

**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: **567 M.Tech. (VLSI)**
 Department: **EC Department of Electronics and Communication Engineering**
 Year: **III**

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										
Semester-II (Spring)														
1.	ECN-701B	Dissertation Stage-II (continued from III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

Summary						
Semester	1	2	3	4	5	6
Semester-wise Total Credits	10	10	10	10	12	18
Total Credits	70					

Program Elective Courses M.Tech. (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-524	Power Electronic Devices, Circuits and System	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
2	ECN-525	Hardware Architecture for Deep- Learning	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
3	ECN-526	Statistical Machine Learning for Variation-Aware Electronic Device and Circuit Simulation	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
4	ECN-561	Compact Modeling of Semiconductor Devices	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
5	ECN-634	Low Voltage CMOS Circuit Operation	PEC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
6	ECN-571	Semiconductor Device Modeling	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
7	ECN-575	Microelectronics Lab-1	PEC	2	0	0	3	0	3	-	100	-	-	-
8	ECN-577	VLSI Technology	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
9	ECN-579	Foundations of Semiconductor Device Physics	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
10	ECN-582	Semiconductor Microwave Devices and Applications	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
11	ECN-583	Optoelectronic Materials and Devices	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
12	ECN-585	VLSI System Design	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
13	ECN-586	Device & Circuit Interaction	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
14	ECN-587	Nano Scale Devices	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-

15	ECN-588	Performance & Reliability of VLSI Circuits	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
16	ECN-589	Advanced VLSI Interconnects	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
17	ECN-590	Organic Electronics	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
18	ECN-591	VLSI Physical Design	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
19	ECN-592	Compound Semiconductor and RF Devices	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
20	ECN-593	CAD for VLSI	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
21	ECN-594	VLSI Digital Signal Processing	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
22	ECN-595	VLSI Testing and Testability	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
23	ECN-596	MEMS and NEMS	PEC	4	3	1	0	3	-	20-35	-	20-30	40-50	-
24	ECN-597	Microelectronics Lab-2	PEC	2	0	0	3	0	3	-	100	-	-	-
25	ECN-598	Simulation Lab-2	PEC	2	0	0	3	0	3	-	100	-	-	-