Curriculum Guide Precalculus II

Unit 1: Trigonometric Functions

9 Lessons

PC#1, PC#6

Objectives	Methods	Resources	Assessment
The students will 1. Convert between degrees, minutes, seconds, and decimal forms for angles. 2. Find the arc length of a circle. 3. Convert from degree to radians and from radians to degrees. 4. Find the area of a sector of a circle. 5. Find the linear speed of an object traveling in circular motion. 6. Find the values of trigonometric functions of acute angles. 7. Use the fundamental identities. 8. Find the exact values of the trigonometric functions of $\pi/4 = 45°$, $\pi/6 = 30°$ and $\pi/3 = 60°$. 9. Use a calculator to approximate the value of the trigonometric functions. 10. Determine the signs of the trigonometric functions of an angle in a given quadrant. 11. Find the reference angle of a general angle. 12. Find the exact values of trigonometric functions of an angle given one of them. 13. Find the exact values of the trigonometric functions using the unit circle. 14. Know the domain and range of the trigonometric functions. 15. Graph all the trigonometric functions. 16. Graph transformations of the trigonometric function.	• teacher lecture • teacher working examples on the board • teacher showing problems on overhead projector • student guided practice of problems in book • cooperative learning groups • individual assistance • partner work • worksheets • homework • video • internet websites	Algebra & Trigonometry; 7th Ed., Pearson Prentice Hall, 2005	• 5 minute checks • check homework • Quizzes • Mid-Chapter Test • Free-Response Chapter test • Oral response • Board work

Unit 2: Analytical Trigonometry

9 Lessons

PC#6

Objectives	Methods	Resources	Assessment
The students will 1. Evaluate the inverse trigonometric functions. 2. Use algebra to simplify trigonometric expressions. 3. Use sum and difference, double-angle, half-angle, sum-to-product, and product-to-sum formulas. 4. Solve trigonometric equations.	• teacher lecture • teacher working examples on the board • teacher showing problems on overhead projector • student guided practice of problems in book • cooperative learning groups • individual assistance • partner work • worksheets • homework • video • internet websites	Algebra & Trigonometry; 7th Ed., Pearson Prentice Hall, 2005	• 5 minute checks • check homework • Quizzes • Mid-Chapter Test • Free-Response Chapter test • Oral response • Board work

Unit 3: Applications of Trigonometric functions

9 Lessons

PC#1, PC#6

Objectives	Methods	Resources	Assessment
The students will 1. Solve right triangles. 2. Solve oblique triangles using the laws of sines and cosines. 3. Solve applied problems involving right and oblique triangles.	• teacher lecture • teacher working examples on the board • teacher showing problems on overhead projector • student guided practice of problems in book • cooperative learning groups • individual assistance • partner work • worksheets • homework • video • internet websites	Algebra & Trigonometry; 7th Ed., Pearson Prentice Hall, 2005	• 5 minute checks • check homework • Quizzes • Mid-Chapter Test • Free-Response Chapter test • Oral response • Board work

Unit 4: Polar Coordinates; Vectors

9 Lessons

PC#7

Objectives	Methods	Resources	Assessment
The students will 1. Plot points using polar coordinates. 2. Convert from polar coordinates to rectangular coordinates and visa versa. 3. Convert a complex number from rectangular form to polar form and visa versa. 4. Plot points in the complex plane. 5. Find products and quotients of complex numbers in polar form. 6. Use De Moivre's theorem. 7. Find complex roots. 8. Graph vectors. 9. Find the position vector for an arbitrary vector. 10. Add and subtract vectors. 11. Find the magnitude of a vector. 11. Find a scalar product of two vectors. 12. Find the corresponding unit vector for an arbitrary vector. 13. Find a vector given its direction and magnitude.	• teacher lecture • teacher working examples on the board • teacher showing problems on overhead projector • student guided practice of problems in book • cooperative learning groups • individual assistance • partner work • worksheets • homework • video • internet websites	Algebra & Trigonometry; 7th Ed., Pearson Prentice Hall, 2005	• 5 minute checks • check homework • Quizzes • Mid-Chapter Test • Free-Response Chapter test • Oral response • Board work

Unit 5: Analytic Geometry

9 Lessons

PC#8

Objectives	Methods	Resources	Assessment
The students will 1. Find the equation of a parabola, ellipse, and hyperbola. 2. Graph parabolas, ellipses, and hyperbolas. 3. Solve applied problems involving the conic sections.	• teacher lecture • teacher working examples on the board • teacher showing problems on overhead projector • student guided practice of problems in book • cooperative learning groups • individual assistance • partner work • worksheets • homework • video • internet websites	Algebra & Trigonometry; 7th Ed., Pearson Prentice Hall, 2005	• 5 minute checks • check homework • Quizzes • Mid-Chapter Test • Free-Response Chapter test • Oral response • Board work

Unit 6: Sequences; Induction; Binomial Theorem

9 Lessons

PC#9

Objectives	Methods	Resources	Assessment
The students will 1. Write the first several terms of a sequence. 2. Write the terms of a sequence defined by a recursive formula. 3. Use summation notation. 4. Determine if a sequence is arithmetic, geometric, or neither 5. Find a formula for the n_{th} term of an arithmetic and geometric sequence. 6. Find the sum of an arithmetic and geometric sequence.	• teacher lecture • teacher working examples on the board • teacher showing problems on overhead projector • student guided practice of problems in book • cooperative learning groups • individual assistance • partner work • worksheets • homework • video • internet websites	Algebra & Trigonometry; 7th Ed., Pearson Prentice Hall, 2005	• 5 minute checks • check homework • Quizzes • Mid-Chapter Test • Free-Response Chapter test • Oral response • Board work