UT-Austin iSchool Syllabus I306 Statistics for Informatics Spring 2026

2026-01-15

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Description (from the catalog)

Restricted to informatics majors and students pursuing the informatics minor. Examine fundamental principles of probability and statistics. Cultivate an understanding of descriptive and inferential statistics. Conduct and interpret statistical analyses using statistical analysis software, and apply these analyses to common issues in informatics. Three lecture hours a week for one semester. Offered on the letter-grade basis only.

Quantitative Reasoning Flag

This course carries the Quantitative Reasoning flag. Quantitative Reasoning courses are designed to equip you with skills that are necessary for understanding the types of quantitative arguments you will regularly encounter in your adult and professional life. You should therefore expect a substantial portion of your grade to come from your use of quantitative skills to analyze real-world problems.

More information is available at quantitative reasoning flag.

Course Number

28130

Prerequisites

None, but you should have a strong command of College-level algebra. Past programming experiences will help.

Time

Tuesdays and Thursdays 3:30PM- 5:00PM

Place

UTC 1.118

Dates

January 13–April 23, 2026

Instructor

Nathan TeBlunthuis

Email

`nathante@utexas.edu`

Office

1616 Guadalupe St, Room 5.434

Office Hours

Mondays 12:00pm-1:00pm and Fridays 1:00pm to 2:00pm or by appointment. I hold office hours in my UTA office or Zoom. Make reservations for my office hours by editing this Wiki page. We'll meet in my jit.si office.

Course Website

The course website is https://pages.ischool.utexas.edu/i306StatisticsForInformatics/.

Week	Dates	Weekly Topic	Tuesday	Thursday

Schedule Overview

Week	Dates	Weekly Topic	Tuesday	Thursday
1	Jan 13-15	Introduction	Course intro & fundamentals	R setup & data basics
2	Jan 20-22	Data & Sampling	Sampling & experiments	Numerical data & visualization
3	Jan 27-29	Categorical Data	Categorical data & independence	**Quiz 1**; Data viz in R
4	Feb 3-5	Probability	Probability fundamentals	Conditional probability & Bayes
5	Feb 10-12	Distributions	Discrete distributions	Normal distribution
6	Feb 17-19	Central Limit Theorem	Law of Large Numbers & CLT	**Quiz 2**; Normal distribution lab
7	Feb 24-26	Inference Foundations	Confidence intervals	Hypothesis testing (proportions)
8	Mar 5, 10	Chi-Square & t-Tests	Chi-square tests	**Quiz 3**; t-distribution & t-tests
9	Mar 12	Power & Corrections	Statistical power & multiple comparisons	—
	Mar 14-22	*Spring Break*		
10	Mar 24-26	ANOVA & Correlation	ANOVA	**Quiz 4**; Intro to regression
11	Mar 31 - Apr 2	Simple Linear Regression	Least squares regression	Regression inference
12	Apr 7-9	Multiple Regression	**Quiz 5**; Intro to multiple regression	Confounders & collinearity

Week	Dates	Weekly Topic	Tuesday	Thursday
13	Apr 14-16	Logistic Regression	Intro to logistic regression	Logistic regression interpretation
14	Apr 21-23	Course Conclusion	**Quiz 6**; Project presentations	Project presentations

Detailed Schedule

The course schedule contains topics, readings, video lectures, activities for each class session, and assignments.

Setup

See the setup instructions for installing R, RStudio, and required packages. *Attempt the setup instructions before our first class.*

Materials

Our primary textbook is the freely available Diez, Çetinkaya-Rundel, and Barr (2019).

This course also uses a number of other resources in whole and part including video lectures from OpenIntro, Nick Huntington-Klein, Khan Academy, StatQuest, 3Blue1Brown, and JBStatistics, in-class activities from Gelman and Glickman (2000), Morrell and Auer (2007), and Burcu Eke Rubini, and tutorials from OpenIntro and AppliedStatsInteractive.

The freely downloadable Wickham, Çetinkaya-Rundel, and Grolemund (2023) is recommended for learning R.

A more advanced textbook on statistics, machine learning, and R is the freely available Kuhn and Silge (2022), the full text of which is available at tmwr.

You may also find the study guide from past editions of this course useful.

