

COURSE OUTLINE

Revision: Frank Post and Heidi Lyman, December 2008

DEPARTMENT:	Academic Programs
CURRICULUM:	Mathematics
COURSE TITLE:	Elementary Statistics
COURSE NUMBER:	MATH 109
TYPE OF COURSE:	Academic Transfer
Special Requirement Met:	QSR
AREA(S) OF KNOWLEDGE:	The Natural World: Science Technology, and the Environment/ The Language of Science; Basic Requirement: Math
COURSE LENGTH:	1 quarter
CREDIT HOURS:	5
LECTURE HOURS:	55
LAB HOURS:	0
CLASS SIZE:	35 (25 online)
PREREQUISITES:	Math 098 with a 2.0 or better or appropriate placement score.

COURSE DESCRIPTION:

The course is designed to give an introduction to the basic statistical techniques for descriptive and inferential data analysis and to show how these techniques are useful as an aid in the decision making process. The emphasis is on the use and application of techniques in business and social sciences.

MATH 109 Elementary Statistics
December 2008

STUDENT LEARNING OUTCOMES ADDRESSED:

1. Computation – Use arithmetic and other basic mathematical operations as required by program of study. Apply quantitative skills for personal, academic and career purposes.
2. Communication – Read and listen actively to learn and communicate.
3. Critical thinking and problem-solving – Think critically in evaluating information, solving problems, and making decisions.
4. Technology – Select and use appropriate technological tools for personal, academic and career tasks.
5. Information Literacy – Access and evaluate information. Use information to achieve personal, academic, and career goals, as well as to participate in a democratic society.

GENERAL COURSE OBJECTIVES:

At the end of the course the student will:

1. Describe a broad overview of the subject of statistics and its application.
2. Demonstrate data collection and preparation for descriptive summarization, tabular and chart presentation, analysis and interpretation.
3. Communicate (oral and written) an understanding of the characteristics or properties of quantitative data and the various descriptive summary measures as an aid to data analysis and interpretation.
4. Organize, summarize and effectively present collected data using calculators and word processing.
5. Demonstrate the software abilities to assist in descriptive analysis.
6. Understand the basic concepts of probability.
7. Show how certain types of discrete data may be represented by particular kinds of mathematical models. (i.e. uniform, binomial, hyper-geometric, and Poisson probability distribution).
8. Show how the normal probability density function can be used to approximate various discrete models.
9. Develop the concept of sampling distribution for both quantitative and qualitative data.
10. Develop confidence intervals to apply these procedures to finite populations.
11. Develop testing procedures techniques for quantitative and qualitative variable.
12. Understand and use linear regression and correlation.

MATH 109 Elementary Statistics
December 2008

TOPICAL OUTLINE:

- I. Introduction to descriptive statistics
 - II. Introduction to probability and distributions
 - III. Statistical inferences and hypothesis testing
 - IV. Linear regression and correlation
- APPROX. HOURS 55

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MATH 109 Elementary Statistics
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SLO #	Included in Course Objective Number	SSCC Student Learning Outcomes
SLO 1.1	1 – 12	Communication - Read and listen actively
SLO 1.2		Communication - Speak and write effectively
SLO 2.1	1 – 12	Computation - Use mathematical operations
SLO 2.2	1 – 12	Computation - Apply quantitative skills
SLO 2.3	1 – 12	Computation - Identify, interpret, and utilize higher level mathematical and cognitive skills
SLO 3.1		Human Relations - Use social interactive skills to work in groups effectively
SLO 3.2		Human Relations - Recognize the diversity of cultural influences and values
SLO 4.1	1 – 12	Critical Thinking and Problem Solving -
SLO 5.1	1 – 12	Technology - Select and use appropriate technological tools
SLO 6.1	1 – 12	Personal Responsibility - Be motivated and able to continue learning and adapt to change
SLO 6.2	1 – 12	Personal Responsibility - Value one's own skills, abilities, ideas and art
SLO 6.3	1 – 12	Personal Responsibility - Take pride in one's work
SLO 6.4		Personal Responsibility - Manage personal health and safety
SLO 6.5	1 – 12	Personal Responsibility - Be aware of civic and environmental issues
SLO 7.1	1 – 12	Information Literacy - Access and evaluate information
SLO 7.2	1 – 12	Information Literacy - Use information to achieve personal, academic, and career goals, as well as to participate in a democratic society

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