

Maulana Azad National Institute of Technology, Bhopal – 462003
Electronics and Communication Engineering Department

M Tech in VLSI Design and Embedded Systems

SCHEME OF STUDY (January 2021)

First Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
MTH 101 VE	Computational Techniques	3	-	-	3
VE 102	VLSI Design	3	-	-	3
VE 103	Computer Aided Design of Digital Systems	3	-	-	3
VE 104	Embedded Systems	3	-	-	3
	Elective-1 (A)	3	-	-	3
	Elective-2 (B)	3	-	-	3
VE 105	Lab-I (Embedded and System Design Lab)	-	-	2	1
VE 106	Seminar-I	-	-	2	1
VE 107	Communication Skills NPTEL/ MOOC	2	-	-	2
Total Hours: 24 Total Credits: 22		Total Semester Credits			22

Second Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
VE 201	Low power VLSI Design	3	-	-	3
VE 202	VLSI Technology	3	-	-	3
VE 203	Testing of VLSI circuits	3	-	-	3
	Elective-3 (A)	3	-	-	3
	Elective-4 (A)	3	-	-	3
	Elective-5 (C)	3	-	-	3
VE 204	Laboratory-II (VLSI Design Lab)	-	-	2	1
VE 205	Research Methodology, Technical Report and Paper Writing	-	2	-	2
VE 206	Seminar-II	-	-	2	1
Total Hours: 24 Total Credits: 44		Total Semester Credits			22

Third Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
VE 301	Dissertation Phase-I	-	-	32	16
Total Hours: 32 Total Credits: 60		Total Semester Credits			16

Fourth Semester:

Course No.	Subject	Scheme of studies periods per week			Total Credits
		L	T	P	
VE 401	Dissertation Phase-II	-	-	4 0	20
Total Hours: 40 Total Credits: 80		Total Semester Credits			20

List of Electives A		List of Electives B	
VE501	Digital System Design	DC102	Digital Signal Processing & Its Applications
VE502	Mixed Signal Design	DC103	Digital Communication Techniques
VE503	Design for Testability	DC104	Micro strip Antenna Design
VE504	Design of Semiconductor Memories	DC501	Signal Theory
VE505	CMOS Active Filter Design	DC502	Mobile Communication
VE506	Design of Analog IC	DC503	Optical Networks
VE507	CMOS RF Circuit Design	DC504	Video Signal Processing
VE508	Device Modeling and Simulation	DC505	Statistical Signal processing
VE509	Physical Design Automation	DC506	Satellite Communication
VE510	High Speed System Design	DC507	Modern Telecom Switching Systems
VE511	Optimization Techniques	DC508	Data Compression & Cryptography
VE512	Fuzzy Logic	DC509	Wireless Communication
VE513	Neural Networks	DC510	Microwave Communication
VE514	Queuing Theory	DC511	Computer vision and pattern recognition
VE515	Biomedical Signal Processing	DC512	Communication Networks
VE516	Operation Research	DC513	Information Theory and Coding
VE517	Wavelet Transforms	DC514	Multi rate Signal Processing
		List of Electives C	
		EN202	Solid Waste Management
		GE203	Reinforced Soil Structures
		GI201	Basic Concepts of GIS
		HY201	Characteristics of Hydraulic Machines
		ST203	Theory of Plates & Shells
		TR201	Highway Construction & Maintenance
		WR203	Ground Water Engineering
		ID203	Advanced Product Design
		IT202	Failure Analysis & Prevention
		AM202	Advanced Composite Materials
		SV203	Theory of Vibration II
		TH202	Thermal Environmental Engineering
		PS201	Modern Control Systems
		ED202	Advanced Control Systems
		AC203	Optimization Techniques
		AI202	Deep Learning
		CN203	Graph Theory & Network Algorithm
		IS201	Applied Cryptography
		MS202	Deformation Behavior of Materials
		CH203	Industrial Safety & Hazard Management
		HS1204	Housing Finance
		UP1203	Infrastructure Planning
		NT201	Nano Structures Characterization Techniques
		BI203	Optimization Techniques & Graph
		CSB201	Mathematical Modeling & Simulation of

			Biological Systems
		RE202	Solar Energy Systems
		ES202	Energy Management in Buildings
		BIO201	Cheminformatics & Drug Designing

Group A: Program Electives.

Group B: Departmental Electives.

Group C: Open Electives.

**{It may also be opted as NPTEL Course after approval from
Chairman Senate}**