1. **COURSE ID:** ELEC 231   **TITLE:** Basic Applied Electronics Mathematics
   Units: 2.0 units **Hours/Semester:** 32.0-36.0 Lecture hours; and 64.0-72.0 Homework hours
   Method of Grading: Letter Grade Only
   Recommended Preparation:
       MATH 110

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)

Lab Content:
    No lab

7. **REPRESENTATIVE METHODS OF INSTRUCTION:**
Typical methods of instruction may include:
    A. Lecture
    B. 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. Class Participation
    B. Class Work
    C. Exams/Tests
    D. Homework
    E. Quizzes
    F. Written examination
    G. 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:
    A. Deem. *Electronics and Computer Mathematics*, 8th ed. -, 2006

Origination Date: November 2021
Curriculum Committee Approval Date: February 2022
Effective Term: Fall 2022
Course Originator: Steven Gonzales