Inver Hills Community College

MATH 1103: Introduction to Statistics

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 4

Lab Hours/Week: 0

OJT Hours/Week: *.*

Prerequisites:
This course requires any of these eight prerequisite categories
1. A score of 76 on test Accuplacer Elementary Algebra
   Or
2. A score of 1148 on test MN Comprehensive Assessment Math
   Or
3. A score of 22 on test ACT Math
   Or
4. A score of 250 on test Accuplacer NG Quantitative Reasoning
   Or
5. A score of 250 on test Accuplacer NG COMP Quantitative Reason
   Or
6. A score of 530 on test SAT Math Composite
   Or
7. A score of 7 on test ACCP local Math History
   Or
8. MATH 0840 - Introductory Algebra (Minimum grade: 2.0 GPA Equivalent and Number of Years Valid: 2)

Corequisites: MATH 0103

MnTC Goals: Goal 02 - Critical Thinking, Goal 04 - Mathematical/Logical Reasoning

Presents basic statistics which includes descriptive and graphical statistics, basic probability, probability distributions, sampling distributions, confidence intervals and hypotheses testing for one or two populations, linear regression, chi-square tests, and ANOVA. Professional statistical software, such as Minitab, will be integrated throughout the class. Graphing calculator required for the course. Recommendation based on the results of the Inver Hills Assessment Test or grade of "C" or higher in MATH 0820 or 0840 within the last 2 years.

B. COURSE EFFECTIVE DATES: 01/01/1998 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. ANOVA: 5%
2. Basic probablility, probability distributions: 25%
3. Chi-Square: 5%
4. Confidence intervals for a single parameter or comparting parameters from two populations: 15%
5. Data summarization: 20%
6. Hypothesis testing for a single parameter or comparing parameters from two populations: 25%
7. Linearar regression: 5%
8. Statistical software will be used extensively as an aid in visualizing and simulating problems, and also to perform the calculations once the method of analysis has been established.

D. LEARNING OUTCOMES (General)

1. Demonstrate an understanding and apply basic principles of probability, probablility distributions (including binomial and normal distributions), and the concept of expected value
2. Determine appropriate confidence intervals for measures of central tendency and for proportions of one or two populations
3. Perform appropriate hypothesis testing for measures of central tendency and for proportions of one or two polulations
4. Demonstrate the appropriate use of the Chi-Square test
5. Determine linear regression equations and use them appropriately
6. Use graphical and arithmetic measures to determine the appropriate analysis for the data under consideration
7. Demonstrate the appropirate use of the Analysis of Variance method for testing the equality of three or more population means
8. Use statistical software extensively to simulate, graph, sample and analyze data; to perform appropriate estimates or tests on population parameters; and to calcuate basic probabilities

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

Goal 02 - Critical Thinking

1. Gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.
2. Imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems.
3. Analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.
4. Recognize and articulate the value assumptions which underlie and affect decisions, interpretations, analyses, and evaluations made by ourselves and others.

Goal 04 - Mathematical/Logical Reasoning

1. Clearly express mathematical/logical ideas in writing.
2. Explain what constitutes a valid mathematical/logical argument(proof).
3. Apply higher-order problem-solving and/or modeling strategies.
4. Illustrate historical and contemporary applications of mathematical/logical systems.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted