

MATH 1012 - Foundations of Mathematics (version 201312L)

Course Title Course Development Learning Support

Foundations of Mathematics Standard No

Course Description

Emphasizes the application of basic mathematical skills used in the solution of occupational and technical problems. Topics include fractions, decimals, percents, ratios and proportions, measurement and conversion, geometric concepts, technical applications, and basic statistics.

Pre-requisites

Appropriate placement test score or appropriate learning support exit point.

Regstr. Co-requisites

Regstr. Co-requisites: None

True Co-requisites

True Co-requisites: None

Course Length

	Lecture Contact Time	Regular Lab Type	Reg. Lab Contact Time	Other Lab Type	Oth. Lab Contact Time	Total Contact Hrs
Contact Hours Per Week	3 hrs	N/A	0 hrs	N/A	0 hrs	3 hrs
Contact Min/Hrs Per Semester	2250 min		0 min		0 min	45 hrs
	Lecture Credit Hours		Lab Credit Hours		Total Credit hours	WLU
Semester Credit Hours	3		0		3	101.25

Competencies & Outcomes

Order Description

1 Fractions

Order	Description	Learning Domain	Level of Learning
1	Simplify fractions.	Cognitive	Application
2	Multiply and divide fractions.	Cognitive	Application
3	Add and subtract fractions.	Cognitive	Application
4	Add, subtract, multiply, and divide mixed numbers.	Cognitive	Application
5	Solve application problems with fractions.	Cognitive	Analysis
6	Perform hierarchy of operations.	Cognitive	Application

2 Decimals

Order	Description	Learning Domain	Level of Learning
1	Read and write decimal word names.	Cognitive	Knowledge

2	Identify place value.	Cognitive	Knowledge
3	Round decimal notation.	Cognitive	Knowledge
4	Add and subtract decimal notation.	Cognitive	Application
5	Multiply decimal notation.	Cognitive	Application
6	Divide decimal notation.	Cognitive	Application
7	Convert between fraction notation and decimal notation.	Cognitive	Application
8	Solve application problems with decimal notation.	Cognitive	Analysis
9	Perform hierarchy of operations.	Cognitive	Application

3 Ratios and Proportions

Order	Description	Learning Domain	Level of Learning
1	Define ratios and rates.	Cognitive	Knowledge
2	Simplify ratios in fraction form.	Cognitive	Application
3	Find unit rates.	Cognitive	Application
4	Solve a proportion using cross products.	Cognitive	Application
5	Solve application problems involving proportions.	Cognitive	Analysis

4 Percents

Order	Description	Learning Domain	Level of Learning
1	Convert between percent and decimal notation.	Cognitive	Application
2	Convert between percent and fraction notation.	Cognitive	Application
3	Solve basic percent problems.	Cognitive	Application
4	Solve application problems involving percents.	Cognitive	Analysis

5 Measurement and Conversion

Order	Description	Learning Domain	Level of Learning
1	Convert measurements of length, weight/mass, and capacity within the American system.	Cognitive	Application
2	Convert measurements of length, weight/mass, and capacity within the Metric system.	Cognitive	Application
3	Convert measurements between the American and Metric systems.	Cognitive	Application
4	Solve application problems involving measurement.	Cognitive	Analysis

6 Geometric Concepts

Order	Description	Learning	Level of
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		Domain	Learning
1	Identify basic two and three dimensional figures.	Cognitive	Knowledge
2	Find the perimeter of polygons and circumference of circles.	Cognitive	Application
3	Find the area of polygons and circles.	Cognitive	Application
4	Solve for volume of three-dimensional objects.	Cognitive	Application
5	Identify and solve problems involving angles.	Cognitive	Application

7 **Technical Applications**

Order	Description	Learning Domain	Level of Learning
1	Apply mathematical concepts of varied occupational applications.	Cognitive	Analysis

8 **Basic Statistics**

Order	Description	Learning Domain	Level of Learning
1	Solve applications involving circle, bar, and line graphs.	Cognitive	Analysis
2	Solve applications involving frequency distributions and histograms.	Cognitive	Analysis
3	Find the mean, weighted mean, median, and mode for a set of data.	Cognitive	Application