

WTCS Repository

10-804-107 College Mathematics

Course Outcome Summary

Course Information

Description This course is designed to review and develop fundamental concepts of mathematics in the areas of algebra, geometry, trigonometry, measurement and data. Algebra topics emphasize simplifying algebraic expressions, solving linear equations and inequalities with one variable, solving proportions and percent applications. Geometry and trigonometry topics include; finding areas and volumes of geometric figures, applying similar and congruent triangles, applying Pythagorean Theorem, and solving right triangles using trigonometric ratios. Measurement topics emphasize the application of measurement concepts and conversion techniques within and between US Customary and metric system to solve problems. Data topics emphasize data organization and summarization skills, including: frequency distributions, central tendency, relative position and measures of dispersion. Special emphasis is placed on problem solving, critical thinking and logical reasoning, making connections, and using calculators.

Total Credits 3.00

Pre/Corequisites

Prerequisite Each Wisconsin Technical College determines the General Education course prerequisites used by their academic institution. If prerequisites for a course are determined to be appropriate, the final Course Outcome Summary must identify the prerequisites approved for use by the individual Technical College.

Course Competencies

1. Simplify algebraic expressions

Assessment Strategies

- 1.1. by simplifying algebraic expression problems
- 1.2. given written problems and calculator

Criteria

Your performance will be successful when:

- 1.1. you perform operations on rational numbers
- 1.2. you simplify expression using the order of operations
- 1.3. you solve applied problems
- 1.4. your solution is correct
- 1.5. your solution includes correct units
- 1.6. you show supporting work
- 1.7. your work is clear and organized

2. Solve equations and inequalities

Assessment Strategies

- 2.1. by solving equation and inequalities problems
- 2.2. given written problems and calculator

Criteria

Your performance will be successful when:

- 2.1. you solve equations in one variable
- 2.2. you manipulate formulas and solve literal equations
- 2.3. you solve applied problems
- 2.4. you solve linear inequalities in one variable
- 2.5. you solve a system of equations by algebraic methods
- 2.6. your solution is correct
- 2.7. your solution includes correct units
- 2.8. you show supporting work
- 2.9. your work is clear and organized

3. Solve ratio and proportion applications

Assessment Strategies

- 3.1. by solving ratio and proportion application problems
- 3.2. given written problems and calculator

Criteria

Your performance will be successful when:

- 3.1. you solve ratios and proportions
- 3.2. you solve for missing quantities in percent problems
- 3.3. you solve financial problems involving percent (interest, finance charges, sale prices, credit transactions, etc.)
- 3.4. your solution is correct
- 3.5. your solution includes correct units
- 3.6. you show supporting work
- 3.7. your work is clear and organized

4. Apply geometric concepts

Assessment Strategies

- 4.1. by applying geometric concepts to solve problems
- 4.2. given written problems and calculator

Criteria

Your performance will be successful when:

- 4.1. you find perimeter of plane figures including composites (having more than one basic shape)
- 4.2. you find area of plane figures including composites
- 4.3. you find volume and surface area of geometric solids including composites
- 4.4. you solve problems involving similar and congruent triangles
- 4.5. you use the Pythagorean Theorem to solve for the unknown side of a right triangle
- 4.6. you solve right triangles using trigonometric ratios
- 4.7. you approximate solutions without a calculator
- 4.8. your solution is correct
- 4.9. your solution includes correct units
- 4.10. you show supporting work
- 4.11. your work is clear and organized

5. Use measurement concepts (both U.S. customary and metric) to solve problems

Assessment Strategies

- 5.1. by solving measurement problems
- 5.2. given written problems and calculator

Criteria

Your performance will be successful when:

- 5.1. you convert measurements within the metric system
- 5.2. you convert measurements within the U.S. customary system
- 5.3. you convert between U.S. and metric systems
- 5.4. you convert area and volume measurements
- 5.5. you express measurements with correct precision and accuracy
- 5.6. you estimate conversions without a calculator
- 5.7. your solution is correct
- 5.8. your solution includes correct units
- 5.9. you show supporting work
- 5.10. your work is clear and organized

6. Summarize data

Assessment Strategies

- 6.1. by organizing data and summarizing results
- 6.2. given data sets
- 6.3. given written problems and calculator

Criteria

Your performance will be successful when:

- 6.1. you organize data using grouped and ungrouped frequency distributions
- 6.2. you find measures of central tendency (mean, median, mode, mid-range) for data sets
- 6.3. you find measures of relative position (quartiles, percentiles)
- 6.4. you find measures of dispersion (range, variance, standard deviation, inter-quartile range) for given data sets your solution is correct
- 6.5. your solution includes correct units
- 6.6. you show supporting work
- 6.7. your work is clear and organized