

**ELEC 66 Course Outline as of Fall 1981****CATALOG INFORMATION**

Dept and Nbr: ELEC 66 Title: TESTS &amp; MEASUREMENTS

Full Title: Tests &amp; Measurements/Troubleshooting

Last Reviewed: 10/13/2003

Units	Course Hours per Week		Nbr of Weeks		Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	2.00	17.5	Lab Scheduled	35.00
		Contact DHR	1.00		Contact DHR	17.50
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 210.00

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:**

Operation, applications and limitations of analog voltmeters, digital voltmeters, signal generators, and oscilloscopes. Construction of a transistor AM receiver to be used as a vehicle for troubleshooting. Circuit analysis at the block and component level is evaluated. Troubleshooting techniques and procedures are covered in general and then applied to the AM radio using standard test equipment.

**Prerequisites/Corequisites:**

ELEC 62 completed with a grade of "C" or better.

**Recommended Preparation:****Limits on Enrollment:****Schedule of Classes Information:**

Description: Operation, applications & limitations of analog voltmeters, digital voltmeters, signal generators & oscilloscopes. Construction of a transistor AM receiver to be used as a troubleshooting vehicle. Circuit analysis at the block & component level evaluation. Troubleshooting techniques & procedures. (Grade Only)

Prerequisites/Corequisites: ELEC 62 completed with a grade of "C" or better.

Recommended:

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>			Effective:	Inactive:
<b>CSU GE:</b>	<b>Transfer Area</b>			Effective:	Inactive:
<b>IGETC:</b>	<b>Transfer Area</b>			Effective:	Inactive:
<b>CSU Transfer:</b>	Transferable	Effective:	Fall 1981	Inactive:	Fall 2009
<b>UC Transfer:</b>		Effective:		Inactive:	

**CID:**

**Certificate/Major Applicable:**

Certificate Applicable Course

## **COURSE CONTENT**

**Outcomes and Objectives:**

The students will be able to:

1. Demonstrate correct operation of standard test equipment.
2. Identify applications and limitations of standard test equipment.
3. Construct a functioning AM transistor receiver.
4. Identify the functions of each block in a block diagram of an AM receiver.
5. Analyze the schematic diagram of a AM receiver to the component level.
6. Identify troubleshooting techniques and procedures.
7. Demonstrate troubleshooting using a transistor AM receiver.

**Topics and Scope:**

1. Oscilloscopes.
  - A. Types and operation.
  - B. Applications and limitations.
2. Voltmeters (analog and digital).
  - A. Comparisons.
  - B. Operations.
  - C. Applications and limitations.
3. Signal Generators.
  - A. Audio versus R.F.
  - B. Function generators.
  - C. Operation.
  - D. Applications and limitations.
4. AM Radio Construction.

- A. Layout.
  - B. Component identification.
  - C. Alignment.
5. AM Radio Operation.
    - A. Block diagram - function of each stage.
    - B. Stage analysis - function of each component.
  6. Troubleshooting (theory).
    - A. Divide by two process.
    - B. Signal tracing.
    - C. Troubleshooting techniques.
  7. Troubleshooting (lab).
    - A. Insert problems into student radios.
    - B. Troubleshooting reports.

**Assignment:**

1. Written and essay assignments.

**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 and skill demonstrations 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, Lab reports, Quizzes

Problem solving  
20 - 50%

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

Class performances, Performance exams

Skill Demonstrations  
10 - 40%

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

Completion

Exams  
20 - 50%

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

None

Other Category  
0 - 0%

## **Representative Textbooks and Materials:**