STA 4210: Regression Analysis
Fall — 2025

Instructor Information

Name: Lingxiao Zhou
Office: FLO 218
Office Hours: R 9:30-11:30 AM

Email: zhou.l@ufl.edu
Phone: (352) 392-1941
Preferred contact: Email

Class Information

Credit Hours: 3
Time: T 8:30-10:25 AM
R 8:30-9:20 AM
Classroom: AND 0134

TA Information

Name: Dipshi Roychowdhury
Email: droychowdhury@ufl.edu
Office: FLO 117D

Office Hours:
T 1:00-2:00 PM (in person)
M 11:00 AM-12:00 PM (Zoom)

Course Description

This course is about the theory and application of linear regression. After some review of basic statistics, we will discuss the simple linear regression model and its matrix formulation, the multiple regression model, and a number of related tools such as model diagnostic measures, collinearity statistics, and variable selection procedures. Computations will be carried out in the R programming language.

Course Objective

Students will be able to investigate the purposes, methods and applications of regression.

Recommended Textbooks

The following textbook is NOT REQUIRED but recommended: Applied Linear Statistical Models by M. Kutner, C. Nachtsheim, J. Neter and W. Li, 5th edition.

Materials and Supplies Fee

N/A

Course Website

Canvas course page. Please check the canvas site regularly. Course documents and important information, including lecture notes, exam topics and special announcements, will be posted in canvas.

Homework

There will be about eight Homework assignments. **Late assignments will not be accepted.** For extensions, students need to email the instructor with a valid reason at least 48 hours prior to the due time. Students may drop their two lowest homework scores at the end of the semester.

Exams

There will be three exams given **in class**. The exams are scheduled for 8:30 – 9:20 AM on **September 25, October 23 and December 2**.
Make-up exams are available only in extreme situations. They may be more challenging than regular exams and may have a different format. To request a make-up exam, students should contact the instructor as soon as possible.

Grading

The course grade is determined by the following components:

Exam1	25%
Exam2	25%
Exam3	25%
Homework	25%

Grade Scale

Final grades will be assigned according to the following scale:

A	93 – 100	C+	77 – 79
A–	90 – 92	C	67 – 76
B+	87 – 89	D	60 – 66
B	83 – 86	E	0 – 59
B–	80 – 82		

Lecture Attendance

Attendance is expected and will be essential for performing well in the class. If you miss class for any reason, it is your responsibility to get any information you might have missed from another student. See university attendance policies: https://go.ufl.edu/syllabuspolicies

UF Grading Policy

https://go.ufl.edu/syllabuspolicies

Evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://go.ufl.edu/syllabuspolicies. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/.

Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See "Get Started With the DRC" Disability Resource Center webpage (https://disability.ufl.edu/get-started/). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester

Lecture Format

This class is 100% in-person. Lectures will not be recorded.

Academic Misconduct

UF students are bound by The Honor Pledge which states We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. See the UF Conduct Code website (https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/) for more information. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Tentative Schedule

The following is a *tentative* schedule for the course.

Week 1

- Introduction

Week 2

- Review key concepts

Week 3

- Simple linear regression
- Inference in SLR model
- HW 1

Week 4

- Confidence interval, Prediction interval
- Sum of Squares
- Checking model assumptions by plots
- HW 2

Week 5

- Checking model assumptions by tests
- Remedial measures
- HW 3

Week 6

- control error rate
- Review for Exam 1
- Exam 1 on Thursday Sep 25

Week 7

- Matrices and operators
- Linear dependency, rank, inverse
- Random Vectors and Matrices
- HW 4

Week 8

- Matrix form for SLR

- Multiple regression
- Qualitative variables
- HW 5

Week 9

- Multiple regression in matrix form
- Extra sum of squares
- General linear test
- HW 6

Week 10

- standardized regression
- Review for Exam 2
- Exam 2 on Thursday Oct 23

Week 11

- VIF, multicolinearity
- Model Selection
- HW 7

Week 12

- Model Selection
- Model validation
- HW 8

Week 13

- Diagnostics
- Weighted Least Square

Week 14

- IRLS
- Penalized regression
- Review for Exam 3

Week 15

- No class this week

Week 16

- Exam 3 on Tuesday Dec 2