



**MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE**  
Belavadi, S.R.Patna Taluk, Mandya - 571477  
**Department of Electronics and Communication Engineering**



# **SCHEME 10**

## **YEAR 16-17**



**MAHARAJA INSTITUTE OF TECHNOLOGY MYSORE**  
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**Department of Electronics and Communication Engineering**



Subject: **Management and Entrepreneurship**

Subject Code: **10AL51**

CO's	DESCRIPTION OF THE OUTCOMES
10AL51.1	<b>Comprehend</b> the fundamental concepts of management and entrepreneurship and the social responsibilities of managers and entrepreneur
10AL51.2	<b>Identify</b> entrepreneurial opportunities, support and resource requirements to launch a new venture within legal and formal frame work.
10AL51.3	<b>Evaluate</b> an opportunity and <b>prepare</b> a written business plan emphasizing financing and marketing to communicate business ideas effectively

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10AL51.1	-	-	-	-	-	2	2	2	-	-	-	-	-	-
10AL51.2	-	-	-	-	-	-	-	2	-	-	-	2	-	-
10AL51.3	-	-	-	-	-	-	-	-	-	-	3	-	-	-
<b>CO Average</b>	-	-	-	-	-	<b>2</b>	<b>2</b>	<b>2</b>	-	-	<b>3</b>	<b>2</b>	-	-

Subject: **Digital Signal Processing**

Subject Code: **10EC52**

CO's	DESCRIPTION OF THE OUTCOMES
10EC52.1	<b>Apply</b> the knowledge of Fourier Transform/Series and Z-Transform to understand the frequency domain processing of discrete time signals.
10EC52.2	<b>Analyze</b> the mathematical model of digital filters using different structures.
10EC52.3	<b>Design</b> of various digital filters.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10EC52.1	3	-	-	-	-	-	-	-	-	-	-	-	3	-
10EC52.2	-	3	-	-	-	-	-	-	-	-	-	-	-	-
10EC52.3	3	3	-	-	-	-	-	-	-	-	-	-	2	-
<b>CO Average</b>	<b>3</b>	<b>3</b>	-	-	-	-	-	-	-	-	-	-	<b>2.5</b>	-

Subject: **Analog Communication**

Subject Code: **10EC53**

CO's	DESCRIPTION OF THE OUTCOMES
10EC53.1	<b>Apply</b> the basics of transistor circuits, signals and systems to understand different analog modulation techniques, random process.



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<b>10EC53.2</b>	<b>Analyse</b> the different modulation techniques in time and frequency domain.
<b>10EC53.3</b>	<b>Apply</b> the knowledge gained from modulation and Demodulation techniques in designing the transmitter and receiver system.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC53.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC53.2</b>	-	3	-	-	-	-	-	-	-	-	-	-	-	-
<b>10EC53.3</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	2
<b>CO Average</b>	<b>2</b>	<b>2.5</b>	-	-	-	-	-	-	-	-	-	-	<b>2</b>	<b>2</b>

Subject: **Microwave and Radar**

Subject Code: **10EC54**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC54.1</b>	<b>Apply</b> the EM wave theory to understand the characteristics and working principle of transmission lines and radar
<b>10EC54.2</b>	<b>Analyse</b> microwave devices using different network parameters.
<b>10EC54.3</b>	<b>Apply</b> the principles of Radar and signal processing techniques for recognizing variety of Targets.
<b>10EC54.4</b>	<b>Evaluate</b> the performance of microwave transmission lines and improve them using single and double stub matching techniques.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC54.1</b>	3	-	-	-	-	-	-	-	-	-	-	-	3	-
<b>10EC54.2</b>	-	3	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC54.3</b>	3	2	-	-	-	-	-	-	-	-	-	-	3	-
<b>10EC54.4</b>	3	3	-	-	-	-	-	-	-	-	-	-	3	-
<b>CO Average</b>	<b>3</b>	<b>2.66</b>	-	-	-	-	-	-	-	-	-	-	<b>2.75</b>	-

Subject: **Information Theory and Coding**

Subject Code: **10EC55**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC55.1</b>	<b>Apply</b> the knowledge of information coding techniques and Comprehend various error control codes and their properties.
<b>10EC55.2</b>	<b>Apply</b> various coding techniques for error detection and correction.



