

Department of Materials Science and Metallurgical Engineering
MTech in Semiconductor Materials and Devices

Semester wise course details

Semester 1: 13 credits - Semiconductor Materials and Processing

Course Code	Course	Credits
SD5010	Fundamentals of Semiconductor Materials	3
SD5020	Semiconductor Extraction, Purification and Growth	2
SD5011	Semiconductor Materials Characterization Lab (Crystal structure and band gap determination techniques)	1
LA5180	English Communications	1
SD/MS5xxx	Dept Electives	6
	Total	13 (12+1)

Semester 2: 13 credits : Semiconductor Devices and Processing

Course Code	Course	Credits
SD5030	Semiconductor Devices (2+1 package simulations as project component)	3
SD5040	Micro and Nanofabrication	3
SD 5021	Semiconductor Devices Characterization lab (Electrical characterization techniques)	1
SD5015	Industry Lecture (Targeted towards electronic packaging and e-waste management)	1
MS/SD5xxx	Dept Elective	6
	Total	14 (13+1)

Semester 3: 12 credits

Course Code	Course	Credits
SD5025	Thesis Stage - I	12

Semester 4: 12 credits

Course Code	Course	Credits
SD5035	Thesis Stage - II	12

Total Credits: 49+2 = 51

Elective Baskets Odd Semester

(One course from each basket is to be taken)

Semiconductor Materials	Semiconductor Materials Processing
1. MS5270 2D Materials: synthesis, characterization and applications	4. SD5050 Electrochemical Processes in Semiconductors
2. MS5490 Nanoporous Materials	5. MS5380 Inter Diffusion in Solids
3. MS5430 Functional Polymers & Composites	

Elective Baskets Even Semester

Department elective can be taken from any one of the baskets and free elective pertaining to electronic devices compulsory

Semiconductor Devices	Semiconductor Device Processing
1. MS5610 Electronic Materials and Devices	3. MS 5080 Thin Film Technology
2. MS5620 Spintronic Materials and Devices	4. SD5060 Flexible/Plastic Electronics