AC Circuits (CETT 1405 6B1)

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

MODE OF INSTRUCTION
Face to Face

PREREQUISITE/CO-REQUISITE:
CETT 1403

COURSE DESCRIPTION
A study of the fundamentals of alternating current including series and parallel AC circuits, phasors, capacitive and inductive networks, transformers, and resonance.

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

- Apply safety techniques while working on and troubleshooting various circuits and components.
- Demonstrate appropriate use of test equipment.
- Identify various sources of electricity in AC circuits.
- Interpret characteristics of voltage, current, resistance and power in DC circuits.
- Measure voltage, current and resistance in DC circuits using appropriate measuring devices.
- Analyze AC circuits using appropriate mathematical formulas
- Troubleshoot various AC circuits using schematic diagrams.

INSTRUCTOR CONTACT INFORMATION

Instructor:	Weldon Jacobs
Email:	wcjacobs@lit.edu
Office Phone:	409-247-4945
Office Location:	PATC 206
Office Hours:	MW 4:30 - 5, additional hours posted on instructor's office door

REQUIRED TEXTBOOK AND MATERIALS

1. Electronic Fundamentals, 9th edition, ISBN 9780135583739
2. Notebook
3. Calculator (Casio FX 115 ES and higher or TI30 and higher)
4. Pencil (NO WORK WILL BE ACCEPTED IN PEN)

Approved: Initials/date

ATTENDANCE POLICY

Regular attendance in class is important to achieve the educational objectives of the student and the Institute. Class attendance is restricted to those students registered for the course and to the guests invited by the instructor. Persons not properly registered for a course will not be permitted to attend class. Students are not permitted to bring any children to class. Children must not be left unattended on campus. If a student misses more than 25% (approximately 8 classes) of the entire semester, they will earn a grade of "F". There are no excused absences. If you are not in class that day, you will be counted absent.

If you find it necessary to leave class early please plan with me before class starts. Please do not leave the room during lecture. If you do leave, please do not re-enter the room until after lecture. This includes bathroom breaks. Take them before class.

DROP POLICY

If you wish to drop a course, you are responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an "F" in the course.

COURSE EVALUATION

Final grades will be calculated according to the following criteria:

- Exams 80% May include lecture and lab exams
- All other work 20% Classwork, Homework, and Labs

GRADE SCALE

- 90-100 A
- 80-89 B
- 70-79 C
- 60-69 D
- 0-59 F

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.

ARTIFICIAL INTELLIGENCE 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

********NO MAKEUP WORK AND NO LATE WORK WILL BE ACCEPTED.********

CLASSWORK:
Classwork will be done in class or due at the beginning of the next class period if it is a take home. If you are not here that day, or you do not turn the work in, then you will receive a zero.

HOMEWORK:
Homework from questions at end of each chapter of textbook will be assigned. Each homework assignment will be due on the day of the exam. Example. Chapter One homework will be due on the day that Chapter One exam is administered. If it is not turned in by due date, you will receive a zero.

LABWORK:
Lab work will be done in class. If you are not here that day, then you will receive a zero.

Absolutely no talking during an exam. (**no excuses**)

Cell phones are not to be seen during lecture. You may be asked to leave the classroom if they ring. Cell phones **may not** be used as calculators. **No texting** during class.

Make sure that when finished with lab, you turn power off to meters and the lab station, and clean up your work area.

ACADEMIC DISHONESTY:

"Academic dishonesty, which includes but is not limited to cheating on an examination or other academic work to be submitted, plagiarism, collusion, or abuse of resource materials, is subject to disciplinary action.

"Students found responsible for an act or acts of academic dishonesty may be subject to either academic sanctions or disciplinary sanctions. Academic sanctions may include, but are not limited to one or more of the following: performance of additional work, withdrawal from the course with a grade of "F", and/or a reduction of a grade in the course."

Tentative Schedule

DATE	TOPIC	READINGS	ASSIGNMENTS (Due on this Date)
Week 1 8/25-8/29	DC Review	Handouts	DC Circuits Review
Week 2 9/2-9/5	AC Waveforms and Values	Chapter 8	Worksheet One
Week 3 9/8-9/12	AC Waveforms and Values	Chapter 8	8-6, 8-3
Week 4 9/15-9/19	AC Waveforms and Values	Chapter 8	Chapter 8 Exam
Week 5 9/22-9/26	Capacitors	Chapter 9	Series C Worksheet Parallel C Worksheet
Week 6 9/29-10/3	Capacitors	Chapter 9	RC Time Constant Worksheet Chapter Nine Worksheet
Week 7 10/6-10-10	Capacitors	Chapter 9	Chapter 9 Exam
Week 8 10/13-10/17		Spring Break	
Week 9 10/20-10-24	RC Circuits	Chapter 10	RC Worksheet One Worksheet One

Week 10 10/27-10/31	RC Circuits	Chapter 10	Worksheet Like the Exam
Week 11 11/3-11-7	RC Circuits	Chapter 10	Chapter 10 Exam
Week 12 11/10-11/14	L Circuits	Chapter 11 Chapter 12	Series L Worksheet Parallel L Worksheet
Week 13 11/17-11/21	L Circuits RL Circuits	Chapter 11 Chapter 12	Series RL Worksheet Parallel RL Worksheet
Week 14 11/24-11/28	RL Circuits	Chapter 11 Chapter 12	Chapter 11,12 Exam
Week 15 12/1-12/5	RLC Circuits Transformers	Chapter 13 Handouts	Worksheets 1-3
Week 16 12/8-12/12	RLC Circuits Transformers	Chapter 13 Handouts	RLC, Transformer Exam
Week 1 8/25-8/29		Final Exam	