

**13. Courses of Study and Scheme of Assessment
M.TECH NANOSCIENCE AND TECHNOLOGY**

**(2015 REGULATIONS)
(Minimum No. of credits to be earned: 75*)**

Course Code	Course Title	Hours/Week			Credits	Maximum Marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
I SEMESTER									
15LN01	Computational Mathematics	2	2	0	3	50	50	100	FC
15LN02	Fundamentals of Nanoscience	4	0	0	4	50	50	100	FC
15LN03	Quantum Mechanics	4	0	0	4	50	50	100	PC
15LN04	Synthesis of Nanomaterials	3	0	0	3	50	50	100	PC
15LN05	Materials Science	3	0	0	3	50	50	100	PC
15LN51	Synthesis of Nanomaterials Laboratory	0	0	4	2	100	0	100	PC
15LN61	Industrial Visit & Technical Seminar	1	0	2	2	100	0	100	EEC
Total 25 Hrs		17	2	6	21	500	200	700	
II SEMESTER									
15LN06	Characterization of nanomaterials	2	2	0	3	50	50	100	PC
15LN07	Nanolithography	3	0	0	3	50	50	100	PC
15LN08	Micro and Nano Electro Mechanical Systems	3	0	0	3	50	50	100	PC
15LN09	Nanoelectronics	3	0	0	3	50	50	100	PC
15LN10	Nanosensors and Devices	3	0	0	3	50	50	100	PC
15LN__	Professional Elective 1	3	0	0	3	50	50	100	PC
15LN52	Nanofabrication laboratory	0	0	4	2	100	0	100	PC
Total 23 Hrs		17	2	4	20	400	300	700	
III SEMESTER									
15LN__	Professional Elective 2	3	0	0	3	50	50	100	PE
15LN__	Professional Elective 3	3	0	0	3	50	50	100	PE
15LN__	Professional Elective 4	3	0	0	3	50	50	100	PE
15LN__	Professional Elective 5	3	0	0	3	50	50	100	PE
15LN__	Professional Elective 6	3	0	0	3	50	50	100	PE
15LN 53	Nanodevice design laboratory	0	0	4	2	100	0	100	PE
15LN71	Project Work - I	0	0	6	3	100	0	100	EEC
Total 25 Hrs		15	0	10	20	450	250	700	
IV SEMESTER									
15LN72	Project Work – II	0	0	28	14	50	0	50	EEC
Total 28 Hrs									
ELECTIVE THEORY COURSES(Six to be opted)									
15LN21	Nanophotonics	3	0	0	3	50	50	100	PE
15LN22	Biomaterials and Tissue Engineering	3	0	0	3	50	50	100	PE
15LN23	Polymer Electronics	3	0	0	3	50	50	100	PE
15LN24	Nanobiomaterials	3	0	0	3	50	50	100	PE
15LN25	Nanotoxicology	3	0	0	3	50	50	100	PE
15LN26	Nanotechnology in Textiles	3	0	0	3	50	50	100	PE
15LN27	Nanotechnology for Energy systems	3	0	0	3	50	50	100	PE
15LN28	Nanostructures in Medicine	3	0	0	3	50	50	100	PE
15LN29	Nanocomputing	3	0	0	3	50	50	100	PE
15LN30	Nanobiotechnology	3	0	0	3	50	50	100	PE
15LN31	Modelling of Nano CMOS	3	0	0	3	50	50	100	PE
15LN32	System on chip design	3	0	0	3	50	50	100	PE
15LN33	Product Design, Management Techniques and Entrepreneurship	3	0	0	3	50	50	100	PE
15LN34	Data Structures and Algorithms	2	2	0	3	50	50	100	PE
15LN35	High Vacuum Technology	3	0	0	3	50	50	100	PE

* Indicated is the minimum number of credits to be earned by a student.

CAT – Category; FC – Foundation Course; PC – Professional Core; PE - Professional Elective

EEC – Employability Enhancement Course

ONE CREDIT COURSES

15LK01	Hardware Software Co-design
15LK02	Scripting Languages
15LK03	Reconfigurable Computing
15LK04	RTOS and its Applications
15LK05	Digital Signal / Image Processing Applications
15LK06	LTE and the Evolution to 4G Wireless Communications
15LK07	Advanced Aircraft Mission and Communication Systems

SCIENCE ELECTIVES

15ID01	Micro Electro Mechanical Systems (MEMS)
15ID02	Sensors for Engineering Applications
15ID03	Laser Processing of Materials
15ID04	Plasma Technology
15ID05	Nanosensor and its Applications
15ID06	Nano Magnetism and Spintronics
15ID07	Corrosion Science and Engineering
15ID08	Instrumental Methods of Chemical Analysis
15ID09	Polymer Science and Technology
15ID10	Nanomaterials and Nanotechnology
15ID11	Thin Film Technology

HUMANITIES AND LANGUAGES ONE CREDIT COURSES

15OK01	Research Writing in Engineering Sciences
15OK02	Indian Ethos and Human Values
15OK03	Personality Development
15OK04	Financial Accounting and Cost Accounting