Math 1112 Trigonometry (effective Spring 2008)
Text: Algebra and Trigonometry (3rd edition) by Robert Blitzer
Content: Chapters 5 – 9 (with some omissions and some additional review sections)

Course Description: Circular functions, solutions of triangles, trigonometric identities and equations, graphs of trigonometric functions, Law of Sines, Law of Cosines, applications, vectors, matrices, complex numbers, Euler's formula, and DeMoivre's theorem. Appropriate technology will be used. Credit may not be received for both MATH 1112 and MATH 1113. Prerequisite: A minimum grade of "C" in Math 1111 or equivalent.

Course Objectives: The student will be able to

- Solve right and oblique triangles (using the Laws of Sines and Cosines)
- Sketch graphs of trigonometric and inverse-trigonometric functions; use graphs in solving trigonometric equations
- Use basic trigonometric identities and formulas (including sum-and-difference, double- and half-angle, product-to-sum) to simplify trigonometric expressions and solve trigonometric equations
- Graph polar equations; perform algebraic operations on complex numbers in polar form
- Perform vector operations (including the dot product)
- Graph conic sections
- Solve systems of linear equations in two and more variables
- Perform matrix operations, use matrices in solving multi-variable systems of linear equations, evaluate determinants, use Cramer's rule (optional)

Below is the list of sections to be covered in Trigonometry. Note some sections are listed as optional; some sections are listed as to be omitted. At the beginning of the course there are listed several review sections covering various algebra topics. **Spend no more than one or two days here.** These sections are intended only as a very quick review and as a way to re-familiarize the class with the TI-83/84. **Do not get bogged down here.** It is up to the individual instructor to plan a daily calendar that fits his/her particular class and instructional needs. Students are required to purchase and become proficient at using the TI-83/84 graphing calculator. How to integrate the calculator into the course is to be done at the discretion of the instructor but use of the calculator is not optional. It is not the intent that students simply learn to push buttons for the sake of button pushing, but that the technology contribute to the teaching and learning and understanding of the mathematics. We want the students to learn the mathematics, some calculator fundamentals and appropriate use of the calculator. Students should not only know how to use the calculator but also when to use it. Many of the students will enroll in subsequent courses which presume both algebra and calculator background. There are also resources available for both instructors and students at www.coursecompass.com. Use of these this web site is optional but is encouraged.

Section		Required/Optional (or omit)
	Chapters 2 & 3: **(Review as needed)**	Optional
5.1	Angles and Radian Measure	Required
5.2	Right Angle Trigonometry	Required
5.3	Trigonometric Functions of Any Angle	Required
5.4	Trigonometric functions of Real Numbers: Periodic Functions	Required
5.5	Graphs of the Sine and Cosine Functions	Required
5.6	Graphs of Other Trigonometric Functions	Required
5.7	Inverse Trigonometric Functions	Required
5.8	Applications of Trigonometric Functions	Optional
6.1	Verifying Trigonometric Identities	Required
6.2	Sum and Difference Formulas	Required
6.3	Double-angle, Power Reducing and Half-angle Formulas	Required
6.4	Product to Sum and Sum to Product Formulas	Cover lightly
6.5	Trigonometric Equations	Required
7.1	The Law of Sines	Required
7.2	The Law of Cosines	Required
7.3	Polar Coordinates	Required
7.4	Graphs of Polar Equations	Required
7.5	Complex Numbers in Polar Form: DeMoivre's Theorem	Required
7.6	Vectors	Required
7.7	The Dot Product	Required
8.1-8.2	Systems of Linear Equations	Cover
8.3-8.6		**OMIT**
9.1	Matrix Solutions to Linear Systems	Cover
9.2	Inconsistent and Dependent Systems and Their Applications	**OMIT**
9.3	Matrix Operations and Their Applications (emphasize operations)	Cover
9.4	Multiplicative Inverses of Matrices and Matrix Equations	Cover
9.5	Determinants and Cramer's Rule	Cover

NOTE: Cover systems of linear equations showing graphical, algebraic, and Cramer's Rule solutions. Cover matrix methods as time permits.