



**Class Reference Number (CRN): 19353**

**Instructor:** Methaq S. Abed, Ph.D., P.E.

**Office:** A226

**Office Hours:** 11-12:15 am MW & 10:30- 11:30 am TR, another time by appointment. [Have your UTEP ID ready to present during the office visit]

**Email:** [msabed@utep.edu](mailto:msabed@utep.edu)

**Class Meeting Schedule:** 4:00-5:20 pm MW

**Class Location:** Liberal Art Building room 211

**Prerequisites:** MATH 1312 (Calculus II)

**Text Book:** Electrical Engineering: Principle and Applications by A. R. Hambley (Sixth Edition, Published by PEARSON)

**References:** 1. Text book

2. Arduino Kit (Elegoo UNO Project Super Starter Kit)

3. Other reference software such as NI Multisim, and LabVIEW

3. Additional Reference materials (notes, web links, etc.) may be handed out in class.

**Course Description:** Electromechanical system requires basic knowledge on electrical circuits and circuit analysis, electronic device, digital system, electromechanics, etc. appropriate for Electrical, Mechanical, Industrial, Civil, Chemical, Computer, Spacecraft engineering and Space science education, etc.

**Course Objective:** This course educates students in both analog and digital circuit analysis in order to build and measure system with various sensors and to develop various concepts learned in Mathematics, Science and Engineering. This course will also improve the ability to identify, formulate and solve engineering problems using basic knowledge, human institution and instinct.



### Topics covered

1. Introduction ( Power, Energy, Current, Voltage, and Circuits) (Chapter 1)
2. Resistance , Capacitance and Inductance (RLC circuits) (Chapter 2)
3. Transients and Sinusoidal signal Analysis and Filters (Chapter 3)
4. Diode, Bipolar and Field –Effect Transistors (Chapter 4)
5. Operational Circuits and Transformers (Chapter 5)
6. Magnetic Circuits and transformers (Chapter 6)
7. DC and AC Machines (Chapter 7)
8. Logic Circuits and Microcontrollers (Chapter 8)
9. Computer Based Instrumentations ( LabVIEW) (Chapter 9)

### Lectures Videos Link:

<https://www.youtube.com/watch?v=Hs33JPY9ziw&list=PLX2gX-ftPVXXAQHPsgcokk4aCHZUKFuho&index=8>

### GRADING PLAN

The final grade for the course will be based on the break given below:

- Mid-terms Exams 45%
- Homework 15%
- Quizzes 10%
- Project 10%
- Final Exam 20 % [Final exam is comprehensive test , for the students who score equal or more than 90% of midterm exams, assignments and projects are exempted from final exam].

There will be 3 midterm exams. All exams must be taken at the scheduled time and date set by the instructor unless prior arrangements are made. ***No makeup exam will be given under any circumstances.*** *If you miss the first or the second exam for an emergency reason, the documents have to be mailed to the instructor with a hard copy to be handed, in this case the grade for the mid- term exams will based on the average of two tests.*

**Homework:**

All students are required to register for the course through MasteringEngineering.

<http://www.pearsonmylabandmastering.com/northamerica/masteringengineering/students/get-registered/index.html>

**Course ID: MEABED10066**

Homework will be assigned through MasteringEngineering. Late homework will be penalized by 33% deduction per day after the deadline. You have 6 trials to submit the correct answer.

**Grading Scale**

Your final grade will be calculated based on the points you have accumulated as follows:

- A      $\geq 90$
- B      $\geq 80$  but  $< 90$
- C      $\geq 70$  but  $< 80$
- D      $\geq 60$  but  $< 70$
- F      $< 60$

**Academic Honesty**

During exams and quizzes, you are not allowed to use any form of wifi enabled electronic device, including cell phones or other electronic communication devices or methods (wrist watches, earbuds, etc.). No wrist watch or other electronic device may be worn.

No electronic version of the book, loose paper print-outs of the book or extra sheets of paper of any kind are allowed unless explicitly mentioned in writing by the instructor. As a part of the zero-tolerance policy, if you have a cellphone or other electronic device capable of communication on your person; or if any proctor sees or hears any electronic device during the exam or if you share your work with someone else, you will be reported to the proper authorities and you may receive a zero on the exam and an F in the class. Other actions including suspension may also be perused.

