

Last Reviewed by: Leslie Wurst

Date Approved: August 97

Date: Fall 2009

New Rubrics: Fall 01

COURSE SYLLABUS

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Syllabus for: **MATH 1720 Precalculus / Trigonometry**

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Former Semester Course and Title: Mat 1620 Precalculus II (Trigonometry)

Former Quarter Course(s): MAT 152 PLANE TRIGONOMETRY  
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**Catalog Description:**

This course is a study of trigonometric functions and their application to right and oblique triangles, linear and angular velocities, vectors, graphical representation of trigonometric functions, inverse trigonometric functions, identities and conditional equations, composite angle formulas, and other selected topics.

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**Credit Hours:** 3                      **Contact Hours:** 3                      **Lab Hours:** 0  
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**Prerequisite(s):**

MATH 1710 or permission of the Mathematics Department Chair  
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**Required**

<b>Text(s):</b>	<u>Trigonometry</u>	McKeague & Turner	6th ed., 2008	Thompson Learning
	<b>Title</b>	<b>Author(s)</b>	<b>Edition/Date</b>	<b>Publisher</b>

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**Required Supplies/Material(s):** Graphing calculator (recommended TI-83, as this is the demonstration model for class use)  
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**Recommended Supplementary Material(s):**

Student's Solutions Manual to accompany McKeague/Turner's Trigonometry  
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**Student Group for Whom Course is Required/Intended:**

Those students who have a prerequisite need for a course in trigonometry and students enrolled in programs requiring trigonometry.

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**GOALS**

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The student will:

- 1) perform computations and do graphing involving the six trigonometric functions for angles given in radians and degrees,
- 2) solve right and oblique triangles,
- 3) verify identities and solve equations through applications of the fundamental identity relationships,
- 4) apply trigonometric forms to operations on complex numbers, and
- 5) graph the six trigonometric functions and certain variations.

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**OBJECTIVES**

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Through the study of trigonometry, the student will:

- 1) define the six trigonometric functions in terms of  $x$ ,  $y$ , and  $r$  using the distance formula, the rectangular coordinate system, and the Pythagorean Theorem;
- 2) compute trig function values for  $30^\circ$ ,  $45^\circ$ ,  $60^\circ$ ,  $0^\circ$ ,  $90^\circ$ ,  $180^\circ$ , and  $270^\circ$ ;
- 3) use a calculator to find angles for trig functions and functions for angles;
- 4) reduce trigonometric functions of positive or negative angles to functions of the acute related angle;
- 5) solve right triangles using trigonometric functions;
- 6) solve applications problems involving angles of elevation and depression, bearing, and vectors;
- 7) solve oblique triangles using Law of Sines and Law of Cosines;
- 8) find areas of triangles;
- 9) convert angles measures from radians to degrees and degrees to radians;
- 10) solve applications problems involving arc length and linear and angular velocities;
- 11) verify trig identities using the basic Pythagorean, quotient, and reciprocal trig relationships;
- 12) evaluate the trig function values for the sum and difference of two angles and for double angles and half angles;
- 13) solve conditional trigonometric equations;
- 14) graph the six basic trigonometric functions;

**OBJECTIVES** (continued)

- 15) graph variations of the six trig functions including changes in amplitude and wavelength and including phase shifts and vertical shifts;
- 16) graph and perform operations with the inverse trigonometric functions;
- 17) convert parametric equations to rectangular form and sketch using a graphing calculator;
- 18) convert polar coordinates to rectangular coordinates and rectangular coordinates to polar coordinates and graph polar equations;
- 19) compute polar forms for complex numbers and multiply, divide, and raise to powers complex numbers in polar form.

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**SUGGESTED EVALUATION PLAN**

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<b>Task</b>	<b>Weight</b>	<b>Objectives</b>
Test 1	100 points	1 & 2
Test 2	100 points	3, 4, 5, 6, 9 & 10
Test 3	100 points	11, 12, 13, 14, 15 & 16
Test 4	100 points	7 & 8
Test 5	100 points	17, 18 & 19
Homework/Quizzes	150 points	
Final Exam	<u>150 points</u>	
Total Points	800 points	

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**FINAL GRADING PLAN**  
**Based Upon Percentages**

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<b>A =</b>	90 - 100%
<b>B =</b>	80 - 89%
<b>C =</b>	70 - 79%
<b>D =</b>	60 - 69%
<b>F =</b>	below 60%

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**INSTRUCTIONAL SCHEDULE**  
for  
**MATH 1720 Precalculus / Trigonometry**

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<b>Week</b>	<b>Objective</b>	<b>Content to be covered</b>	<b>Suggested assignment</b>
I.	1 & 2	Section 1.1 Section 1.2 Section 1.3	1 – 63 Odds are suggested on all. 53 – 85 1 – 15, 35 – 75
II.		Section 1.4 Section 1.5 Review	1 – 49 1 – 49, 59 – 91
III.		<b>Test 1 on Chapter 1</b>	
	5	Section 2.1	1 – 55
	3	Section 2.2	1 – 73
IV.		Section 2.3	1 – 53, 61
	6	Section 2.4 Section 2.5	1 – 19 1 – 29
V.	4	Section 3.1	1 – 79
	9	Section 3.2	1 – 15, 95
	10	Section 3.5	1 – 41, 49, 51, 53
VI.		Review	
		<b>Test 2 on Chapters 2 &amp; 3</b>	
	14	Section 4.1	1- 23
VII.	15	Section 4.2	1 – 39
		Section 4.3	1 – 49
	16	Section 4.7	1 – 23, 45 – 71
VIII.	11	Section 5.1	1 – 61
	12	Section 5.2 Section 5.3	1 -19, 43 – 53 1 – 53
IX.		Section 5.4	1 – 53
	13	Section 6.1 Section 6.2	1 – 37 1 – 37
X.		Review	
		<b>Test 3 on Chapters 4, 5 &amp; 6</b>	
	7	Section 7.1	1 – 29
XI.		Section 7.2	1 – 19
		Section 7.3	1 – 15, 21
	8	Section 7.4	1 – 17
XII.		Review	
		<b>Test 4 on Chapter 7</b>	
	18	Section 8.1	1 – 53

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XIII.		Section 8.2	1 – 63
	19	Section 8.3	1 – 47
	17	Section 8.5	1 – 63
XIV.		Section 8.6	1 – 43
		Review	
		<b>Test 5 on Chapter 8</b>	
XV.	1 – 19	<b>Comprehensive Final Exam</b>	