Instructor: Instructor
Office: Office, Building
Phone: 409-880-XXXX
Office Hours: Days and Times
Other times are available by appointment?
Text: Trigonometry, 2nd ed., Beecher, Required?
Prerequisites: 270 Math THEA or C or better in CRMA 0372 If THEA exempt: 500 MATH SAT or 19 Math ACT Prepares for: MATH 2310, 2413, 3313

Catalog Description: Study of trigonometric functions, graphs, identities, inverse trigonometric functions, trigonometric equations, and applications of trigonometry. Recommended for students who have not had high school trigonometry.

MATH 1316 Learning Outcomes: Upon completion of the course, students should be able to:

1. Compute the values of the six trigonometric functions for key angles measured in both degrees and radians.
2. Graph all six trigonometric functions and their transformations.
3. Use the basic trigonometric identities to verify other trigonometric identities.
4. Solve trigonometric equations.
5. Solve right and oblique triangles.
6. Plot points and graph equations in the Polar Coordinate system.
7. Use basic operations for vectors in planes.
8. Relate the polar form for complex numbers to vectors.
9. Use the concepts of trigonometry to solve applied problems.

Lectures/Discussions: Please see the attached list of text sections, topics, and problems.

Core Curriculum Outcomes: Upon completion of this course, the student will demonstrate his or her abilities to think critically, communicate quantitative information, and apply mathematical concepts:

1. Critical Thinking: Develop a logical, consistent plan to solve a problem, recognize consequences of the solution, and articulate a reason for choosing solution method.
2. Communication Skills: Use and present quantitative information in connection with an argument or problem solution and explicate it in an effective format.
3. Empirical and Quantitative: Construct and present a detailed problem statement with evidence of relevant contextual factors and possible approaches for solving the problem, then implement a solution and review the results.
**Grading Policies:** You are responsible for everything that goes on in class regardless of the reason for an absence. I reserve the right to drop any student with three unexcused absences. Make-up exams will be given during the last week of classes. It is your responsibility to contact me to set a date for taking the makeup exam. Your grade will be greater than or equal to the average of three tests, the comprehensive final, and weekly assigned homework.

**Final Exam:** Day, Date, and Time Exemption Policy, if any

**General Information:**

Lamar University expressly prohibits intimidation and harassment of students, faculty, staff, or applicants. [http://dept.lamar.edu/studentaffairs/handbook.htm](http://dept.lamar.edu/studentaffairs/handbook.htm)

Lamar University expects all students to engage in academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in their academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. [http://dept.lamar.edu/studentaffairs/handbook.htm](http://dept.lamar.edu/studentaffairs/handbook.htm)

Any student with disabilities, who needs reasonable modifications to complete assignments successfully, is encouraged to meet with me as early in the term as possible to identify and plan specific accommodations. The student will be asked to provide an accommodation memorandum from the Office of Services for Students with Disabilities. Web: [http://dept.lamar.edu/sfswd/](http://dept.lamar.edu/sfswd/) Telephone: 409-880-8026 Location: Communication Building, Rm.105, P.O. Box 10087, Beaumont, TX 77710 Director: Callie Trahan

You will have an opportunity to evaluate all aspect of this course in a formal process to be completed online near the end of the term.

While I have made a sincere effort to ensure that this syllabus is correct, changes may be required. I will announce any substantive changes during a regularly scheduled class. If you find an error or omission, please advise me at once so that the other members of the class may be advised.