If you have a disability that requires the use of an electronic device during exams you must have a letter of accommodation from the Center for Accommodations and Support Services (CASS). This accommodation must be coordinated in advance with the instructor.



During exams, you will not be allowed to leave the examination room until you complete the exam. This includes restroom breaks. Students with disabilities must have a letter of accommodation and coordinate this in advance with the instructor.

Instructors and/or proctors may record and/or use their personal cell phones to document activity during the exam. Recording devices may also be located at various locations in the room and may be out of sight of the students. These recordings will be managed according to the UTEP approved regulations for such media.

If you are suspected of scholastic dishonesty you may not be directly confronted about your conduct by the instructor or proctor. You will however, be reported to the Office of Student Conduct and Conflict Resolution (OSCCR) and your exam will not be admissible. Your grade in the class may not be available until OSCCR makes a final ruling, this may adversely impact your ability to enroll in other classes.

If you arrive more than 15 minutes late to an exam, you will not be allowed to enter the examination room.

There will be no makeup exams administered. If you have a university approved excuse, your instructor will have a process for determining how to handle the missing grade outlined in the syllabus. However, no makeup exams will be given.

If you miss more than one exam, the instructor may choose to administratively drop you from the class. This may adversely impact a visa and financial aid.

No food or drinks will be allowed in the examination room.

Departmental policy allows for the use of assigned seats. All students must present their UTEP issued ID prior to and during every exam and may be required to sign in. Not having a UTEP issued ID when asked will result in forfeiture of the exam.

Scholastic dishonesty on homework, lab assignments and all other class assignments will be held to the same standards and requirements of academic honesty as quizzes and exams.

### **Class Attendance Policy**

Attendance is mandatory. Anyone with 5 or more absences will be dropped from the class. A drop for not attending will count toward the State Allowed Six Drop Limit. If you are failing the class at the time of the drop you may also be given a WF designation. Be advised that a drop could adversely impact visa status, financial aid and other programs.

As per UTEP rules, you may be asked to show a UTEP ID at any time during class.

**Harassment Policy**

The department has a zero-tolerance policy for harassment. Engagement in any behavior considered harassment will be reported to the proper authorities. In addition to generally understood forms of harassment, the department also treats the following behavior as harassment:

- Repeated emails and/or calls regarding subjects that have already been addressed. Once a decision has been made or a question answered, a student who continues to ask the same question will be given a warning by the recipient of the email/call. If the student continues, the behavior will be reported. Questions that seek understanding of course material are not harassment; but repeated questions about a grade or an administrative decision are.
- Grades are NOT negotiable, ever. If you believe a grading mistake has been made, you must follow the process described in the UTEP catalog. Any request for a grade elevation that is NOT based on a mistake is considered harassment and will be reported immediately.
- Remaining in an office after the occupant requests you leave is considered harassment and potentially threatening. You will be reported immediately without warning and depending on the severity, may be reported to law enforcement.
- Similar behavior towards department staff, and student advisors will also be treated as harassment, including persistent phone calls, emails, and badgering. Department staff and student advisors are there to help students, and should be treated with due respect.

**ACES & Tutoring Center**

Students are reminded of the tutoring services available in the ACES and the library. These services are provided to you by the University. Check the schedules and make use of the services.

**Allowed Calculators**

The following will be the only calculators allowed in exams:

- Casio: All fx-115 models. Any Casio calculator must contain fx-115 in its model name.
- Hewlett Packard: The HP 33s and HP 35s models, but no others.
- Texas Instruments: All TI-30X and TI-36X models. Any Texas Instruments calculator must contain either TI-30X or TI-36X in its model name.



**CELL PHONES AND PAGERS OFF OR ON VIBRATE!!!!!!!!!!!!!!!!!!!!!!!!!!!!**

**Policy on Cheating**

Students are expected to be above reproach in all scholastic activities. Students who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and dismissal from the university. Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student, or the attempt to commit such acts (Regents= Rules and Regulations, Part One, Chapter VI, Section 3, Subsection 3.2, Subdivision 3.22). Scholastic dishonesty harms the individual, all students, and the integrity of the university, policies on scholastic dishonesty will be strictly enforced.