Department of Electronics and Communication Engineering

III B.Tech II Semester

SUBJECT: ANTENNAS & PROPAGATION (C303)

After going through this course student will be able

SNO	COURSE OUTCOMES	BT Level
C303.1	Understand the parameter consideration viz antenna efficiency, beam efficiency etc.	1
C303.2	Design antenna and field evaluation under various conditions	5
C303.3	Understand the array system of the different antennas , will gain knowledge of about means of propagation of EM WAVES i.e., free space propagation	1
C303.4	Understand the design issues, operations of fundamental antennas like yagi-uda, horn antenna etc..	1
C303.5	Design a lens structure and also the bench setup for antenna parameter measurements	5

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C303.1	3	2	3	3	3	3	3	1	2	3	2	3	3	3	2
C303.2	2	2	3	3	2	2	2	1	2	3	2	2	2	2	1
C303.3	3	3	3	3	2	1	2	1	2	1	2	2	3	2	1
C303.4	3	3	3	3	2	2	1	1	2	3	2	1	3	2	1
C303.5	3	3	3	3	2	2	2	1	2	3	2	2	3	2	1
Average	**2.8**	**2.6**	**3**	**3**	**2.2**	**2**	**2**	**1**	**2**	**2.6**	**2**	**2**	**2.8**	**2.2**	**1.2**

Department of Electronics and Communication Engineering

III B.Tech II Semester

SUBJECT: DIGITAL SIGNAL PROCESSING (C314)

After going through this course the

SNO	COURSE OUTCOMES	BT Level
C314.1	Students will be able to understand LTI system characteristics and Multirate signal processing.	2
C314.2	Students will be able to represent inter-relationship between DFT and various transforms.	2
C314.3	Students will be able to design a digital IIR filter for a given specification.	5
C314.4	Students will be able to design a digital FIR filter for a given specification.	5
C314.5	Students will be able to acknowledge the significance of various filter structures and effects of round off errors.	3

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C314.1	3	2	3	3	2	1	-	-	-	2	2	3	3	3	1
C314.2	3	2	3	3	2	1	-	-	-	2	2	3	2	3	1
C314.3	1	3	3	2	2	1	1	-	-	3	2	3	3	1	1
C314.4	3	2	3	3	2	1	-	-	1	2	2	3	3	3	1
C314.5	3	2	3	3	2	1	-	1	-	2	2	3	3	3	1
Average	**3**	**2**	**3**	**3**	**2**	**1**	**1**	**1**	**1**	**2**	**2**	**3**	**3**	**3**	**1**

Department of Electronics and Communication Engineering

III B.Tech II Semester

SUBJECT: VLSI DESIGN (C312)

After going through this course students will be able to

SNO	COURSE OUTCOMES	BT Level
C312.1	Understand operation of a MOS transistor	1
C312.2	Understand down to physical level and relate the knowledge to the development of its operational equations	1
C312.3	Analyze and implement various logic gates and circuits, using MOS Transistors	4
C312.4	Design circuit components and verify their performance using simulation tools	5
C312.5	Design static CMOS Combinational circuits	5

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C312.1	3	2	3	2	2	1	1	-	1	2	2	1	1	1	1
C312.2	3	3	3	2	2	1	1	-	1	1	-	1	1	1	1
C312.3	1	2	2	3	2	3	2	1	-	1	1	-	-	2	3
C312.4	3	3	3	2	2	1	1	-	1	1	-	-	1	1	1
C312.5	3	3	3	2	2	1	1	-	1	1	2	1	1	1	1
Average	**2.6**	**2.6**	**2.8**	**2.2**	**2**	**1.4**	**1.2**	**1**	**1**	**1.2**	**1.67**	**1**	**1**	**1.2**	**1.4**

Department of Electronics and Communication Engineering

III B.Tech II Semester

SUBJECT: EMBEDDED SYSTEM DESIGN (C330)

After going through this course the student will

SNO	COURSE OUTCOMES	BT Level
C330.1	Identify the hardware and software components of an embedded system	2
C330.2	Choose appropriate embedded system architecture for the given application	6
C330.3	Modify programs for optimized performance of an embedded system and validate	5
C330.4	Describe the basics of OS and RTOS	2
C330.5	Understand embedded firmware design approach	1

