College of San Mateo
Official Course Outline

1. COURSE ID: ELEC 231  
   TITLE: Basic Applied Electronics Mathematics
   Units: 2.0 units  
   Hours/Semester: 32.0-36.0 Lecture hours
   Method of Grading: Letter Grade Only
   Prerequisite: eligible for or completion of MATH 110 or 111.

2. COURSE DESIGNATION:
   Degree Credit
   Transfer credit: CSU

3. COURSE DESCRIPTIONS:
   Catalog Description:
   Basic principles: algebra, trigonometry, logarithms, graphing, and scientific calculator use as applied to
   DC/AC circuits.

4. STUDENT LEARNING OUTCOME(S) (SLO'S):
   Upon successful completion of this course, a student will meet the following outcomes:
   1. Develop a basic working skill in whole numbers, decimals and fractions.
   2. Apply rules of signed number arithmetic to perform addition, subtraction, multiplication and division
      problems.
   3. Convert fixed notation numbers into powers of ten, scientific and engineering notation formats.
   4. Demonstrate the ability to convert all numbers into metric prefix format.
   5. Convert complex real number expressions into a simplified form.
   6. Develop a working skill in algebra, including the combination of real and literal numbers into terms,
      expressions and equations.
   7. Solve for literal numbers in algebraic equations using recognized algebraic procedures.
   8. Convert a given literal number formula or equation in order to solve for different values.
   9. Develop a working skill in solving problems in right triangle trigonometry.
   10. Demonstrate proper graphing techniques as applies to industry-recognized procedures.

5. SPECIFIC INSTRUCTIONAL OBJECTIVES:
   Upon successful completion of this course, a student will be able to:
   1. Develop a basic working skill in whole numbers, decimals and fractions.
   2. Apply rules of signed number arithmetic to perform addition, subtraction, multiplication and division
      problems.
   3. Convert fixed notation numbers into powers of ten, scientific and engineering notation formats.
   4. Demonstrate the ability to convert all numbers into metric prefix format.
   5. Convert complex real number expressions into a simplified form.
   6. Develop a working skill in algebra, including the combination of real and literal numbers into terms,
      expressions and equations.
   7. Solve for literal numbers in algebraic equations using recognized algebraic procedures.
   8. Convert a given literal number formula or equation in order to solve for different values.
   9. Develop a working skill in solving problems in right triangle trigonometry.
   10. Demonstrate proper graphing techniques as applies to industry-recognized procedures.

6. COURSE CONTENT:
   Lecture Content:
   1. Basic mathematics operations, including whole numbers, decimals and fractions. (Objective 1)
   2. Use of rules of signed number arithmetic to perform addition, subtraction, multiplication and division
      problems. (Objective 2)
   3. Conversion of fixed numbers into powers of ten, scientific, engineering and metric prefix formats.
      (Objectives 3, 4)
   4. Conversion of complex real number expressions into their most simplified form. (Objective 5)
   5. Using the rules of algebra to solve algebraic expressions and equations. (Objectives 6, 7)
   6. Using algebraic techniques to convert a given formula to solve for a different literal number, embedded in
      the formula. (Objective 8)
   7. Develop a working skill in solving right triangle trigonometry problems as applies to electronics
calculations. (Objective 9)
8. Graphing techniques and procedures as applies to industry-recognized documentation procedures. (Objective 10)

7. REPRESENTATIVE METHODS OF INSTRUCTION:
   Typical methods of instruction may include:
   A. Other (Specify): Includes lecture and group discussion relating to the topics being considered. Weekly reading and homework will be assigned.

8. REPRESENTATIVE ASSIGNMENTS
   Representative assignments in this course may include, but are not limited to the following:
   Writing Assignments:
   Weekly worksheets and handouts.
   Reading Assignments:
   Weekly reading assignments from text.

9. REPRESENTATIVE METHODS OF EVALUATION
   Representative methods of evaluation may include:
   A. Evaluation will be based on satisfactory performance on homework activities, section tests and a final exam. The final exam will be used to determine competency to progress to the next level.

10. REPRESENTATIVE TEXT(S):
    Possible textbooks include:

    **Origination Date:** April 2016
    **Curriculum Committee Approval Date:** May 2016
    **Effective Term:** Fall 2016
    **Course Originator:** Steven Gonzales