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<b>10EC55.3</b>	<b>Design</b> efficient codes for communication channels.
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CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC55.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC55.2</b>	2	2	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC55.3</b>	2	2	-	-	-	-	-	-	-	-	-	-	2	-
<b>CO Average</b>	<b>2</b>	<b>2</b>	-	-	-	-	-	-	-	-	-	-	<b>2</b>	-

Subject: **Fundamentals Of CMOS VLSI**                      Subject Code: **10EC56**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC56.1</b>	Understand and <b>apply</b> the characteristics of CMOS circuit in processes testing and testability issues in VLSI Design.
<b>10EC56.2</b>	<b>Analyze</b> MOS devices and CMOS digital electronics circuits by applying mathematical methods and also CMOS subsystems and architectural issues with the design constraints.
<b>10EC56.3</b>	<b>Design</b> MOS layouts using CMOS technology-specific layout rules in the placement and routing of transistors and interconnect.
<b>10EC56.6</b>	<b>Evaluate</b> the functionality, and parasitic effects in MOS circuits.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC56.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC56.2</b>	-	3	-	-	-	-	-	-	-	-	-	-	-	-
<b>10EC56.3</b>	2	-	2	-	-	-	-	-	-	-	-	-	-	-
<b>10EC56.4</b>	2	2	-	-	-	-	-	-	-	-	-	-	2	-
<b>CO Average</b>	<b>2</b>	<b>2.5</b>	<b>2</b>	-	-	-	-	-	-	-	-	-	<b>2</b>	-

Subject: **Digital Signal Processing Laboratory**                      Subject Code: **10ECL57**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10ECL57.1</b>	<b>Apply</b> the fundamentals of Signals, Systems, and their properties both in time and frequency domain to realize digital signal processing operations using MATLAB programming.
<b>10ECL57.2</b>	<b>Design and write</b> software modules for digital filters and digital signal processing techniques/operations using MATLAB Software Tool.
<b>10ECL57.3</b>	<b>Implement</b> digital signal processing techniques/operations and digital filters using DSP processor.
<b>10ECL57.4</b>	<b>Documentation</b> of the complete experimental process and results.



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CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10ECL57.1	3	-	-	-	-	-	-	-	-	-	-	-	3	-
10ECL57.2	3	2	2	-	3	-	-	-	-	-	-	-	-	2
10ECL57.3	-	2	2	-	2	-	-	-	2	-	-	-	-	2
10ECL57.4	-	-	-	-	-	-	-	-	-	2	-	-	-	-
<b>CO Average</b>	<b>3</b>	<b>2</b>	<b>2</b>	<b>-</b>	<b>2.5</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>2</b>	<b>2</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>2</b>

Subject: **Analog Communication**  
**Lab**

Subject Code: **10ECL58**

CO's	DESCRIPTION OF THE OUTCOMES
10ECL58.1	<b>Apply</b> the basic concepts of Op-Amps, Linear ICs and modulation techniques to understand the behavior of various Op-Amp circuits and modulation techniques practically.
10ECL58.2	Design and Implementation of filters, multi vibrators,
10ECL58.3	<b>Documentation</b> of the complete Experimental process.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10ECL58.1	3	-	-	-	-	-	-	-	-	-	-	-	3	-
10ECL58.2	-	2	3	-	-	-	-	-	3	-	-	-	-	2
10ECL58.3	-	-	-	-	-	-	-	-	-	3	-	-	-	-
<b>CO Average</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>2</b>

Subject: **Digital Communication**

Subject Code: **10EC61**

CO's	DESCRIPTION OF THE OUTCOMES
10EC61.1	<b>Apply</b> the fundamentals of information theory to understand the concepts of digital communication and its advantages, encoding formats and spread spectrum techniques.
10EC61.2	<b>Analyze</b> different digital modulation techniques and detection of signals.
10EC61.3	<b>Apply</b> concepts of ISI to band limited channels
10EC61.4	<b>Evaluate</b> the criterion for transmission techniques in line with applications.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10EC61.1	2	-	-	-	-	-	-	-	-	-	-	-	2	-
10EC61.2	2	3	-	-	-	-	-	-	-	-	-	-	2	-













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CO Average	2	2	2	-	-	-	-	-	-	-	-	-	2	2
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Subject: **Optical Fiber Communication**