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C330.1	1	2	-	-	1	-	-	-	-	-	-	-	2	1	1
C330.2	-	3	-	-	-	-	-	-	1	-	-	2	1	2	-
C330.3	1	3	3	2	1	-	1	1	1	1	1	1	2	1	1
C330.4	1	3	3	2	-	-	-	-	-	-	-	1	1	1	-
C330.5	1	2	-	-	-	1	-	-	-	-	-	-	1	1	-
Average	**1**	**2.6**	**3**	**2**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**1.33**	**1.4**	**1.2**	**1**

Department of Electronics and Communication Engineering

III B.Tech II Semester

SUBJECT: NON-CONVENTIONAL ENERGY SOURCES (C331)

After going through this course the student will

SNO	COURSE OUTCOMES	BT Level
C331.1	Identify renewable energy sources and their utilization.	2
C331.2	Understand the basic concepts of solar radiation and analyze the working of solar and thermal systems.	2
C331.3	Understand principles of energy conversion from alternate sources including wind, geothermal, ocean, biomass, biogas and hydrogen.	2
C331.4	Understand the concepts and applications of fuel cells, thermoelectric convertor and MHD generator.	2
C331.5	Identify methods of energy storage for specific applications	2

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C331.1	1	1	1	1	-	-	2	1	1	1	-	1	2	2	1
C331.2	2	1	1	-	1	1	2	-	-	-	-	-	2	1	-
C331.3	2	1	1	-	1	1	2	-	-	-	-	-	2	1	-
C331.4	2	1	1	-	1	1	2	-	-	-	-	-	2	1	-
C331.5	1	1	1	1	-	-	2	-	1	1	1	1	2	2	1
Average	**1.6**	**1**	**1**	**1**	**1**	**1**	**2**	**1**	**1**	**1**	**1**	**1**	**2**	**1.4**	**1**

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III B.Tech II Semester

SUBJECT: DIGITAL SIGNAL PROCESSING LAB (C316)

After going through this course the student will

SNO	COURSE OUTCOMES	BT Level
C316.1	Develop and Implement DSP algorithms in software using a computer language such as C with TMS320C6713 floating point Processor.	5
C316.2	Develop various DSP Algorithms using MATLAB Software package.	5
C316.3	Analyze and Observe Magnitude and phase characteristics (Frequency response Characteristics) of digital IIR-Butterworth, Chebyshev filters.	4
C316.4	Analyze and Observe Magnitude and phase characteristics (Frequency response Characteristics) of digital FIR filters using window techniques.	4
C316.5	Design and Analyze Digital Filters using FDA Tool.	5

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C316.1	3	2	3	3	2	1	-	-	-	2	2	3	3	3	1
C316.2	3	2	3	3	2	1	-	-	-	2	2	3	2	3	1
C316.3	1	3	2	2	1	-	1	-	-	3	1	3	3	1	-
C316.4	3	2	3	3	2	1	-	-	1	2	2	3	3	3	1
C316.5	3	2	3	3	2	1	-	1	-	2	2	3	3	3	1
Average	**2.6**	**2.2**	**2.8**	**2.8**	**1.8**	**1**	**1**	**1**	**1**	**2.2**	**1.8**	**3**	**2.8**	**2.6**	**1**

Department of Electronics and Communication Engineering

III B.Tech II Semester

SUBJECT: E – CAD LAB (C335)

After going through this course the student will

SNO	COURSE OUTCOMES	BT Level
C335.1	Understand the physical design process of Digital Integrated Circuits.	2
C335.2	Describe procedure for designing of programmable circuits.	2
C335.3	Demonstrate the ability to use various EDA tools for digital system design	3
C335.4	Implement various combinational and sequential circuits using VHDL on FPGA.	3
C335.5	Implement schematic and layout of various digital CMOS logic circuits using EDA tools.	3

