	DNR COLLEGE OF ENGINEERING & TECHNOLOGY, Bhimavaram		
Program Name:	M.Tech. In Digital Electronics & Communication Systems	AY	2018-19
Class/SEM	I-I	Regulation	R16

Course Name: Digital System Design

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	Understand the basic concepts of a Karnaugh Map (“K-map”) for a 2-, 3-, 4-, or 5-variable logic function and to identify the prime implicants, essential prime implicants, and nonessential prime implicants of a function depicted on a K-map.	Understand
CO.2	Perform the minimization of a Boolean function using tabular method, QM algorithm and CAMP algorithm and determine the Adjacencies, DA, CSC, SSMs, EPCs and SPCs	Evaluate
CO.3	Perform the minimization of PLA using IISc algorithm and folding using COMPACT algorithm	Apply
CO.4	Can design a digital circuit by steps involving ASM chart.	Creating
CO.5	Understand the digital system design approaches using CPLDs, FPGAs and ASICs.	Understand
CO.6	Rectify a single fault and multiple faults in combinational circuits using Path sensitization method, Boolean difference method and Kohavi algorithm.	Apply

Course Name: Detection and Estimation Theory

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	The students will be able to apply various methods of signal estimation knowing the significance of each method.	Apply
CO.2	The students will be able to know Cramer-Rao Lower bound in estimating a signal.	Understand
CO.3	By applying suitable criterion the students will be able to detect the signals with minimum errors in the presence of noise.	Apply
CO.4	Observe the estimation of probability Density function	Analyze
CO.5	Estimating the parameters of random process	Analyze

Course Name: Digital Data Communications

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	1Model digital communication system using appropriate mathematical techniques (error probability, constellation diagrams, pharos diagrams).	Understand
CO.2	Understanding the basic concepts of how digital data is transferred across computer networks.	Understand
CO.3	Independently understand basic computer network technology.	Apply
CO.4	Understand and explain Data Communications System and its components	Understand
CO.5	Identify the different types of network topologies and protocols	Apply
CO.6	Enumerate the layers of the OSI model and TCP/IP. Explain the function(s) of each layer	Apply

Course Name: Advanced Digital Signal Processing

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	To understand theory of different filters and algorithms	Analyze
CO.2	To understand theory of multi rate DSP, solve numerical problems and write algorithms	Understand
CO.3	To understand theory of prediction and solution of normal equations	Apply
CO.4	To know applications of DSP at block level	Understand
CO.5	To understand lattice structures for IIR filters	Understand

Course Name: Radar Signal Processing

Upon completion of the course, students will be able to:


CO#	Course Outcomes	Taxonomy
CO.1	Understand the operation of Radar and characteristics of Matched filter for non-white noise	Understand
CO.2	Understand the various detection criterion and types of detectors that can be used to detect the Radar signals in noise.	Understand
CO.3	Understand the waveform design requirements and optimum waveforms for the detection of signals in clutter.	Understand
CO.4	Know the significance and types of pulse compression techniques for analog and digital signals.	Analyzing
CO.5	Understand the requirements of phase coding in Radar and various poly phase codes used for phase coding	Apply

Course Name: Optical Communication Technology

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	Realize basic elements in optical fibers, different modes and configurations	Analyze
CO.2	Analyze the transmission characteristics associated with dispersion and polarization techniques.	Analyze
CO.3	Design optical sources and detectors with their use in optical communication system.	Create
CO.4	Construct fiber optic receiver systems, measurements and coupling techniques.	Create
CO.5	Design optical communication systems and its networks. phase codes used for phase coding	Understand

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Course Name: Coding Theory and Applications

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	Learning the measurement of information and errors.	Remember
CO.2	Obtain knowledge in designing Linear Block Codes and Cyclic codes	Analyze
CO.3	Construct tree and trellis diagrams for convolution codes	Apply
CO.4	Design the Turbo codes and Space time codes and also their applications	create

Course Name: Embedded System Design

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	Apply processor based embedded system design concepts to develop an embedded system.	Apply
CO.2	Analyze and understand the hardware requirement of an embedded system	Analyze
CO.3	Implement a device driver	
CO.4	Design and Test an embedded system using appropriate software tools and hardware	create
CO.5	Design a processor core based embedded system	create

Course Name: Image and Video Processing

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	Know digital image, representation of digital image, importance of image resolution, applications in image processing, the advantages of representation of digital images in transform domain, application of various image transforms.	Analyze
CO.2	Understand and analyze the image enhancement and image degradation, image restoration techniques using spatial filters and frequency domain	Understand
CO.3	Understand and analyze the detection of point, line and edges in images, edge linking and various segmentation techniques and the redundancy in images, various image compression techniques	Understand
CO.4	Describe the video technology from analog color TV systems to digital video systems, how video signal is sampled and filtering operations in video processing.	Understand
CO.5	Describe the general methodologies for 2D motion estimation, various coding used in video processing	Understand

Course Name: Wireless Communications and Networks

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	Understand Cellular communication concepts	Understand
CO.2	Study the mobile radio propagation	Understand
CO.3	Study the wireless network different type of MAC protocols	Understand
CO.4	Evaluate process of Practical Space Diversity Consideration	Evaluating
CO.5	Understand Frequency Domain Channels Sounding	Understand

Course Name: Advanced computer architecture

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	Interpret the performance of a processor based on metrics such as execution time, cycles per instruction (CPI), Instruction count etc	Apply
CO.2	Interpret performance of different pipelined processors	Apply
CO.3	Demonstrate concepts of parallelism in hardware/software	understand
CO.4	Predict the challenges of realizing different kinds of parallelism (such as instruction, data, thread, core level) and leverage them for performance advancement	create
CO.5	Analyze the architecture and functionality of Intel IA-64 ILP in embedded and mobile market .	Analyze

Course Name: Digital Signal Processors and Architectures

Upon completion of the course, students will be able to:

CO#	Course Outcomes	Taxonomy
CO.1	Understand the basics concepts of Digital Signal Processing (DSP) and transforms.	Understand
CO.2	To distinguish between the architectural features of General purpose processors and Programmable DSP processors.	Analyze
CO.3	Understand the architectures of TMS320C54xx devices.	Understand
CO.4	Understand the architectures of ADSP 2100 DSP devices and Black fin Processor.	Understand
CO.5	Interface various devices to DSP Processors.	Understand
CO.6	Able to write simple assembly language programs using instruction set of TMS320C54xx.	Apply

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