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## ECON 335: INTRODUCTION TO ECONOMETRICS

### INSTRUCTOR INFORMATION

Instructor: Bhavya Sinha

Pronouns: She/Her/Hers

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Office Hours: TR 9-10:30 pm MT (Zoom)

Zoom: <https://zoom.us/j/2056597543?pwd=dCtoQXNvUC9ySINUZWWhUMUs2NW9Mdz09>

Communication Policy: **All e-mail correspondence should be through our CSU Rams e-mail address.** I typically respond to e-mails in 1-2 working days.

### COURSE ACCESS

Canvas: <https://colostate.instructure.com/courses/184136>

Course: 2024SM-ECON-335-801: Introduction to Econometrics

### PREREQUISITES FOR COURSE

ECON 204 (Principles of Microeconomics) and ECON 202 (Principles of Macroeconomics); MATH 141 (Calculus in Management Sciences) or MATH 155 (Calculus for Biological Scientists I) or MATH 160 (Calculus for Physical Scientists I); STAT 201 (General Statistics) or STAT 204 (Statistics for Business Students) or STAT 301 (Introduction to Statistical Methods) or STAT 307 (Introduction to Biostatistics).

### COURSE DESCRIPTION & OBJECTIVES

This course is an undergraduate-level introduction to econometrics - the social science in which the tools of economic theory, mathematics, and statistical inference are applied to the analysis of economic phenomena. We will learn and apply regression analysis to various data sets (by closely relating each of them to one concrete economic question) to familiarize students with the core concepts of estimation of economic parameters, prediction of economic outcomes, and statistical inference. The primary objective of the course is to:

- Understand what econometrics is and what its methods can be used for.
- Develop and maintain a working knowledge of econometrics that will provide a strong foundation for further study in econometrics and statistical techniques.

Upon the completion of this course, students will be able to:

- Use statistical analyses to estimate relevant economic parameters, predict economic outcomes, and test hypotheses using data.

- Understand the assumptions of the classical regression model and when these assumptions are violated and procedures to correct for such violations.

## TEXTBOOK / COURSE READINGS

Text (required): **James H. Stock and Mark W. Watson: Introduction to Econometrics**, 4th edition ISBN: 9780134520155 (2019 student value edition); ISBN: 9780136879787 (e-book). You can choose to purchase either version of the book. The student value edition is unbound loose-leaf.

## COURSE MATERIALS & EQUIPMENT

For Canvas related support, see [info.canvas.colostate.edu](http://info.canvas.colostate.edu).

For any other computer-related technical support, contact the Central IT Technical Support Help Desk: (970) 491-7276 or [help@colostate.edu](mailto:help@colostate.edu).

The technology requirements for this online course are listed below:

Hardware:

- A Windows or Macintosh computer with at least 2 GB of RAM and a fast, reliable broadband Internet connection (e.g., cable, DSL).
- Recommended desktop monitor and laptop screen size be 13-inches or larger for optimum visibility of course material.
- Computer speakers or headphones to listen to recorded content. **CAMERA FOR RESPONDUS!**
- Enough space on your computer for:
  - Installation of the required and recommended software and,
  - Saving your course assignments.

Software:

- Web browser (GOOGLE CHROME is recommended).
- Adobe Acrobat Reader and Flash Player.
- Microsoft Office.
- **Gretl:** We will mainly rely on Gretl for graphics, data management, basic statistics, and econometric estimation. **You will need to use Gretl for problem sets and empirical exercises. Gretl is a free and user-friendly econometric software package.** You can download and install Gretl using the following directions:
  1. Go to <http://gretl.sourceforge.net/>
  2. On the left-hand side, click on “gretl for Windows” if you are a Windows user, or click on “gretl on Mac OS X” if you are a Mac user.

FOR WINDOWS USERS: Check to see that your PC meets the system requirements, and then download the latest release based on 64 bit or 32 bit of your computer. Your download should begin automatically.

