

KING FAHD UNIVERSITY OF PETROLEUM & MINERALS
Electrical Engineering Department
EE 445 INDUSTRIAL ELECTRONICS (042)

Course Content

1. 555 Timers
2. Power semiconductor devices, Thyristors (SCR, Diacs, Triacs, UJT)
3. Sensors (Temperature sensors, Pressure sensors, etc.)
4. Instrumentation Amplifier, Comparators, Schimit Trigger
5. Some Examples of Industrial Electronic Circuits

Some Reference Books

1. Modern Industrial Electronics (T. J. Maloney)
2. Sensors and Signal Conditioning Circuits (Ramon P. Areny)
3. Design with Operational Amplifier (S. Franco)
4. Electronic Devices (T. Floyd)

Grade Distribution

- Three Major Exams 10 + 10 + 10
- Attendance 4
- Lab (Class performance + Final) 10 + 10
- Project 10
- Final 36

- **Official Excuses:** Any make up will require official excuses. Personal excuses will not be accepted. Excuses must be submitted within a week.
- **Absence:**
 1. University Rule: 6 unexcused absences → Warning; 9 unexcused absences → DN
 2. Every unexcused absence results in -0.5, 8 absences results in 0 out of 4 in the attendance, 9 absences results in DN.
 3. Two late arrival= One absence.

INSTRUCTOR:

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Office Hours: Sat, Sun & Mon, 11:00 – 12:30 PM, or by appointment.

Schedule of Lab Experiments

Week	Name of Exp	Exp No.
1	No exp	
2	555 TIMER: ASTABLE and MONOSTABLE OPERATION	1
3	555 TIMER IN INDUSTRIAL APPLICATIONS	2
4	555 TIMER ADDITIONAL INDUSTRIAL APPLICATIONS	3
5	No Lab	
6	WATER ALERT SYSTEM	4
7	LIGHT DIMMERS AND MOTOR SPEED CONTROL	5
8	UJT AND SCR RELAXATION AND SINUSOIDAL OSCILLATORS	6
9	No Lab	
10	OPTICAL LINK	7
11	HEART MEASUREMENT (BIOFEEDBACK MEASUREMENT CIRCUIT)	8
12	INSTRUMENTATION AMPLIFIERS	9
13	FERROUS MOTION SENSORS	10
14	PRINTED CIRCUIT TECHNIQUES	
15	Lab Final	