**Alexandria Technical and Community College**

**MATH 1445: Introduction to Statistics**

**A. COURSE DESCRIPTION**

Credits: 3

Lecture Hours/Week: 3

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites:
This course requires any of these nine prerequisites

- MATH 0431 - Intermediate Algebra (Minimum grade: 2.0 GPA Equivalent and Number of Years Valid: 5)
- MATH 1415 - Mathematical Reasoning
- MATH 1425 - Precalculus (Minimum grade: 2.0 GPA Equivalent)
- A score of 1158 on test MN Comprehensive Assessment Math
- A score of 2 on test Algebra
- A score of 22 on test ACT Math
- A score of 50 on test Accuplacer College Level Math
- A score of 530 on test SAT Math Composite
- A score of 250 on test Accuplacer NG Advanced Algebra Functions

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

This course meets Minnesota Transfer Curriculum (MnTC) goal area 4. This course is primarily for business, science, liberal arts, psychology, and education majors. Topics studied include descriptive measures for empirical data, theory of probability, probability distributions, sampling distributions of statistics from large and small samples, estimation theory, hypothesis testing, correlation, and regression. Prerequisite: MATH1415 or MATH1420 or MATH1425.

**B. COURSE EFFECTIVE DATES:** 03/11/2001 - Present

**C. OUTLINE OF MAJOR CONTENT AREAS**

1. Basic concepts of probability: addition and multiplication rules.
2. Binomial probability distribution.
3. Determine and interpret the measures of center, variation, and box plots.
4. Estimates and sample sizes for a given population.
5. Hypothesis testing: create, analyze, and summarize.
7. Probability through simulations.
8. Sampling distributions and estimators.
10. Understanding and applying statistical terminology.
11. Two sample test for a population mean
12. Utilize linear regression and correlation concepts
D. LEARNING OUTCOMES (General)
   1. The learner will demonstrate the ability to use statistical software in applied problems.
   2. The learner will demonstrate application of statistical concepts to a variety of applied problems.
   3. The learner will demonstrate understanding of the basic concepts of descriptive statistics, probability and the methods of statistical inference.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
   Goal 04 - Mathematical/Logical Reasoning
   1. Illustrate historical and contemporary applications of mathematical/logical systems.
   2. Explain what constitutes a valid mathematical/logical argument (proof).
   3. Apply higher-order problem-solving and/or modeling strategies.

F. LEARNER OUTCOMES ASSESSMENT
   As noted on course syllabus

G. SPECIAL INFORMATION
   None noted