FOR MAC USERS: Follow the instructions onscreen to determine if your Mac has an Intel or PPC processor. Once determined, click on the appropriate button. Again, follow the onscreen instructions to download Gretl.

If you are already familiar with alternative commercial software (e.g. STATA, SAS, EViews, R, etc.), you are welcome to use it for problem sets as long as you circle or highlight your answers. Since datasets for homework will be provided in Gretl format, it will be up to you to convert files for use with different software. Furthermore, I may or may not be able to answer questions about alternative software depending on what it is.

## PARTICIPATION/BEHAVIORAL EXPECTATIONS

There will be 15 modules with two modules for each of the 8 weeks of the course. You should proceed through two modules per week.

Modules will comprise of readings, videos, learning activities, discussions, and assignments. Every Monday two new modules will be released. Assignments are typically due Sunday at 11:59 PM MST (unless otherwise specified) and you will have a week to complete the material in the modules before the next module is released. Since the course moves very quickly and part of the class involves discussion, everyone will need to stay at the same pace. As there are no in-person classes, it is crucial to work through the entire module and contact me with any questions as soon as possible.

Average weekly hours required for taking this course over the term are:

<b>Task</b>	<b>Weekly Time Estimate</b>
Reading	3 hours
Discussion	½ hour
Watching lecture videos & other supplemental materials	2 hours
Problem sets	2 hours
Preparation for exams	1 hour
Final project	1 hour
<b>Total</b>	<b>9.5 hours</b>

Please review the [core rules of netiquette](#) for some guidelines and expectations on how to behave in an online learning environment.

## COURSE POLICIES (LATE ASSIGNMENTS, MAKE-UP EXAMS, ETC.)

It is your responsibility to turn in each assignment on the required date. All assignments turned in after the scheduled due date will be penalized 10% for each day late. The exceptions that may be considered are due to sickness, university excused function, or circumstances beyond the students' control. You must contact me within 1 week of a missed assignment to be considered for an extension due to illnesses or circumstances beyond one's control. You must contact me at least 1 week before the due date if it is a university excused function.

The instructor reserves the sole right to determine what grounds constitutes a reasonable excuse for missing or submitting a late work assignment, the level of penalty, and the right to require the student to submit proper verification of such excuse.

## GRADING POLICY

Grade	Range
A+	100% to 96.67%
A	<96.67% to 93.33%
A-	<93.33% to 90.0%
B+	<90.0% to 86.67%
B	<86.67% to 83.33%
B-	<83.33% to 80.0%
C+	<80.0% to 76.67%
C	<76.67% to 70.0%
D	<70.0% to 60.0%
F	<60.0% to 0.0%

Final grades will not be rounded.

As a student enrolled in this course, one of your responsibilities is to submit course work by the due dates listed in Canvas. With that said, I take my role as your instructor very seriously and I care about how well you do in this course and that you have a rewarding experience. To that end, it is my commitment to you to respond individually to the work you submit in this class and to return your work promptly.

## Assignments

ASSIGNMENT	GRADE POINTS	GRADE PERCENTAGE
Discussions	100	10%
Problem Sets	250	25%
Midterm 1	150	15%
Midterm 2	150	15%
Project	150	15%
Final Exam	200	20%
<b>Total:</b>	<b>1000</b>	<b>100%</b>

**Important:** Keep a copy of all work created for the course, including work submitted through Canvas course learning management system.

**Discussion Posts:** There will be four (4) Discussion Posts each worth 25 points (i.e., 2.5%) to make up 10% of your final discussion grade. Discussion posts should be thoughtful written responses to course content that demonstrate your understanding of the course material and ability to communicate and apply econometric methods. These posts should be at least 150 words and **you must also respond to other student's posts to get full credit.** Note that there will not be any discussion post due during the week of the first midterm exam and neither will there be any due after week 5. This is to enhance your focus on your midterms, final project, and final exam.

