MASTER OF TECHNOLOGY(INSTRUMENTATION)
REVISED SCHEME OF EXAMINATION (FOUR SEMESTERS)

FIRST SEMESTER

S. No.	Course No.	Subject	Marks			Duration of End Sem. Exam	Schedule of Teaching			Credits	Credit Points
			End Sem Exam	Class Test	Total	Exam. Hours	L	T	P		
1.	E-651	Instrumentation Systems	60	40	100	3	4	1	-	4	3.5
2.	EC-691	Digital Electronics and Instruments	60	40	100	3	4	1	-	4	3.5
3.	Ph-651	Transducers	60	40	100	3	4	1	-	4	3.5
4.	Ph-652	Signal Processing	60	40	100	3	4	1	-	4	3.5
5.	Ph-658	X-rays and Bio-medical instrumentation	60	40	100	3	4	1	-	4	3.5
6.	Ph-681	Instrumentation Laboratory	40	60	100	3	-	-	8	8	4
SECOND SEMESTER											
Any five courses are to be taken out of the list of 13 courses given in Appendix-I											
1.		Elective (i)	60	40	100	3	4	1	-	4	3.5
2.		-Do- (ii)	60	40	100	3	4	1		4	3.5
3.		-Do- (iii)	60	40	100	3	4	1	-	4	3.5
4.		-Do- (iv)	60	40	100	3	4	1	-	4	3.5
5.	M-651	Instrumentation Manufacturing Techniques	60	40	100	3	4	1	-	4	3.5
6.	Ph-682	Instrumentation Lab	40	60	100	3	-	-	8	8	4
THIRD SEMESTER											
An y three courses are to be taken out of those given in Appendix-I excluding the courses offered in II semester											
1.	Elective (i)		60	40	100	3	4	1		4	3.5
2.	-Do- (ii)		60	40	100	3	4	1		4	3.5
3.	-Do- (iii)		60	40	100	3	4	1		4	3.5
4.	Ph-683	Seminar		100	100	-	-	-	6	6	6.0
5.	Ph-684 Project		40	60	100	3	-	-	6	6	9.0

FOURTH SEMESTER										
1.	Dissertation	-	-	-	-	-		-	24	48

APPENDIX-I

ELECTIVES

S.No.	Course No.	Subject
1.	Ph-653	Materials Characterization Techniques
2.	CH-651	Analytical Instrumentation
3.	Ph-692	Computer Technology
4.	EC-693	Microprocessors and their applications
5.	Ph-654	Applied Optics and Optical design
6.	Ph-655	Electro Optical Instrumentation
7.	Ph-656	High Vacuum Techniques
8.	Ph-657	Nuclear Instrumentation
9.	Ph-659	Remote Sensing
10.	Ma-691	Stochastic processes and Estimation theory
11.	EC-694	Communication systems and equipments
12.	C-691	Hydraulic and pneumatic instrumentation

DEPARTMENT OF PHYSICS
NATIONAL INSTITUTE OF TECHNOLOGY, KURUKKSHETRA

MASTER OF TECHNOLOGY (NANOTECHNOLOGY)

FIRST SEMESTER M.TECH NANOTECHNOLOGY

Course No.	Title	Schedule of Teaching				Credit Points
		Lecturer	Tutorial	Practical	Total	
PhNT-101	Solid State Physics	4	--	--	4	4
PhNT-103	Foundations of Nanoscale Science and Technology	4	--	--	4	4
PhNT-105	Electronic and Optical Properties of materials	4	--	--	4	4
	*Elective	4	--	--	4	4
PhNTL-101	Lab 1: Nano/micro Synthesis Instrumentation and Sensor Lab	--	--	8	8	4
	Total	16	--	8	24	20

*Electives:
PhNT-107:Materials Science
PhNT-109:Atomic and Electronic Structure of Matter
PhNT-111:Introduction to Materials
PhNT-113:Photonics

Weightage:
For Theory Courses : During Semester Evaluation Weightage = 40%
End Semester Examination Weightage = 60%

For Laboratory Courses : During Semester Evaluation Weightage = 60%
End Semester Examination Weightage = 40%

SECOND SEMESTER M.TECH NANOTECHNOLOGY

Course No.	Title	Schedule of Teaching				Credit Point
		Lecturer	Tutorial	Practical	Total	
PhNT-202	Experimental Methods in Nanotechnology	4	--	--	4	4
PhNT-204	Characterization tools for nanomaterials	4	--	--	4	4
PhNT-206	Micro Electro Mechanical Systems (MEMS) & Nano Electro Mechanical Systems(NEMS)	4	--	--	4	4
MNT-307	Nanotribology	4	--	--	4	4
	*Elective	4	--	--	4	4
PhNTL-202	Lab2:Materials' Characterization Lab	--	--	8	8	4
	Total	20	--	8	28	24

*Electives:
PhNT-208:Nano- lithography (E)
PhNT-210:Nanoelectronics and Devices (E)
PhNT-212:Molecular Self- Assembly (E)

Weightage:
For Theory Courses : During Semester Evaluation Weightage = 40%
End Semester Examination Weightage = 60%

For Laboratory Courses : During Semester Evaluation Weightage = 60%
End Semester Examination Weightage = 40%

THIRD SEMESTER MTECH NANOTECHNOLOGY

Course No.	Title	Schedule of Teaching				Credit Points
		Lecturer	Tutorial	Practical	Total	
PhNT-303	Generic Methodologies for Nanotechnology	4	--	--	4	4
PhNT-305	Nanoscale Magnetic Materials and Devices	4	--	--	4	4
	*Elective	4	--	--	4	4
PhNTP-303	Minor Project	--	--	--	8	12
PhNTS-305	Seminar	–	–	–	2	2
	Total	12	--	--	22	26

*Electives:

PhNT-309: Inorganic Semiconductor Nanostructures (E)

PhNT-311: Computer Technology (E)

PhNT-313: Industrial Applications of Nano- sized Materials Nanostructures (E)

Weightage:

For Theory Courses : During Semester Evaluation Weightage = 40%

End Semester Examination Weightage = 60%

- Minor Project:1 (The project may be done in the Department or in collaboration with Industry/ National Lab/ Universities/ IITs or similar organizations.)

FOURTH SEMESTER MTECH NANOTECHNOLOGY

Course No.	Title	Schedule of Teaching				Credit Points
		Lecturer	Tutorial	Practical	Total	
PhNTD-404	Dissertation/Thesis	_	--	--	_	24

- Two Seminars (One at the time of initial stage of progress and another before-submission of the Dissertation

The examination in the subject of Dissertation is to be conducted jointly by two examiners, one of which will be the dissertation supervisor, and the other an external examiner.

The result of the examination in Dissertation shall be one of the followings-Approved, Approved with Distinction, Rejected.