Subject Code: **10EC72**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC72.1</b>	<b>Apply</b> the fundamental concepts of optical fiber communication to study the optical fiber transmission, fiber modes and structures.
<b>10EC72.2</b>	<b>Analyze</b> the channel impairments, optical fiber connections and components commonly used in an optical fiber communication system.
<b>10EC72.3</b>	<b>Apply</b> the optical fiber concepts in networking aspects, transmission links, Amplifiers and WDM

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC72.1</b>	2	2	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC72.2</b>	-	3	-	-	-	-	-	-	-	-	-	-	-	2
<b>10EC72.3</b>	3	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>CO Average</b>	<b>2.5</b>	<b>2.5</b>	-	-	-	-	-	-	-	-	-	-	<b>2</b>	<b>2</b>

Subject: **Power Electronics**

Subject Code: **10EC73**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC73.1</b>	Understand the various power electronic devices, concepts and <b>apply</b> their impact upon the power network for control and conversion of electric power.
<b>10EC73.2</b>	Design and critically assess key aspects of power converters by <b>applying</b> advanced knowledge and analysis techniques.
<b>10EC73.3</b>	<b>Analyze</b> V-I characteristics of various power electronic devices.
<b>10EC73.4</b>	<b>Analyze</b> different circuit elements in power converters and motors.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC73.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC73.2</b>	2	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>10EC73.3</b>	-	2	-	-	-	-	-	-	-	-	-	-	-	-
<b>10EC73.4</b>	-	2	-	-	-	-	-	-	-	-	-	-	-	-
<b>CO Average</b>	<b>2</b>	<b>2</b>	-	-	-	-	-	-	-	-	-	-	<b>2</b>	-





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Subject: **Image Processing**

Subject Code: **10EC763**

CO's	DESCRIPTION OF THE OUTCOMES
10EC763.1	Understand and <b>Apply</b> the knowledge of fundamentals of image processing techniques and color models to solve image processing problems.
10EC763.2	<b>Analyze</b> different image transformation and enhancement techniques.
10EC763.3	<b>Apply</b> image enhancement techniques in both spatial domain and frequency domain.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10EC763.1	3	-	-	-	-	-	-	-	-	-	-	-	3	-
10EC763.2	-	3	-	-	-	-	-	-	-	-	-	-	2	-
10EC763.3	3	-	-	-	-	-	-	-	-	-	-	-	3	-
<b>CO Average</b>	<b>3</b>	<b>3</b>	-	-	-	-	-	-	-	-	-	-	<b>2.66</b>	-

Subject: **VLSI lab**

Subject Code: **10ECL77**

CO's	DESCRIPTION OF THE OUTCOMES
10ECL77.1	<b>Apply</b> the fundamentals of digital electronic circuits to develop the test bench code for combinational circuits and sequential circuits.
10ECL77.2	<b>Analyze</b> the various waveforms of combinational and sequential logic circuits and <b>verify</b> it by simulation with truth table through EDA tools.
10ECL77.3	<b>Document</b> the experimental process and corresponding outcomes

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10ECL77.1	3	-	-	-	-	-	-	-	-	-	-	-	2	-
10ECL77.2	-	3	-	-	3	-	-	-	-	-	-	-	-	2
10ECL77.3	-	-	-	-	-	-	-	-	-	2	-	-	-	-
10ECL77.4	3	3	-	-	3	-	-	-	-	2	-	-	2	2

Subject: **Power Electronics Laboratory**

Subject Code: **10ECL78**

CO's	DESCRIPTION OF THE OUTCOMES
10ECL78.1	Understand the basic concepts of power electronic devices and <b>apply</b> in power electronic circuits.
10ECL78.2	<b>Analyze</b> various waveforms across different circuit elements in power converters and motors.



