North Hennepin Community College

MATH 1090: Statway Statistics II

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites:
This course requires the following prerequisite
MATH 0990 - Statway Statistics I

Corequisites: None

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

This is the second course in a two-course sequence. Students in this course are required to have taken the preceding course, Math 0990 in the previous semester. Topics for both courses include concepts and methods of statistics with an emphasis on data analysis. Topics include methods for collecting data, graphical and numerical descriptive statistics, correlation, simple linear regression, basic concepts of probability, confidence intervals and hypothesis tests for means and proportions, and chi-square tests.

B. COURSE EFFECTIVE DATES: 08/26/2013 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. See Course Description and Course Outcomes.

D. LEARNING OUTCOMES (General)

1. Understand the data analysis process and the characteristics of well-designed statistical studies. (MNTC Goals 4a, b, d) (NHCC ELO 1, 2, 4)
2. Demonstrate the use of distributional thinking to reason about data in order to describe and summarize distributions of data, identify trends and patterns, judge the fit of a model, and describe similarities and differences in comparing distributions. (MNTC Goals 4a, b, d) (NHCC ELO 1, 2, 4)
3. Demonstrate an ability to use appropriate statistical evidence to reason about population characteristics and about experimental treatment effects. (MNTC Goals 4a, b, d) (NHCC ELO 1, 2, 4)
4. Use descriptive statistics to compare or describe data (MnTC Goal 4: b; Goal 2: a, b, c) (NHCC ELO 1, 2)
5. Read and/or create visual summaries of data (e.g., histograms, stem-and-leaf displays, box-and-whisker plots) (G4: b; G2: a) (NHCC ELO 1, 2)
6. Identify, describe, and determine mean and standard deviation of discrete probability distributions with an emphasis on Binomial Distributions (G4: a, b, d) (NHCC ELO 1, 2)
7. Identify and describe continuous probability distributions with an emphasis on Normal Distributions (G4: a, b, d) (NHCC ELO 1, 2)
8. Create and interpret confidence intervals of population means, proportions, and variances (G4: a, b, d; G2: a, b, c, d) (NHCC ELO 1, 2, 4)
9. Create, perform, and interpret hypothesis tests of population means, proportions, and variances (G4: a, b, d; G2: a, b, c, d) (NHCC ELO 1, 2, 4)
10. Use linear regression to investigate correlation of paired data (G4: a, b, d; G2: a, b, c, d) (NHCC ELO 1, 2)

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. Illustrate historical and contemporary applications of mathematical/logical systems.
2. Clearly express mathematical/logical ideas in writing.
3. Apply higher-order problem-solving and/or modeling strategies.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

1. Knowledge of Human Cultures and the Physical and Natural World--Through study in the sciences, mathematics, social sciences, humanities, histories, languages, the arts, technology and professions.

2. Intellectual and Practical Skills--Including: Inquiry and analysis; Critical and creative thinking; Written and oral communication; Quantitative literacy; Information literacy; Teamwork and problem solving.

4. Integrative and Applied Learning--Including: Synthesis and advanced accomplishment across general education, liberal studies, specialized studies and activities in the broader campus community.