Learning Outcomes

- Learn to describe data using statistics and contingency tables to summarize
- Learn to use probability distributions
- Learn to visualize data
- Learn to develop confidence intervals
- Learn to conduct hypothesis tests
- Learn to conduct single and multiple regression and logistic regression
- Learn to write reproducible reports

Class Format

The class will primarily be a "flipped" classroom.

You will prepare for class by reading from the textbook, watching lecture videos published by OpenIntro, and *attempting* the exercises from the textbook section. Thinking through the exercises is at least as important as reading the text to our mathematical and technical learning goals. Doing textbook exercises is the best way to prepare for the quizzes.

Each even-numbered exercise in the textbook is similar to an odd-numbered exercise, and Appendix A in the back of the textbook has solutions to the odd-numbered exercises.

I will not grade these exercises, and I don't expect you to always be able to solve them on your own before class. We will have time in class to answer your questions and work through textbook exercises.

Assignments

Credit for this class comes from *quizzes*, *homework and in-class participation*, and a *semester project*.

Attendance

Participation in in-class activities and assignments is graded and constitute 40% of your grade. I expect you to attend each class and participate in activities. If you do not attend class it will be difficult for most of you to learn the material needed to succeed on quizzes and the semester project.

Grading

I plan to grade assignments within two weeks of their due date except where circumstances interfere. The grading scale used along with the grade components follow.

Table 2: Scores are not rounded.

Letter Grade	Percentage Range	Points
A	94% and above	940+
A-	90% – 93.9%	900 – 939
B+	87% – 89.9%	870 – 899
B	83% – 86.9%	830 – 869
B-	80% – 82.9%	800 – 829
C+	77% – 79.9%	770 – 799
C	73% – 76.9%	730 – 769
C-	70% – 72.9%	700 – 729
D	60% – 69.9%	600 – 699
F	Below 60%	Below 600

Note that project work requires the submission of a .qmd file and a .html file. Omission of either will result in no credit for the work.

There are a total of 1010 available points (including 10 extra credit) in the class.

Quizzes (400 points, 40%)

Six in-class quizzes throughout the semester. The quizzes are cumulative, covering all material up to that point. However, they tilt quite heavily (quiz 6 less so) toward new material. You may use a 3.5" × 5" index card of handwritten notes.

Quiz	Topic	Points
Quiz 1	Data Types & Visualization	63
Quiz 2	Probability, Distributions, CLT	63
Quiz 3	CI, Hypothesis Testing, Chi-Square	63
Quiz 4	ANOVA	63
Quiz 5	Simple Linear Regression	63
Quiz 6	Multiple & Logistic Regression	85

Homework & Participation (400 points, 40%)

In almost all class sessions, we will have in-class activities, such as demonstrations, interactive tutorials, programming exercises, and worksheets. Participation points are earned by attending class engaging with activities, and completing tutorials, exercises, and worksheets.

Semester Project (200 points, 20%)

We will have semester-long project where you choose a dataset and apply the statistical methods learned in class. Milestone assignments scaffold the project. You will use Quarto to create reproducible reports.

Assignment	Points
Milestone 1: Dataset Selection & EDA	40
Milestone 2: Data Visualization	40
Milestone 3: Statistical Analysis	40
Final Report	50
In-class Presentation	30

University Policies and Resources for Students Canvas Page

Review this Canvas page. It is a part of all UT syllabi (including this one) and contains University policies and resources that you can refer to as you engage with and navigate your courses and the university.

References

Diez, David, Mine Çetinkaya-Rundel, and Cristopher D Barr. 2019. *OpenIntro Statistics, Fourth Edition*. self-published. https://openintro.org/os.

Gelman, Andrew, and Mark E. Glickman. 2000. "Some Class-Participation Demonstrations for Introductory Probability and Statistics." *Journal of Educational and Behavioral Statistics* 25 (1): 84–100. https://doi.org/10.2307/1165214.

Kuhn, Max, and Julia Silge. 2022. *Tidy Modeling with R*. Sebastopol, CA: O'Reilly. https://www.tmwr.org/.

Morrell, Christopher H., and Rebecca E. Auer. 2007. "Trashball: A Logistic Regression Classroom Activity." *Journal of Statistics Education* 15 (1). https://doi.org/10.1080/10691898.2007.11889451.

Wickham, Hadley, Mine Çetinkaya-Rundel, and Garrett Grolemund. 2023. *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*. 2nd ed. O'Reilly Media, Inc. https://r4ds.hadley.nz/.