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<b>10ECL78.3</b>	<b>Design</b> the different power circuit using power devices.
<b>10ECL78.4</b>	<b>Documentation</b> of the complete Experimental process.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10ECL78.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10ECL78.2</b>	-	2	-	-	-	-	-	-	-	-	-	-	-	3
<b>10ECL78.3</b>	-	-	2	-	-	-	-	-	-	-	-	-	-	-
<b>10ECL78.4</b>	-	-	-	-	-	-	-	-	-	3	-	-	-	-
<b>CO Average</b>	<b>2</b>	<b>2</b>	<b>2</b>	-	-	-	-	-	-	<b>3</b>	-	-	<b>2</b>	<b>3</b>

Subject: **Wireless communication**

Subject Code: **10EC81**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC81.1</b>	Understand the characteristics of wireless communication systems and <b>Apply</b> the same for call processing.
<b>10EC81.2</b>	<b>Analyze</b> the cellular cluster, reuse of frequency and different digital modulation techniques.
<b>10EC81.3</b>	<b>Evaluate</b> the performance of Common cellular components and diversity techniques in wireless communication.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC81.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC81.2</b>	-	3	-	-	-	-	-	-	-	-	-	-	-	-
<b>10EC81.3</b>	2	2	-	-	-	-	-	-	-	-	-	-	2	2
<b>CO Average</b>	<b>2</b>	<b>2.5</b>	-	-	-	-	-	-	-	-	-	-	<b>2</b>	<b>2</b>

Subject: **Digital Switching Systems**

Subject Code: **10EC82**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC82.1</b>	<b>Apply</b> the fundamentals of Digital communication systems to comprehend the evolution and development of telecommunication systems such as FDMA, TDMA, PDH and SDH.
<b>10EC82.2</b>	<b>Apply</b> probability theory to understand lost call system and queuing system to determine grade of service using mathematical model considering analytical solutions to the tele-traffic problems.
<b>10EC82.3</b>	<b>Analyze</b> the software and hardware architecture, recovery strategy and reliability analysis.



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CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10EC82.1	2	-	-	-	-	-	-	-	-	-	-	-	2	-
10EC82.2	3	2	-	-	-	-	-	-	-	-	-	-	3	-
10EC82.3	-	2	-	-	-	-	-	-	-	-	-	-	-	-
<b>CO Average</b>	<b>2.5</b>	<b>2</b>	-	-	-	-	-	-	-	-	-	-	<b>2.5</b>	-

Subject: **Network Security**

Subject Code: **10EC832**

CO's	DESCRIPTION OF THE OUTCOMES
10EC832.1	Understand the security risk and complex security concepts in networks and also <b>Apply</b> security algorithms to protect a computer system from security treats
10EC832.2	<b>Apply</b> security mechanism and policies to provide network security.
10EC832.3	<b>Analyze</b> secure networks by using relevant protocols and standards.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10EC832.1	-	-	-	-	-	-	-	-	-	-	-	-	2	-
10EC832.2	2	2	2	-	-	-	-	-	-	-	-	-	-	2
10EC832.3	-	2	-	-	-	-	-	-	-	-	-	-	-	-
<b>CO Average</b>	<b>2</b>	<b>2</b>	<b>2</b>	-	-	-	-	-	-	-	-	-	<b>2</b>	<b>2</b>

Subject: **GSM**

Subject Code: **10EC843**

CO's	DESCRIPTION OF THE OUTCOMES
10EC843.1	Understand and <b>apply</b> the concepts of GSM Network architecture and GSM mobility management system
10EC843.2	<b>Analyze</b> the different types of calls and service aspects
10EC843.3	<b>Apply</b> the knowledge of cell architecture in Planning of GSM Network.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10EC843.1	2	-	-	-	-	-	-	-	-	-	-	-	2	-
10EC843.2	-	2	-	-	-	-	-	2	-	-	-	2	-	-
10EC843.3	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>CO Average</b>	<b>2</b>	<b>2</b>	-	-	-	-	-	<b>2</b>	-	-	-	<b>2</b>	<b>2</b>	-



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Subject: **Project Work**

Subject Code: **10ECP85**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10ECP85.1</b>	<b>Analyze</b> complex problems and arrive at feasible solutions using analytical decision –making capability and critical thinking
<b>10ECP85.2</b>	<b>Develop</b> skills to build and manage teams required to support project process(scheduling work, procuring parts and documenting expenditures and working within the confines of a deadline) effectively and efficiently
<b>10ECP85.3</b>	<b>Design</b> , build and test electronic circuitry/system software for real life applications, by making comprehensive use of the technical knowledge gained from previous courses.
<b>10ECP85.4</b>	<b>Communicate</b> technical information by means of written reports and presentations.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10ECP85.1</b>	3			2.5		3							3	
<b>10ECP85.2</b>								3	3		3	2		
<b>10ECP85.3</b>		3	3		3	3	3					2		3
<b>10ECP85.4</b>										3		3		
<b>CO Average</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2.5</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>3</b>	<b>2.3</b>	<b>3</b>	<b>3</b>

