Course Outline for Mathematics 36
TRIGONOMETRY

Catalog Description:

MTH 36 - Trigonometry
3.00 units
Plane trigonometry. Includes circular and right triangle trigonometric functions; trigonometric equations, graphs and identities; triangle solutions. Polar coordinates.
Prerequisite: MTH 57 (completed with a grade of "C" or higher) and , MTH 55 (completed with a grade of "C" or higher) or , MTH 55L (completed with a grade of "C" or higher) or , MTH 55B (completed with a grade of "C" or higher) or an appropriate skill level demonstrated through the Early Assessment Program or an appropriate skill level demonstrated through the Mathematics Assessment process. May not receive credit if Mathematics 37 has been completed.

Grading Option: Optional

Discipline:

<table>
<thead>
<tr>
<th>Units</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Week</td>
</tr>
<tr>
<td>Lecture</td>
<td>3.00</td>
</tr>
<tr>
<td>Laboratory</td>
<td>0.00</td>
</tr>
<tr>
<td>Clinical</td>
<td>0.00</td>
</tr>
<tr>
<td>Total</td>
<td>3.00</td>
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Prerequisite Skills:
None

Measurable Objectives:

Upon completion of this course, the student should be able to:
1. Identify and use the trigonometric ratios in problem solving;
2. Use radian measure;
3. Define trigonometric functions in terms of the right triangle and the unit circle;
4. Write down from memory the values of sine, cosine, and tangent functions of standard angles, both in degree and radian measure;
5. Write down from memory the Pythagorean identities, reciprocal identities, double angle formulas for sine and cosine, and sum and difference formulas for the sine and cosine;
6. Prove trigonometric identities;
7. Use trigonometric formulas;
8. Solve trigonometric equations with multiple angles over different intervals;
9. Use the law of sines and the law of cosines to solve oblique triangles;
10. Graph trigonometric functions;
11. Graph the inverse sine, inverse cosine, and inverse tangent functions;
12. Convert between polar coordinate system and rectangular coordinate system;
13. Graph polar equations.

Course Content:
1. Trigonometric functions
2. Trigonometric equations
3. Trigonometric formulas and identities
4. The graphs of trigonometric functions and their inverses
5. Polar coordinates
6. Solution of triangles and related problems

Methods of Presentation
1. Lecture/Discussion
2. Group discussions
3. Problem sessions

Assignments and Methods of Evaluating Student Progress
1. Typical Assignments
   B. Give the students unit circles on a rectangular grid system. Have the students draw the graphs of \( y = \sin x \), \( y = \cos x \) and \( y = \tan x \).
2. Methods of Evaluating Student Progress
   A. Exams/Tests
   B. Quizzes
   C. Home Work
   D. Final Examination

3. Student Learning Outcomes
   Upon the completion of this course, the student should be able to:
   A. Critically analyze mathematical problems using a logical methodology.
B. Communicate mathematical ideas, understand definitions, and interpret concepts.
C. Increase confidence in understanding mathematical concepts, communicating ideas and thinking analytically.

**Textbook (Typical):**

**Special Student Materials**
1. Scientific calculator

**Abbreviated Class Schedule Description:**

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