

**CENTRE FOR NANOTECHNOLOGY
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code : **XXX M.Tech. (Nanotechnology)**
 Department : **Centre for Nanotechnology**
 Year : **I**
 Model : **2**

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
Semester-I (Autumn)									
1.	NTC-501	Nanoscale Materials	PCC	3	3	0	0	3	0
2.	NTC-503	Advanced Characterizations and Analytical Techniques	PCC	3	3	0	0	3	0
3.	NTC-505	Emerging Applications of Nanomaterials	PCC	4	3	1	0	3	0
4.	NTC-507	Nanoscale Modelling and Simulation	PCC	4	3	0	2	3	0
5.	NTC-509	Laboratory	PCC	2	0	0	4	0	4
6.		Social Science Course	SSC	2	-	-	-	-	-
		Total		18					
Semester-II (Spring)									
1.		Program Elective-I	PEC	4	-	-	-	-	-
2.		Program Elective-II	PEC	4	-	-	-	-	-
3.		Program Elective-III	PEC	4	-	-	-	-	-
4.		Program Elective-IV	PEC	4	-	-	-	-	-
5.		Science, Technology, and Advanced Research-tools	STAR	3	-	-	-	-	-
6.	NTC-700	Seminar	SEM	2	-	-	-	-	-
		Total		21					

**CENTRE FOR NANOTECHNOLOGY
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Program Code : **XXX M.Tech. (Nanotechnology)**
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Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
Semester-I (Autumn)									
1.	NTC-691	Internship Social Activity	ISA	3	-	-	-	-	-
2.	NTC-701A	Thesis Stage-I	THESIS	10	-	-	-	-	-
		Total		13					
Semester-II (Spring)									
1.	NTC-701B	Thesis Stage-II	THESIS	14	-	-	-	-	-
		Total		14					

Summary				
Semester	1	2	3	4
Semester-wise Total Credits	18	21	13	14
Total Credits	66			

M.Tech. (Nanotechnology)

Program Elective Courses

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	NTL-501	Structural Analysis of Nanomaterials	PEC	4	3	1	0	3	0
2.	NTL-502	Supramolecular Chemistry of Nanomaterials	PEC	4	3	1	0	3	0
3.	NTL-503	Physics of Nanomaterials	PEC	4	3	1	0	3	0
4.	NTL-504	Biomedical Nanotechnology	PEC	4	3	1	0	3	0
5.	NTL-505	Electronic Properties and Measurement Techniques of Nanomaterials	PEC	4	3	1	0	3	0
6.	NTL-506	Nanoscale Fabrication Techniques	PEC	4	3	1	0	3	0
7.	NTL-507	Environmental Nanotechnology	PEC	4	3	1	0	3	0
8.	NTL-508	Surface Engineering of Nanoscale Materials	PEC	4	3	1	0	3	0

M.Tech. (Nanotechnology)

Science, Technology, and Advanced Research-tools Basket

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	NTT-501	Technology of Nanoscale Devices	STAR	3	3	0	0	3	0
2.	NTT-502	Quantum Materials	STAR	3	3	0	0	3	0
3.	NTT-503	AI and ML for Nanotechnology	STAR	3	2	0	2	3	0

Social Sciences Course Basket

Teaching Scheme					Contact Hours/Week			Exam Duration	
S.No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical
1.	NTS-501	Safety and Ethics in Nanotechnology Research	SSC	2	2	0	0	3	0