

Common Course Numbering System

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Searching Current Courses For Summer 2015

Course: MAT 107

Title: Career Math

Long Title:

Course Description: Covers material designed for career technical or general studies students who need to study particular mathematical topics. Topics may include measurement, algebra, geometry, trigonometry, graphs, and/or finance. These are presented at an introductory level and the emphasis is on applications.

Min Credit: 3

Max Credit:

Status Notes: Replaces Mat 114 (FRCC), Mat 102 (RRCC)

Origin Notes: CCD

STANDARD COMPETENCIES:

1. Demonstrate knowledge and use of ratios, proportions, and percents.
2. Demonstrate knowledge and use of units of measure.
3. Demonstrate knowledge and use of signed numbers.
4. Demonstrate knowledge and use of powers of ten and scientific notation.
5. Demonstrate knowledge and use of algebraic operations.
6. Demonstrate knowledge and use of algebraic equations and formulas.
7. Demonstrate knowledge and use of angles.
8. Demonstrate knowledge and use of triangles.
9. Demonstrate knowledge and use of circles and polygons.
10. Demonstrate knowledge and use of geometric solids.
11. Demonstrate knowledge and use of graphs.

TOPICAL OUTLINE:

- I. Demonstrate knowledge and use of ratios, proportions, and percents.
 - A. Write the comparison of two numbers by means of a ratio.
 - B. Write a ratio as a fraction, a decimal numeral or a unit ratio.
 - C. Solve a proportion.

- D. Recognize, set up, and solve direct and indirect proportion applications.
 - E. Convert fractions and decimal numbers to percent numbers and vice versa.
 - F. Solve rate/base/percentage problems.
- II. Demonstrate knowledge and use of units of measure.
- A. Identify significant digits.
 - B. Identify which of two numbers is more accurate or more precise.
 - C. Round numbers off correctly depending on the accuracy or precision required.
 - D. Use dimensional analysis in problem solving.
- III. Demonstrate knowledge and use of signed numbers.
- A. Know and use the rules for adding, subtracting, multiplying, and dividing signed numbers.
 - B. Find the powers and roots of signed numbers.
 - C. Know and use the rules for order of operations in problems with signed numbers.
- IV. Demonstrate knowledge and use of powers of ten and scientific notation.
- A. Convert to and from scientific notation.
 - B. Multiply, divide, and find powers of numbers in scientific notation.
- V. Demonstrate knowledge and use of algebraic operations.
- A. Recognize "like terms".
 - B. Add and subtract like terms.
 - C. Multiply and divide monomials.
 - D. Apply the distributive law.
- VI. Demonstrate knowledge and use of elementary algebraic equations and formulas.
- A. Check the solution of an equation.
 - B. Solve and check the linear equations, including those containing grouping symbols and fractions.
 - C. Evaluate and solve formulas.
- VII. Demonstrate knowledge and use of angles.
- A. Recognize, draw, and/or define an acute angle, obtuse angle, right angle, and straight angle.
 - B. Recognize, draw, and/or define vertical, complementary, supplementary, alternate interior, alternate exterior and corresponding angles.
 - C. Change degree-minutes to degrees-tenths and vice versa.
 - D. Add and subtract the measures of angles.
 - E. Solve angle problems.
- VIII. Demonstrate knowledge and use of triangles.
- A. Identify and draw acute, obtuse, isosceles, equilateral and right triangles.
 - B. Use the Pythagorean Theorem to solve a right triangle.
 - C. Find the perimeter and area of a triangle.

- D. Solve similar triangle problems.
- IX. Demonstrate knowledge and use of circles and polygons.
- A. Identify squares, rectangles, parallelograms, and trapezoids.
 - B. Find the perimeter and area of a quadrilateral.
 - C. Identify regular pentagons, hexagons, and octagons.
 - D. Find the perimeter and area of regular polygons.
 - E. Identify diameter, radius, circumference, arc, and sector of a circle.
 - F. Find the circumference, area, arc length, and sector of a circle.
- X Demonstrate knowledge and use of geometric solids.
- A. Describe and identify prisms, cylinders, pyramids, cones, and spheres.
 - B. Identify the critical characteristics of geometric solids.
 - C. Find the surface area and volume of geometric solids.
- XI. Demonstrate knowledge and use of graphs.
- A. Sketch and read line, bar, circle, and coordinate plane graphs.
 - B. Use graphs to interpret data.

Course Offered At:

Arapahoe Community College	ACC
Community College of Aurora	CCA
Colorado Community College Sys	CCCS
Community College of Denver	CCD
Colorado Northwestern CC	CNCC
Front Range Community College	FRCC
Lamar Community College	LCC
Morgan Community College	MCC
Northeastern Junior College	NJC
Otero Junior College	OJC
Pueblo Community College	PCC
Pikes Peak Community College	PPCC
Red Rocks Community College	RRCC
Trinidad State Junior College	TSJC

RELEASE: 8.5.3