

Course Syllabus – Fall 2025



Course STAT 4355.001
Course Title Applied Linear Models
Professor Chuan-Fa Tang
Term Fall 2025
Meetings M/W 2:30pm - 3:45pm at SCI 3.250

Professor's Contact Information

Office Phone MS Teams
Office Location FO 2.610D
Email Address Chuan-Fa.tang@utdallas.edu
Office Hours T/Th 12:00 – 1:00 pm on MS Team or in-person
Preferred Method of Contact The best way to contact me is email with the course number STAT4355 in the subject line. I will respond to your emails within 24 hours under normal circumstances.

TA's Contact Information

Teaching Assistant Meng He
Email Address Meng.He@UTDallas.edu
Office Hours T/Th 4:00 – 5:00 pm, in person at office FO 1.204V or online by appointment.
Note Questions on HW should be first addressed to TA. If any problems cannot be sorted out, please come and talk to Professor.

Student Resources

[Comets United webpage](#): check frequently.

[Campus Health Promotion](#): during public health emergencies affecting campus, this page will provide UTD-specific information and guidance for students and employees.

[FAQ](#): check out the FAQs and reach out to your instructor or academic advisor if answers are not included

[Student Resources](#): a variety of resources are available to help students obtain counseling, health care, and academic support.

General Course Information

Pre-requisites, Co-requisites, & other restrictions	STAT 3355
Course Description	<p>The course will introduce linear statistical models and demonstrate their application to empirical data using the statistical programming language <i>R</i>.</p> <p>Topics include</p> <ul style="list-style-type: none"> • Linear regression models • Multiple linear regression models • Model fitting and validation • Diagnostic measures • Detection of outliers and influential observations • Transformations and indicator variables • Variable selection and model building • Generalized linear regression models
Learning Outcomes	<ol style="list-style-type: none"> 1. Students will be able to understand relevant background theory for linear statistical models. 2. Students will be able to perform analysis of linear regression models and ANOVA models using statistical software <i>R</i>. <p>Students will be able to analyze data with linear statistical models and give an effective oral/written presentation about the results.</p>
Required Texts & Materials	Montgomery, D.C., Peck, E.A., and Vining, G.G. (2012). Introduction to Linear Regression Analysis (5th ed.). Hoboken, NJ: John Wiley & Sons
Suggested Texts, Readings, & Materials	<p>Weisberg, S. (2005). Applied Linear Regression (3rd ed.). Hoboken, NJ: John Wiley & Sons</p> <p>Textbooks can be ordered online or purchased at the UT Dallas Bookstore.</p>

Assignments & Academic Calendar

Weeks	Topics	HW	Exam/Project
1	Chapter 2. Simple Linear Regression		
2	(Continued)		
3	(Continued)	HW 1	
4	(Continued)		
5	(Continued)	HW 2	
6	Chapter 3. Multiple Linear Regression	HW 3	
7	(Continued)		Exam 1

Weeks	Topics	HW	Exam/Project
8	(Continued)	HW 4	Project Intro
9	(Continued) Chapter 4. Model Adequacy Checking & Chapter 6. Diagnostics for Leverage and Influence	HW 5	Proposal
10	(Continued)	HW 6	
11	(Continued)		Exam 2
12	Chapter 5. Transformations to Correct Model Inadequacies	HW 7	
13	Chapter 10. Variable Selection and Model Building		
14	Chapter 8. Indicator Variables		
15	Presentation Week	HW 8	Report

Assignments

There will be **8 homework assignments**. Homework will be assigned through [eLearning](#). Students must submit a **scanned or electronic copy of the assignment** in a **single PDF** for grading. The lowest score (including missed ones) will be dropped. Each HW due is at **11:59 pm**.

Exams

There will be **two 75-minute closed-book tests** on **Oct. 8th (Wednesday)** and **Nov. 5th (Wednesday)**. Depth and scope of understanding of concepts and methods will be tested. The tests will be based on a specified range of course content. The instructor will inform students of the exact coverage of each test when it approaches. If deemed necessary, students are allowed to bring a cheat sheet.

