Course Syllabus

Course ID	**0902401**
Course Title	**Digital Communication**
Prerequisite	
Time & Date	**11:00qm – 12:30pm (Room ENG314)**
Coordinator	**-**
Instructor	**. Prof.** E-mail: Telephone: ext.
Office hours	**1:00-2:00 Môn, Wed.**
Course Description	Principles of digital communication : Binary base band and PAM. Pulse code formats. Matched filter detector. Digital signal Correlator Receiver. Power spectra. Error performance. Optimum receiving filters. RF transmission techniques: ASK, BPSK, and BFSK.
Course Objectives	the transmission of information. 2 Understand how to convert analog signals to digital signals (sampling, quantization, and encoding) and study the different encoding techniques (PCM, DM, D-EM, DPCM). Understand the effect of noise and inter-symbol interference on data transmission and the techniques to minimize them(matched filter, correlation receiver, and maximum likelihood decoder, and equalizers) 4. Able to compute the bandwidth and the probability of error for different digital modulation techniques (ASK, FSK, PSK, QPSK, QAM) assuming AWGN. 3. 5. Understand the concept of source entropy, and able to use source coding

Course Outcomes	(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 program outcomes (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
Course Topics	1. Pulse Modulation 9 Hours 2. Baseband Pulse Transmission 6 Hours 3. Signal Space Analysis 3 Hours 4. Passband Digital Transmission: 6 Hours 5. Information Theory: 3 Hours 6. Error Control Coding:

Course Text Book	1. . Communication Systems, Simon Haykin, 4th edition, john Wiley, 2001.
Course References	1- Digital Communications, J. Proakis, 3rd edition, McgrawHill,1995. Modern Digital and Analog Communication Systems, B. P. Lathi, Oxford Press, Digital and Analog Communications, K.S. Shanmugan,Wiley,1979. 4. Digital Communication Systems, P. 5.Understand the concept of source entropy, and able to use source codes
Course delivery	
Course Assessment	First exm 20% Second exm 20% Assessment 10% Final 50%
Updated	Dr. Takialddin AL-Smadi

	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											
CO2											
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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
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(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

Plagiarism

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).