Subject: **Technical Seminar**

Subject Code: **10ECS86**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10ECS86.1</b>	Ability to <b>read, comprehend, analyze, prepare and present</b> various concepts in the IEEE or equivalent technical articles/journals.
<b>10ECS86.2</b>	Prepare <b>detailed reports</b> with comprehensive survey of literature ass applicable to technical seminar topic.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10ECS86.1</b>	2	3	-	3	-	-	-	-	-	3	-	-	3	-
<b>10ECS86.2</b>	-	3	-	-	-	-	-	-	-	3	-	-	3	-
<b>CO Average</b>	<b>2</b>	<b>3</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>	<b>-</b>	<b>3</b>	<b>-</b>



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# **SCHEME 10**

## **YEAR 17-18**





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**Subject: Computer Communication Networks**

**Subject Code: 10EC71**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC71.1</b>	<b>Apply</b> the fundamentals of computer communication network to study the working principle of protocols.
<b>10EC71.2</b>	<b>Apply</b> the concept of wireless networking and network standards in understanding device communication
<b>10EC71.3</b>	<b>Design</b> a network model and determine the routing of packets using different routing algorithms.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC71.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC71.2</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	2
<b>10EC71.3</b>	-	2	2	-	-	-	-	-	-	-	-	-	-	2
<b>CO Average</b>	<b>2</b>	<b>2</b>	<b>2</b>	-	-	-	-	-	-	-	-	-	<b>2</b>	<b>2</b>

**Subject: Optical Fiber Communication**

**Subject Code: 10EC72**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC72.1</b>	<b>Apply</b> the fundamental concepts of optical fiber communication to study the optical fiber transmission, fiber modes and structures.
<b>10EC72.2</b>	<b>Analyze</b> the channel impairments, optical fiber connections and components commonly used in an optical fiber communication system.
<b>10EC72.3</b>	<b>Apply</b> the optical fiber concepts in networking aspects, transmission links, Amplifiers and WDM

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC72.1</b>	2	2	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC72.2</b>	-	3	-	-	-	-	-	-	-	-	-	-	-	2
<b>10EC72.3</b>	3	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>CO Average</b>	<b>2.5</b>	<b>2.5</b>	-	-	-	-	-	-	-	-	-	-	<b>2</b>	<b>2</b>

**Subject: Power Electronics**

**Subject Code: 10EC73**



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CO's	DESCRIPTION OF THE OUTCOMES
10EC73.1	<b>Understand</b> the various power electronic devices, concepts and <b>apply</b> their impact upon the power network for control and conversion of electric power.
10EC73.2	Design and critically assess key aspects of power converters by <b>applying</b> advanced knowledge and analysis techniques.
10EC73.3	<b>Analyze</b> V-I characteristics of various power electronic devices.
10EC73.4	<b>Analyze</b> different circuit elements in power converters and motors.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10EC73.1	2	-	-	-	-	-	-	-	-	-	-	-	2	-
10EC73.2	2	-	-	-	-	-	-	-	-	-	-	-	-	-
10EC73.3	-	2	-	-	-	-	-	-	-	-	-	-	-	-
10EC73.4	-	2	-	-	-	-	-	-	-	-	-	-	-	-
CO Average	2	2	-	-	-	-	-	-	-	-	-	-	2	-

**Subject: Embedded system design**

**Subject Code: 10EC74**

CO's	DESCRIPTION OF THE OUTCOMES
10EC74.1	Understand the basic concepts of hardware and software in embedded system design and <b>Apply</b> the same in creation of a system.
10EC74.2	<b>Apply</b> the software and hardware parameters in designing an embedded system with requirements and specifications.
10EC74.3	<b>Analyze</b> performance and efficiency measures in embedded system.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10EC74.1	2	-	-	-	-	-	-	-	-	-	-	-	2	-
10EC74.2	2	-	-	-	-	-	-	-	-	-	-	-	2	2
10EC74.3	-	3	-	-	-	-	-	-	-	-	-	-	-	-
CO Average	2	3	-	-	-	-	-	-	-	-	-	-	2	2

