

COURSE DESCRIPTION

Dept., Number	Math 375	Course Title	Introduction to Statistical Methods
Semester hours	3	Course Coordinators	Hanxiang Peng, Associate Professor Sunil K. Mathur, Assistant Professor

Current Catalog Description

Probability; distributions; joint probability distributions; conditional distributions; marginal distributions; independence; probability distributions; simple regression; simple correlation and tests of significance; introduction to the use of statistical software packages.

Textbook

(Dr. Peng's class) Jay L. Devore and Roxy Peck. *Statistics: The Exploration and Analysis of Data*, 5th edition, Cengage, 2005.

(Dr. Mathur's class) William Mendenhall, Robert J. Beaver, Barbara M. Beaver. *Introduction to Probability and Statistics*, 12th edition, Cengage, 2006.

References

(Dr. Peng's class) Statistical software package R/Splus: <http://www.r-project.org>

(Dr. Mathur's class) SPSS statistical software package: <http://www.SPSS.com>

Course Outcomes

Upon successful completion of this course, the students:

1. understand probability and probability distributions;
2. know how to use probability distributions to support decision-making involving statistical analysis;
3. can use statistical software packages to analyze data and make decisions.

Relationship between Course Outcomes and Program Outcomes

The ABET/CAC criteria for computer science require the study of at least 15 hours of mathematics beyond the precalculus level. The BSCS program requires the student to take Math 375 to satisfy part of this expectation.

All three course outcomes contribute to program outcomes (a) and (j).

Prerequisites by Topic

Introductory differential and integral calculus (Math 261)

Major Topics Covered in the Course

1. Probability, both conditional and independent assumptions
2. Random variables
3. Expected value, variance, and other parameters
4. Collection of data, the sampling process
5. Sampling distributions of statistics
6. Hypothesis testing

Assessment Plan for the Course

The instructor assesses the student performance related to the outcomes by using examinations, quizzes, homework assignments and laboratory assignments/projects.

How Data in the Course are Used to Assess Program Outcomes (unless adequately covered already in the assessment discussion under Criterion 4)

The conduct of this course is not governed by the ABET program faculty. No data are collected that are used to assess program outcomes directly.

Estimate Curriculum Category Content (Semester hours)

Mathematics 3 hours