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 Savitribai Phule Pune University Identification No. PU/PN/Engg./441/2012, DTE CODE:- EN 6794

Class: BE E & TC

Name Of Subject		VLSI Design & Technology	
1	Course Objectives:1	To study HDL based design approach.	
	Course Objectives:2	To learn digital CMOS logic design.	
	Course Objectives:3	To nurture students with CMOS analog circuit designs.	
	Course Objectives:4	To realize importance of testability in logic circuit design.	
	Course Objectives:5	To overview SoC issues and understand PLD architectures with advanced features.	
	Course Outcomes:1	Model digital circuit with HDL, simulate, synthesis and prototype in PLDs.	
	Course Outcomes:2	Understand chip level issues and need of testability.	
	Course Outcomes:3	Design analog & digital CMOS circuits for specified applications.	
	Name Of Subject		Computer Networks
2	Course Objectives:1	Recognize the individual components of the big picture of computer network	
	Course Objectives:2	List the layers of the TCP/IP and OSI model and describe the duties of each layer	
	Course Objectives:3	Define the basic terminology of computer networks	
	Course Objectives:4	To provide students with a theoretical and practical base in computer networks issues	
	Course Objectives:5	Outline the basic network configurations	
	Course Objectives:6	Understand the transmission methods underlying LAN and WAN technologies.	
	Course Outcomes:1	Describe and analyze the hardware, software, components of a network and the interrelations.	
	Course Outcomes:2	Have a basic knowledge of installing and configuring networking applications.	
	Course Outcomes:3	Have a basic knowledge of the use of cryptography and network security	
	Course Outcomes:4	Specify and identify deficiencies in existing protocols, and then go onto select new and better protocols.	
	Course Outcomes:5	Analyze the requirements for a given organizational structure and select the most appropriate networking architecture and technologies	
	Course Outcomes:6	Understand fundamental underlying principles of computer networking	
Name Of Subject		Microwave Engineering	
3	Course Objectives:1	To establish the framework for microwave designing	
	Course Objectives:2	To understand the applications of microwave engineering	
	Course Objectives:3	Carryout the microwave network analysis.	
	Course Outcomes:1	Formulate the wave equation in wave guide for analysis.	
	Course Outcomes:2	To Recognize the utilization of microwave segments and gadgets in microwave applications.	
	Course Outcomes:3	Understand the working principles of all the microwave tubes	
	Course Outcomes:4	Understand the working principles of all the solid state devices	
	Course Outcomes:5	Choose a suitable microwave tube and solid state device for a particular application	
	Course Outcomes:6	Choose a suitable microwave measurement instruments and carry out the required measurements.	
	Name Of Subject		Digital Image Processing
	4	Course Objectives:1	To learn the fundamental concepts of Digital Image Processing
		Course Objectives:2	To study basic image processing operations.
Course Objectives:3		To understand image analysis algorithms	
Course Objectives:4		To expose students to current applications in the field of digital image processing	
Course Outcomes:1		Develop and implement algorithms for digital image processing	
Course Outcomes:2		Apply image processing algorithms for practical object recognition applications	
Name Of Subject		EPD	
	Course Objectives:1	To understand the stages of product (hardware/ software) design and development.	
	Course Objectives:2	To learn the different considerations of analog, digital and mixed circuit design.	
	Course Objectives:3	To be acquainted with methods of PCB design and different tools used for PCB Design.	

5	Course Objectives:4	To understand the importance of testing in product design cycle.
	Course Objectives:5	To understand the processes and importance of documentation
	Course Outcomes:1	Understand various stages of hardware, software and PCB design
	Course Outcomes:2	Importance of product test & test specifications.
	Course Outcomes:3	Special design considerations and importance of documentation.
	Name Of Subject	Mobile Communication(404189)
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	Course Objectives:1	To learn and understand the basic principles of Telecommunication switching, traffic and networks
	Course Objectives:2	To learn and understand basic concepts of cellular system, wireless propagation and the techniques used to maximize the capacity of cellular network.
	Course Objectives:3	To learn and understand architecture of GSM and CDMA system.
	Course Objectives:4	To understand mobile management, voice signal processing and coding in GSM and CDMA system
	Course Outcomes:1	Explain and apply the concepts telecommunication switching, traffic and networks
	Course Outcomes:2	Analyze the telecommunication traffic.
	Course Outcomes:3	Analyze radio channel and cellular capacity.
	Course Outcomes:4	Explain and apply concepts of GSM and CDMA system.
	Name Of Subject	Broadband Communication Systems(404190)
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	Course Objectives:1	To understand the three primary components of a fiber-optic communication system.
	Course Objectives:2	To understand the system design issues and the role of WDM components in advanced light wave systems.
	Course Objectives:3	To understand the basics of orbital mechanics and the look angles from ground stations to the satellite.
	Course Objectives:4	To apply their subject understanding in Link Design.
	Course Outcomes:1	Carry out Link power budget and Rise Time Budget by proper selection of components and check its viability
	Course Outcomes:2	Carry out Satellite Link design for Up Link and Down Link.
	Name Of Subject	Audio Video Engineering(404191)
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	Course Objectives:1	After learning AVE course, students will get benefit to learn and understand the working of real life video system and the different elements of video system plus the encoding/decoding techniques.
	Course Objectives:2	The learners will be groomed up to understand different channel allocations, difference between various systems present in this world, their
	Course Objectives:3	Students will get insight on functioning of individual blocks, different standards of compression and they will be acquainted with different types
	Course Objectives:4	The students will get overview of fundamentals of Audio systems and basics Acoustics
	Course Outcomes:1	To study the analysis and synthesis of TV Pictures, Composite Video Signal, Receiver, Picture Tubes and Television Camera Tubes.
	Course Outcomes:2	To study the various Colour Television systems with a greater emphasis on television standards.
	Course Outcomes:3	To study the advanced topics in Digital Television and High Definition Television
	Course Outcomes:4	To study audio recording systems such CD/DVD recording, Audio Standards, and Acoustics principles.
	Name Of Subject	Biomedical Signal Processing(404192)
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	Course Objectives:1	To understand the basic signals in the field of biomedical.
	Course Objectives:2	To study origins and characteristics of some of the most commonly used biomedical signals, including ECG, EEG, evoked potentials, and EMG.
	Course Objectives:3	To understand Sources and characteristics of noise and artifacts in bio signals.
	Course Objectives:4	To understand use of bio signals in diagnosis, patient monitoring and physiological investigation
	Course Objectives:5	To explore research domain in biomedical signal processing.
	Course Objectives:6	To explore application of established engineering methods to complex biomedical signals problems.
	Course Outcomes:1	The student will be able to model a biomedical system.
	Course Outcomes:2	The student will be able to understand various methods of acquiring bio signals.
Course Outcomes:3	The student will be able to understand various sources of bio signal distortions and its remedial techniques	
Course Outcomes:4	The students will be able to analyze ECG and EEG signal with characteristic feature points.	
Course Outcomes:5	The student will have a basic understanding of diagnosing bio-signals and classifying them.	