Common Course Outline for: MATH 0995 Math Skills for Accelerated Statway

A. Course Description

1. Number of credits: 2
2. Lecture hours per week: 2
3. Prerequisites: Eligible for MATH 0990
4. Co-requisites: MATH 1095 Statway Statistics: Accelerated
5. MnTC Goals: None

This course is taught concurrently with MATH 1095 Statway Statistics: Accelerated and is designed to support students in completing the topics covered in both beginning algebra and college-level introductory statistics in one semester. MATH 1095 (4 credits) and the co-requisite MATH 0995 (2 credits) are useful to students whose academic program is satisfied by an introductory statistics course, and MATH 0995 allows those students who are not eligible for MATH 1080 Statistics to complete a college-level statistics course in 1 semester. Math Skills for Accelerated Statway covers sampling methods; descriptive statistics; converting among fraction, decimal, and percent equivalencies; addition and subtraction of decimal numbers; rounding decimal numbers accurately; order and equivalence of rational numbers; understanding inequality symbols; understanding scientific notation; an introduction to probability; necessary topics from beginning algebra; and student success skills. The curriculum is based on student collaborative group learning. Students must complete MATH 0995 and MATH 1095 concurrently.

B. Date last reviewed: November 2021

C. Outline of Major Content Areas

1. The statistical analysis process, populations, sampling, studies and experiments
2. Graphical and numerical summaries of data: histograms, dotplots, means, medians and standard deviations
3. Decimal, fractional, and percent forms of rational numbers
4. Rounding
5. Scientific notation
6. Ordering of rational numbers
7. Linear and non-linear (exponential) models
8. Two-way tables, marginal, joint and conditional probabilities
9. Necessary algebra concepts such as linear and exponential functions, exponents, graphing functions, solving equations, and working with decimals and fractions in applied problems

D. Course Learning Outcomes

Upon successful completion of the course, the student will be able to:

1. Describe and critique types of statistical studies and sampling methods.
2. Calculate various numerical descriptive statistics to describe data.
3. Construct appropriate graphical descriptions of quantitative data, and interpret what these visual summaries imply about the data.
4. Use linear and exponential models to describe relationships between two quantitative variables.
5. Use appropriate theoretical probability distributions and the laws of probability to solve applied problems.

E. Methods for Assessing Student Learning

In order to provide consistent data on the effectiveness of the project, the instructor is encouraged to use the assessments that are included in the Statway curriculum created by the Carnegie Foundation for the Advancement of Teaching. The instructor may choose other assessment methods to complement the included methods, including attendance and participation in group learning activities.

F. Special Information

The curriculum requires extensive use of either computer software (some of which is included in the Statway curriculum) or a statistical calculator (TI-83/84 is recommended).