# IMPERIAL COMMUNITY COLLEGE DISTRICT
## IMPERIAL VALLEY COLLEGE

## COURSE OUTLINE

**DIVISION:**  Science, Mathematics, and Engineering          **DATE:** October 12, 2005

**COURSE TITLE:**    Trigonometry     **COURSE NO.:** MATH 140          **UNITS:**   3
        **LEC HRS.**   3   **LAB HRS.**     **HRS. TBA**

If cross-referenced, please complete the following

**COURSE NO.(s) _ COURSE TITLE**

**I. COURSE/CATALOG DESCRIPTION:**
Right angle trigonometry and applications, unit circle trigonometry, graphs of trigonometric functions, inverse trigonometric functions, trigonometric identities, solving triangles using the Laws of Sines and Cosines, and polar coordinates.

**II. A. PREREQUISITES, if any:**
Math 090 - Intermediate Algebra with a grade of C or better.

**B. COREQUISITES, if any:**

**C. RECOMMENDED PREPARATION, if any:**

**III. GRADING CRITERIA:**

   X    Course must be taken on a "letter-grade" basis only.
        Course may be taken on a "credit" basis or for a letter grade.
        Course must be taken on a "credit" basis only.

**IV. MEASURABLE COURSE OBJECTIVES AND MINIMUM STANDARDS FOR GRADE OF "C":**

**Student will be able to:**
1. Define the six trigonometric functions using right triangle and unit circle definitions.
2. Express angles in degrees and radians.
3. Graph trigonometric functions, including those involving vertical and horizontal translations.
4. Solve triangles using the Law of Sines and Law of Cosines, including ambiguous cases.
5. Verify trigonometric identities, including sum and difference formulas, half-angle and power-reducing formulas.
6. Define and graph inverse trigonometric functions.
7. Solve trigonometric equations.
8. Graph polar and equations.
9. Solve application problems.

**V. CORE CONTENT TO BE COVERED IN ALL SECTIONS:**

| CORE CONTENT | APPROX. % OF COURSE |
|---|---|
| The Definitions of Trigonometric Functions | 5% |
| Angles in Degrees and Radians | 5% |
| Graphing Trigonometric Functions | 10% |
| Law of Sines and Cosines | 10% |
| Trigonometry Identities | 15% |
| Inverse Trigonometric Functions | 10% |
| Trigonometry Equations | 15% |
| Polar Coordinates and Equations | 10% |
| Applications | 20% |

**VI.  METHOD OF EVALUATION TO DETERMINE IF OBJECTIVES HAVE BEEN MET BY STUDENTS:** (check all that apply)

| | | | | | |
|---|---|---|---|---|---|
| **Essay** | __X__ | **Class Activity** | __X__ | **Written Assignments** | __X__ |
| **Problem Solving Exercise** | __X__ | **Final Exam** | __X__ | **Oral Assignments** | __X__ |
| **Skill Demonstration** | __X__ | **Objective** | __X__ | **Quizzes** | __X__ |
| **Other** | | | | | |

**VII.  INSTRUCTIONAL METHODOLOGY:** (Check all that apply)

| | | | | | |
|---|---|---|---|---|---|
| **Lecture** | __X__ | **Discussion** | __X__ | **Demonstration** | __X__ |
| **Audio Visual** | __X__ | **Group Activity** | __X__ | **Lab Activity** | __X__ |
| **Computer Assisted Instruction** | __X__ | **Individual Simulation/ Assistance** | __X__ | **Case Study** | __X__ |
| **On-Line** | __X__ | | | | |

**Two (2) hours of independent work done out of class per each  hour of lecture or class work, or 3 hours lab, practicum, or the equivalent per unit.**  __X__

**Other**

**VIII.  TEXTBOOK(S) AND SUPPLEMENT(S)**

Aufmann, Richard N. et al. College Trigonometry, 5th edition. Boston, MA: Houghton Mifflin, 2004.

McKeague, Charles P. Trigonometry. 5th edition.  CA: Brooks/Cole, 2003.

Larson, Ron and Robert Hostetler. Trigonometry, 6th edition. Boston, MA: Houghton Mifflin, 2004.

OR any comparable text.