

ELEC 61L Course Outline as of Summer 2008**CATALOG INFORMATION**

Dept and Nbr: ELEC 61L Title: FUND ELEC CIRC LAB

Full Title: Fundamental Circuits Lab

Last Reviewed: 7/16/2001

| Units | | Course Hours per Week | | Nbr of Weeks | Course Hours Total | |
|---------|------|-----------------------|------|--------------|--------------------|-------|
| Maximum | 2.00 | Lecture Scheduled | 1.00 | 17.5 | Lecture Scheduled | 17.50 |
| Minimum | 2.00 | Lab Scheduled | 3.00 | 17 | Lab Scheduled | 52.50 |
| | | Contact DHR | 1.00 | | Contact DHR | 17.50 |
| | | Contact Total | 5.00 | | Contact Total | 87.50 |
| | | Non-contact DHR | 0 | | Non-contact DHR | 0 |

Total Out of Class Hours: 35.00

Total Student Learning Hours: 122.50

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:

Theory of semiconductors and their associated circuits, including vacuum tube. Application of alternating and direct current theory to these devices.

Prerequisites/Corequisites:

Course Completion or Current Enrollment in ELEC 61

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

Description: Semiconductors. (Grade Only)

Prerequisites/Corequisites: Course Completion or Current Enrollment in ELEC 61

Recommended:

Limits on Enrollment:

Transfer Credit:

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

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

| | | | |
|----------------------|----------------------|------------|-----------|
| AS Degree: | Area | Effective: | Inactive: |
| CSU GE: | Transfer Area | Effective: | Inactive: |
| IGETC: | Transfer Area | Effective: | Inactive: |
| CSU Transfer: | | Effective: | Inactive: |
| UC Transfer: | | Effective: | Inactive: |

CID:

Certificate/Major Applicable:

Certificate Applicable Course

COURSE CONTENT

Outcomes and Objectives:

The student will be able to:

1. analyze basic electronic circuits and make AC and DC measurements with an oscilloscope, VTVM AND VOM.
2. evaluate the performance of these fundamental circuits and assemble these findings in the form of a standardized laboratory report.
3. arrange, assemble and assess graphs from measurement data to illustrate the performance of specific circuits.

Topics and Scope:

1. AC-DC superposition.
2. Diode characteristics - full and half wave.
3. Rectification and filters.
4. Rectification and filters (cont.).
5. Common emitter amplifier.
6. Common emitter load line - bias.
7. Common emitter design.
8. Common emitter coupling and loading.
9. Beta independent amplifier.
10. Common collector amplifier.
11. Common base amplifier - frequency response.
12. Triode amplifiers.
13. JFET amplifier.
14. Series resonance.
15. Parallel resonance.
16. Oscillator - basics.

Assignment:

Lab Reports:

1. The diode

2. Diode rectifier circuits
3. Capacitor input filter
4. The diode limiter
5. Testing transistor diode junctions
6. Base biasing
7. Emitter biasing
8. Voltage divider biasing
9. Collector feedback biasing
10. Common emitter amplifier
11. Emitter follower
12. Common base amplifier
13. FET amplifiers
14. Series resonance
15. Parallel resonance

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.

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|-------------|--------------------|
| Lab reports | Writing 5 - 10% |
|-------------|--------------------|

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

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| Lab reports | Problem solving 65 - 85% |
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Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

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|-------------------|----------------------------------|
| HANDS-ON LAB TEST | Skill Demonstrations 10 - 25% |
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Exams: All forms of formal testing, other than skill performance exams.

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| None | Exams 0 - 0% |
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Other: Includes any assessment tools that do not logically fit into the above categories.

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| None | Other Category 0 - 0% |
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Representative Textbooks and Materials:

Experiments in Electronic Devices, 5th Ed., Howard Berlin: Prentice Hall, 1999.