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

Academic Year 2021-22

M.Tech 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: MT 601 Research Methodology and IPR **Year of Study: 2021-2022**

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.

Course Name: MT 602 Advance Digital Signal Processing   **Year of Study: 2021-2022**

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

Course Name: MT603Advance Digital Communication systems   Year of Study: 2021-2022

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.

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

Course Name: MT604 Wireless Sensor Network **Year: 2021-2022**

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

Course Name: MT641-Internet of Things   **Year of Study: 2021-2022**

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

Course Name: MT624-Seminar   **Year of Study: 2021-2022**

| 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
MTM101.1	3		
MTM101.2	3		
MTM101.3	3		
MTM101.4	3	3	3
MTM101.5	3	3	3
MTM101.6	3	3	3
Avg	3	3	3

CO	PO 1	PO 2	PO 3
MTE102.1	1		
MTE102.2	1		
MTE102.3	1		
MTE102.4	1		
MTE111.1			1
MTE111.2			1
Avg	1		1

CO	PO 1	PO 2	PO 3
MTE103.1	1		
MTE103.2	1		
MTE103.3	1		
MTE103.4	1		
MTE112.1			2
MTE112.2			2
Avg	1		2

CO	PO 1	PO 2	PO 3
MTE104.1	1		
MTE104.2	1		
MTE104.3	1		
MTE104.4	1		
MTE113.1			1
MTE113.2			1
Avg	1		1

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

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

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

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M.Tech Course outcome and mapping

Semester-II

Course Name: MTE 141 OPTIMIZATION TECHNIQUES **Year of Study: 2021-2022**

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

Course Name: MTE 142 Digital Audio Processing   **Year of Study: 2021-2022**

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**)

Course Name: MT143 VLSI Design, Verification and Testing Year: 2021-2022

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

Course Name: MTE164-Voice and Data Network (Professional Elective II)

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

Course Name: MTE 144 Image Processing and Computer Vision   Year of Study: 2021-2022

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

Course Code: MTE152
Course: Lab II Image Processing and Computer   Vision

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

CO PO mapping:

	PO1	PO2	PO3
MTE141.1	1		2
MTE141.2			2
MTE141.3			2
MTE141.4			2
MTE153.5	1		2
MTE153.6	1		2
Avg	1		2

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

CO	PO 1	PO 2	PO 3
MTE143.1	1		
MTE143.2	1		
MTE143.3	1		
MTE143.4	1		
MTE151.1			2
MTE151.2			2
Avg	1		2

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

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

CO	PO 1	PO 2	PO 3
MTE152.1	1		
MTE152.2	1		
Avg.	1		

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