



Course Syllabus

Course ID	0902312
Course Title	Digital Electronics
Prerequisite	0902206 Logic Circuits
Time & Date	
Coordinator	-
Instructor	Assistant. Prof. Dr. Takiaddin Al-Smadi Faculty of Engineering E-mail: dsmadi@rambler.ru Telephone: ext.
Office hours	
Course Description	Semiconductor devices and switching characteristics. Logic gates and families Electronics Digital Memory elements and types. Timing circuits . Analog/digital and Digital / analog converters . Pre :0902206
Course Objectives	<ol style="list-style-type: none">1. Ability to characterize TTL and CMOS logic gates2. Ability to design, build and measure multivibrator, schmitt trigger, IC timers and wave generation circuits3. Ability to analyze and characterize A/D and D/A converters and sample and hold circuit.
Course Outcomes	After successfully completing this course, the students should be able to: <ol style="list-style-type: none">(a) An ability to apply knowledge of mathematics, science, and engineering(b) An ability to design and conduct experiments, to analyze and interpret data(c) An ability to design a system, component, or process to meet desired needs(d) An ability to function on multidisciplinary teams program outcomes <ol style="list-style-type: none">(e) An ability to identify, formulate, and solve engineering problems(f) An understanding of professional and ethical responsibility(g) An ability to communicate effectively(h) The broad education necessary to understand the impact of engineering solutions in a global and societal context

	<ul style="list-style-type: none"> (i) A recognition of the need for, and an ability to engage in life-long learning (j) A knowledge of contemporary issues (k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
Course Topics	<ol style="list-style-type: none"> 1. Transistor as a switching elements 2. TTL logic gates specifications 3. Monostable and astable multivibrators 4. Schmitt trigger characteristics 5. Digital to analog and A/D converters 6. IC timers 7. Sweep-voltage waveform 8. Waveform generation 9. Sample and hold circuits 10. Interfacing TTL with CMOS logic gates
Course Text Book	<p>[-Logic Circuits (ISBN: 0070840660) Noel M. Morris: McGraw-Hill Education, 1976</p>
Course References	<ol style="list-style-type: none"> 1. Introduction to digital microelectronic circuits by Gopalan “IRWIN” 2. Digital electronic circuits by Glasford 3. Electronic circuit analysis and design by D. Neamen.

	4. Electronic Circuits by D. Schilling and Belove
Course delivery	Lectures Tutorial Lab Homework Project Computer Internet Industrial Visit
Course Assessment	First Exam : 20% Second Exam: 20% Quizzes : 10% Final Exam : 50% Total : 100%
Updated	Dr. Takiialddin 2009

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO12
CO1											
CO2											
CO3											
CO4											
CO5											
CO6											
CO7											
CO8											
CO9											

	a	b	C	D	e	f	g	h	i	j	K
CO1											
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CO5											
CO6											
CO7											
CO8											
CO9											

ABET a-k Engineering and Technology program outcome

- (a) An ability to apply knowledge of mathematics, science, and engineering
- (b) An ability to design and conduct experiments, to analyze and interpret data
- (c) An ability to design a system, component, or process to meet desired needs
- (d) An ability to function on multi-disciplinary teams
- (e) An ability to identify, formulate, and solve engineering problems
- (f) An understanding of professional and ethical responsibility
- (g) An ability to communicate effectively
- (h) The broad education necessary to understand the impact of engineering solutions in a global and societal context
- (i) A recognition of the need for, and an ability to engage in life-long learning
- (j) A knowledge of contemporary issues
- (k) An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice

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Deliberate plagiarism is a serious act of academic misconduct. Students may be suspended from the University if they are found to have plagiarized their course work. Whether inadvertent or deliberate, plagiarism includes the following:

- (a) word-for-word copying of sentences or whole paragraphs or presenting of substantial extracts from either paper-based or electronic sources the work or data of others that are published or unpublished (such as books, internal reports, and lecture notes or tapes) without clearly indicating their origin;
- (b) using very close paraphrasing of sentences or whole paragraphs without due acknowledgement in the form of reference to the original work;
- (c) submitting another student's work in whole or in part;
- (d) using of another person's ideas, work or research data without acknowledgement;
- (e) copying computer files, algorithms or computer code without clearly indicating their origin;
- (f) submitting work that has been written by someone else on the student's behalf; and
- (g) submitting work that has been derived, in whole or in part, from another student's work by a process of mechanical transformation (e.g., changing variable names in computer programs).