

Professor:	Dr. Thomas Fisher
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Email:	fishert4@miamioh.edu (best)
Office Hours:	MW 2:35pm-2:45pm (immediately after class) MW 10:30am-11:30am (<u>until</u> April 9th) Tu 10:30am-11:30am ThF - by appointment
Personal Website:	https://tjfisher19.github.io/ and Canvas site
Class Materials:	Notes. Occasionally your textbook, calculator or laptop will be handy
Textbook:	<u>Mathematical Statistics with Applications</u> , (Miami edition) by Wackerly, Mendenhall, Scheaffer (Note: Same book as STA 401)
References:	Introduction to Probability and Statistics Using R (free pdf) by Kerns
Bulletin Description:	A study of estimation and hypothesis testing including a development of related probability ideas. Topics include derivation of the distribution of functions of random variables, point estimation methods, properties of point estimators, derivation of confidence interval formulas, and derivation of test statistics and critical regions for testing hypotheses.
Topic Outline:	Brief review of probability, methods of transformation, sampling distributions, point estimators and properties, interval estimation, methods of estimation and properties, hypothesis testing for means and variance, properties of hypothesis tests. We will also look at inferential topics from a Bayesian perspective and through resampling (bootstrapping) methods.
Exams:	Two exams will be given in the class (each worth 15%) and a cumulative final exam (worth 20%). Tentative Dates: Exam 1 - Monday, March 3, 2025 Exam 2 - Monday, April 21, 2025 (ish – subject to change) Final - Finals week – TBD

Weekly Homework & Quizzes:

There will be a weekly homework (HW) assignment based on problems from the textbook. You are not required to submit these assignments for grade. However, a HW-Quiz will be given in class every Monday (with a few exceptions) based on the previous week's assigned HW questions. You are encouraged to solve all homework problems. Questions on the quiz will be based on your HW problems (might be verbatim HW questions or slightly modified). **The lowest two scores on these quizzes will be dropped from your grade calculation.** You are encouraged to work on your HW by yourself and check with your peers or professor if you have any questions. Solutions of each will be posted at the end of the week before the in-class quiz.

Computing Assignments:

Modern Probability and Statistics are performed using computer software. As such, several smaller dedicated computer lab assignments (anticipating 4 or 5 throughout the semester) will be given that will complement the material in class (and your intro stats class) and prepare you for a slightly larger computing assignment towards the end of the semester. This small project will attempt to connect the material from the class to a real-world setting.

Attendance, Group-work, worksheets & Check-ins:

While attendance does not directly factor into your grade, we will regularly have in-class assignments/worksheets/group-work that may be assessed for grade. You are expected to be an active participant for the entire 80-minute class. Indications that this is not happening include sleeping, surfing the web or instant messaging on your laptop, text-messaging on your cell-phone, studying for another class, etc.

The pace of this class is such that it will not be advisable to miss any sessions. If you know you will be absent, please inform me in advance. When you are absent, it will be your responsibility to contact another student for the notes and announcements.

Etiquette:

Please turn your cell phone to silent before class. Students are expected to wait quietly for 15 minutes after class is scheduled to begin. If I have not yet appeared, the students are free to leave.

When emailing the instructor please add "STA 462" to the subject line. I will do my best to respond within 24-hours for emails sent during the work-week and 72-hours when sent over the weekend.

Letters of Accommodation & ADA Compliance:

Miami University is committed to ensuring equal access to students with disabilities. Miami's Office of Student Disability Services (SDS) assists students with determining eligibility for services and accommodation planning. Miami's AccessMU provides resources and guidance toward equal opportunity for all individuals. Refer to Miami University's [Accessible Technology Policy](#) for definitions and additional information.

Students who are entitled to disability-related academic adjustments, auxiliary aids, etc., must register with SDS to receive accommodations in university courses. Please understand that formal communication from

SDS must be presented prior to the coordination of accommodations for this course. For more information, see [Student Disability Services](#) and/or [the Rinella Learning Center](#). Students may also contact SDS at (513) 529-1541 or via email at sds@miamioh.edu.

If you have a disability, please contact me, and I will be glad to make any necessary accommodations.

Prerequisites: [MTH 252](#) with a grade of C or better and [STA 363](#) with a grade of C or better and [STA 401/STA 501](#) with a grade of C or better.

Student Code of Conduct: Any violations of Academic Integrity within the Student Handbook will not be tolerated. This includes cheating, plagiarism, storing information in a calculator, sabotage of another's work and disrupting class. See the [Handbook](#) for a complete listing of the student code of conduct. All violations will be handled in accordance with established procedures and policies concerning student academic responsibility. See the [Bulletin](#) for additional details:

<http://miamioh.edu/academics/bulletin/>

<http://www.miamioh.edu/handbook>

Notable Dates:

Date(s)	Topic
Mon, Jan 27	Classes begin
Thur, Feb 13	Last day to drop without a "W"
Mon, Feb 17	MAYBE a sub – Dr Fisher might be out (<i>I think I'll be here</i>)
Mon, Mar 3	First midterm evaluation scheduled
Fri, Mar 14	Midterm Grades deadline
Mon-Fri, Mar 24–28	Spring Break – no class
Fri-Sun, Apr 4-6	DataFest (through CADS)
Mon, Apr 7	Last day to drop with a "W"

Mon, Apr 21	Second midterm evaluation scheduled
Wed, Apr 30	Last day to apply for December/January Graduation
Fri, May 9	Last day of classes (Wed May 08 for this class)
May 12-16	Final Exam week (exam time TBD)

Final Grades: At the conclusion of the semester, final grades will be compiled using:

Source	Amounts
Weekly HW-Quizzes	20%
Computing Assignments	20%
In-class, Worksheets, Group-work, etc...	10%
Midterms	30%
Final Exam	20%
Total	100%

Grades will be assigned based on:

[98, 100)	A+	[92, 98)	A	[90, 92)	A-
[88, 90)	B+	[82, 88)	B	[80, 82)	B-
[78, 80)	C+	[72, 78)	C	[70, 72)	C-
[68, 70)	D+	[62, 68)	D	[60, 62)	D-
		[0, 60)	F		