STAT 5213/6213-001 & MATH 4903-001
Theory of Statistics (Page 1 of 3)

Primary Information

Winter 2025-2026

Class meets in IESB 222 TTH 10:00-11:50

Professor: Nathan Ponder, ponder@latech.edu

Office: Nethken 227, **Phone**: 318-257-3224

Office Hours: T 1:30-4:30, W 8:30-11:30 & 1:00-4:00, Th 12:00-1:00

Prerequisites: STAT 5213/6213 Theory of Probability (that has MATH 2443 Calculus IV) as a prerequisite

Course Goals: To develop proficiency in the official course description topics of "Point estimation, interval estimation, statistical hypotheses, statistical tests, nonparametric inference, normal distribution theory." Credit will not be given for STAT 5213 if credit is given for STAT 6213.

Course Materials and Text: The programming language R and the textbook Hogg, McKean, and Craig. *Introduction to Mathematical Statistics, 8th Edition*. Pearson, 2019, are both required. Go to https://www.r-project.org/ to download and install R (version 4.5.2) on your device for free. Go to https://cs.wmich.edu/~mckean/hmchomepage/Pkg/ to download the package **hmcpkg** to install in R.

Homework: Homework will be assigned throughout the quarter. Completing the homework is excellent preparation for exams.

Examinations: There are three required exams, each comprising one third of the course grade. The exam dates are as follows: Exam 1 on Jan. 8, Exam 2 on Feb. 3, Exam 3 on Feb. 26.

Grade Determination: A ten-point grading scale will be used for this class: 90% and higher is an A, at least 80% and less than 90% is a B, at least 70% and less than 80% is a C, at least 60% and less than 70% is a D, and less than 60% is an F.

Electronic Media: Smart devices (phones, watches, glasses, etc.) are not to be used or even visible during an exam. If such a device is visible at all during an exam, a student's exam will be taken immediately and will result in a test grade of zero. Calculators are allowed on the exams.

Retention of Graded Materials: In the event of a question regarding an exam grade or final grade, it will be the responsibility of the student to retain and present graded materials which have been returned for student possession during the quarter.

Refinements to Syllabus: It's possible the syllabus will be slightly refined. You'll be notified if that's the case.

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List of Textbook Topics with Assigned Exercises*
(The first line is from Ponder's notes. The rest of the list is from Hogg, McKean, and Craig's *Introduction to Mathematical Statistics*, 8th Ed.)

Section	Topics	Assigned Exercises
Ponder	Descriptive Statistics and R	1-8
3.3	Gamma, Chi-square, and Beta Distributions	1-4, 18-19
3.5.1	Bivariate Normal Distribution	1-2,7
3.6	t and F Distributions	1-2, 4-5
4.1	Sampling and Statistics	1-4
4.2	Confidence Intervals	1-2, 4-8, 15-18, 20, 22
4.5	Introduction To Hypothesis Tests	2-4, 8, 10
4.6.1	p-Value	5-8
4.7	Chi-Square Tests	4-7, 9
4.9	Bootstrap Procedures	1, 4, 9, 13
5.3	Central Limit Theorem	1-3, 6-8
9.2	One-Way ANOVA	3, 6-8
9.5	Two-Way ANOVA	6, 8, 10
9.6	Regression	2-3, 14
10.2	Sample Median and the Sign Test	4
10.3	Signed-Rank Wilcoxon	4
	Other sections	TBA

**There will likely be modifications to this list of sections and exercises as the quarter goes on. You will be notified of any such changes.*

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University Policies

Accommodations for Students with Disabilities

Students needing testing or classroom accommodations based on a disability must be registered with the Louisiana Tech University Office of Testing & Disability Services. Students are encouraged to discuss those needs with the instructor as soon as possible. If you do not have a current accommodation memo, visit the **Office of Testing & Disability Services** for assistance.

Academic Honor Code

In accordance with the **Academic Honor Code**, students pledge the following: "Being a student of higher standards, I pledge to embody the principles of academic integrity."

Emergency Notification System (ENS)

All Louisiana Tech students are strongly encouraged to enroll and update their contact information in the **Emergency Notification System**. It takes just a few seconds to ensure you're able to receive important text and voice alerts in the event of a campus emergency.

Counseling Services

Students have access confidential counseling services at no additional cost. Visit the **Louisiana Tech Counseling Services** website to learn more.

Non-Discrimination

Louisiana Tech University is committed to the principle of providing the opportunity for learning and development of all qualified citizens without regard to race, color, national origin, religion, age, sex, sexual orientation, marital status, or disability. Persons with concerns may contact the Louisiana Tech Director of Title IX Compliance Mortissa D. Harvey, Phone: 318.257.5911, Wyly Tower 1536, Email: mharvey@latech.edu

Section 504 is a federal law designed to protect the rights of individuals with disabilities in programs and activities that receive Federal financial assistance from the U.S. Department of Education. Persons with concerns may contact the Section 504 Coordinator Annie Jantz, Phone: 318.257.2445, Division of Student Affairs; Keeny Hall 305, Email: ajantz@latech.edu

Drop with a "W" date

The last date to drop a course (or resign an entire schedule) with a "W" for Winter 25-26 is **Friday, Feb. 6, 2026**.

Canvas and Workday Help

Direct questions/problems to the **Computing Center Help Desk** (helpdesk@latech.edu or 318-257-5300)