

# Syllabus

## Introduction to Mathematical Statistics (ST 554)

<b>Course</b>	ST 554 Introduction to Mathematical Statistics						
<b>Instructor</b>	Dr. Michael Adams 371 Alston Office Phone: 348-8911 Email: badams@cba.ua.edu						
<b>Office Hours</b>	Monday and Wednesday 3:30- 4:30 pm Other times by appointment						
<b>Required Text</b>	<i>Introduction to Mathematical Statistics</i> , 6th Edition by Hogg, McKean, and Craig						
<b>Prerequisites</b>	MA 227 or ST 410						
<b>Course Description</b>	A study of the mathematics of probability, random variables, distribution functions and expectations. Special parametric families of univariate distributions will be investigated. Joint and conditional distributions, stochastic independence and the distribution of functions of random variables will be covered in detail.						
<b>Objectives</b>	Students must demonstrate the application of mathematics in the area of statistical inference and a mathematical foundation sufficient for reading and writing for advanced studies involving statistics..						
<b>Policies</b>	Attendance is required. Students should read new material prior to each class. The semester grades are determined using the following weighting scheme: <table style="margin-left: auto; margin-right: auto;"><tr><td>Homework and quizzes</td><td>30%</td></tr><tr><td>Exam I</td><td>35%</td></tr><tr><td>Final Exam (Comprehensive)</td><td>35%</td></tr></table>	Homework and quizzes	30%	Exam I	35%	Final Exam (Comprehensive)	35%
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Final Exam (Comprehensive)	35%						

Late assignments are not accepted. Makeup exams are typically not given.

**Final Exam: Friday, December 14, 3:30 – 6:00pm**

**Miscellaneous Policies:**

**Academic Misconduct** will not be tolerated. All acts of dishonesty in any work constitute academic misconduct. The Academic Misconduct Disciplinary Policy will be followed in the event of academic misconduct.

**Disabilities:** If you need to request the accommodation of a disability, you must contact the Office of Disability Services at 348-4285 as soon as possible. You may then contact the instructor to schedule an appointment to discuss your request.

**Severe Weather** is always a possibility. In the event of an emergency, we will adhere to the following actions in accordance with University policies.

**FIRE/FIRE ALARM:** Evacuate the building and stay out of the building at a safe distance until authorized to return.

**TORNADO WARNING:** Move to the Lower Level, inside classrooms, offices or corridors. Remain until the warning has expired. Classes are cancelled until the warning expires.

Monday			Wednesday		
			C1	Introduction to Math Stat Sections 1.1 – 1.5	8/22
C2	Discrete Random Variables Sections 1.6	8/27	C3	Continuous Random Variables Section 1.7	8/29
<b>C4</b>	<b>LABOR DAY</b>	<b>9/3</b>	C5	Expectation Section 1.8	9/5
C6	Special Expectations Sections 1.9 – 1.10	9/10	C7	Bivariate Distributions Section 2.1	9/12
C8	Bivariate Distributions Section 2.2	9/17	C9	Conditional Distributions Section 2.3	9/19
C10	The Correlation Coefficient Section 2.4	9/24	C11	Independent Random Variables Section 2.5	9/26
C12	Extensions to several variables Section 2.6	10/1	C13	Transformations: Random Vectors Section 2.7	10/3
C14	Transformations: CDF and MGF Section 2.7	10/8	C15	Binomial / Poisson Distributions Section 3.1-3.2	10/10
C16	Normal Distribution Section 3.4	10/15	<b>C17 Exam I</b>		<b>10/17</b>
C18	The $\Gamma$ , $\chi^2$ , and $\beta$ Distributions Section 3.3	10/22	C19	$t$ and F Distributions Section 3.6	10/24
C20	$t$ and F Distributions Section 3.6	10/29	C21	Order Statistics Sections 5.2	10/31
C22	Estimation – Point Estimates Section 5.1	11/5	C23	Method of Moments Sections 5.1	11/7
C24	Maximum Likelihood Estimation Section 6.1	11/12	C25	Properties of Point Estimates Section 4.1	11/14
C26	Confidence Intervals Section 5.1	11/19	C27	Confidence Intervals Section 5.4	11/21
C28	Hypothesis Tests Section 5.5	11/26	C29	Hypothesis Tests Section 5.6	11/28
C29	Review for Final Chapters 1 – 3	12/3	C30	Review for Final Chapters 5 – 6	12/6

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