School of: Arts and Sciences  Prepared by: Mathematics Department

Department: Mathematics  Date (prepared for CCC): 6/2/11

Major Curriculum or market served: Mathematics, Science, Engineering, and for students who plan to enter the Calculus Sequence

Annual Review Date: Fall 2011

Prefix No. Course Title Credit Lecture Lab Clinical Lab *Fee
MAT 114 Plane Trigonometry 3.0 3.0 0.0 0.0 None

Prerequisite(s):
Writing: Assessment test score of 4 or higher; an English ACT score of 20 or higher; or a grade of "C" or better in RHT 095 or RHT 096 or completion of RHT 101
AND 
Reading: Assessment test score of 4 or higher; a Reading ACT score of 20 or higher; or a grade of "C" or better in RHT 085 or RHT 086 or completion of RHT 101
AND
Intermediate Algebra and Geometry demonstrable through a minimum Triton placement score of 6, or ACT Math score of 23 (within the last two years), or MAT 085 or MAT 096 or MAT 103. A grade of “C” or better is required for all prerequisite math courses.

Catalog Course Description:
Trigonometric functions and their graphs, identities, trigonometric equations, right and oblique triangles, inverse trigonometric functions; polar coordinates; vectors, and complex numbers are covered.

I. Overall Learning Goals (1 or 2 sentences):
Upon successful completion of this course, the student will be able to:
Solve problems involving trigonometric functions and their graphs, identities, trigonometric equations, right and oblique triangles, inverse trigonometric functions, polar coordinates, and vectors.

*List course fee amount for new courses only. List ‘None’ if course fee not required
II. **Resources utilized:**
A. Required textbook(s)/workbook(s) example: (list author, year of publication, title of work, location: (i.e. New York, NY), and publisher):
   Lial, Hornsby, Schneider, Daniels, *Trigonometry, 10th* edition, © 2013, Pearson Education, Boston, MA.
B. Supplementary texts/and materials:
C. Other resources utilized: MyMathLab

(HINT: Double-click on the box and mark ‘checked’ or ‘not checked’)

III. **Instructional Strategies:** Check and comment as needed on the instructional methods utilized to attain the course objectives:

- [x] Lecture
- [ ] Lecture/Demonstration
- [ ] Clinical Lab
- [ ] Internship
- Other: Computer Terminal, Power Point

- [ ] Discussion
- [ ] Laboratory
- [ ] Independent Study
- [ ] Problem solving/case situations
- [ ] Graphing Calculator Demonstrations

IV. **Formative Evaluation:** Check the evaluation methods utilized to monitor progress toward attainment of course objectives:

- [x] Quizzes
- [ ] Laboratory skills
- [ ] Presentations
- [ ] Examinations
- [ ] Oral participation
- [ ] Projects
- [ ] Journal
- [x] Written assignments
- [ ] Portfolio
- [ ] Mid-term examination
- [x] Clinical progress reports
- [ ] Coop experience Progress report
- Other: Graphing Calculator Demonstration

V. **Summative Evaluation:** Check the evaluation method utilized to determine whether final course objectives have been attained:

- [x] Final (written) examination
- [ ] Course projects
- [ ] Final (oral) examination
- [ ] Term papers
- [ ] Final clinical/laboratory exam
- [ ] Portfolio
- [ ] Final skills test
- [ ] Final coop experience evaluation
- Other:

VI. **Assessment:** Check the assessment method(s) utilized to determine if the learning goals and objectives have been attained:

- [ ] Pre/post test/paper
- [ ] License/certification exam results
- [ ] One-minute paper
- [ ] Journal assignment
- [ ] Portfolio assessments
- [ ] Common writing assessment
- [ ] Student survey
- [ ] Employer survey
- Other:
**VII. Course Plan:** Indicate the distribution of contact hours by topic.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Contact Hours</th>
<th>Clinical</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Lecture</td>
<td>Laboratory</td>
</tr>
<tr>
<td>Definitions of trigonometric functions</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Properties of trigonometric functions</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Graphical characteristics of trigonometric functions</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Radian Measure</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Trigonometric identities</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Trigonometric equations</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Solution of oblique and right triangles</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Inverse trigonometric functions</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Powers and roots of complex numbers</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Polar coordinates</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Vectors</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>45</strong></td>
<td></td>
</tr>
</tbody>
</table>
**VIII. Learning Objectives:** For courses approved by ICCB, it is presumed students will spend a minimum of 2 hours outside study for each 1 hour of lecture in class; and a minimum of 1 hour of outside study for each 2 hours of lab or clinical in class, in order to meet the following objectives. Attach additional pages as needed. (Learning objectives must be stated in measurable terms)

<table>
<thead>
<tr>
<th>Objective</th>
<th>Lecture</th>
<th>Laboratory</th>
<th>Clinical/Laboratory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know the trigonometric functions defined as functions of acute angles, in terms of $x$, $y$, $r$, and as circular functions.</td>
<td>X</td>
<td></td>
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<tr>
<td>Understand and be able to use radian measure.</td>
<td>X</td>
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<tr>
<td>Be able to solve right and oblique triangles.</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Understand the basic trigonometric graphs and their variations.</td>
<td>X</td>
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<tr>
<td>Be able to prove and use identities</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Understand the inverse trigonometric functions.</td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>Be able to solve trigonometric and inverse trigonometric equations.</td>
<td>X</td>
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<tr>
<td>Be able to work with vectors and polar equations.</td>
<td>X</td>
<td></td>
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<tr>
<td>Be able to work with the trigonometric form of complex numbers.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Know the trigonometric functions defined as functions of acute angles, in terms of $x$, $y$, $r$, and as circular functions.</td>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>