MATH 630
Statistics - An Integrated Approach   (3 units)

Course Outline

Topics	# of Weeks
Probability Theory: Conditional probability, counting techniques	0.5
Random Variables: Discrete and continuous random variables, expectation and variance of random variables	1.0
Discrete Probability Distributions: Binomial, geometric, Poisson, and multinomial distributions	1.0
Continuous Probability Distributions: Uniform, exponential, gamma, Weibull, and beta distributions	1.5
The Normal Distribution	0.5
Descriptive Statistics: Experimentation, data presentation, and sample statistics	0.5
Statistical Estimation and Sampling Distributions: Point estimates, sampling distributions, and parameter estimates	1.0
Inferences on a Population Mean: Confidence intervals, hypothesis testing	1.5
Comparing Two Population Means: Analysis of paired and independent samples	1.0
Discrete Data Analysis: Inferences on proportions and χ^2 testing	1.0
Analysis of Variance: One-factor analysis of variance and randomized block designs	1.0
Simple Linear Regression and Correlation: Fitting the regression line, inferences on slope and the regression line, prediction intervals, ANOVA table, residual analysis, variable transformations, correlation analysis	2.0
Tests	1.5

Textbooks: <u>Statistics: The Exploration and Analysis of Data, 6th Edition</u> by Roxy Peck and Jay Devore. Thomson: Brooks/Cole.

Adopted: March 2007