Course Syllabus

Probability and Statistics I

Math-1110-02
Summer 2024
Online Course

Contact Information

Instructor
Linh Do
Teacher
ldo3@tulane.edu

Teaching Assistant
Truc Dang
TA
tdang4@tulane.edu

Course Description

Elementary probability theory and statistics with applications; random variables; distributions including a thorough discussion of the binomial, hypergeometric, and normal distributions; central limit theorem; histograms; sampling distributions; confidence intervals; tests of hypotheses; linear models; regression.
Course Learning Outcomes
Here are the course learning outcomes and the associated percentages of class material:

- Proficiency with descriptive statistics and selected graphical methods (10%)
- Understanding of probability concepts and their applications (15%)
- Proficiency with discrete and continuous random variables and their applications (25%)
- Understanding of the Central Limit Theorem and sampling distributions (10%)
- Proficiency in introductory parameter estimation and statistical inference (30%)
- Familiarity with simple linear regression concepts and applications (10%)
-

Core Curriculum Outcomes

Tulane undergraduates should understand the methods of scientific inquiry. MATH 1110 may be applied to the mathematics and natural sciences requirement, which will equip students to understand and assess scientific issues that affect the world today.

Required Materials

"Introduction to Probability and Statistics" by Mendenhall, Beaver, and Beaver (15th Ed.) It must have WebAssign Access.
Required software: If you buy WebAssign access online, you also get the ebook, so you won't need the hard copy.

Evaluation Procedures and Grading Criteria

Course grades will be based on homework assignments, quizzes, participation, two midterm exams, and a final exam. Exams will require an active Zoom session. Check deadlines carefully and plan ahead; late work will not be accepted without prior approval.

Assessment	Weight
WebAssign Homework	30%
Quizzes	10%
Participation	5%
Midterm 1	15%
Midterm 2	15%
Final Exam	25%
Total	100%

Letter Grade Scale

Below is the table for the course letter grade. Scores will NOT be rounded up or down to the nearest integer. For example, if your Total Score is 89.93, then your letter grade is B+ not A-.

Total Score	Grade
93–100	A
90–92.99	A-
86–89.99	B+
80–85.99	B
75–79.99	B-
71–74.99	C+
63–70.99	C
60–62.99	C-
57–59.99	D+

Total Score	Grade
53–56.99	D
50–52.99	D-
0–49.99	F

Assignment Makeups

- Quizzes: The lowest quiz score will be dropped. This means you can miss at most one quiz (for medical, personal, time, or any other reasons). Other missed quizzes will be scored as 0 points. The quizzes will be given and graded by our TA in the recitation classes.
- WebAssign Homework: The lowest WebAssign homework score will be dropped, so NO extensions/makeups will be given for other assignments. Assignments submitted one day after the deadline will have a 20% penalty. Other missed homework assignments will be scored as 0 points.

HW set per section via WebAssign. To access your homework on WebAssign, log into Canvas and follow the WebAssign link under Modules. You will be prompted to log in if you already have an account; otherwise, you will need to create a new account using your Tulane email address. There is a short free trial period at the beginning. WebAssign access is $90. If you have another course, you can purchase Cengage Unlimited for $119. These fees also give you access to the ebook.

- Participation: Your participation will be based on participation and attendance in class and recitations.

- Exams: NO makeup will be given. Only in extreme cases with approved documentation, the final exam will replace your missed midterm. Tulane policy states that Final Exam makeups need approval from the Dean's office. Students with accommodation needs to take the exam in class. Since all exams will be online, no alternative testing through the Goldman Center will be accepted.
- Students with extended absences should reach out to a Tulane case manager at Case Management and Victim Support ServicesLinks to an external site.. We will address each student's situation on a case-by-case basis.

Exam and Assignment Policy

- Exams will be online and proctored on Zoom. Students must have a webcamera. While taking the test students must join a Zoom room and their webcamera must be on and the sound must be off. The Zoom session will be recorded. Students must identify themselves by their full (First and Last) name.
- All assignments and exams are to be completed individually. For assignments, you can only use the course textbook and your class notes. No other resources are permitted. If you have any questions about whether a resource is acceptable, you must ask the instructor rather than assume. You cannot share information about assignments or tests with other students or individuals.

