

Maulana Azad

NATIONAL INSTITUTE OF TECHNOLOGY, Bhopal-462003

DEPARTMENT OF PHYSICS

M. Tech. in Physics

With Specialization in: Nano Technology

SCHEME OF STUDY (Revised April 2020)



First Semester

Course No.	Subject	Scheme of Studies Periods per week			Total Credits
		L	T	P	
NT 101	Computational Methods	3	1	-	4
NT 102	Structure and Properties of Solids	3	1	-	4
NT 103	Properties of Nano Materials	3	1	-	4
NT 104	Processing and Fabrication of Nanostructures	3	1	-	4
	Elective 1(A)	3	1	-	4
	Elective 2(B)	3	1	-	4
NT105	Nanomaterials Synthesis Lab,	-	-	2	1
NT 106	Seminar-1	-	-	2	1
NT 107	Communication Skills NPTEL / MOOC / Humanities	2	-	-	2
Total Hours 30		Total Credits			28
Total Credits (Cumulative) 28					

Second Semester

Course No.	Subject	Scheme of Studies Periods per week			Total Credits
		L	T	P	
NT 201	Nanostructure Characterization Techniques	3	1	-	4
NT 202	Properties of Low-dimensional System	3	1	-	4
NT 203	Instrumentation	3	1	-	4
	Elective 3(A)	3	1	-	4
	Elective 4(A)	3	1	-	4
	Elective 5(C)	3	1	-	4
NT 204	Nano materials Characterization Lab.	-	-	2	1
NT 205	Seminar-2	-	-	2	1
NT 206	Research Methodology, Technical Report and Paper Writing	-	2	-	2
Total Hours 30		Total Credits			28
Total Credits (Cumulative) 56					

Third Semester

Course No.	Subject	Scheme of Studies Periods per week			Total Credits
		L	T	P	
NT 301	Dissertation Phase-1	-	-	24	12
Total Hours 24 Total Credits (Cumulative) 68		Total Credits			12

Fourth Semester

Course No.	Subject	Scheme of Studies Periods per week			Total Credits
		L	T	P	
NT 401	Dissertation Phase-2	-	-	24	12
Total Hours 24 Total Credits (Cumulative) 80		Total Credits			12

List of Electives

Group A Program Electives	
NT501 Nano Fluids & Surfaces	NT502 Optoelectronics
NT503 Photonic Materials	NT504 Non linear Dynamics
NT505 General Theory of Relativity	NT506 Quantum Computing
NT507 Semiconductor devices	NT508 Amorphous Materials
NT509 Low Temperature Behavior of Materials	NT510 Molecular Electronics and Biomolecules
NT511 Quantum Optics	NT512 Methods in Experimental Nuclear and Particle Physics
NT513 Renewable Energy Technologies	NT514 Soft Matter Physics
NT515 Computational Physics	
Group B Department Electives (for other programs of same department only))	
NT601 Laser Technology	NT602 Nano Electronics
NT603 Solar Photovoltaic Technology	NT604 Optical Sensors
NT605 Advanced Electromagnetic Theory	
Group C Institute Electives (for other departments only)	
NT701 Molecular Structures	NT702 Advanced Magnetic Materials and their Applications
NT703 Advanced Topics in Physics	NT704 Physics of Quantum Devices
NT705 Quantum Field Theory	