**MATH 1316 -- TRIGONOMETRY**

*Trigonometry, 2nd Ed. By Beecher*

<table>
<thead>
<tr>
<th>Sec.</th>
<th>Topic</th>
<th>Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sec. 1-1</td>
<td>Trigonometric Functions of Acute Angles</td>
<td>1, 3, 6, 7, 11, 15, 17, 20, 22, 23, 28, 30, 55, 63, 66, 73, 77, 83, 87, 88, 91, 92, 93, 94, 95, 97, 115</td>
</tr>
<tr>
<td>Sec. 1-2</td>
<td>Applications of Right Triangles</td>
<td>2, 3, 5, 9, 14, 17, 20, 21, 23, 26, 32, 33, 37, 46</td>
</tr>
<tr>
<td>Sec. 1-3</td>
<td>Trigonometric Functions of Any Angle</td>
<td>1, 4, 5, 9, 12, 13, 17, 19, 23, 26, 27, 29, 31, 34, 35, 37, 39, 40, 44, 47, 49, 61, 68, 75, 79, 83, 85, 87, 90, 97, 100, 101, 103, 105, 118</td>
</tr>
<tr>
<td>Sec. 1-4</td>
<td>Radians, Arc Length, and Angular Speed</td>
<td>1, 2, 6, 7, 10, 11, 13, 23, 27, 28, 31, 32, 33, 35, 41, 44, 47, 52, 53, 58, 60, 65, 69, 71, 75, 78, 96, 97, 100</td>
</tr>
<tr>
<td>Sec. 1-5</td>
<td>Circular Functions: Graphs &amp; Properties</td>
<td>1, 4, 9, 12, 17, 19, 20, 21, 25, 32, 37, 43, 47, 49, 53, 54, 55, 56, 69, 72, 73, 75, 80</td>
</tr>
<tr>
<td>Sec. 1-6</td>
<td>Graphs of Transformed Sine and Cosine Functions</td>
<td>1, 3, 7, 12, 16, 17, 19, 26, 29, 33, 37, 43, 45, 49, 53, 58, 70, 89, 101</td>
</tr>
<tr>
<td>Sec. 2-1</td>
<td>Pythagorean &amp; Sum &amp; Difference Identities</td>
<td>1, 2, 6, 7, 9, 11, 13, 15, 18, 19, 22, 25, 28, 32, 36, 38, 39, 41, 43, 45, 47, 50, 51, 54, 57, 58, 61, 66, 71, 74, 76, 85, 88, 93, 94, 97, 105, 108</td>
</tr>
<tr>
<td>Sec. 2-2</td>
<td>Cofunction, Double-Angle, &amp; Half-Angle ID's</td>
<td>3, 5, 6, 10, 11, 13, 17, 21, 22, 25, 27, 29, 31, 43, 46, 49, 55, 59, 61</td>
</tr>
<tr>
<td>Sec. 2-3</td>
<td>Proving Trigonometric Identities</td>
<td>1, 5, 6, 9, 12, 18, 21, 25, 29, 33, 36, 40, 45, 46, 49, 61, 65</td>
</tr>
<tr>
<td>Sec. 2-4</td>
<td>Inverses of the Trigonometric Functions</td>
<td>1, 2, 7, 10, 11, 19, 22, 24, 29, 35, 39, 40, 43, 45, 52, 56, 57, 65, 81, 83</td>
</tr>
<tr>
<td>Sec. 2-5</td>
<td>Solving Trigonometric Equations</td>
<td>4, 5, 6, 11, 13, 18, 21, 24, 28, 29, 31, 32, 37, 39, 65, 68, 72</td>
</tr>
<tr>
<td>Sec. 3-1</td>
<td>The Law of Sines</td>
<td>3, 6, 9, 17, 20, 22, 24, 25, 27, 30, 46</td>
</tr>
</tbody>
</table>
Sec. 3-2  The Law of Cosines  1, 3, 6, 11, 16, 18, 21, 23, 27, 28, 30, 36, 51
Sec. 3-3  Complex Numbers: Trigonometric Form  3, 8, 11, 13, 16, 21, 23, 27, 30, 35, 37, 40, 43, 47,
          52, 57, 60, 65, 72, 73, 91, 96
Sec. 3-4  Polar Coordinates and Graphs  2, 4, 5, 12, 15, 18, 21, 24, 27, 29, 33, 36, 40, 43,
          49, 53, 54, 59, 60, 63, 67, 79, 86
Sec. 3-5  Vectors and Applications  1, 6, 7, 13, 16, 19, 23, 25, 29, 30, 38, 39, 42
Sec. 3-6  Vector Operations  3, 5, 9, 13, 16, 17, 24, 27, 34, 35, 39, 47, 50, 53,
          56, 60, 63, 66, 67, 71, 73, 80, 83, 85, 99

Student planning to certify to teach grades EC-4 or 4-8, content standard skills covered in this course are: 1.6, 1.7, 1.13, 1.15, 1.18, 1.18, 2.3, 2.4, 2.5, 2.6, 2.8, 2.10, 2.11, 2.12, 2.14, 3.1, 3.3, 3.4, 3.5, 3.7, 3.10, 3.14, 5.9, 5.17
5.17, 5.18