

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

Program Code:     **47**     **M.Tech. (Nanotechnology)**  
 Department:       **NT**     **Centre for Nanotechnology**  
 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
<b>Semester- I (Autumn)</b>														
1.	NTN-501	Nanoscale Materials	PCC	4	3	-	2	3	-	15	25	20	40	-
2.	NTN-502	Biomedical Nanotechnology	PCC	4	3	1	0	3	-	25		25	50	-
3.	NTN-503	Numerical methods and statistics	PCC	4	3	-	2	3	-	15	25	20	40	-
4.		Program Elective	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		Program Elective	PEC	3/4	-	-	-	-	-	-	-	-	-	-
		Total		19/ 20	9	1	3							
<b>Semester-II (Spring)</b>														
1.	NTN-504	Nanoscale Modelling and Simulation	PCC	4	3	-	2	3	-	15	25	20	40	-
2.	NTN-505	Laboratory methods (Multidisciplinary Experiments)	PCC	2	0	0	4	-	4	-	50	-	-	50
3.	NTN-700	Seminar	SEM	2	-	-	-	-	-	-	-	-	100	-
4.		Program Elective	PEC	4	-	-	-	-	-	-	-	-	-	-
5.		Program Elective	PEC	3/4	-	-	-	-	-	-	-	-	-	-
6.		Program Elective	PEC	3/4	-	-	-	-	-	-	-	-	-	-
		Total		18- 20	3	-	6							

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Program Code:     **47**     **M.Tech. (Nanotechnology)**  
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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
<b>Semester- I (Autumn)</b>														
1.	NTN-701A	Dissertation Stage-I (to be continued next semester)	DIS	12	-	-	-	-	-	-	-	-	100	-
		Total		12										
<b>Note: Students can take 1 or 2 audit courses as advised by the supervisor, if required.</b>														
<b>Semester-II (Spring)</b>														
2.	NTN-701B	Dissertation Stage-II (contd. From III semester)	DIS	18	-	-	-	-	-	-	-	-	100	-
		Total		18										

<b>Summary</b>				
Semester	1	2	3	4
<b>Semester-wise Total Credits</b>	<b>19/20</b>	<b>18-20</b>	<b>12</b>	<b>18</b>
<b>Total Credits</b>	<b>67-70</b>			

**Program Elective Courses (Nanotechnology)**

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.	NTN-601	Structural Analysis of Nanomaterials	PEC	4	3	1	0	3	-	25	-	25	50	-
2.	NTN-602	Technology of Nanostructured Fabrications	PEC	4	3	1	0	3	-	25	-	25	50	-
3.	NTN-603	Supramolecular Chemistry of Nanomaterials	PEC	4	3	1	0	3	-	25	-	25	50	-
4.	NTN-604	Physics of Nanomaterials	PEC	4	3	1	0	3	-	25	-	25	50	-
5.	NTN-605	Electronic Properties and Measurement Techniques of Nanomaterials	PEC	4	3	1	0	3	-	25	-	25	50	-
6.	NTN-606	Environmental Nanotechnology	PEC	4	3	1	0	3	-	25	-	25	50	-
7.	NTN-607	Transport Phenomenon in Nanomaterials	PEC	4	3	1	0	3	-	25	-	25	50	-
8.	NTN-608	Surface Engineering of Nanomaterials	PEC	4	3	1	0	3	-	25	-	25	50	-
9.	NTN-609	Nanobiotechnology	PEC	4	3	1	0	3	-	25	-	25	50	-
10.	BTN-644	Research Methods in Bionanotechnology	PEC	3	3	0	0	3	-	25	-	25	50	-
11.	CYN-611	Molecular Spectroscopy	PEC	3	3	1	0	3	-	25	-	25	50	-
12.	PHN-702	Nanomaterials and Technology	PEC	3	3	0	0	3	-	25	-	25	50	-
13.	PHN-706	Functional Materials and Devices	PEC	3	3	0	0	3	-	25	-	25	50	-
14.	ECN-632	RF and Microwave MEMS	PEC	3	3	0	0	3	-	25	-	25	50	-
15.	ECN-642	Nanoscale Devices and Circuit Design	PEC	3	3	0	0	3	-	25	-	25	50	-
16.	MTN-530	Nanomaterials and Applications	PEC	4	3	1	0	3	-	25	-	25	50	-
17.	ECN-596	MEMS and NEMS	PEC	4	3	1	0	3	0	25	-	25	50	-
18.	ECN-587	Nano Scale Devices	PEC	4	3	1	0	3	0	25	-	25	50	-
19.	MTN-530	Nanomaterials and Applications	PEC	4	3	1	0	3	0	25	-	25	50	-