Republic of Iraq

The Ministry of Higher Education

& Scientific Research

بسم الله الرحمن الرحيم

University: Diyala
College: Engineering
Department: Communications
Stage: Fourth
Lecturer name: Ahmed Mohammed Ahmed
Academic Status: Assistant lecturer
Qualification:master
Place of work: Communications

Flow up the implementation of course syllabus

Course Instructor	Ahmed Mohammed Ahmed			
E_mail	**Ahmed_zydi@yahoo.com**			
Title	Information theory			
Course Coordinator	**3 hours weekly**			
Course Objective	Give the students the Fundamentals and principles of Information theory, and understanding principal elements of digital communication system			
Course Description	The subject divided in to several chapters, as follow: Chapter One: Random variable and probability Chapter Two: Information measurement Chapter Three: Channel capacity Chapter Four: Source coding Chapter Five: linear block codes Chapter Six: Cyclic codes Chapter seven: BCH and RS codes Chapter Eight: Convolutional codes Chapter Nine: Trellis Coded Modulation			
Textbook	1-"Digital Communication" by: J.G. Proakis 2-"Modern Digital and Analog Communication Systems" by Lathi			
Course Assessment	First Term	2nd Term	Project	Final Exam
	20 %	20 %	----	60 %
General Notes				

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Course Weekly Outline

week	Date	Topics Covered	Lab. Experiment Assignments	Notes
1	4/10/2015	Random variable and probability		
2	11/10/2015	Self-information		
3	18/10/2015	source entropy and source entropy rate		
4	25/10/2015	mutual information		
5	1/11/2015	channel model BSC and non-symmetric discrete channels		
6	8/11/2015	Optimum threshold setting		
7	15/11/2015	Capacity of continuous channel (Shannon equation).		
8	22/11/2015	Coding of Discrete Sources		
9	29/11/2015	Efficiency and redundancy of a code		
10	6/12/2015	fixed length codes		
11	13/12/2015	variable length codes		
12	20/12/2015	Fano code, Huffiman code		
13	27/12/2015	Shannon code. Nonbinary source coding		
14	3/1/2015	Source extension for higher coding efficiency.		
15	17/1/2016	Channel Coding		
16	24/1/2016	Types of errors		
Half-Year Break				
17	21/2/2016	Probability of undetected errors. Error correcting codes		
18	28/2/2016	Linear block codes		
19	6/3/2016	Hamming weight bound, and error correction capabilities		
20	13/3/2016	Decoding of linear block codes (syndromes).		
21	20/3/2016	Cyclic codes: generator polynomial, nonsystematic code (multiplication)		
22	27/3/2016	systematic cyclic code (division),		
23	3/4/2016	realization logic circuit for encoding logic and decoding of systematic cyclic codes		
24	10/4/2016	BCH codes		
25	17/4/2016	Reed- Solomon codes;		
26	24/4/2016	Encoder and decoder cct. For BCH and RS codes		
27	1/5/2016	Convolution codes,encoding logic		
28	8/5/2016	tree diagram state diagram and		
29	15/5/2016	trellis diagram of convolutional cod		
30	22/5/2016			
31	29/5/2016			

Instructor Signature: **Dean Signature:**