Minnesota State College Southeast

MATH 1230: 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 11 prerequisites
- 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 1148 on test MN Comprehensive Assessment Math
- A score of 250 on test Accuplacer NG Advanced Algebra Functions
- MATH 1555 - Algebra
- MATH 1025 - Algebra
- MATH 1020 - Special Topics in Mathematics
- MATH 1577 - Special Topics in Mathematics
- MATH 1015 - Geometry
- MATH 1566 - Geometry and Trigonometry

Corequisites: None

MnTC Goals: Goal 04 - Mathematical/Logical Reasoning

This course emphasizes the concepts and methods of statistics. Statistics is the study of how to collect,
organize, analyze, and interpret numerical information from data. Statistical methods will be presented
with a focus on understanding both the suitability of the method and the meaning of the result. Statistical
methods and measurements will be studied in the context of a broad range of practical applications that
require decision making. (MnTC Goal 4) (Prerequisite: A minimum score of 50 in the college level math
section of the ACCUPLACER basic skills test or a minimum score of 22 on the math subject area of the
ACT test or successful completion of MATH1025 or MATH1020 or MATH1015) (3 credits: 3 lecture/0
lab)

B. COURSE EFFECTIVE DATES: 07/20/2016 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Collect, analyze, organize, and interpret numerical information from data
2. Understanding statistical methods
3. Suitability of statistical methods and meanings of results
4. Practical applications involving decision making
D. LEARNING OUTCOMES (General)
   1. Develop an understanding of the importance of statistics
   2. Analyze the purposes for descriptive statistics and inferential statistics
   3. Understand the nature of data
   4. Draw random samples/use sampling techniques
   5. Design ways to collect and organize and label data
   6. Select graphs appropriate for given data sets
   7. Use graphics such as histograms, ogives, and other graphs
   8. Understand common distribution shapes, order data and reveal distribution shapes
   9. Learn commonly used measures of central tendency including mode, median, and average
  10. Use variance and standard deviation to measure and understand data spread
  11. Learn elementary probability theory and binomial probability distributions
  12. Analyze processes from discrete and continuous probability distributions
  13. Learn characteristics of normal distribution
  14. Use standard normal distribution/standard deviation/probability
  15. Use sampling distributions for decisions based on incomplete information
  16. Estimate the expected value of a random variable and construct estimates from sample data
  17. Use a scatter diagram for estimation
  18. Learn and apply the concepts of hypothesis testing, correlation, and regression

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. 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
   This course was previously MATH 2530.