

## WTCS Repository

10-804-107 College Mathematics

# Course Outcome Summary

### Course Information

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|  | Description | This course reviews key math concepts in algebra, geometry, trigonometry, measurement, and data. Topics include simplifying algebraic expressions, solving linear equations and inequalities with one variable, proportions, and percent applications, and working with geometric figures.  It covers the Pythagorean Theorem, trigonometric ratios, and unit conversions between U.S. customary and metric systems. Data analysis focuses on organizing and summarizing data, central tendency, and measures of dispersion. Emphasis is on problem-solving, critical thinking, and logical reasoning. |
|  | Total Credits | 3 |

Pre/Corequisites

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| 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

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| 1. | Simplify algebraic expressions | |
|  | Assessment Strategies | |
|  | 1.1. | Oral, Written or Graphic Assessment |
|  | Criteria | |
|  | 1.1. | perform operations on rational numbers |
|  | 1.2. | simplify expression using the order of operations |
|  | 1.3. | solve applied problems |
| 2. | Solve equations and inequalities | |
|  | Assessment Strategies | |
|  | 2.1. | Oral, Written or Graphic Assessment |
|  | Criteria | |
|  | 2.1. | solve equations in one variable |
|  | 2.2. | manipulate formulas and solve literal equations |
|  | 2.3. | solve applied problems |
|  | 2.4. | solve linear inequalities in one variable |
|  | 2.5. | solve a system of equations by algebraic methods |
| 3. | Solve proportion and percent applications | |
|  | Assessment Strategies | |
|  | 3.1. | Oral, Written or Graphic Assessment |
|  | Criteria | |
|  | 3.1. | use ratios in real-world applications |
|  | 3.2. | solve proportions |
|  | 3.3. | solve problems involving percent |
| 4. | Apply geometric concepts | |
|  | Assessment Strategies | |
|  | 4.1. | Oral, Written or Graphic Assessment |
|  | Criteria | |
|  | 4.1. | find perimeter of plane figures including composites |
|  | 4.2. | find area of plane figures including composites |
|  | 4.3. | find volume of geometric solids including composites |
|  | 4.4. | find surface area of geometric solids including composites |
| 5. | Apply trigonometric concepts | |
|  | Assessment Strategies | |
|  | 5.1. | Oral, Written or Graphic Assessment |
|  | Criteria | |
|  | 5.1. | solve problems involving similar triangles |
|  | 5.2. | solve for the unknown side of a right triangle using the Pythagorean Theorem |
|  | 5.3. | solve for an unknown side of a right triangle using trigonometric ratios |
|  | 5.4. | solve for an unknown angle in a right triangle using trigonometric ratios |
| 6. | Use measurement concepts (both U.S. customary and metric) to solve problems | |
|  | Assessment Strategies | |
|  | 6.1. | Oral, Written or Graphic Assessment |
|  | Criteria | |
|  | 6.1. | convert measurements within the metric system |
|  | 6.2. | convert measurements within the U.S. customary system |
|  | 6.3. | convert between U.S. and metric systems |
|  | 6.4. | convert area and volume measurements |
|  | 6.5. | express measurements with correct precision and accuracy |
|  | 6.6. | estimate conversions without a calculator |
| 7. | Summarize data | |
|  | Assessment Strategies | |
|  | 7.1. | Oral, Written or Graphic Assessment |
|  | Criteria | |
|  | 7.1. | organize data using grouped and ungrouped frequency distributions |
|  | 7.2. | find measures of central tendency for data sets |
|  | 7.3. | find measures of relative position for data sets |
|  | 7.4. | find measures of dispersion for data sets |