



## COURSE OUTLINE: MAC200 - APPLD TRADE CALC

Prepared: Kevin Sloss

Approved: Corey Meunier, Chair, Technology and Skilled Trades

<b>Course Code: Title</b>	MAC200: APPLIED TRADE CALCULATIONS	
<b>Program Number: Name</b>	6346: GENERAL MACHINIST L2	
<b>Department:</b>	MECHANICAL TECHNIQUES PS	
<b>Academic Year:</b>	2022-2023	
<b>Course Description:</b>	This course involves solving trade-specific problems involving the Pythagorean theorem, right angle trigonometry and circles. Students will be required to analyze problems, perform calculations and solve for unknown values required to produce parts.	
<b>Total Credits:</b>	5	
<b>Hours/Week:</b>	3	
<b>Total Hours:</b>	36	
<b>Prerequisites:</b>	There are no pre-requisites for this course.	
<b>Corequisites:</b>	There are no co-requisites for this course.	
<b>Essential Employability Skills (EES) addressed in this course:</b>	<p>EES 3    Execute mathematical operations accurately.</p> <p>EES 4    Apply a systematic approach to solve problems.</p> <p>EES 5    Use a variety of thinking skills to anticipate and solve problems.</p> <p>EES 6    Locate, select, organize, and document information using appropriate technology and information systems.</p> <p>EES 11   Take responsibility for ones own actions, decisions, and consequences.</p>	
<b>Course Evaluation:</b>	<p>Passing Grade: 70%,</p> <p>A minimum program GPA of 2.0 or higher where program specific standards exist is required for graduation.</p>	
<b>Books and Required Resources:</b>	<p>Technology Of Machine Tools by Steve F. Krar, Arthur R. Gill, Peter Smid, Robert J. Gerritsen  Publisher: McGraw - Hill Edition: 8  ISBN: 9781260565782</p> <p>Mathematics for Machine Technology by Peterson and Smith  ISBN: 978-1-133-28145-0</p>	
<b>Course Outcomes and Learning Objectives:</b>	<b>Course Outcome 1</b>	<b>Learning Objectives for Course Outcome 1</b>
	1. Solve trade-specific problems involving the Pythagorean Theorem and solve for unknown values.	1.1 Describe the application of the Pythagorean Theorem 1.2 Calculate the values of the unknown sides of right angle triangles
	<b>Course Outcome 2</b>	<b>Learning Objectives for Course Outcome 2</b>



2. Solve trade-specific problems involving right angle trigonometry and solve for unknown values.	2.1 Describe definitions and relation of Trigonometric functions: i. Variations of Trig. functions from 0 to 90 ii. Fundamental relations between Trig. functions iii. Definitions of Trig. functions 2.2 Sides of a Right Angle Triangle using Trigonometry i. Opposite, Adjacent & Hypotenuse ii. Sine, Cosine & Tangent iii. Cotangent, Secant & Cosecant
<b>Course Outcome 3</b>	<b>Learning Objectives for Course Outcome 3</b>
3. Calculate the values of angles and sides of right angle triangles.	3.1 Perform trigonometric calculations of angles and sides of right angle triangles including: i. unknown side ii. angle corresponding to a given trigonometric function iii. angle when two sides of a right angle triangle are given iv. rule for finding the function of an angle v. ratio method
<b>Course Outcome 4</b>	<b>Learning Objectives for Course Outcome 4</b>
4. Solve trade-specific problems involving circles and solve for unknown values.	4.1 Describe a circle and the parts of a circle: i. circumference, chord, arc ii. central angle, tangent, secant, segment, inscribed angle iii. diameter, radius 4.2 Calculate the values of unknown parts of a circle: i. angles formed inside and outside of a circle ii. internally & externally tangent circles
<b>Course Outcome 5</b>	<b>Learning Objectives for Course Outcome 5</b>
5. Perform calculations to produce parts.	5.1 Perform calculations required to machine parts involving: i. tapers ii. bevels iii. isosceles triangles iv. distance between holes and v-slots v. Vee-block applications, dovetails 5.2 Select reference materials and tables/charts used to calculate machining parameters by determining: i. applications, types, format ii. magnitudes and dimensions iii. standards, abbreviation, terminology iv. graduations, accuracy, limitations 5.3 Perform calculations for machining using reference material and charts/tables: i. taper calculation ii. thread data iii. thread measurement iv. mathematical formulae v. three wire method

**Evaluation Process and Grading System:**

Evaluation Type	Evaluation Weight
Assignments & Quizzes	50%



	Final Test	25%
	Midterm Test	25%

**Date:** July 11, 2022

**Addendum:** Please refer to the course outline addendum on the Learning Management System for further information.