MATH 330
Introduction to statistical Methods (4 units)

Course Outline

Topics	# of Weeks
Chapter 1: Probability Theory: sample space, events, probability rules, algebra of events (omit section 6)	1.5
Chapter 2: Random variables: Discrete and continuous random variables, expectation and variance of random variables (omit sections 5 & 6)	1.5
Chapter 3: Discrete probability distributions: The Binomial Distribution (omit sections 2, 3, 4 & 5)	0.5
Chapter 5: The Normal Distribution: Calculating probabilities, linear combination of normal random variables, Central limit theorem, distributions related to normal distributions (omit sections 5.3.1, 5.4.1 & 5.4.5)	1.5
Chapter 6: Descriptive statistics: Data presentation using frequency distributions, histogram, sample statistics	0.5
Chapter 7: Sampling Distributions: Sampling distribution of sample mean, sample proportion (omit sections 1, 2 & 4)	0.5
Chapter 8: One-sample inference on population mean: Confidence interval and hypothesis testing for population mean, calculation of p-value	2.0
Chapter 9: Two-sample Inference for difference of population means: Confidence intervals and hypothesis testing for difference of two population means, independent sample and dependent sample cases	1.5
Chapter 10: Discrete data analysis: Inference for one and two sample population proportions (omit sections 3 & 4)	0.5
Chapter 11: Analysis of variance: One factor analysis of variance model, hypothesis testing, ANOVA table, multiple comparisons for the population means (omit section 2)	1.0
Chapter 12: Simple Linear Regression: Simple linear regress model, estimation of slope and intercept, inference for slope, prediction interval for future observation, inference about correlation	2.0
Tests	1.0

Textbooks: Probability & Statistics for Engineers and Scientists, 3rd Edition by A. Hayter, and Minitab Lab Workbook 19th Edition by Howard Kaplon

At least six (6) lab assignments from the Minitab Lab Workbook will be assigned and graded.

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