

Planned Course: Pre-Calculus	Course Number: 308/309	Department: Math	
Unit: Analytic Trigonometry	Grade Level: 10-12		
Estimated Time: 43 days	Level/Track:	Date Approved: 08/20/02	
Academic Standards	Skills/Knowledge	Activities	Assessment

<p>2.2.11 Computation and Estimation</p> <p>F. Demonstrate skills for using computer spreadsheets and scientific or graphing calculators.</p> <p>2.4.11 Mathematical Reasoning and Connections</p> <p>E. Demonstrate mathematical solutions to problems (e.g. in the physical sciences)</p>	<p>The student will be able to find the exact value of inverse trigonometric functions.</p> <p>The student will be able to find the approximate value of inverse trigonometric functions.</p> <p>The student will be able to find the exact value of expressions involving inverse trigonometric functions.</p>	<ul style="list-style-type: none"> • Chalkboard examples • Exercises in textbook • Problems at chalkboard • Classroom use of a calculator • Worksheets 	<ul style="list-style-type: none"> • Tests • Quizzes • Homework • Graded notebook • Projects/group projects
<p>2.8.11 Algebra and Functions</p> <p>S. Analyze properties and relationships of functions (e.g. linear, polynomial, rational, trigonometric, exponential, and logarithmic).</p>	<p>The student will be able to use the reciprocal, quotient, and Pythagorean identities to transform a given expression to a specified, equivalent form.</p> <p>The student will be able to express functions of $-x$ in terms of functions of x.</p> <p>The student will be able to be given a trig equation and prove it is an identity.</p>	<ul style="list-style-type: none"> • Chalkboard examples • Exercises in textbook • Problems at chalkboard • Worksheets 	<ul style="list-style-type: none"> • Tests • Quizzes • Homework • Graded notebook • Projects/group projects

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	<p>The student will be able to express $\cos(\alpha-\beta)$, $\cos(\alpha+\beta)$, $\sin(\alpha-\beta)$, $\sin(\alpha+\beta)$ in terms of $\sin \alpha$, $\cos \alpha$, $\sin \beta$ and $\cos \beta$.</p> <p>The student will be able to express $\tan(\alpha-\beta)$ and $\tan(\alpha+\beta)$ in terms of $\tan \alpha$ and $\tan \beta$.</p> <p>The student will be able to solve equations and prove identities using sum and difference properties.</p>		
<p>2.8.11 Algebra and Functions</p> <p>S. Analyze properties and relationships of functions (e.g. linear, polynomial, rational, trigonometric, exponential, and logarithmic).</p> <p>2.2.11 Computation and Estimation</p> <p>F. Demonstrate skills for</p>	<p>The student will be able to express functions of double-angle arguments in terms of functions of single arguments.</p> <p>The student will be able to express functions of a half-angle argument in terms of functions of a single argument.</p>	<ul style="list-style-type: none"> • Chalkboard examples • Exercises in textbook • Problems at chalkboard • Worksheets 	<ul style="list-style-type: none"> • Tests • Quizzes • Homework • Graded notebook • Projects/group projects

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using computer spreadsheets and scientific and graphing calculators.	The student will be able to use double-angle and half-angle formula to prove identities.		
2.8.11 Algebra and Functions S. Analyze properties and relationships of functions (e.g. linear, polynomial, rational, trigonometric, exponential, and logarithmic). 2.4.11 Mathematical Reasoning and Connections E. Demonstrate mathematical solutions to problems (e.g. in the physical sciences).	The student will be able to transform a sum of two sines or cosines as a product of sines and cosines. The student will be able to transform a product of two sines, two cosines, or a sine and a cosine into a sum of two sines or cosines. The student will be able to solve equations and prove identities using sum-to-product and product-to-sum properties.	<ul style="list-style-type: none"> • Chalkboard examples • Exercises in textbook • Problems at chalkboard • Classroom use of a calculator • Worksheets 	<ul style="list-style-type: none"> • Tests • Quizzes • Homework • Graded notebook • Projects/group projects
2.8.11 Algebra and Functions S. Analyze properties and relationships of functions (e.g. linear, polynomial, rational, trigonometric, exponential, and logarithmic).	The student will be able to solve equations involving single trigonometric functions. The student will be able to solve trigonometric equations that are quadratic in form.	<ul style="list-style-type: none"> • Chalkboard examples • Exercises in textbook • Problems at chalkboard • Classroom graphing with the aid of calculators • Graphing functions using spreadsheets 	<ul style="list-style-type: none"> • Tests • Quizzes • Homework • Graded notebook • Projects/group projects

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<p>2.4.11 Mathematical Reasoning and Connections</p> <p>E. Demonstrate mathematical solutions to problems (e.g. in the physical sciences)</p>	<p>The student will be able to solve trigonometric equations using identities.</p> <p>The student will be able to solve trigonometric equations that are linear in sine and cosine.</p> <p>The student will be able to solve trigonometric equations using a graphing calculator.</p>		
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