

## FLORIDA STATE COLLEGE AT JACKSONVILLE

## COLLEGE CREDIT COURSE OUTLINE

COURSE NUMBER	MAC 1114
COURSE TITLE:	College Trigonometry
PREREQUISITE(S):	MAC 1105 with a grade of "C" or better or a strong high school algebra background
COREQUISITE(S):	None
CREDIT HOURS:	3
CONTACT HOURS/WEEK:	3
CONTACT HOUR BREAKDOWN:	
Lecture/Discussion:	3
Laboratory:	
Other _____:	
FACULTY WORKLOAD POINTS:	3
STANDARDIZED CLASS SIZE ALLOCATION:	27

## CATALOG COURSE DESCRIPTION:

The major topics in this course are circular functions, solving triangles, trigonometric identities and functions, inverse relations and trigonometric equations, complex numbers, polar coordinates and vectors. (CBE)

SUGGESTED TEXT(S):	Cohen, <u>Precalculus: A Problems-Oriented Approach</u> , (6 <sup>th</sup> Edition), Thomson Brooks/Cole, 2005, ISBN 0-534-40212-7
	Cohen, <u>Algebra and Trigonometry</u> (4 <sup>th</sup> Edition), Brooks/Cole, 1996, ISBN 0-314-06922-4
	Coburn, <u>Trigonometry</u> , (1 <sup>st</sup> Edition), McGraw-Hill, 2008, ISBN 0-072-91005-4
	Larson, Hostetler, and Edwards, <u>Trigonometry: A Graphing Approach</u> , (4 <sup>th</sup> Edition), Houghton-Mifflin, 2004, ISBN 0-618-39458-3
	Lial, Hornsby, and Schneider, <u>Trigonometry</u> , (8 <sup>th</sup> Edition), Addison-Wesley, 2005, ISBN 0-321-22736-0

SUGGESTED TEXT(S): (CONTINUED)

Sullivan, Trigonometry, (8<sup>th</sup> Edition), Prentice Hall, 2008,  
ISBN 0-132-39279-8

Burger, Trigonometry, Thinkwell, ISBN 1-931381-45-3

IMPLEMENTATION DATE:

Fall Term, 1982 (831)

REVIEW OR MODIFICATION DATE:

Fall Term, 1999

Fall Term, 2002 (20031)

Spring Term, 2005 (20052)

Fall Term, 2006 (20061)

Fall Term, 2008, (20091) - Outline Review 2007

COURSE TOPICS	<u>CONTACT HOURS PER TOPIC</u>
I. Trigonometric and Circular Functions	6
A. Angles and Units of Measure	
B. Angles in Standard Position	
C. Trigonometric Functions on a Unit Circle	
D. Applications	
II. Solving Triangles	9
A. Right Triangles	
B. Law of Sines	
C. Law of Cosines	
D. Applications: Involving Law of Sines, Law of Cosines	
E. Vector Triangles	
III. Trigonometric Identities	9
A. Fundamental Identities	
B. Proving Identities	
C. Double Angle and Half Angle Identities	
D. Product and Sum Identities	
E. Applications	
IV. Graphs: Trigonometric Functions	3
A. Sine, Cosine, Tangent, Cotangent, Secant, Cosecant	
B. Amplitude, Period, and Phase Shifts	
C. Graphing Techniques	
V. Inverse Functions and Trigonometric Equations	9
A. Inverse Functions	
B. Trigonometric Equations	
C. Conditional Equations	
D. Applications	
VI. Complex Numbers, Polar Coordinates, and Parametric Equations	6
A. Operations on Complex Numbers	
B. Graphical Representations	
C. Trigonometric Form	
D. DeMoivre's Theorem; Powers and Roots ( <u>Optional</u> )	

COURSE TOPICS (CONTINUED)	CONTACT HOURS <u>PER TOPIC</u>
E. Polar Coordinates and Graphing	
F. Polar Curves	
G. Parametric Equations	
VII. Vectors	3
A. Definitions, Notations, and Properties	
B. Vector Arithmetic	

\*TOPICS NEED NOT BE COVERED IN THE INDICATED SEQUENCE.



Course Prefix and Number: <b>MAC1114</b>	Semester Credit Hours: <b>3</b>
Course Title: <b>College Trigonometry</b>	

Discipline Area for the Course:

<input type="checkbox"/> Communication	<input checked="" type="checkbox"/> Mathematics	<input type="checkbox"/> Social & Behavioral Sciences
<input type="checkbox"/> Humanities & Visual/Performing Arts	<input type="checkbox"/> Natural Sciences	<input type="checkbox"/> Other-Designated Option

INTELLECTUAL COMPETENCIES:

<input checked="" type="checkbox"/> Reading	<input type="checkbox"/> Speaking	<input checked="" type="checkbox"/> Critical Analysis	<input checked="" type="checkbox"/> Quantitative Skills	<input type="checkbox"/> Scientific Method of Inquiry
<input type="checkbox"/> Writing	<input checked="" type="checkbox"/> Listening	<input type="checkbox"/> Information Literacy	<input type="checkbox"/> Ethical Judgment	<input checked="" type="checkbox"/> Working Collaboratively

Learning Outcomes		Method Of Assessment
1	The students will be able to:	Students demonstrate analytical reasoning skills by solving problems on tests, class assignments, and projects.
2	1. Identify trigonometric and circular functions.	Students utilize a variety of approaches when solving mathematical problems including analytical, numerical, and computer/graphing calculator procedures.
3	Solve trigonometric equations using right triangles, inverse trigonometric functions, algebra, laws of sine and cosine, and use this information to solve application problems.	Students demonstrate knowledge of the connection between mathematical principles and real-world problems.
4	Prove, derive and use trigonometric identities.	Students are successful in the subsequent calculus courses which utilize the trigonometric functions and their properties.
5	4. Graph trigonometric functions on the Cartesian coordinate system and Polar coordinate system.	
6	5. Determine inverse trigonometric functions and solve trigonometric equations.	
7	6. Perform operations with complex numbers.	
8	7. Use polar coordinates to demonstrate polar graphing.	
9	8. Solve parametric equations.	
10	9. Use vectors to solve problems that involve vector applications.	

Name of Person Completing This Form: **Pierre Satkowiak, Phil Petersen**

Signature: \_\_\_\_\_ Date: **02/07/04**



