

Virginia Western Community College

MTH 130

Fundamentals of Reasoning

Prerequisites

MTE 1-3 or MDE 10

Course Description

Presents elementary concepts of algebra, linear graphing, financial literacy, descriptive statistics, and measurement & geometry. Based on college programs being supported by this course, colleges may opt to add additional topics such as logic or trigonometry. This course is intended for occupational/technical programs

Semester Credits: 3 Lecture Hours: 3

Required Materials

Textbook:

Mathematics – Its Power & Utility. Smith. 10th edition. Cengage. ISBN: 9781111577421.

Other Required Materials:

Calculator

Course Outcomes

At the completion of this course, the student should be able to:

- Communication
 - Interpret and communicate quantitative information and mathematical and statistical concepts using language appropriate to the context and intended audience.
 - Use appropriate mathematical language in oral, written and graphical forms.
 - Read and interpret real world advertisements, consumer information, government forms and news articles containing quantitative information.
 - Use quantitative information from multiple sources to make or critique an argument.
- Problem Solving
 - Make sense of problems, develop strategies to find solutions, and persevere in solving them.
 - Use multiple calculations to develop an answer to an open-ended question requiring analysis and synthesis of data.
 - Develop personal problem solving processes and apply them to applications studied over an extended period of time.

- Reasoning
 - Reason and draw conclusions or make decisions with quantitative information.
 - Draw conclusions or make decisions in quantitatively based situations that are dependent upon multiple factors.
 - Analyze how different situations would affect the decisions.
 - Present written or verbal justifications of decisions that include appropriate discussion of the mathematics involved.
 - Recognize when additional information is needed or the appropriate times to simplify a problem
- Evaluation
 - Critique and evaluate quantitative arguments that utilize mathematical, statistical, and quantitative information.
 - Evaluate the validity and possible biases in arguments presented in real world contexts based on multiple sources of quantitative information for example; advertising, internet postings, or consumer information.
- Technology
 - Use appropriate technology in a given context
 - Use a computer or calculator to organize quantitative information and make repeated calculations using simple formulas. This would include using software like Excel or internet-based tools appropriate for a given context for example, an online tool to calculate credit card interest.
- Basic Algebra

Topical Description

Chapter	Topic
1	Arithmetic, Calculators and Problem Solving
2	Sets of Numbers
3	Introduction to Algebra
4	Percents and Problem Solving
5	Introduction to Geometry
6	Measurement and Problem Solving
7	Applications of Percent
10	Statistics
11	Graphs

Notes to Instructors

1. The final exam must be comprehensive and be at least 25% of the total course grade.

Virginia Western Community College

3097 Colonial Avenue, S.W. School of School of STEM Roanoke, VA 24015

(540) 857-7273