Attendance Statement

Regular attendance and interaction with the course is required. Please notify me of any planned absences in advance. Excessive absenteeism will result in the filing of an early warning report with the Dean's Office.

Electronic Devices and Calculator Policy

The use of electronic devices such as other laptop computers, smartphones, tablets, smart watches etc. that don't allow proper focus during lectures is not allowed, except to access course material for distance learning.
Simple 4-function calculators can be used on exams and assignments.

Course Calendar

Week	Day	Date	Time	Topic
	Friday	2-Aug-24	9:00-11:00 am	Final Exam (Cumulative) = 2 hours
1	Monday	1-Jul-24	9:00-10:45 am	Introduction to Probability and Statistics 4.1 Events and the Sample Space 4.2 Calculating Probabilities Using Simple Events 4.3 Useful Counting Rules
	Tuesday	2-Jul-24	9:00 - 10:45 am	4.4 Rules for Calculating Probabilities 4.5 Bayes's Rule
			2:00 - 3:15 pm	Recitation with Truc Dang
	Wednesday	3-Jul-24	9:00 - 10:45 am	5.1 Discrete Random Variables and its Probability Distributions
	Thursday	4-Jul-24	No class	Independence Day
	Friday	5-Jun-23	9:00-10:45 am	5.2 The Binomial Probability Distribution

Week	Day	Date	Time	Topic
2	Monday	8-Jun-23	9:00-10:45 am	5.3 The Poisson Probability Distribution 5.4 The Hypergeometric Probability Distribution
	Tuesday	9-Jun-23	9:00-10:45 am	6.1 Probability Distributions for Continuous Random Variables 6.2 The Normal Probability Distribution
			2:00 - 3:15 pm	Recitation with Truc Dang
	Wednesday	10-Jun-23	9:00-10:45 am	6.3 The Normal Approximation to the Binomial Probability Distribution.
	Thursday	11-Jun-23	9:00-10:45 am	Practice Exam (preparation for Midterm 1)
			2:00 - 3:15 pm	Recitation with Truc Dang
	Friday	12-Jun-23	9:00-10:45 am	Midterm 1 (Chapters 4, 5) = 90 minutes
3	Monday	15-Jul-24	9:00-10:45 am	7.1 Sampling Plans and Experimental Designs 7.2 Statistics and Sampling Distributions
	Tuesday	16-Jul-24	9:00-10:45 am	7.3 The Central Limit Theorem and the Sample Mean 7.5 The Sampling Distribution of the Sample Proportion
			2:00 - 3:15 pm	Recitation with Truc Dang

Week	Day	Date	Time	Topic
	Wednesday	17-Jul-24	9:00-10:45 am	8.1 Where we've been and where we're going 8.2 Point Estimation 8.3 Interval Estimation
	Thursday	18-Jul-24	9:00-10:45 am	8.4 Estimating the Difference between two population means 8.5 Estimating the Difference between two binomial proportions.
			2:00 - 3:15 pm	Recitation with Truc Dang
	Friday	19-Jul-24	9:00-10:45 am	8.7 Choosing the Sample Size 9.1 A Statistical Test of Hypothesis
4	Monday	22-Jul-24	9:00-10:45 am	9.2 A large-sample test about a Population Mean
	Tuesday	23-Jul-24	9:00-10:45 am	9.3 A large-sample test of hypothesis for the difference between two population means 9.4 A large-sample test of hypothesis for a binomial proportion
			2:00 - 3:15 pm	Recitation with Truc Dang
	Wednesday	24-Jul-24	9:00-10:45 am	9.5 A large-sample test of hypothesis for the difference between two binomial proportions
	Thursday	25-Jul-24	9:00-10:45 am	Practice Exam (Preparation for Midterm 2)

Week	Day	Date	Time	Topic
			2:00 - 3:15 pm	Recitation with Truc Dang
	Friday	26-Jul-24	9:00-10:45 am	Midterm 2 (Chapters 6,7,8) = 90 minutes
5	Monday	29-Jul-24	9:00-10:45 am	1.1 Variables and Data 1.2 Graphs for Categorical Data 1.3 Graphs for Quantitative Data (Stem and Leaf Plots)
	Tuesday	30-Jul-24	9:00-10:45 am	2.1 Measures of Center 2.2 Measure of Variability 2.3 Understanding and Interpreting the Standard Deviation 2.4 Measures of Relative Standing
			2:00 - 3:15 pm	Recitation with Truc Dang
	Wednesday	31-Jul-24	9:00-10:45 am	3.1 Describing the Bivariate Categorical Data 3.2 Describing the Bivariate Quantitative Data
	Thursday	1-Aug-24	9:00-10:45 am	Practice Final Exam
			2:00 - 3:15 pm	Recitation with Truc Dang

