COURSE CODE	COURSE NAME	CO	CO STATEMENT
C401	VLSI Design	C401.1	Gain knowledge about operation, fabrication process of various MOS devices and behaviour of different logic circuits
		C401.2	Explain the significance of design rules in the design and layout of CMOS circuits
		C401.3	Analyze the impact of scaling on semiconductor technology and its and subsequent effect on device parameters.
		C401.4	Design of subsystems like combinational and sequential circuits
		C401.5	Interpret different approaches of semi-custom VLSI designs based on FPGA and ASICs
		C401.6	Apply Xilinx tool to design digital VLSI systems from register-transfer or higher level descriptions on FPGA device.
C402	Computer Networks	C402.1	Illustrate the basic Network Models such as OSI & TCP/IP and Network Topologies for Communication
		C402.2	Analyze the different types of Data Transmission Mechanisms in Physical Layer.
		C402.3	Find the errors in data Transmission by means of CRC, Hamming Code etc. based on Various IEEE Standard Protocols.
		C402.4	Identify the shortest path between Transmitter& receiver and determine the proper usage of various routing protocols for different applications.
		C402.5	Illustrate the basic protocols used in transport layer and connection management in TCP and

			UDP protocols
		C402.6	Summarise the network based security for domain based systems those are suitable to email, world wide web applications
C403	Digital Image Processing	C403 .1	Explain the digital image processing concepts and apply different image transform techniques on an image.
		C403 .2	Compare the different intensity transformations and analyse spatial &frequency domain filtering for image enhancement applications.
		C403.3	Illustrate the effects of various noises on images and apply different restoration techniques on them to retrieve the original image.
		C403 .4	Classify different color models for representation of color images and their usage in colour image processing
		C403 .5	Apply various image compression techniques in spatial and frequency domain such as wavelet transforms etc.
		C403 .6	Summarize various image segmentation techniques along with morphological operations.
C404	Computer Architecture & Organization	C404.1	Acquire knowledge about the basic components of a computer, including CPU, memories, and input/output, and their organization.
		C404.2	Acquire the knowledge of representation of data, addressing modes, instructions sets and arithmetic and logical operations are performed by computers
		C404.3	Acquires the basic knowledge in the design of digital logic circuits and apply to computer organization.

		C404.4	Evaluate the differences between organization of memory and memory management hardware
		C404.5	Understand the input-output operations and how data is processed by processor for multiple input and output devices.
		C404.6	Acquire the knowledge on Parallel processing, Pipelining, multiprocessors, interconnection structures.
C405	Electronics switching systems	C405.1	Understand the complete switching system and different types of switching networks.
		C405.2	Get the knowledge about routing hierarchy and different plans.
		C405.3	Evaluate the traffic load parameters and blocking probability of the system.
		C405.4	Understand different concepts of data communication circuits, switching techniques and protocols used in telecommunication.
		C405.5	Analyze the complete architecture of ISDN & BISDN.
		C405.6	Evaluate various DSL technologies and cable networks.
C406	Radar Systems	C406.1	Illustrate basic radar block diagram and discuss the parameter variations of radar range equation.
		C406.2	Compare the Doppler concept in CW and FMCW radars.
		C406.3	Explain the operating principle of MTI radar and tracking techniques.
		C406.4	Classify various types radar antennas and their arrays used in radar communication.
		C406.5	Summarize detection characteristics of radar antennas in presence of noise
		C406.6	Examine the functionalities of various radar receivers, scopes and duplexers in the radar system.
C407	Optical Communication	C407.1	Illustrate the elements of optical communication system and propagation of light through fibers
		C407.2	Analyze the propagation characteristics of fiber and materials used for fabrication process

		C407.3	Identify the different types of optical fiber connectors and splicing techniques are used for optical fibers.
		C407.4	Analyze different types of sources and photo detectors for coupling to various types of fibers.
		C406.5	Interpret the design concepts of various analog and digital optical receiver models.
		C407.6	Develop a point to point fiber optic link and obtain the performance through different measurement techniques.
C408	V L S I Lab	C408.1	Acquire knowledge about the environment of mentor graphics and its design flow
		C408.2	Design of CMOS logic circuits and analyse the parameters
		C408.3	Create the layout of digital circuits
		C408.4	Apply the design rules and analyse their significance on MOS circuits
		C408.5	Ability to design/ develop custom logic circuits/systems
		C408.6	Compare pre layout and post layout simulation result
C409	Microwave Engineering Lab	C409.1	Demonstrate microwave & optical communication system and measurement of relevant performance parameters.
		C409.2	Identify the characteristics of Microwave Sources like Reflex Klystron and Gunn Diode.
		C409.3	Experiment with different waveguide components and microwave junctions operated in X-Band.
		C409.4	Measure the different parameters including Frequency, Attenuation, Impedance, VSWR and analysis of scattering parameters of different microwave components using Microwave bench setup.

		C409.5	Examine the characteristics of LED and Laser diode in a Fiber optic link.
		C409.6	Measure the various parameters including Numerical Aperture, losses and data rate of a given Optical fiber cable.