Math 321 Applied Statistical Methods Course Schedule Fall 2024

Chapter/Section	Week	Topics
1.1-1.2	1 Aug 26-Sept 1	• Practical applications of statistics • Graphical and Numerical summaries of data
1.3, 2.1	2 Sept 2-Sept 8	• Creating and interpreting graphical displays • Fundamentals of probability
2.3	3 Sept 9-Sept 15	• Computing conditional probability • Independent events • Bayes' Theorem
2.4	4 Sept 16-Sept 22	• Discrete random variables • Continuous random variables • Expectation operator • Means and variances of random variables
2.5, 4.1-4.2	5 Sept 23-Sept 29	• Linear combinations of random variables • Sample mean as a linear combination • Bernoulli and Binomial random variables
4.5	6 Sept 30-Oct 6	• Normal random variables • Approximating Binomial probabilities with normal distributions
4.9, 4.11 **Exam # 1**	7 Oct 7-Oct 13 (Oct 13-14)	• Point estimation • Sampling distributions • Ch 1 sections 1,2 3 • Ch 2 sections 1,2,3,4, and 5 • Ch 4 sections 1,2, and 5
5.1-5.3	8 Oct 14-Oct 20	• Large sample confidence intervals, construction and interpretation • Upper and lower confidence bounds, construction and interpretation • Small sample confidence intervals and upper and lower bounds
6.1-6.4	9 Oct 21-Oct 27	One sample hypothesis tests for population means and population proportions
5.4-5.5, 6.5-6.6	10 Oct 28-Nov 3	• Two-sample confidence intervals and two-sample hypothesis tests for the difference between population means and population proportions
5.6-5.7, 6.7, 6.10	11 Nov 4-Nov 10	• Confidence intervals and hypothesis tests for the difference between means using paired samples

		• Confidence intervals and hypothesis tests for the variance and standard deviation of a normal distribution
6.11-6.12 **Exam # 2**	12 Nov 11-Nov 17 (Nov 17-18)	• Fixed level hypothesis testing • Type I and Type II errors • Power of a test • Ch 4 sections 9, 11 • Ch 5 sections 1, 2, 3, 4, 5, 6, and 7. • Ch 6 sections 1, 2, 3, 4, 5, 6, 7, and 10.
7.1-7.2	13 Nov 18-Nov 24	• Scatterplots • Correlation • Least squares regression
7.3-7.4	14 Nov 25-Dec 1	• Confidence intervals and hypothesis tests for the slope parameter and the mean of Y for a given value of X • Prediction intervals for a future value of Y for a given value of X • Residual analysis of regression assumptions
9.1-9.2	15 Dec 2-Dec 8	• One-way Analysis of Variance • Multiple Comparisons
Final Exam	16 Dec 9-Dec 15 (Dec 15-16)	**Review for Final Exam** • All sections covered on Exams 1 and 2 New Material • Ch 6 sections 11 and 12 • Ch 7 sections 1,2,3,4 • Ch 9 sections 1,2