Solid State Circuits CETT 1441

LAMAR INSTITUTE OF TECHNOLOGY

INSTRUCTOR CONTACT INFORMATION

Instructor:	Minus Hargrave
Email:	mjhargrave@lit.edu
Office Phone:	409-247-4883
Office Location:	PATC Room 209
Office Hours:	10:00am – 11:00am TR other times on office door

CREDIT

4 Semester Credit Hours (3 hours lecture, 4 hours lab)

MODE OF INSTRUCTION

Hybrid

PREREQUISITE/CO-REQUISITE:

Prerequisite CETT 1403 & CETT 1405

COURSE DESCRIPTION

A study of various devices incorporated in circuits and their applications. Emphasis on circuit construction, measurement, and analysis.

COURSE OBJECTIVES

Upon completion of this course, the student will be able to

Analyze circuit operation with various semiconductor device application.

Measure, test, and troubleshoot circuits containing various semiconductor devices.

Describe the AC small signal development from input to output of a FET voltage follower/configuration.

Describe the AC small signal development from input to output of a BJT push-pull amplifier.

REQUIRED TEXTBOOK AND MATERIALS

Solid State Devices and Systems by Gary Rockis, American Technical Publishers ISBN# 978-0-8269-1637-2

ATTENDANCE POLICY

If you are not here that day then you are absent. There are no excused absences.

If you miss MORE THAN 20% of classes you will receive an F for the semester.

(Example: 30 days of class = 6 days. 7th day = F)

Approved: Initials/date

DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process by the specified drop date as listed on the Academic Calendar. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

STUDENT EXPECTED TIME REQUIREMENT

For every hour in class (or unit of credit), students should expect to spend at least two to three hours per week studying and completing assignments. For a 3-credit-hour class, students should prepare to allocate approximately six to nine hours per week outside of class in a 16-week session OR approximately twelve to eighteen hours in an 8-week session. Online/Hybrid students should expect to spend at least as much time in this course as in the traditional, face-to-face class.

COURSE CALENDAR

DATE	TOPIC	READINGS (Due on this Date)	ASSIGNMENTS (Due on this Date)
Week 1 8-27	Course introduction and policies	Class policies	Handouts
Week 2/3 9-3	Safety/PC Board Construction and Repair	Chapters 1/2	Labs and As assigned
Week 4/5 9-17	Semiconductor Diodes	Chapter 3	Labs and As assigned
Week 6/7 10-1	DC Power Supplies-Single Phase	Chapter 4	Labs and As assigned
Week 8 10-15	Solid State Transducers	Chapter 5 CLS/EXM 05-01,02 Due 2-9-2025	Labs and As assigned
Week 9/10	Transistor as a DC Switch	Chapter 6 CLS/EXM 06-01,02 Due 3-2-2025	Labs and As assigned
Week 11 11-5	Silicon Controlled Rectifiers	Chapter 7	Labs and As assigned
Week 12 11-12	Triac, Diac, and Unijunction Transistor	Chapter 8	Labs and As assigned
Week 13 11-19	Transistor as an AC Amplifier	Chapter 9 CLS/EXM 09-01,02 Due 4-8-2025	Labs and As assigned
Week 14 11-26	Field-Effect Transistor and Multistage Amplifier	Chapter 10	Labs and As assigned
Week15/16 12-3	Integrated Circuit	Chapter 11/12 CLS/EXM (555)(Op-Amp) Due 5-4-2025	Labs and As assigned

	Due dates are subject to change. Refer to Blackboard for official due dates.		

COURSE EVALUATION
Final grades will be calculated according to the following criteria:

- Classwork 20% of total grade
- Labwork 20% of total grade
- Quizzes 25% of total grade
- Exams 35% of total grade

GRADING SCALE
90-100 A
80-89 B
70-79 C
60-69 D
below 60 F

LIT does not use +/- grading scales

ACADEMIC DISHONESTY
Students found to be committing academic dishonesty (cheating, plagiarism, or collusion) may receive disciplinary action. Students need to familiarize themselves with the institution's Academic Dishonesty Policy available in the Student Catalog & Handbook at http://catalog.lit.edu/content.php?catoid=3&navoid=80#academic-dishonesty.

TECHNICAL REQUIREMENTS
The latest technical requirements, including hardware, compatible browsers, operating systems, etc. can be online at https://lit.edu/online-learning/online-learning-minimum-computer-requirements. A functional broadband internet connection, such as DSL, cable, or WiFi is necessary to maximize the use of online technology and resources.

DISABILITIES STATEMENT
The Americans with Disabilities Act of 1990 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. LIT provides reasonable accommodations as defined in the Rehabilitation Act of 1973, Section 504 and the Americans with Disabilities Act of 1990, to students with a diagnosed disability. The Special Populations Office is located in the Eagles' Nest Room 129 and helps foster a supportive and inclusive educational environment by maintaining partnerships with faculty and staff, as well as promoting awareness among all members of the Lamar Institute of Technology community. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409)-951-5708 or email

specialpopulations@lit.edu. You may also visit the online resource at Special Populations - Lamar Institute of Technology (lit.edu).

STUDENT CODE OF CONDUCT STATEMENT

It is the responsibility of all registered Lamar Institute of Technology students to access, read, understand and abide by all published policies, regulations, and procedures listed in the *LIT Catalog and Student Handbook*. The *LIT Catalog and Student Handbook* may be accessed at www.lit.edu. Please note that the online version of the *LIT Catalog and Student Handbook* supersedes all other versions of the same document.

AI STATEMENT

Lamar Institute of Technology (LIT) recognizes the recent advances in Artificial Intelligence (AI), such as ChatGPT, have changed the landscape of many career disciplines and will impact many students in and out of the classroom. To prepare students for their selected careers, LIT desires to guide students in the ethical use of these technologies and incorporate AI into classroom instruction and assignments appropriately. Appropriate use of these technologies is at the discretion of the instructor. Students are reminded that all submitted work must be their own original work unless otherwise specified. Students should contact their instructor with any questions as to the acceptable use of AI / ChatGPT in their courses.

STARFISH

LIT utilizes an early alert system called Starfish. Throughout the semester, you may receive emails from Starfish regarding your course grades, attendance, or academic performance. Faculty members record student attendance, raise flags and kudos to express concern or give praise, and you can make an appointment with faculty and staff all through the Starfish home page. You can also login to Blackboard or MyLIT and click on the Starfish link to view academic alerts and detailed information. It is the responsibility of the student to pay attention to these emails and information in Starfish and consider taking the recommended actions. Starfish is used to help you be a successful student at LIT.

ADDITIONAL COURSE POLICIES/INFORMATION

TURNED IN WORK RULES

1. All work will be folded lengthwise with content (sheet # 1) on inside.
2. ***Name, course and section number, and date*** will go on outside. **DO NOT WRITE NAME ON THE INSIDE.**
3. All assignments will be stapled **separately** and turned in separately. (NOT all stapled together.)
4. Multiple choice letter answers are to go in the blank next to the question number.
5. All work will be done in **PENCIL**. **WORK DONE IN INK WILL NOT BE ACCEPTED.**
6. Name and answers must be **legible**.