

MATH FOR MANUFACTURING

Course Description

Today's business leaders are looking for flexible employees who can adapt to a work environment that is becoming more complex. These employers typically ask for workers who are good critical thinkers, excellent problem solvers, and can communicate clearly and concisely. They encourage their workers to take special training courses to stay current in their chosen fields of specialization. This course will help you develop and practice mathematics skills you will use on a job in manufacturing if you so choose to pursue this career in your future. This course focuses on decimals, fractions, tolerances, percentages, angles, triangles, shop problems, integers and rectangular coordinates, triangles and Pythagorean Theorem, and trigonometric functions. This course will culminate with a Final Exam.

Prerequisite

None

Credit Requirement Area

Math & Vocational Education

Learning Objectives

Students will study and master the following concepts:

- Decimals
- Fractions
- Tolerances
- Percents
- Angles and Triangles
- Shop Problems
- Beyond Arithmetic
- Triangles and Pythagorean Theorem
- Sines, Cosines, and Tangents

Suggested Weekly Schedule

Week	Graded Activities	Suggested Due Date	% Points
1	Worksheet 1-1: Metric Tolerances, 1- and 2- Place Decimals	Monday of Week 1	5%
	Worksheet 1-2: Caliper Math with 2-Place Decimals	Monday of Week 1	12%
	Worksheet 1-3: Caliper Math with 3 Decimal Places	Tuesday of Week 1	12%
	Worksheet 1-4: Four-Place Decimals	Tuesday of Week 1	11%
	Worksheet 2-1: Reading 8ths and 16ths of an Inch	Wednesday of Week 1	12%
	Worksheet 2-2: Reading a Scale with 32nds and 64ths	Wednesday of Week 1	9%
	Worksheet 2-3: 16R Scale, 50ths and 100ths	Thursday of Week 1	8%

Week	Graded Activities	Suggested Due Date	% Points
	Worksheet 2-4: Hole Locations with Fractions	Thursday of Week 1	12%
	Worksheet 2-5: Converting Fractions to Decimals on a Print	Friday of Week 1	14%
	Worksheet 2-6: Sawing Bar Stock	Friday of Week 1	5%
Week 1 Total Percentage Towards Final Grade			17%
2	Worksheet 3-1: 2-Place, 3-Place, and Fractional Tolerances	Monday of Week 2	10%
	Worksheet 3-2: Special Tolerances	Tuesday of Week 2	29%
	Worksheet 3-3: Print Tolerances of 2, 3, and 4 Place Decimals	Wednesday of Week 2	54%
	Worksheet 4-1: Allowable Burr Size on Stampings	Thursday of Week 2	7%
Week 2 Total Percentage Towards Final Grade			17%
3	Worksheet 5-1: Complementary and Supplementary Angles	Monday of Week 3	8%
	Complementary and Supplementary Angles Activity #2	Tuesday of Week 3	50%
	Worksheet 6-2: Calculate Drill Clearance	Wednesday of Week 3	21%
	Worksheet 6-3: Calculate Drill Speeds in RPM	Thursday of Week 3	21%
Week 3 Total Percentage Towards Final Grade			17%
4	Worksheet 7-3: Signed Numbers and Rectangular Coordinates	Monday of Week 4	36%
	Worksheet 8-1: Areas of Right Triangles	Tuesday of Week 4	14%
	Worksheet 8-2: Pythagorean Theorem	Wednesday of Week 4	14%
	Worksheet 8-3: 45 Degree and 30-60-90 Triangles	Thursday of Week 4	14%
	Worksheet 8-5: Finding Missing Dimensions on Slotted Holes	Friday of Week 4	22%
Week 4 Total Percentage Towards Final Grade			17%
5	Worksheet 9-1: Solving Triangles	Monday of Week 5	11%
	Worksheet 9-2: Depths of Slots and Chamfers	Tuesday of Week 5	5%
	Khan Academy: Solve for a Side of a Right Triangle	Wednesday of Week 5	28%
	Khan Academy: Solve for an Angle in a Right Triangle	Thursday of Week 5	28%
	Khan Academy: Right Triangle Trigonometry Word Problems	Friday of Week 5	28%
Week 5 Total Percentage Towards Final Grade			17%
6	Final Exam	Friday of Week 6	100%

Week	Graded Activities	Suggested Due Date	% Points
Week 6 Total Percentage Towards Final Grade			15%
WEIGHTED TOTAL			100%