

Revised Syllabus for M.E. IN MICROELECTRONICS

1. Course Structure and Scheme of Evaluation (Semester-wise, along with curriculum details)

Semester 1

Subject Code	Name of the Subjects	No. of Hrs / Week				Scheme of Examination				
		L	T	P	Theory hours	Credits				
						Theory	IA	Practical	orals	Total
MEM1.1	Solid-State Devices & Semiconductor Physics	4	-	0	3	4	2	--	--	6
MEM1.2	Digital VLSI Design	4	-	0	3	4	2	--	--	6
MEM1.3	Analog VLSI Design	4	-	0	3	4	2	--	--	6
MEM1.4	VLSI Technology	4	-	0	3	4	2	--	--	6
MEM1.5	Advanced Engineering Mathematics	4	-	0	3	4	2	--	--	6
MEM1.6	HDL –LAB	0	-	7	--	--	2	2	--	4
MEM1.7	VLSI CAD – LAB	0	-	7	--	--	2	2	--	4
Total		20	-	14	--	20	14	4		38

Semester 2

Subject Code	Name of the Subjects	No. of Hrs / Week				Scheme of Examination				
		L	T	P	Theory hours	Credits				
						Theory	IA	Practical	orals	Total
MEM 2.1	ASIC Design & FPGA	4	-	0	3	4	2	--	--	6
MEM 2.2	Digital Signal Processors & Embedded Systems	4	-	0	3	4	2	--	--	6
MEM 2.3	Design for Testability & E-Waste Management	4	-	0	3	4	2	--	--	6
MEM 2.4	Processor Architecture & Parallel Processing	4	-	0	3	4	2	--	--	6
MEM 2.5	Memory Design	4	-	0	3	4	2	--	--	6
MEM 2.6	Parallel Processing - LAB	0	-	7	--	--	2	2	--	4
MEM 2.7	FPGA and Embedded Systems – LAB	0	-	7	--	--	2	2	--	4
Total		20	-	14	--	20	14	4		38

Semester 3

Subject Code	Name of the Subjects	No. of Hrs / Week				Scheme of Examination				
		L	T	P	Theory hours	Credits				
						Theory	IA	Practical	orals	Total
MEM 3.1	Elective – I	4	-	0	3	4	2	--	--	6
MEM 3.2	Elective – II	4	-	0	3	4	2	--	--	6
MEM 3.3	Project	-	-	20	-	-	4	--	8	12
	Total	8	-	20	-	8	8	-	8	24

List of Electives**Elective - I**

- E1 System on Chip (SOC)
- E2 Process and Device Characterization and Measurements
- E3 Sensor Technology and MEMS
- E4 Optical Communication
- E5 Microwave Integrated Circuits
- E6 Design for Reliability
- E7 Mobile Phone Programming
- E8 Image Processing
- E9 Industrial Design of Electronic Devices

Elective - II

- E10 Integrated Optics
- E11 TCP/IP and Implementation of a Network IP on FPGA
- E12 Electronic Systems Design
- E13 Sensors in Instrumentation
- E14 Simulation of circuits & devices
- E15 Nanoelectronics
- E16 Compound Semiconductors: Properties & Applications
- E17 RF Microelectronic Chip Design
- E18 Electromagnetic Interference and Electromagnetic Compatibility

Semester 4

Subject Code	Name of the Subjects	No. of Hrs / Week				Scheme of Examination				
		L	T	P	Theory hours	Credits				
						Theory	IA	Practical	orals	Total
MEM 4.1	Dissertation	-	-	28	-	-	6	-	14	20
	Total	-	-	28	-	-	6	-	14	20