LeMoyne-Owen College

Division of Natural and Mathematical Sciences

Probability and Statistics Theory, MATH401

Spring 2026

Instructor:	Valerie Chu, Ph.D.
Office Room:	GOH400D or Teams
Office Phone:	(901) 435-1378
Office Hours:	MW 11:00 a.m. to 1:00 p.m. & Tues/Thurs 12:15 p.m. to 2:15 p.m.
Email Address:	valerie_chu@loc.edu
URL:	https://www.loc-cs.org/~chu/

Credit Hours: 3
Prerequisites: MATH 202 & MATH310
Class Meeting: T Th 11:00 a.m. to 12:15 p.m., GOH114

Syllabus

Texts: *Probability and Statistical Inference*, 10th Edition, *Wackerly, Robert V. Hogg, Elliot A. Tanis, Dale L. Zimmerman*, Publisher: *Pearson,* ISBN-9780135189399.

Learning Platform Guide

The learning materials about this course are posted on **Dr. Chu's website**. The website's URL is posted on the top section of information about the instructor. You should contact Dr. Chu for password to get into details of each subject.

The platform to submit your assignments is Canvas. You must be able to sign into Canvas and click on the course, Intro to Micro Computers. You can find your assignments under Syllabus tab.

*****Note: Please READ ALL STUDENT INSTRUCTIONAL GUIDES in Canvas LMS. All assignments are to be completed, uploaded, and submitted in Canvas.**

Course Description:

This course is a study of sample distributions, transformations of random variables, central limit theorem, law of large numbers, unbiasedness, least squares estimations, maximum likelihood estimations, confidence intervals, most powerful tests, and Neyman-Person Lemma. Likelihood ratio tests, probability and random variables, and discrete and continuous probability distributions.

College Graduate Competencies:

The three college graduate competencies (CGC) that are directly addressed in Probability and Statistics Theory are:

1. Think creatively, critically, logically, and analytically using both quantitative and qualitative methods for problem solving;
2. Communicate effectively (listen, speak, read, and write) on formal and informal levels;
9. Attain motivational, personal management, interpersonal skills, professional development and research experience, as well as resourcefulness that will form the basis for a career and/or further educational experiences;

Student Learning Outcomes:

By the end of this course, students should attain the following proficiency at the Senior level:

1. Demonstration of critical and analytical skills required to solve problems in Probability and Statistics. (CGC#1)
2. Show the ability to explain solutions of solving probability and statistics problems. (CGC#2)
3. Development of a foundation for advanced study and the application of statistics in one's area of specialization. (CGC#9)

Attendance Policy:

In accordance with college policy, classroom attendance is required. The following standard will be applied:

1. If unexcused absences total 15% of the regularly scheduled class meetings, the instructor has the authority to lower the final grade by one letter.
2. If unexcused absences total 20% of the regularly scheduled class meetings, the instructor has the authority to give a failing grade.
3. Five classes of tardiness—arrival to class five minutes after class has begun—will equal one unexcused absence

ALL STUDENTS MUST ATTEND THE CLASS IN PERSON.

Technology Use: LeMoyne-Owen College is committed to enhancing student learning through the use of a variety of applicable technology. In this course, students will use or be exposed to [software and/or hardware].

Demeanor: Suitable demeanor, posture and attire are required. For guidelines and the dress code, please refer to the Student Handbook.

AI Use Policy Overview

This policy outlines acceptable AI use in this course while maintaining academic integrity.

Acceptable Uses of AI:

1. Research & Learning: Use AI to gather information, summarize research, and explain topics.
2. Brainstorming: AI can help generate ideas and understand complex concepts.
3. Writing Assistance: Use AI for grammar checks, style editing, and content organization. The final content must be original.

Prohibited Uses of AI:

1. Completion: Submitting AI-generated work as your own, including discussion posts and projects, is prohibited.
2. Assessments: Using AI to generate answers for quizzes or exams is not allowed.
3. Plagiarism: Do not rephrase or paraphrase sources using AI without proper citation. Attribute any AI-generated text appropriately (see my example below).
4. Misrepresentation: Presenting AI-generated ideas or analysis as your own is considered academic dishonesty.

Academic Integrity

Adhere to the college's academic dishonesty policy. Misuse of AI tools will result in disciplinary action.

Classroom Policies and Procedures:

The classroom learning experience provides opportunities for faculty and students to engage in interactive exchanges of course content. To facilitate this exchange, the following guidelines are provided:

1. Because each class session covers vital material and information, it is important that students arrive on time to each class session.
2. In order to enhance students' performance and confidence in acquiring the material, it is critical that students come to each class session prepared. This includes bringing to class required texts, supplemental materials, and assigned work, which is provided on the course outline.
3. In order to limit unnecessary distractions which would deter learning, cell phones, multi-media devices, and laptops are required to be turned off or on vibrate when class is in session, except by permission of the faculty.
4. Faculty reserve the right to apply penalties for noncompliance to either or all of the above guidelines.

Assessment and Submission Requirements:

Homework problems will be assigned from the problems at the end of a chapter. The answers for the assigned homework problems are available at the end of the textbook. Students should take a responsibility to do and study assignments since a set of similar problems from assignments may show on the quiz paper.

Several quizzes, two mid-term tests and a final comprehensive examination will be given. **There are no make-up quizzes, tests or final exam.** The score of the **final examination** can be used to replace the lowest score of three mid-term examinations.

Policies Related to Students with Disabilities:

If you need course adaptations or accommodations because of a disability, if you have emergency medical information to share, or if you need special arrangements in case the building must be evacuated, please make an appointment with Jean Saulsberry, Dean of Students, as soon as possible at (901) 435-1727 or jean_saulsberry@loc.edu

Student Performance Evaluation and Grading Scale:

The course grade will be calculated on the following distribution:		Grades will be recorded in numerical form until the final averages are determined at the end of the semester. *Grading Scale* will be	
Assignments	20%	90 to 100	A,
Quizzes	20%	80 to 89	B,
Mid-term Tests	40%	70 to 79	C,
Final Comprehensive Exam	20%	60 to 69	D,
		others	F.
The final exam score can replace the lowest midterm test if students wish to.			

LeMoyne-Owen College Graduate Competencies (CGC)

LeMoyne-Owen College graduates should be able to:

1. Think creatively, critically, logically, and analytically using both quantitative and qualitative methods for problem solving;
2. Communicate effectively (listen, speak, read, and write) on formal and informal levels;
3. Distinguish, clarify, and refine personal values for the attainment of richer self-perception and relate those values to the value system of others;
4. Appreciate, understand, and know the foundations of the Afrocentric perspective;
5. Appreciate, understand, and know the foundations of diverse cultures in the context of a global community;
6. Appreciate, understand, now and pursue the principles, methods and subject matter that underlie the major discipline(s);
7. Accept social responsibility and provide service to humankind;
8. Maintain levels of literacy that allow them to understand the impact of science and technology on individuals, society, and the environment;
9. Attain motivational, personal management, interpersonal skills, professional development and research experience, as well as resourcefulness that will form the basis for a career and/or further educational experiences;
10. Attain critical skills, frame of reference, and understanding needed to appreciate and discriminate between artistic achievements.

Probability and Statistics Theory
Course Outline

Weeks	***Chapters***	***Topics***
1-2	1	Probability
2-4	2	Discrete Distributions
5-7	3	Continuous Distributions
8	**Review & Test 1**	
9-10	4	Bivariate Distributions
11-13	5	Distributions of Functions of Random Variables
14	**Review & Test 2**	
15	**Final Comprehensive Examination**	

Instructor reserves the right to add or subtract assignments or assessments.