Project

A team of 3-4 students will find interesting data, perform regression analysis, and discuss novel discoveries from the analysis. Each team will submit a **project proposal**, have a **10-minute oral presentation** about their results in class, and write a **project report**. The proposal submission is due **Oct. 22nd (Wednesday) at 11:59 pm**. The presentation dates are **Dec. 1st (Monday)**, **Dec. 3rd (Wednesday)**, and **Dec 8th (Monday)**. The analysis report is due on **Dec. 15th (Wednesday) at 11:59 pm**.

Course Policies

Class Materials	The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course; however, these materials are for registered students' use only. Classroom materials may not be reproduced or shared with those not in class or uploaded to other online environments except to implement an approved Office of Student Access accommodation. Failure to comply with
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	these University requirements is a violation of the Student Code of Conduct .
Classroom Conduct Requirements Related to Public Health Measures	UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Spring 2022 semester to the extent allowed by state governance. Texas Governor Greg Abbott's Executive Order GA-38 prohibits us from mandating vaccines and face coverings for UT Dallas employees, students, and members of the public on campus. However, we strongly encourage all Comets to get vaccinated and wear face coverings as recommended by the CDC. Check the Comets United: Latest Updates webpage for the latest guidance on the University's public health measures. Comets are expected to carry out Student Safety protocols in adherence to the Comet Commitment. Unvaccinated Comets will be expected to complete the Required Daily Health Screening . Those students who do not comply will be referred to the Office of Community Standards and Conduct for disciplinary action under the Student Code of Conduct – UTSP5003 .
Class Attendance	The University's attendance policy requirement is that individual faculty set their course attendance requirements. Regular and punctual class attendance is expected. Students who fail to attend class regularly are inviting scholastic difficulty. In some courses, instructors may have special attendance requirements; these should be made known to students during the first week of classes. Faculty have the discretion to set an attendance policy for their in-person meetings.
Class Participation	Regular class participation is expected. Students who fail to participate in class regularly are inviting scholastic difficulty. A portion of the grade for this course is directly tied to your participation in this class. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (and/or labs). Class participation is documented by faculty. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct .
Grading (credit) Criteria	<ul style="list-style-type: none"> • 30% Homework • 20% Exam 1 • 20% Exam 2 • 30% Project <ul style="list-style-type: none"> ○ 5% Proposal ○ 10% Presentation ○ 15% Report <p>The course grade is based on the overall course score, as follows: A+ [96, ∞); A [93, 96); A- [90-93); B+ [86, 90); B [83, 86); B- [80-83); C+ [75, 80); C [70, 75); C- [65-70); D+ [60, 65); D [55, 60); D- [50-55); F [0,50)</p>
Make-up Exams	<i>If absence is not excused based on documentation, eg. Doctor's Note, missed test or quiz receives the grade of zero.</i> Absences due to forgetfulness, etc., will not be excused. If the absence is excused based on documentation, then the average of the non-missed exams will be used for the missing grade.
Extra Credit	In the interest of equitable treatment of all students, no individual requests for special projects, extra assignments, extra tests, etc., will be granted.

Late Work	Late submission of HW or test results in a grade of zero.
Special Assignments	No individual requests for special projects, extra assignments, extra exams, etc., will be granted.
Classroom Citizenship	Any action that disturbs your classmates or interrupts the lecture is unacceptable. Examples of such actions are using inappropriate language in chats and displaying inappropriate pictures/videos.
Comet Creed	<i>This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:</i> <i>"As a Comet, I pledge honesty, integrity, and service in all that I do."</i>
Academic Support Resources	<i>The information contained in the following link lists the University's academic support resources for all students.</i> <i>Please go to http://go.utdallas.edu/academic-support-resources.</i>
UT Dallas Syllabus Policies and Procedures	<i>The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please review the sections regarding the credit/no credit grading option and withdrawal from class.</i> <i>Please go to http://go.utdallas.edu/syllabus-policies for these policies.</i>

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.