**Subject: DSPAA**

**Subject Code: 10EC751**

CO's	DESCRIPTION OF THE OUTCOMES
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<b>10EC751.1</b>	<b>Implement</b> the basic DSP algorithms using TI DSP processor and understand the concept of advanced DSP algorithms
<b>10EC751.2</b>	<b>Interpret</b> the architectural details of TMS320C67xx processor for digital filters
<b>10EC751.3</b>	<b>Analyze</b> Addressing modes, instruction sets and the memory considerations features of TMS320C67XX processor as applied to DSP applications
<b>10EC751.4</b>	<b>Demonstrate</b> the application on DSP Devices -DSP-based bio-Telemetry Receiver, A Speech Processing system, and An Image processing system.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC751.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	3	-
<b>10EC751.2</b>	3	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC751.3</b>	-	2	-	-	-	-	-	-	-	-	-	-	-	-
<b>10EC751.4</b>	-	-	3	-	-	-	-	-	-	-	-	-	-	-
<b>CO Average</b>	<b>2.5</b>	<b>2</b>	<b>3</b>	-	-	-	-	-	-	-	-	-	<b>2.5</b>	-

**Subject: Image Processing**

**Subject Code: 10EC763**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC763.1</b>	<b>Understand</b> and <b>Apply</b> the knowledge of fundamentals of image processing techniques and color models to solve image processing problems.
<b>10EC763.2</b>	<b>Analyze</b> different image transformation and enhancement techniques.
<b>10EC763.3</b>	<b>Apply</b> image enhancement techniques in both spatial domain and frequency domain.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC763.1</b>	3	-	-	-	-	-	-	-	-	-	-	-	3	-
<b>10EC763.2</b>	-	3	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC763.3</b>	3	-	-	-	-	-	-	-	-	-	-	-	3	-
<b>CO Average</b>	<b>3</b>	<b>3</b>	-	-	-	-	-	-	-	-	-	-	<b>2.66</b>	-

**Subject: VLSI lab**

**Subject Code: 10ECL77**

CO's	DESCRIPTION OF THE OUTCOMES
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<b>10ECL77.1</b>	<b>Understand</b> and develop the test bench code for combinational circuits and sequential circuits.
<b>10ECL77.2</b>	<b>Simulate</b> various combinational and sequential logic circuits and <b>verify</b> the simulation with truth table through EDA tools.
<b>10ECL77.3</b>	<b>Document</b> the experimental process and corresponding outcomes

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10ECL77.1</b>	3	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10ECL77.2</b>	-	-	-	-	3	-	-	-	-	-	-	-	-	-
<b>10ECL77.3</b>	-	-	-	-	-	-	-	-	-	2	-	-	-	-
<b>10ECL77</b>	<b>3</b>	-	-	-	<b>3</b>	-	-	-	-	<b>2</b>	-	-	<b>2</b>	-

**Subject: Power Electronics Laboratory**

**Subject Code: 10ECL78**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10ECL78.1</b>	Understand the basic concepts of power electronic devices and <b>apply</b> in power electronic circuits.
<b>10ECL78.2</b>	<b>Analyze</b> various waveforms across different circuit elements in power converters and motors.
<b>10ECL78.3</b>	<b>Design</b> the different power circuit using power devices.
<b>10ECL78.4</b>	<b>Documentation</b> of the complete Experimental process.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10ECL78.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10ECL78.2</b>	-	2	-	-	-	-	-	-	-	-	-	-	-	3
<b>10ECL78.3</b>	-	-	2	-	-	-	-	-	-	-	-	-	-	-
<b>10ECL78.4</b>	-	-	-	-	-	-	-	-	-	3	-	-	-	-
<b>CO Average</b>	<b>2</b>	<b>2</b>	<b>2</b>	-	-	-	-	-	-	<b>3</b>	-	-	<b>2</b>	<b>3</b>

**Subject: Wireless communication**

**Subject Code: 10EC81**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC81.1</b>	Understand the characteristics of wireless communication systems and <b>Apply</b> the same for call processing.
<b>10EC81.2</b>	<b>Analyze</b> the cellular cluster, reuse of frequency and different digital modulation techniques.
<b>10EC81.3</b>	<b>Evaluate</b> the performance of Common cellular components and diversity