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C335.1	2	3	1	2	2	-	-	-	-	3	-	3	3	2	-
C335.2	2	3	2	2	2	-	-	-	-	3	-	3	3	2	-
C335.3	2	3	2	3	3	-	-	-	-	3	-	3	3	2	-
C335.4	2	3	2	3	3	1	1	1	1	3	2	3	3	2	1
C335.5	2	3	2	3	3	1	1	1	1	3	2	3	3	2	1
Average	**2**	**3**	**2**	**3**	**3**	**1**	**1**	**1**	**1**	**3**	**2**	**3**	**3**	**2**	**1**

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III B.Tech II Semester

SUBJECT: SCRIPTING LANGUAGES LAB (C332)

After going through this course the student will be able to

SNO	COURSE OUTCOMES	BT Level
C332.1	Outline Functional, Logic and Scripting Programming Language Concept	4
C332.2	Design and test programs to solve mathematical problems	5
C332.3	Develop programs Using Ruby Script	5
C332.4	Develop Programs Using TCL Script	5
C332.5	Develop Programs Using Perl Script	5

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C332.1	2	2	3	2	1	2	1	-	1	-	2	1	2	2	1
C332.2	3	3	3	2	1	2	-	-	1	-	2	1	2	3	1
C332.3	2	3	3	2	2	1	-	1	2	1	3	1	2	3	2
C332.4	2	3	3	2	2	1	-	1	2	1	3	1	2	3	2
C332.5	2	3	3	2	2	1	-	1	2	1	3	1	2	3	2
Average	**2.2**	**2.8**	**3**	**2**	**1.6**	**1.4**	**1**	**1**	**1.6**	**1**	**2.6**	**1**	**2**	**2.8**	**1.6**

Department of Electronics and Communication Engineering

III B.Tech II Semester

SUBJECT: ENVIRONMENTAL SCIENCE (C333)

After going through this course the engineering graduate will

SNO	COURSE OUTCOMES	BT Level
C333.1	Understand technologies on the basis of ecological principles and environmental regulations	1
C333.2	Evaluate technologies on the basis of ecological principles and environmental regulations	6
C333.3	Develop technologies on the basis of ecological principles and environmental regulations	5
C333.4	Understand the impacts of developmental activities and mitigation measures	1
C333.5	Understand the importance of ecological balance for sustainable development	1

MAPPING

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
C333.1	1	1	-	1	2	3	3	2	2	3	2	3	-	-	2
C333.2	-	1	1	1	1	3	3	2	1	3	2	3	-	-	1
C333.3	1	-	1	1	2	3	2	1	2	3	2	3	1	1	2
C333.4	1	1	1	1	2	2	3	2	2	2	1	2	-	-	2
C333.5	1	1	1	2	2	2	3	2	2	3	2	2	-	-	2
Average	**1**	**1**	**1**	**1.2**	**1.8**	**2.6**	**2.8**	**1.8**	**1.8**	**2.8**	**1.8**	**2.6**	**1**	**1**	**1.8**

Department of Electronics and Communication Engineering

III B.Tech II Semester

SUBJECT: ARTIFICIAL INTELLIGENCE (C336)

Upon successful completion of this course, the student shall be able to

SNO	COURSE OUTCOMES	BT Level
C336.1	Demonstrate fundamental understanding of the history of artificial intelligence (AI) and its foundations.	2
C336.2	Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.	2
C336.3	Demonstrate awareness and a fundamental understanding of various applications of AI techniques in intelligent agents, expert systems, artificial neural networks and other machine learning models.	2
C336.4	Demonstrate profciency developing applications in an 'AI language', expert system shell, or data mining tool.	2
C336.5	Demonstrate an ability to share in discussions of AI, its current scope and limitations, and societal implications.	2

MAPPING

CO	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
C336.1	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-
C336.2	2	1	1	1	3	1	-	1	1	1	1	1	2	1	1
C336.3	2	-	1	1	2	-	-	-	-	-	-	-	2	1	-
C336.4	2	-	-	-	2	-	-	-	-	-	-	-	2	1	-
C336.5	2	-	1	1	2	-	-	-	-	-	-	-	2	1	-
Average	**2**	**1**	**1**	**1**	**2.2**	**1**	**-**	**1**	**1**	**1**	**1**	**1**	**2**	**1**	**1**