

CETT 1409 — DC-AC Circuits

Frank Phillips College

General Course Information

Credit Hours: 4

Prerequisite

Consult Advisor

Course Description

Fundamentals of DC circuits and AC circuits operation including Ohm's law, Kirchhoff's laws, networks, transformers, resonance, phasors, capacitive and inductive and circuit analysis techniques.

THECB Approval Number15.1201.0000

End-of-Course Outcomes:

1. Construct and analyze DC and AC circuits from simple to complex.
2. Perform test measurements.
3. Utilize a multi meter and oscilloscope to differentiate between two AC signals with respect to voltage, current, and power.

Methods of Evaluation

Category	Percentage
Labs	40%
Participation	10%
Midterm exam	25%
Final exam	25%
Total	100%
Grading System	
A	100-90%
B	80-89%
C	70-79%
D	60-69%

Academic Honesty and Integrity

Students attending Frank Phillips College are expected to maintain high standards of personal and scholarly conduct. Academic dishonesty including, but not limited to, cheating, collusion (working with anyone else to produce work for which you take credit without the professor's permission), utilizing resources such as books and notes for a test without the professor's permission, and plagiarism is considered a serious offense and may result in disciplinary actions including:

- A grade of 0 for the test or assignment
- A semester grade of F for the course
- Administrative withdrawal from the course
- Academic suspension
- Notation of the student's transcript of "Academic Dishonesty."
- ***Faculty members have the right to assign a failing grade to a student who is guilty of academic dishonesty at any point during a semester. Faculty members may prohibit a student from dropping a course when academic dishonesty is discovered. However, if a student has dropped the course in accordance with the rules and dates applied to dropping a course and prior to the discovery of academic dishonesty, the grade of W will stand. Students currently enrolled in a course and students who have completed a course (A, B, C, D, CT, and I) may have a grade changed to an F if academic dishonesty is discovered. The faculty member must notify the student of the change to the final grade within one week of facilitating the change. The student will have the opportunity to appeal the final grade change according to the college policy stated in the catalog.

Class Attendance*

Regular attendance is necessary for satisfactory achievement. Therefore, it is the responsibility of the student to attend class in accordance with requirements of the course as established by the instructor.

Students will be excused from class without penalty when either representing the college in an approved activity or having an approved reason for not attending. Reasons for absences must be approved by the instructor of the course. These exceptions do not relieve the student of the responsibility of making up the missed work as designated by the instructor concerned.

Students who enroll in one or more college-preparatory course(s) because of TSI deficiency will be administratively withdrawn from all classes if the course in which they are excessively absent is their only preparatory course. For a student enrolled in more than one preparatory course, the student may be dropped from only the course affected by absences.

Any student who is absent from classes for the observance of a religious holy day shall be allowed to take an examination or complete an assignment scheduled for that day, provided that proper notification of the absence is given to the instructor of the course missed. The student should notify the instructor within the first fifteen (15) days of the semester that he or she intends to be absent on the specified holy day.

***Classroom Policy and Instructor Expectations:** Please come to class on time; If you can **NOT** attend class, please call FPC at 457-4200 ext. 721 or 875. Failure to call if you can **NOT** attend class will result in an unexcused absence and may affect your grade. Each student will be responsible for all materials covered in class discussions and handouts. When you do receive handouts, it will be necessary for you to keep them in such a manner as to provide comprehensive reference for you to use throughout the duration of the class. If you miss a quiz, you will be required to make it up before the next two classes meet. In the case of the final week, you will have only one session to

make up any work not completed. If you have a cell phone, please turn it off or put it on VIBRATE during class. If you must take a call, please excuse yourself and take it in the hall.

***Attendance Requirements:** Two absences will be allowed without affecting your grade.

Cell Phones and Other Electronic Devices Procedure:

Cell phones and electronic devices in the classroom create a distraction for both students and faculty. Cell phones are also considered suspicious during test taking. Therefore, Frank Phillips College outlines the procedure for handling cell phone usage in a classroom as follows:

1. First Offense: the student will be warned verbally by the instructor to turn off the cell phone or electronic device or by appropriate administrative personnel at distance sites. The instructor will make a notation of the infraction.
2. Second Offense: the student will be asked to leave the class period for the day and will receive zeroes for any work done in class on that day; a student receiving instruction through remote connection at an off-campus site will be required to attend the class face to face in Borger from this class date forward.
3. Third Offense: the student will be administratively withdrawn from the class in which the infraction occurred and will receive no refund for the class.

Students should leave the college's main number with an appropriate contact in case of an emergency.

Borger: (806) 457-4200, ext. 0 or 886-5047 after hours

Dalhart: (806) 244-7669

Perryton: (806) 648-1450

Grievance Policy

If you have a dispute concerning your grade or policies in this class, it is your responsibility to FIRST contact the instructor, either by e-mail or in person, to discuss the matter. Should things remain unresolved after this initial contact, please follow the procedures described in the Academic Policies section of the Frank Phillips College Catalog. In the vast majority of cases, the matter can be resolved at the instructor/student level, and learning to communicate your concerns in a civilized manner is part of the college experience.

Important Information

Frank Phillips College is a Microsoft Office Campus. You must submit your electronic assignments in Microsoft Office programs only. If you do not have Microsoft Office, you may use one of the computer lab sites on campus for your class work.

Scans/Or Core Competencies That Will Be Addressed in the Class

Resources:

Allocates Time
Allocates Money
Allocates Material & Facility Resources

Interpersonal:

Participates as a Member of a Team
Teaches Others
Serves Clients/Customers
Exercises Leadership
Negotiates to Arrive at a Decision
Works with Cultural Diversity

Technology:

Selects Technology
Applies Technology
Maintains & Troubleshoots Technology

Basic Skills:

Reading
Writing
Arithmetic
Mathematics
Listening & Speaking

Information:

Acquires & Evaluates Information
Organizes & Maintains Information
Uses Computers to Process Information

Thinking Skills:

Creative Thinking
Decision Making
Problem Solving
Seeing Things in the Mind's Eye
Knowing How to Learn
Reasoning

Systems:

Understands Systems
Monitors & Corrects Performance
Improves & Designs Systems

Personal Qualities:

Responsibility
Self-Esteem
Sociability
Self-Management
Integrity/Honesty

- Week 1- Orientation & Safety
- Week 2- Electrical Quantities & Ohm's Law
- Week 3- Meters & Batteries
- Week 4- Wire Tables & Conductors and Resistors
- Week 5- Series Circuits, Voltage Dividers
- Week 6- Parallel Circuits and Combination Circuits
- Week 7- Thevenin's Theorem, Impedance Matching and Magnetism, Magnetic Induction
- Week 8- Mid-Term Exam – DC
- Week 9- Trigonometry and Alternating Current
- Week 10- Inductance in AC Circuits & RL Series Circuits
- Week 11- RL Capacitive, Capacitive Circuits
- Week 12- Capacitance in AC Circuits & RC Series Circuits
- Week 13- RC Parallel Circuits & RLC Series Circuits

- Week 14- RLC Parallel, Single Phase Transformers
- Week 15- Review (All Labs Due)
- Week 16- Final Exam- AC