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	techniques in wireless communication.
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CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC81.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC81.2</b>	-	3	-	-	-	-	-	-	-	-	-	-	-	-
<b>10EC81.3</b>	2	2	-	-	-	-	-	-	-	-	-	-	2	2
<b>CO Average</b>	<b>2</b>	<b>2.5</b>	-	-	-	-	-	-	-	-	-	-	<b>2</b>	<b>2</b>

**Subject: Digital Switching Systems**

**Subject Code: 10EC82**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC82.1</b>	<b>Apply</b> the fundamentals of Digital communication systems to comprehend the evolution and development of telecommunication systems such as FDMA, TDMA, PDH and SDH.
<b>10EC82.2</b>	<b>Apply</b> probability theory to understand lost call system and queuing system to determine grade of service using mathematical model considering analytical solutions to the tele-traffic problems.
<b>10EC82.3</b>	<b>Analyze</b> the software and hardware architecture, recovery strategy and reliability analysis.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC82.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC82.2</b>	3	2	-	-	-	-	-	-	-	-	-	-	3	-
<b>10EC82.3</b>	-	2	-	-	-	-	-	-	-	-	-	-	-	-
<b>CO Average</b>	<b>2.5</b>	<b>2</b>	-	-	-	-	-	-	-	-	-	-	<b>2.5</b>	<b>-</b>

**Subject: Network Security**

**Subject Code: 10EC832**

CO's	DESCRIPTION OF THE OUTCOMES
<b>10EC832.1</b>	<b>Understand</b> the security risk and complex security concepts in networks and also <b>Apply</b> security facilities to protect a computer system from security treats
<b>10EC832.2</b>	<b>Apply</b> security mechanism and policies to provide network security.
<b>10EC832.3</b>	<b>Analyze</b> secure networks by using relevant protocols and standards.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
<b>10EC832.1</b>	2	-	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC832.2</b>	2	2	-	-	-	-	-	-	-	-	-	-	2	-
<b>10EC832.3</b>	-	2	-	-	-	-	-	-	-	-	-	-	-	-



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CO Average	2	2	-	-	-	-	-	-	-	-	-	-	-	2	-
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Subject: GSM

Subject Code: 10EC843

CO's	DESCRIPTION OF THE OUTCOMES
10EC843.1	<b>Understand</b> and <b>apply</b> the concepts of GSM Network architecture and GSM mobility management system
10EC843.2	<b>Analyze</b> the different types of calls and service aspects
10EC843.3	<b>Apply</b> the knowledge of cell architecture in Planning of GSM Network.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10EC843.1	2	-	-	-	-	-	-	-	-	-	-	-	2	-
10EC843.2	-	2	-	-	-	-	-	2	-	-	-	2	-	-
10EC843.3	2	-	-	-	-	-	-	-	-	-	-	-	2	-
CO Average	2	2	-	-	-	-	-	2	-	-	-	2	2	-

Subject: Project Work

Subject Code:10ECP85

CO's	DESCRIPTION OF THE OUTCOMES
10ECP85.1	<b>Analyze</b> complex problems and arrive at feasible solutions using analytical decision –making capability and critical thinking
10ECP85.2	<b>Develop</b> skills to build and manage teams required to support project process(scheduling work, procuring parts and documenting expenditures and working within the confines of a deadline) effectively and efficiently
10ECP85.3	<b>Design</b> , build and test electronic circuitry/system software for real life applications, by making comprehensive use of the technical knowledge gained from previous courses.
10ECP85.4	<b>Communicate</b> technical information by means of written reports and presentations.

CO No	PO No												PSO	
	1	2	3	4	5	6	7	8	9	10	11	12	1	2
10ECP85.1	3	-	-	3	-	3	-	-	-	-	-	-	3	-
10ECP85.2	-	-	-	-	-	-	-	3	3	-	3	2	-	-
10ECP85.3	-	3	3	-	3	3	3	-	-	-	-	2	-	3
10ECP85.4	-	-	-	-	-	-	-	-	-	3	-	3	-	-
CO Average	3	3	3	3	3	3	3	3	3	3	3	2.5	3	3

