THE OHIO STATE UNIVERSITY

STAT 4202
Introduction to Mathematical Statistics II (20967)
Autumn 2026

Syllabus - Instructor Information

Omer Ozturk

Professional Qualifications
PhD, Statistics, Penn State University

Syllabus - Required or Recommended Readings

Irwin Miller and Marylees Miller (2014). John E. Freund's Mathematical Statistics With Application, Eight Edition. Pearson, ISBN-13: 978-0-321-80709-0

The textbook and/or courseware for this course is being provided via CarmenBooks. Through CarmenBooks, students obtain publisher materials electronically through CarmenCanvas, saving them up to 80\% per title. The fee for this material is included as part of tuition and is listed as CarmenBooks fee on your Statement of Account. In addition to cost-savings, materials provided through CarmenBooks are available immediately on or before the first day of class.You can access this eBook through the CarmenBooks reader link in the course navigation.

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Syllabus - Course Schedule

Week	Topics, Chapter
Weeks 1-3	Point estimation, Chapter 10
Weeks 4-5	Interval estimation, Chapter 11
Weeks 6-7	Hypothesis testing, Chapter 12
Weeks 8-10	Hypotheses testing involving means, variances and proportions, Chapter 13
Weeks 11-12	Regression and correlation, Chapter 14
Week 13	Anova, Chapter15
Week 14	Nonparametric tests, Chapter 16
Week 15	Decision theory, Chapter 9

Course Details - Instructor Contact Details

Instructor: Professor Omer Ozturk

419 Cockins Hall

ozturk.4@osu.edu

Teaching assistant:

Qian Zhou, email: zhou.3132@buckeyemail.osu.edu

Tomy Fan, email: fan.1317@osu.edu

Course Details - Office Hours

Monday: 12:00 pm--1:00 pm

Wednesday: 12:00 pm--1:00 pm

Course Details - Additional Instructional Staff

Recitations:

It is required to sign up for a lab/recitation session. The TAs will help you review important concepts and do practice problems in these sessions. Quizzes will also be regularly given during the recitations. Homework assignments should be turned in at the beginning of the recitation session.

Homework and Quizzes

Homework assignments will be posted on the course website. There will be 8-10 homework assignments, each containing about 10 problems. Each homework will have some problems graded for accuracy and some graded for completion. You are encouraged to discuss homework problems with other students, but you must prepare your own solution and upload it to Carmen course webpage as a single pdf file before due date. There will be 5-7 quizzes, each containing 1 or 2 problems. All quizzes will be close-book/close-notes. You may bring a calculator, but cheat sheet is not allowed for quizzes. The quiz problem(s) will be similar to homework problems. For most weeks, there will be a quiz and/or a homework assignment due in recitation. Your lowest homework and quiz score will be dropped at the end of the semester, so late homework will **NOT** be accepted and **NO** makeup quizzes will be given.

Exams

All exams will be closed-book. Statistical tables will be provided as needed. Calculators may be used on the exams, but the calculators on cell phones, PDAs, or any other communication device are **NOT** allowed. You may use one 8.5 x 11

inch sheet of paper (both sides, handwritten), with whatever facts, formulas, or explanations you find helpful for both Midterms, and you may bring two such sheets for the final exam.

There will be **NO** makeup exams. The only excuses for missing an exam are a serious illness requiring hospitalization or a major family crisis. Proof must be provided in the form of an official document. A note from a family member alone is not sufficient.

You have until one week after receiving your grades on the exams to dispute the grade; the same applies to any homework/quiz grade. After that no grade will be changed for any reason.

Note that when asking for a question to be re-graded, the entire assignment/ exam may be re-graded. So please be aware that you may run the risk of losing more points than you gain back.

Important note: To receive full credit on homework, quizzes and exams, you need to show your justifications for all work. Answers without work will receive only partial credit.

The final exam will be cumulative, but will emphasize more on the recent material. The two midterm exams will be in the regular lecture hall Pomerene - Room: 160; and the location of the final exam will be posted later according to the university arrangement.