**Problem Sets:** There will be five (5) Problem Sets each worth 50 points (5%) to make up 25% of your grade. These problem sets will consist of questions (multiple-choice, calculation, short answer, and essay type) covering important course material from the previous week(s) to prepare you for your exams.

**Project:** The final project will be worth 150 points to make up 15% of your final grade. The final project will cover what you have learned over the full course up until the project due date. Your project will be based on data analysis and interpretation pertaining to a question that interests you. Instructions for the final project will be provided on Canvas during the semester.

**Exams:** There will be three (3) assessments in form of exams making up a total of 50% of the final grade: 2 midterms each worth 150 points (15%) and a cumulative final worth 200 points (20%). These will consist of multiple-choice, calculation, problem-solving, short and/or long essay questions. Detailed instructions will be provided before the exams.

**ALL EXAMS WILL BE PROCTORED.** Respondus will proctor your exams this term. Respondus is an online proctoring service that allows you to take your exam from the comfort of your home. You **DO NOT** need to schedule an appointment in advance. Respondus is available 24/7 and all that is needed is a computer, a working webcam, and a stable Internet connection.

To get started, you will need Google Chrome and to download the Respondus Chrome Extension. You can download the extension at:

<https://download.respondus.com/lockdown/download.php?id=787854830>

Here is a quick start guide to help you set up:

<https://web.respondus.com/wp-content/uploads/2019/08/RLDB-QuickStartGuide-Instructure-Student.pdf>

When you are ready to take the test, log into Canvas, go to the ECON 335 course page, and click on the exam. Respondus will be recording your exam session by the webcam as well as recording your screen. Respondus also has an integrity algorithm that can detect search-engine use, so please do not attempt to search for answers, even if on a secondary device.

Respondus support is available 24/7/365. If you encounter any issues, you may contact them through <https://web.respondus.com/support/>.

## CSU STANDARD POLICIES

All standard policies for CSU Online courses are available in [the Passport to Canvas course](#). You can view these policies, which will be updated in real time if university policy changes, by logging into at [the Passport to Canvas course](#) with your NetID.

## COURSE SCHEDULE

<b>Weeks</b>	<b>Modules &amp; Topic</b>	<b>Chapters</b>	<b>Assignments</b>
<b>Week 1:</b> 06/10-06/16	Module 1 & 2: Economic Questions and Data; Review of Probability and Review of Statistics.	1-3	<b>Discussion 1 &amp; Problem Set 1</b> due by June 16 by 11:59 pm MST
<b>Week 2:</b> 06/17-06/23	Module 3 & 4: Linear Regression with One Regressor	4	<b>Discussion 2 &amp; Problem Set 2</b> due by June 23 by 11:59 pm MST
<b>Week 3:</b> 06/24-06/30	Module 5 & 6: Hypothesis Testing and Confidence Intervals I & Linear Regression with Multiple Regressors	5-6	<b>Discussion 3 &amp; Problem Set 3</b> due by June 30 by 11:59 pm MST
<b>Week 4:</b> 07/01-07/07	Module 7 & 8: Hypothesis Testing and Confidence Intervals II / <b>Midterm Exam 1</b>	7	<b>Midterm Exam 1</b> July 7 by 11:59 pm MST
<b>Week 5:</b> 07/08-07/14	Module 9 & 10: Nonlinear Regression	8	<b>Discussion 4 &amp; Problem Set 4</b> due by July 14 by 11:59 pm MST
<b>Week 6:</b> 07/15-07/21	Module 11 & 12: Assessing Econometric Studies / <b>Midterm Exam 2</b>	9	<b>Midterm Exam 2</b> July 21 by 11:59 pm MST
<b>Week 7:</b> 07/22-07/28	Module 13: Regression with a Binary Dependent Variable	11	<b>Problem Set 5</b> due by July 28 by 11:59 pm MST
<b>Week 8:</b> 07/29-08/02	Module 14 & 15: Final Exam		<b>Final Exam</b> August 2 by 11:59 pm MST