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**Salisbury University Department of Mathematical Sciences**
**MATH 140 : College Algebra and Trigonometry  
Syllabus (Tentative)**

**Description:** Applications-oriented college algebra and trigonometry course for students planning to study science or additional mathematics. Emphasizes computational, qualitative, visual and symbolic approaches. Topics include functions and graphs; exponential, logarithmic and trigonometric functions; and difference equations. 4 Hours Credit: Meets four hours per week. Meets General Education IVB or IVC.

**Prerequisites:** High school Algebra II and plane geometry.

**Credit:** Credit may only be received for one of MATH 100, MATH 102, MATH 118, MATH 122, MATH 135, and MATH 140

**Intended Audience:** Students interested in improving their algebraic and problem-solving skills in preparation for taking courses in calculus or science.

**Objective:** To develop a foundation for MATH 201: Calculus I

**Textbooks:** *Algebra & Trigonometry Enhanced with Analytic Geometry*, by Swokowski & Cole; Brooks/Cole, ISBN: 9781111495916.

**Technology:** Multiple technologies may be used in this class. These may including Webassign, graphing calculator, Mathematica, Desmos, GeoGebra, etc. Computer software is either available in campus labs or is freely available.

Topic	Weeks
<b>Graphs, Equations and Inequalities, Exponents, Algebraic Expression</b>	2
Solving equations and inequalities. Graphing equations, lines and circles.	
<b>Functions and their Graphs</b>	2
Functions. Definition of Functions, Linear and Quadratic Functions, Operations on Functions. Graphing Functions. Mathematical Models.	
<b>Polynomial and Rational Functions</b>	2
Power Functions. Polynomial Functions. Rational Functions. Real Zeros. Complex Zeros.	
<b>Exponential and Logarithmic Functions</b>	2
Composite Functions. Inverse Functions. Properties of Exponential Functions. Properties of Logarithms. Solving Exponential and Logarithmic equations. Compound interest. Growth and decay.	
<b>Trigonometric Functions</b>	2
Angles. Right triangle trigonometry. Trigonometric values at special and at general angles. Unit Circle. Graphs of trigonometric functions.	
<b>Analytic Trigonometry</b>	1.5
Inverse Trigonometric Functions. Trigonometric identities and formulas. Solving Trigonometric equations.	
<b>Applications of Trigonometric Functions</b>	1.5
Solving right triangles. Laws of Sines and Cosines. Areas of triangles.	
<b>Tests</b>	1
<b>Total</b>	<b>14</b>

**Evaluation**

Quizzes & Selected Problems	15 – 25%
Tests (4)	50 - 60%
Final Exam	15 - 25%

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- Free tutoring is available for this course in the Spring and Fall semesters.
- Clear descriptions of thought processes, evidence of critical thinking, and effective communication must be demonstrated in written work.
- **Writing Across the Curriculum:** Students will be expected to communicate mathematics and mathematical ideas effectively in speech and writing. At the University Writing Center, trained consultants are ready to help you at any stage of the writing process. In addition to the important writing instruction that occurs in the classroom and during professors' office hours, the Center offers another site for learning about writing. **All students are encouraged to make use of these important services.**
- **NOTE:** Once a student has received credit, including transfer credit, for a course, credit may not be received for any course with material that is equivalent to it or is a prerequisite for it.