

**Professor:** Dr. Thomas Fisher

**Office:** 334E Upham Hall

**Telephone:** (513) 529-2176

**Email:** [fishert4@miamioh.edu](mailto:fishert4@miamioh.edu) (best)

**Office Hours:** MW 11:00-11:30 (after class) & 2:00-3:00  
TuTh 10:30-11:30 and by appointment

**Personal Website:** <http://www.users.miamioh.edu/fishert4/>  
and *Nihka* site

**Class Materials:** Notes. Occasionally your textbook, calculator or laptop will be handy

**Textbook:** Mathematical Statistics with Applications, (Miami edition) by Wackerly, Mendenhall, Scheaffer

**References:** [Introduction to Probability and Statistics Using R](#) (free pdf) by Kerns  
[Probability and Statistics with R](#) (book's site) by Ugarte, Militino and Arnholt

**Bulletin Description:** Development of probability theory with emphasis on how probability relates to statistical inference. Topics include review of probability basics, counting rules, Bayes Theorem, distribution function, expectation and variance of random variables and functions of random variables, moment generating function, moments, probability models for special random variables, joint distributions, maximum likelihood estimation, unbiasedness, distributions of functions of random variables, chi-square distribution, students t distribution, F distribution, and sampling distributions of the sample mean and variance.

**Topic Outline:** Review of Intro Stat class material and how it relates to Probability, Laws of probability, discrete distributions, continuous distributions, methods of transformation and sampling distributions and connections to statistics.

**Exams:** Two exams will be given in the class (each worth 15%) and a cumulative final exam (worth 20%). Tentative Dates:

Exam 1 - Wednesday, October 1

Exam 2 - Wednesday, November 12

Final - Wednesday, December 10, 10:15--12:15

**Homework:** Homework will be given throughout the semester and will count for a substantial part of your final grade (35%). I expect to give roughly 10 homework assignments during the semester (roughly one assignment per week). The homeworks will cover both theoretical and application perspectives of the covered material.

**Computing Assignments:** Modern Probability and Statistics are performed using computer software. As such, 5 smaller computer lab assignments (each worth 2%) will be given during the semester that will complement the material in class (and your intro stats class) and prepare you for a computing project towards the end of the class (worth 5%). The small project will attempt to connect the material from the class to a real-world setting.

**Attendance:** 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. While attendance does not factor into your grade, I may take

attendance for my own records. You are expected to be an active participant for the entire 55-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. 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.

**Letters of Accommodation:** If you have a letter stating specific testing accommodations to which you are entitled, please come by my office to discuss the accommodations that you will need and to give me a copy of the letter. Even if you do not anticipate using any accommodations, it is a good idea to turn in the letter as soon as possible. Please note that unless I have at least one week's notice I will be unable to provide any accommodation on an exam

**Prerequisites:** [STA 261](#), [301](#), or [368](#) or equivalent. Pre- or Co-requisite: [Calculus II](#).

**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>

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

Source	Amounts
Homework	35%
Computing	15%
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		