1. **COURSE DESCRIPTION.** Students will learn the fundamental knowledge and analytic techniques of Trigonometry. Students will study six trigonometric functions and their properties. Then, students will apply their knowledge and develop analytic techniques such as proving trigonometric identities and solving trigonometric equations. Finally, students will study applications such as oblique triangles, polar coordinates, complex numbers and vectors.

2. **COURSE OBJECTIVES.**
   
   (a) Students will acquire the fundamental knowledge and techniques of Trigonometry.
   (b) Students will develop problem-solving skills using the acquired fundamental knowledge and techniques of Trigonometry.

3. **STUDENT LEARNING OUTCOMES.** At the completion of the course, the successful student will be able to
   
   (a) Compute the exact values of the six trigonometric functions for general angles.
   (b) Graph the sine, cosine and tangent functions along with their transformations.
   (c) Use basic trigonometric identities to verify other trigonometric identities.
   (d) Solve trigonometric equations.
   (e) Solve right triangles, oblique triangles and related applied triangle problems.
   (f) Plot points and graph equations in the polar coordinate system.
   (g) Perform operations on complex numbers in polar form.
   (h) Graph vectors in two dimensions.
   (i) Perform vector operations including the dot product.

4. **CALCULATOR POLICY.** A scientific calculator is required for select topics. We recommend a TI-30X IIS. A graphing calculator is permissible if it is not a model higher than a TI-84 Plus. Any calculator capable of symbolic manipulation, e.g., TI-Nspire, is not allowed. Electronic devices such as tablets and mobile phones are not acceptable substitutes for a calculator. When examinations and quizzes are administered, you must use your own calculator; you will not be permitted to share with or borrow from a fellow classmate.

6. **ASSESSMENTS.**

7.1 **Exams.** There shall be three 50-minute exams and a cumulative 120-minute final exam. The tentative exam dates are:

<table>
<thead>
<tr>
<th>Exam</th>
<th>Date</th>
<th>Sections</th>
<th>Calculator</th>
<th>Formula Sheet</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>11 Feb</td>
<td>6.1-6.4</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td>II</td>
<td>20 Mar</td>
<td>6.5, 7.1-7.4</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>III</td>
<td>20 Apr</td>
<td>2.6, 8.1, 8.2, 8.4</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Final</td>
<td>05 May</td>
<td>Cumulative including 8.5 and 8.6</td>
<td>No</td>
<td>Yes</td>
</tr>
</tbody>
</table>

All final answers should be left in **exact form.** In Exam III, all approximations obtained using a calculator ought to be rounded to 4 decimal places, unless stated otherwise.

7.2 **Quizzes.** Quizzes will be given frequently. You should be able to answer the quiz questions if you attended class the previous day, reviewed the corresponding section and got started on the assigned homework from that section. **Two of your lowest quiz scores will be dropped.** There will be no make-up quizzes.

7.3 **Homework:** A selection of homework problems will be collected about once a week. You are encouraged to discuss homework problems with classmates. However, you are expected to individually write up your solutions, and you are responsible for your own understanding of the material. At the end of the semester, I will drop your two lowest homework grades. There will be no late homework accepted.

7.4 **Suggested Exercises.** Suggested exercises are selected from the textbook to help you master the course topics through practice. Suggested exercises are not collected; check your work with the answers provided at the end of your textbook.

7. **GRADING.**

8.1 **Grade Components and Weights.** Course percentages are distributed in the following manner:

(a) Homework, 8%
(b) Quizzes, 8%
(c) Exams, 54% (i.e. 18% each)
(d) Final exam, 30%

8.2 **Grading Scale.** The grading scale is

- 90–100   A
- 80–86    B
- 70–76    C
- 60–66    D
- 59–59    F

8.3 **Extra Credit.** There is no extra credit in this course.

8.4 **Final Exam Replacement.** Your final exam score replaces your lowest in-class exam score if:

(a) the former is higher than the latter,
(b) you do not violate the Code of Conduct of CCU.

8.5 **Make-Up Exams.** There will be no make-up exams unless approved ahead of time. Missed exams may be made up only at the discretion of the professor.

8.6 **Academic Dishonesty.** Cheating is a very serious offence. Any student caught cheating on an exam will receive an FX for the class. Academic offences and violations shall be reported to the Office of Academic Integrity. To the fullest extent allowable under Coastal Carolina University’s Code of Conduct, the office will prosecute the offender on whom academic sanctions may be henceforth imposed.
8. **IMPORTANT DATES.** Note the following dates in your planner:

- **Jan 12:** First day of classes
- **Jan 12-16:** Late registration, drop/add or drop with no academic record
- **Jan 19:** Martin Luther King, Jr. holiday
- **Mar 09-13:** Spring Break
- **Mar 25:** Last day to drop with grade of "W"
- **Apr 03:** Student holiday
- **Apr 29:** Last day of classes
- **Apr 30:** Study day
- **May 05:** Final Examination at 8:30-10:30

9. **ATTENDANCE.** Students are obligated to attend class regularly. Absences, excused or not, do not absolve a student from the responsibility of completing all assigned work promptly. If you miss a class, obtain notes from your peers and learn of topics discussed and announcements made.

*Per university policy, attendance is reported during midterm and final grading.*

Absences will be excused for documented cases of:

(a) incapacitating illness,
(b) official representation of the University (excuses for official representation of the University should be obtained from the official supervising the activity),
(c) death of a close relative, and
(d) religious holidays (see [www.interfaithcalendar.org](http://www.interfaithcalendar.org)).

All absences are unexcused unless documented otherwise. It is the student’s responsibility to notify the professor and provide formal documentation.

10. **DISCLAIMER.** The schedule, policies, procedures and assignments in this course are subject to change in the event of extenuating circumstances and/or ensuring better student learning.
11. **LIST OF SUGGESTED EXERCISES.** Calculator is allowed in Section 8.1 only. Elsewhere, one ought to solve the problems without a calculator and thus leave all final answers in exact form, notwithstanding the instructions of the textbook problems. Rationalisation is not required. Round to 4 decimal places when approximating.

**Chapter 2: Introduction to Equations and Inequalities of Two Variables**
- Section 2.6: 1-55* (Section 2.6 serves as a preface to Section 8.2.)

**Chapter 6: Radian and Degree Measure of Angles**
- Section 6.1: 1-66*, 69, 75-80, 85-95
- Section 6.2: 1-14, 15, 17, 19, 23, 34, 37, 45-50, 58-67, 69
- Section 6.3: 1-5, 9, 11, 13, 14, 16-48, 49(a)-63(a), 50(b)-53(b), 55(b), 59(b)-61(b), 64-82 (need not verify), 91, 93, 94-99 (need not verify)
- Section 6.4: 6, 7, 10, 11, 13-16, 22, 23, 33, 35
- Section 6.5: 4-6, 10-12, 17, 18, 20, 23, 24, 25, 29, 40-51*, 52, 55, 56, 59, 62, 63, 64, 68, 69

**Chapter 7: Trigonometric Identities and Equations**
- Section 7.1: 1-25*
- Section 7.2: 1-68*, 88-93 and supplementary handout
- Section 7.3: 1-12*, 19-24
- Section 7.4: 1-33*, 35-39, 59-71, 73

**Chapter 8: Additional Topics in Trigonometry**
- Section 8.1: 1-92*
- Section 8.2: 1-52* (also, confer Section 2.6)
- Section 8.4: 1-10*, 17-36*, 39-50*, 59, 60, 62-64
- Section 8.5: 1-46*
- Section 8.6: 1-34*, 39-48*

Key: *odd-numbered exercises only