

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code: **31** **M.Tech.(Microelectronics & VLSI)**
 Department: **EC** **Electronics & Communication Engineering**
 Year: **I**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
Semester-I (Autumn)														
1.	ECN-573	Digital VLSI Circuit Design	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
2.	ECN-575	Microelectronics Lab-1	PCC	2	0	0	3	0	3	-	100	-	-	-
3.	ECN-576	Simulation Lab-1	PCC	2	0	0	3	0	3	-	100	-	-	-
4.	ECN-578	Digital System Design	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
5.	ECN-579	Foundations of Semiconductor device physics	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
6.		ELECTIVE-I	PEC	4	-	-	-	-	-	-	-	-	-	-
		Total		20	9	3	6	9	6					
Semester-II(Spring)														
1.	ECN-577	VLSI Technology	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
2.	ECN-700	Seminar	SEM	2	0	0	0	0	3	-	100	-	-	-
3.		ELECTIVE-II	PEC	4	-	-	-	-	-	-	-	-	-	-
4.		ELECTIVE-III	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		ELECTIVE-IV	PEC	4	-	-	-	-	-	-	-	-	-	-
6.		ELECTIVE-V	PEC	2	-	-	-	-	-	-	-	-	-	-
		Total		20	3	1	0	3	3					

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Program Code: **31** **M.Tech.(Microelectronics & VLSI)**
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 Year: **II**

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
Semester-I (Autumn)														
1.	ECN-701A	Dissertation Stage-I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
Note: Students can take 1 or 2 audit courses as advised by the supervisor, if required.														
Semester-II (Spring)														
1.	ECN-701B	Dissertation Stage-II (contd. From III)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

Summary					
Semester		1	2	3	4
Semester-wise Total Credits		20	20	12	18
Total Credits		70			

Program Elective Courses (Microelectronics & VLSI)

Teaching Scheme					Contact Hours/Week			Exam Duration		Relative Weight(%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
1	ECN-571	Semiconductor Device Modeling	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
2	ECN-572	MOS Device Physics	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
3	ECN-581	Analog VLSI Circuit Design	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
4	ECN-582	Semiconductor Microwave Devices & Applications	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
5	ECN-583	Optoelectronic Materials & Devices	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
6	ECN-584	Mixed Signal Circuit Design	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
7	ECN-585	VLSI System Design	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
8	ECN-586	Device & Circuit Interaction	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
9	ECN-587	Nano Scale Devices	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
10	ECN-588	Performance and Reliability of VLSI Circuits	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
11	ECN-589	Advanced VLSI Interconnects	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
12	ECN-590	Organic Electronics	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
13	ECN-591	VLSI Physical Design	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
14	ECN-592	Compound Semiconductors and RF Devices	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
15	ECN-593	CAD for VLSI	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
16	ECN-594	VLSI Digital Signal Processing	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
17	ECN-595	VLSI Testing and Testability	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-

18	ECN-596	MEMSandNEMS	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
19	ECN-597	MicroelectronicsLab.-2	PEC	2	-	-	2	-	-	-	100	-	-	-
20	ECN-598	SimulationLab.-2	PEC	2	-	-	2	-	-	-	100	-	-	-