

Department of Mathematics
MATH 321
Statistics for Experimentalists
 Required Elective



AY	Revision History: Changes and Rationale	Progress Exam Affected?
07/08	Syllabus Created	N

Coordinator: Fr. Scott Coble, S.J., Assistant Professor, Mathematics

Catalog Description: An applied statistics course for those with calculus preparation. Descriptive statistics, probability theory, discrete and continuous random variables, and methods of inferential statistics including interval estimation, hypothesis testing, and regression.

Prerequisites by Topic: Calculus and Analytic Geometry II

Textbook(s) / Require Mat'l: Devore, Jay L., Probability and Statistics for Engineering and the Sciences, 7th ed., Brooks/Cole, 2008

Course Topics:
 Descriptive Statistics (8%)
 Probability (4 hours)
 Discrete Random Variables and Probability Distributions (10%)
 Continuous Random Variables and Probability Distributions (14%)
 Statistics and Their Distributions (5%)
 Point Estimation (3%)
 Statistical Intervals Based on a Single Sample (14%)
 Tests of Hypotheses Based on a Single Sample (14%)
 Tests of Hypotheses Based on Two Samples (14%)
 Simple Linear Regression (8%)

Course Objectives:
 To study methods, use, and limitation of descriptive statistics
 To study elements of probability
 To study the methods, use, and limitations of inferential statistics
 To study simple regression

Professional Components/ Course Outcomes:
 By the end of this course the student will be able to:
 Make decisions under uncertainty and properly estimate the uncertainty
 Evaluate statistical statements

Class/Lab Schedule:
 3 classes per week, 50 minutes per session
 3 credits

Relation to Program Outcomes:

<input checked="" type="checkbox"/> (a) Fundamental math, science, or engineering	<input type="checkbox"/> (b) Experimentation
<input type="checkbox"/> (c) Design	<input type="checkbox"/> (d) Teamwork
<input type="checkbox"/> (f) Professional ethics	<input checked="" type="checkbox"/> (e) Problem solving
<input type="checkbox"/> (i) Life-long learning	<input type="checkbox"/> (g) Communication
<input type="checkbox"/> (j) Contemporary issues	<input type="checkbox"/> (h) Global awareness
	<input checked="" type="checkbox"/> (k) Modern tools

Computer Tools:

**Laboratory
Content:**

no lab

**Design
Content:**

none