ADA/Accessibility Statement

Any students with disabilities or other needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor and should contact Goldman Center for Student Accessibility: http://accessibility.tulane.eduLinks to an external site. or 504.862.8433.

Code of Academic Conduct

The Code of Academic Conduct applies to all undergraduate students, full-time and part-time, in-person and online courses, at Tulane University. Tulane University expects and requires behavior compatible with its high standards of scholarship. By accepting admission to the university, a student accepts its regulations (i.e., Code of Academic ConductLinks to an external site. and Code of Student ConductLinks to an external site.) and acknowledges the right of the university to take disciplinary action, including suspension or expulsion, for conduct judged unsatisfactory or disruptive.

Title IX

Tulane University recognizes the inherent dignity of all individuals and promotes respect for all people. As such, Tulane is committed to providing an environment free of all forms of discrimination including sexual and gender-based discrimination, harassment, and violence like sexual assault, intimate partner violence, and stalking. If you (or someone you know) has experienced or is experiencing these types of behaviors, know that you are not alone. Resources and support are available: you can learn more at allin.tulane.edu. Any and all of your communications on these matters will be treated as either "Confidential" or "Private" as explained in the chart below. Please know that if you choose to confide in me I am mandated by the university to report to the Title IX Coordinator, as Tulane and I want to be sure you are connected with all the support the university can offer. You do not need to respond to outreach from the university if you do not want. You can also make a report yourself, including an anonymous report, through the form at tulane.edu/concerns.

Confidential	Private
Except in extreme circumstances, involving imminent danger to one's self or others, nothing will be shared without your explicit permission.	*Conversations are kept as confidential as possible, but information is shared with key staff members so the University can offer resources and accommodations and take action if necessary for safety reasons.*
Counseling & Psychological Services (CAPS) | (504) 314-2277	Case Management & Victim Support Services | (504) 314-2160 or srss@tulane.edu
The Line (24/7) | (504) 264-6074	Student Affairs Professional On-Call (24/7) | (504) 920-9900
Student Health Center | (504) 865-5255	Tulane University Police (TUPD) | Uptown - (504) 865-5911. Downtown – (504) 988-5531

Sexual Aggression Peer Hotline and Education (SAPHE) | (504) 654-9543	Title IX Coordinator | (504) 314-2160 or msmith76@tulane.edu

Emergency Preparedness & Response

EMERGENCY NOTIFICATION SYSTEM: TU ALERT

In the event of a campus emergency, Tulane University will notify students, faculty, and staff by email, text, and phone call. You were automatically enrolled in this system when you enrolled at the university.

Check your contact information annually in Gibson Online to confirm its accuracy.

RAVE GUARDIAN

- Download the RAVE Guardian app from the App Store
- Communicate with dispatchers silently by selecting "Submit Tip" feature in the app
- Use the Safety Timer feature to alert your "guardian" (TUPD, family, friend) when travelling alone at night

For more information, visit publicsafety.tulane.edu/rave-guardian

Tulane University EMERGENCY PREPAREDNESS & RESPONSE

ACTIVE SHOOTER / VIOLENT ATTACKER

- **RUN** – run away from or avoid the affected area, if possible
- **HIDE** – go into the nearest room that can be locked, turn out the lights, silence cell phones, and remain hidden until all-clear message is given through TU ALERT
- **FIGHT** – do not attempt this option, except as a last resort

For more information on Active Shooter emergency procedures or to schedule a training, visit emergencyprep.tulane.edu

SEVERE WEATHER

- Follow all TU Alerts and outdoor warning sirens
- Seek shelter indoors until the severe weather threat has passed and an all-clear message is given
- Do not attempt to travel outside if weather is severe
- Monitor the Tulane Emergency website (tulane.edu/emergency/) for university-wide closures during a severe weather event