

CATALOG INFORMATION

Dept and Nbr: ELEC 90B      Title: ELECTRONIC MATH 2  
Full Title: Electronic Mathematics 2  
Last Reviewed: 11/3/2003

| Units   |      | Course Hours per Week |      | Nbr of Weeks | Course Hours Total |       |
|---------|------|-----------------------|------|--------------|--------------------|-------|
| Maximum | 3.00 | Lecture Scheduled     | 3.00 | 17.5         | Lecture Scheduled  | 52.50 |
| Minimum | 3.00 | Lab Scheduled         | 0    | 17.5         | Lab Scheduled      | 0     |
|         |      | Contact DHR           | 0    |              | Contact DHR        | 0     |
|         |      | Contact Total         | 3.00 |              | Contact Total      | 52.50 |
|         |      | Non-contact DHR       | 0    |              | Non-contact DHR    | 0     |

Total Out of Class Hours: 105.00

Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable  
Grading: Grade Only  
Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP  
Also Listed As:  
Formerly:

**Catalog Description:**  
Fundamental operations of trigonometry, periodic functions, harmonics, vectors, phasor algebra as applied to a series, parallel, series parallel, and bridge circuits. Includes a discussion of logarithms, decibels, and transients, and binary math.

**Prerequisites/Corequisites:**  
Course Completion of ELEC 90A OR Course Completion of ELEC 191 ( or ELEC 91)

**Recommended Preparation:**  
Course Completion of MATH 27 ( or MATH 57)

**Limits on Enrollment:**

**Schedule of Classes Information:**  
Description: Fundamental operations of trigonometry, periodic functions, harmonics, vectors, phasor algebra as applied to a series, parallel & series parallel & bridge circuits. Includes a discussion of logarithms, decibels, transients, and binary Math. (Grade Only)  
Prerequisites/Corequisites: Course Completion of ELEC 90A OR Course Completion of ELEC 191 ( or ELEC 91)  
Recommended: Course Completion of MATH 27 ( or MATH 57)

Limits on Enrollment:

Transfer Credit: CSU;

Repeatability: Two Repeats if Grade was D, F, NC, or NP

## **ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:**

|                      |                      |                                       |                   |                   |                  |             |
|----------------------|----------------------|---------------------------------------|-------------------|-------------------|------------------|-------------|
| <b>AS Degree:</b>    | <b>Area</b>          |                                       |                   | <b>Effective:</b> | <b>Inactive:</b> |             |
|                      | B                    | Communication and Analytical Thinking |                   | Fall 1981         | Spring 2011      |             |
| <b>CSU GE:</b>       | MC                   | Math Competency                       |                   |                   |                  |             |
|                      | <b>Transfer Area</b> |                                       |                   | <b>Effective:</b> | <b>Inactive:</b> |             |
| <b>IGETC:</b>        | <b>Transfer Area</b> |                                       |                   | <b>Effective:</b> | <b>Inactive:</b> |             |
| <b>CSU Transfer:</b> | Transferable         |                                       | <b>Effective:</b> | Fall 1981         | <b>Inactive:</b> | Spring 2011 |
| <b>UC Transfer:</b>  |                      |                                       | <b>Effective:</b> |                   | <b>Inactive:</b> |             |

**CID:**

**Certificate/Major Applicable:**

Both Certificate and Major Applicable

## **COURSE CONTENT**

### **Outcomes and Objectives:**

Upon successful completion of the course the student will be able to:

1. Analyze vectors graphically and mathematically.
2. Identify and analyze periodic functions.
3. Calculate electronic circuit problems using phasor algebra.
4. Apply logarithms to AC circuits.
5. Calculate bridge circuits with loop equations and Thevinin's Theorem.
6. Identify mathematical functions concepts related to computer circuitry.

### **Topics and Scope:**

1. Vectors.
2. Periodic functions.
3. Phasor algebra.
4. AC circuits.
  - a. series
  - b. parallel
  - c. series - parallel
5. Logarithms with applications.
6. Math for the computer.
7. Bridge circuits - loop equations and Thevinin's Theorem.

### **Assignment:**

1. Skill exercises: numerical problems applied to electronic circuits.
2. Problem solving assignments: numerical problems in preparation for application exercises.

3. Four to eight quizzes; midterm; final exam.
4. Reading in assigned text: 30-35 pages per week.

### Methods of Evaluation/Basis of Grade:

**Writing:** Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments are more appropriate for this course.

Writing  
0 - 0%

**Problem Solving:** Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems

Problem solving  
40 - 60%

**Skill Demonstrations:** All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

None

Skill Demonstrations  
0 - 0%

**Exams:** All forms of formal testing, other than skill performance exams.

Multiple choice, True/false, Matching items, Completion

Exams  
40 - 60%

**Other:** Includes any assessment tools that do not logically fit into the above categories.

None

Other Category  
0 - 0%

### Representative Textbooks and Materials:

Kramer, Arthur D. Mathematics for Electricity & Electronics. Delmar, 2002.