The exams are **TENTATIVELY** scheduled for:

Exams	Exam Dates
Midterm I	Monday, September 28 (lecture time)
Midterm II	Wednesday, November 4 (lecture time)
Final	Friday, December 11, 12:00 pm -1:45 pm

The dates for the exams are tentative and I reserve the right to change the dates; at least one week of notice will be provided in case of a change.

Course Details - Class Meeting Details

Class Meeting Details: 03:00 PM-03:55 PM - Pomerene Hall 160 - MWF

Course Details - Course Description

Decision theory, point and interval estimation, Neyman-Pearson lemma, likelihood ratio tests, tests for means, variances, and proportions, nonparametric tests, regression, and ANOVA. Prereq: C- or better in 4201, Math 4530, or 5530H, or permission of instructor. Not open to students with credit for 3202, 6201, 6302, or 6802.
Prerequisite(s) / Corequisites: Prereq: C- or better in 4201, Math 4530, or 5530H, or permission of instructor. Not open to students with credit for 3202, 6201, 6302, or 6802.

Course Details - More About This Course

This course is the second part in a series of two courses (STAT4201-STAT4202), which cover the fundamentals of mathematical statistics and statistical inference. STAT 4202 focuses on point and interval estimation, statistical tests, and regression, with rigorous mathematical treatments and various applications.

Course Details - Course Learning Outcomes

By the end of this course, students should successfully be able to:

- Use logical, mathematical and/or statistical concepts and methods to represent real-world situations.
- Use diverse logical, mathematical and/or statistical approaches, technologies and tools to communicate about data symbolically, visually, numerically and verbally.

- Draw appropriate inferences from data based on quantitative analysis and/or logical reasoning.
- Make and evaluate important assumptions in estimation, modeling, and logical argumentation and/or data analysis.
- Evaluate social and ethical implications in mathematical and quantitative reasoning.

Course Details - Grading Policy

Your final grade for this course will be determined by your performance on homework, quizzes, the midterm, and the final exam. The weights for each are as follows:

Course component	Contribution
Homework	20%
Quiz	20%
Midterm I	20%
Midterm 2	20%
Final	20%

Questions about homework and quiz grading should be directed to a teaching assistant first. Exam grading questions should be directed to the instructor.

Course Details - Grading Scale

Letter Grade	Percentage Range
A	100% to 93%
A-	< 93% to 90%
B+	< 90% to 87%
B	< 87% to 83%
B-	< 83% to 80%
C+	< 80% to 77%

Letter Grade	Percentage Range
C	< 77% to 73%
C-	< 73% to 70%
D+	< 70% to 67%
D	< 67% to 60%
E	< 60% to 0%

Course Details - AI Use Policy

Study Assistance: GenAI can fabricate information (for example, creating citations to sources that do not exist) or omit key information. You are ultimately responsible for the accuracy and integrity of your submitted work. Unless explicitly permitted below, representing AI-generated content as your own work is a violation of the Code of Student Conduct. Please check with your instructor if you have questions.

These levels may apply to the entire course or specific assignments, as indicated by the instructor:

- Permitted: You may use GenAI as a virtual tutor to explain concepts, quiz you on course topics, or summarize content you have personally authored (e.g., your own class notes).
- Prohibited: The materials in this course may be subject to copyright protection. Do not input or allow AI to access external or instructor-created course materials (e.g., assigned readings, slides) without explicit instructor permission. Do not use GenAI to outline, draft, translate, or write any part of an assignment.

Syllabus - University Policies

Office of Undergraduate Education - Standard Syllabus Statements

- Academic Misconduct
- Religious Accommodations

- Accommodations for Disability and Illness
- Intellectual Diversity
- Grievances and Solving Problems
- Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct
- Copyrights
- Content Warnings
- Mental Health Support
- Resources for Military-Connected Students
- Campus-wide Class Cancellations