be posted and submitted through Canvas. **Only homework submitted as a single pdf will be graded**. Homework assignments will **usually** be due on Wednesday evenings at 9:00 pm. Assignments received after the deadline but before midnight will be given 90 percent of the credit earned. Assignments received on the day after the due date will receive 50 percent of the credit earned. Except for students with a university-approved absence, submissions after midnight on the day after the due date will not be accepted. **The lowest score will be dropped.**

Exams will consist of true-false and multiple-choice questions, numerical and STATA problems, and short answer. The final exam is comprehensive. **Exams will include material covered in the tutorials**. **Students will need a calculator**. No phones are allowed. Exams will be administered in class.

If a student has a university-approved absence to miss a midterm exam, please notify me as early as possible. A makeup exam will then be scheduled.

Data Analysis Project: Detailed information on the data analysis project will be provided after the 2nd exam. The project is a regression analysis project focused on the analysis of demographic data. It is due on December 8th (Thursday night).

Tutorial exercises (E1-E6) will be based on the information presented in the weekly tutorial session. These exercises will vary but can include a short quiz related to the week's lectures, the completion of a worksheet in the tutorial, or a Stata programming exercise. Tutorial exercises are posted on Friday mornings and due on Friday by 5:00 pm. **The lowest score will be dropped.**

Course Grades: A (94-100); A- (90-93); B+ (87-89); B (83-86); B- (80-82); C+ (77-79); C (73-76); C- (70-72); D (60-69); F (below 60). Grades will be rounded to the nearest integer.

Class Schedule (Subject to Change):

Week	Lecture Dates	HW Due (Estimated Date)	Exercise/Review Tutorials*	Exams
1	**8/23-8/25**		**Math Review**	
2	**8/30-9/1**	**#1: 8/31**	**Stata Intro**	
3	**9/6-9/8**	**#2: 9/7**	**E1**	
4	**9/13-9/15**	**#3: 9/14**	**E2**	
5	**9/20-9/22**	**#4: 9/21**	**Review**	
6	**9/27-9/29**			**Exam 1: 9/27**

7	**10/4-10/6**	**#5: 10/5**	**E3**	
8	**10/11-10/13**	**#6: 10/12**	**No Tutorial**	
9			**Fall Break**	
10	**10/25-10/27**	**#7: 10/26**	**E4**	
11	**11/1-11/3**	**#8: 11/2**	**E5**	
12	**11/8-11/10**	**#9: 11/9**	**Review**	
13	**11/15-11/27**			**Exam 2: 11/15**
14	**11/22**		**No Tutorial**	
15	**11/29-12/1**	**#10: 11/30**	**E6**	
16	**12/6-12/8**	**Project Due (12/8)**		**Final (12/16)**

***Note: Tutorials meet every week – even if an exercise of specific title is not listed**

Lecture Class Attendance and Participation: Class attendance is expected. As noted in the Academic Code: **"Students are required to attend class regularly and punctually."** Readings for the upcoming week will be announced in class. It is important that students prepare prior to class, as that will make the lectures easier to understand and class discussions more productive. The use of cell phones during class is prohibited. We will use laptops to perform data analysis during some classes, so students should bring their laptops to both lecture and tutorial.

Honor Code: All students are expected to be familiar with and to follow Notre Dame's Academic Code of Honor (https://honorcode.nd.edu/).

Disability Accommodations: It is the policy and practice of The University of Notre Dame to provide reasonable accommodations for students with properly documented disabilities. Because the University's Academic Accommodations processes generally require students to request accommodations well in advance of the dates when they are needed, students who believe they may need an accommodation for this course are encouraged to contact Sara Bea Disability Services at their earliest opportunity. Additional information about Sara Bea Disability Services and the process for requesting accommodations can be found at sarabeadisabilityservices.nd.edu.

Health and Safety Protocols: In this class, as elsewhere on campus, students must comply with all University health and safety protocols.