

G.S.Mandal's

**Maharashtra Institute of Technology, Aurangabad.
Electronics and Telecommunication Engineering Department**

Academic Year 2024-25
Program: M. Tech (ETC)
Course outcome and mapping

Program Outcome:

PO1: An ability to independently carry out research /investigation and development work to solve practical problems.

PO2: An ability to write and present a substantial technical report/document.

PO3: Demonstrate a degree of mastery over the electronic and telecommunication program. The mastery should be at a level higher than the requirements in the appropriate bachelor's program

Course Outcomes:

Course Name: MTM101 Research Methodology and IPR

MTM101.1	Define the different terminologies used in research and intellectual property rights.
MTM101.2	Describe the various forms of intellectual property rights, research, research problems, sampling and design.
MTM101.3	Discuss procedure to execute the sampling design, data collection, research and protect different forms of IPRs
MTM101.4	Prepare the sample research design, sampling design, research and patent filing report.
MTM101.5	Analyze collection of research data, ethics of research and intellectual property rights.
MTM101.6	Examine the validity, reliability, hypothesis of research and patentability.

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTM101.1	3		
MTM101.2	3		
MTM101.3	3		
MTM101.4	3	3	3
MTM101.5	3	3	3
MTM101.6	3	3	3

1: Slight (Low) 2: Moderate (Medium) 3: Substantial (High)

Course coordinator

Program Coordinator

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Course Outcomes:

Course Name: MTE102 Advance Digital Signal Processing

MTE102.1	Identify different system as continuous or discrete
MTE102.2	Relate decimators and interpolators with Polyphase and QMF filters
MTE102.3	Construct prediction and adaptive filters by suitable method
MTE102.4	Develop applications of DSP in image and speech processing

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE102.1	1		
MTE102.2	1		
MTE102.3	1		
MTE102.4	1		

Course Name: MTE111 Lab –I Advance Digital Signal Processing

MTE111.1	Choose appropriate method to design low pass & high pass filters
MTE111.2	Design Digital IIR filter using filter realization

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE111.1			1
MTE111.2			1

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Course Outcomes:

Course Name: MTE103 Advance Digital Communication Systems

MTE103.1	Perform the time and frequency domain analysis of the signals in a digital communication system.
MTE103.2	Compare modulation techniques and analyze their performance.
MTE103.3	Analyze the performance of a baseband and passband digital communication system in terms of error rate and spectral efficiency.
MTE103.4	Apply the knowledge of band-limited channels and evaluate the performance of digital communication systems in the presence of noise.

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE103.1	1		
MTE103.2	1		
MTE103.3	1		
MTE103.4	1		

Course Name: MTE112 Lab-II Advance Digital Communication Systems

MTE112.1	Analyze Digital Communication Techniques using simulation tools.
MTE112.2	Verify the different Error Detection techniques, Synchronization and Noise effect using simulation software.

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE112.1			2
MTE112.2			2

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Course Outcomes:

Course Name: MTE104 Wireless Sensor Network

MTE104.1	Explain the basic principles, characteristics, operational challenges, and design considerations for sensor network
MTE104.2	Describe architecture for wireless sensor network-based systems.
MTE104.3	Analyze radio standards and routing protocols for wireless sensor network.
MTE104.4	Handle special issues related to sensors like energy conservation and security challenges.

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE104.1	1		
MTE104.2	1		
MTE104.3	1		
MTE104.4	1		

Course Name: MTE113 Lab-III Wireless Sensor Network

MTE113.1	Design wireless sensor network system as per user requirement.
MTE113.2	Simulate a network in WSN environment

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE113.1	1		
MTE113.2	1		

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Course Outcomes:

Course Name: MTE141-Internet of Things

MTE121.1	Describe the basic architecture of IoT
MTE121.2	Illustrate application areas of IoT and its variant
MTE121.3	Analyze networking aspects used in IoT
MTE121.4	Infer the cloud computing and big data analytics for IoT

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE121.1	1		
MTE121.2	1		
MTE121.3	1		
MTE121.4	1		

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Course Outcomes:

Course Name: MTE114-Seminar

MTE114.1	Impart skills by presenting effectively and preparing detail presentation report.
MTE114.2	Identify promising new dimensions of cutting-edge technologies by studying research papers

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE114.1		3	
MTE114.2	3		

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Semester-II

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Course Outcomes:

Course Name: MTE 141 Optimization Techniques

MTE141.1	Comprehend the techniques and applications of Engineering optimization
MTE141.2	Elaborate classical optimization techniques.
MTE141.3	Explain constrained Optimized Algorithm.
MTE141.4	Describe the basics of different evolutionary algorithms.

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE141.1	1		2
MTE141.2			2
MTE141.3			2
MTE141.4			2

Course Name: MTE 153 Lab-III Optimization Techniques

MTE153.5	Implementation of optimization methods using Matlab / Python.
MTE153.6	Learn efficient computational procedures to solve optimization problems.

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE153.5	1		2
MTE153.6	1		2

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Course Outcomes:

Course Name: MTE 142 Digital Audio Processing

MTE142.1	Identify speech production models(Remember)
MTE142.2	Relate speech production models, speech analysis and synthesis(Understand)
MTE142.3	Construct LPC Encoder-Decoder, PCM and ADPCM(Apply)
MTE142.4	Explain Speech recognition and Speaker recognition system (Analyze)

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE142.1	1		
MTE142.2	1		
MTE142.3	1		
MTE142.4	1		
Avg.	1		

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Course Outcomes:

Course Name: MT143 VLSI Design, Verification and Testing

MTE143.1	Explain the different verification guidelines in VLSI Design.
MTE143.2	Describe the classification of the data types used in VLSI Design environment.
MTE143.3	Analyze the different types of routines and test benches for testing.
MTE143.4	Design the various circuits by using Verilog HDL.

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE143.1	1		
MTE143.2	1		
MTE143.3	1		
MTE143.4	1		

Course Name: MTE 153 Lab-I VLSI Design, Verification

MTE151.1	Implementation of verification method by using Verilog.
MTE151.2	Apply the different parameters of the Testing and verification for the design.

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE151.1			2
MTE151.2			2

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Course Outcomes:

Course Name: MTE 144 Image Processing and Computer Vision

MTE144.1	Learn different feature extraction techniques for Image analysis and Recognition
MTE144.2	Interpret Image Segmentation and Representation Technique
MTE144.3	Identify basic concepts, terminology, theories, models and methods in the field of computer vision
MTE144.4	Describe basic methods and approaches of Computer Vision related to motion and object recognition

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE144.1	1		
MTE144.2	1		
MTE144.3	1		
MTE144.4	1		

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Course Name: MTE152 Lab II Image Processing & Computer Vision

MTE152.1	Perform various operations on an image
MTE152.2	Detect an object in an image

CO PO mapping:

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MTE152.1	1		
MTE152.2	1		

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Course Outcomes:

Course Name MTE 164Voice and Data Network

MTE164.1	Identify different issues and parameters related to network design
MTE164.2.	Describe different types of Network
MTE164.3	Analyze the performance of networks
MTE164.4	Apply the knowledge of internetworking , congestion control in network design

CO PO mapping:

CO	PO 1	PO 2	PO 3
MTE164.1	1		
MTE164.2.	1		
MTE164.3	1		1
MTE164.4	1		1

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Course Outcomes:

Course Name: MTE 154 Minor Project

MTE154.1	
MTE154.2	
MTE154.3	
MTE154.4	

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MTE154.1			
MTE154.2.			
MTE154.3			
MTE154.4			

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