Appendix-

DEPARTMENT OF PHYSICS
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code: **XX** **M.Sc. (Physics)**
Department: **PH** **Physics**
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**
Semester- I (Autumn)														
1.	HSN-501	Technical Communication	PCC	2	1	0	2	2	0	15	25	20	40	0
2.	PHN-503	Quantum Mechanics – I	PCC	4	3	1	0	3	0	25	0	25	50	0
3.	PHN-505	Advanced Mathematical Physics	PCC	4	3	1	0	3	0	25	0	25	50	0
4.	PHN-507	Classical Electrodynamics	PCC	4	3	1	0	3	0	25	0	25	50	0
5.	PHN-509	Classical Mechanics	PCC	3	3	0	0	3	0	25	0	25	50	0
6.	PHN-513	Semiconductor Devices and Applications	PCC	4	3	0	3	3	3	20	20	20	40	0
		Total		21										
Semester-II (Spring)														
1.	PHN-502	Laboratory Work	PCC	3	0	0	6	0	4	0	50	0	0	50
2.	PHN-504	Condensed Matter Physics	PCC	3	3	0	0	3	0	25	-	25	50	-
3.	PHN-506	Statistical Mechanics	PCC	3	3	0	0	3	0	25	-	25	50	-
4.	PHN-508	Quantum Mechanics - II	PCC	3	3	0	0	3	0	25	-	25	50	-
5.	PHN-512	Physics of Earth's Atmosphere	PCC	4	3	1	0	3	0	25	-	25	50	-
6.	PHN-516	Atomic, Molecular and Laser Physics	PCC	4	3	1	0	3	0	25	-	25	50	-
7.	PHN-518	Elements of Nuclear and Particle Physics	PCC	4	3	1	0	3	0	25	0	25	50	0
		Total		24										

DEPARTMENT OF PHYSICS
INDIAN INSTITUTE OF TECHNOLOGY ROORKEE

Program Code: **XX** **M.Sc. (Physics)**
Department: **PH** **Physics**
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**
Semester- I (Autumn)														
1	PHN-643	Numerical Analysis & Computer Programming	PCC	3	2	0	2	2	2	20	20	20	40	-
2.	PHN-699	Seminar	SEM	2	0	0	0	0	0	-	-	-	100	-
3.	PHN-600A	Dissertation Stage I	DIS	3	0	0	0	0	0	-	-	-	100	0
4.		Departmental Elective -I	PEC	4	3	0	3	3	3	20	20	20	40	-
5.		Departmental Elective -II	PEC	4	3	1	0	3	0	25	-	25	50	-
6.		Departmental Elective -III	PEC	4	3	1	0	3	0	25	-	25	50	-
7		Departmental Elective -IV	PEC	4	3	1	0	3	0	25	-	25	50	-
8.														
		Total		24										
Semester-II (Spring)														
1.		Departmental Elective –V	PEC	4	3	1	0	3	0	25	-	25	50	-
2.		Departmental Elective -VI	PEC	4	3	1	0	3	0	25	-	25	50	-
3.	PHN-600B	Dissertation Stage II	DIS	9	0	0	0	0	0	0	0	0	100	0
		Total		17										

Program Elective Courses (M.Sc. Physics)

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
Departmental Elective -I **(III Semester: One paper to be chosen)**														
1.	PHN-601	Advanced Condensed Matter Physics	PEC	4	3	0	3	3	0	20	20	20	40	0
2.	PHN-603	Advanced Atmospheric Physics	PEC	4	3	0	3	3	0	20	20	20	40	0
3.	PHN-605	Advanced Laser Physics	PEC	4	3	0	3	3	0	20	20	20	40	0
4.	PHN-607	Advanced Nuclear Physics	PEC	4	3	0	3	3	0	20	20	20	40	0
Departmental Electives (III Semester: Three paper to be chosen & IV Semester: Two paper to be chosen)														
5.	PHN-602	Nuclear Astrophysics	PEC	4	3	1	0	3	0	25	-	25	50	-
6.	PHN-604	Physics of Nanosystems	PEC	4	3	1	0	3	0	25	-	25	50	-
7.	PHN-606	Superfluidity and Superconductivity	PEC	4	3	1	0	3	0	25	-	25	50	-
8.	PHN-608	Fiber and Nonlinear Optics	PEC	4	3	1	0	3	0	25	-	25	50	-
9.	PHN-610	Quantum Optics	PEC	4	3	1	0	3	0	25	-	25	50	-
10.	PHN-612	Advanced topics in Mathematical Physics	PEC	4	3	1	0	3	0	25	-	25	50	-
11.	PHN-614	Introduction to Superstring theory	PEC	4	3	1	0	3	0	25	-	25	50	-
12.	PHN-616	Advanced Electroceramics Technology	PEC	4	3	1	0	3	0	25	-	25	50	-
13.	PHN-617	Advanced Characterization Techniques	PEC	4	3	1	0	3	0	25	-	25	50	-
14.	PHN-618	Atomic and Molecular Collision Physics	PEC	4	3	1	0	3	0	25	-	25	50	-
15.	PHN-619	A Primer in Quantum Field Theory	PEC	4	3	1	0	3	0	25	-	25	50	-
16.	PHN-620	Advanced Quantum Field Theory	PEC	4	3	1	0	3	0	25	-	25	50	-
17.	PHN-621	Astrophysics	PEC	4	3	1	0	3	0	25	-	25	50	-
18.	PHN-622	Solar Terrestrial Physics	PEC	4	3	1	0	3	0	25	-	25	50	-
19.	PHN-623	General Relativity	PEC	4	3	1	0	3	0	25	-	25	50	-
20.	PHN-624	Computational Nuclear Physics	PEC	4	3	1	0	3	0	25	-	25	50	-
21.	PHN-625	Particle Physics	PEC	4	3	1	0	3	0	25	-	25	50	-
22.	PHN-626	Advanced Atomic and Molecular Physics	PEC	4	3	1	0	3	0	25	-	25	50	-
23.	PHN-627	Quantum Theory of Solids	PEC	4	3	1	0	3	0	25	-	25	50	-
24.	PHN-629	Weather Forecasting	PEC	4	3	1	0	3	0	25	-	25	50	-
25.	PHN-631	Nuclear Instrumentation	PEC	4	3	1	0	3	0	25	-	25	50	-
26.	PHN-633	Physics and Technology of Thin Films	PEC	4	3	1	0	3	0	25	-	25	50	-
27.	PHN-635	Advanced Nuclear reactions	PEC	4	3	1	0	3	0	25	-	25	50	-
28.	PHN-637	Semiconductor Photonics	PEC	4	3	1	0	3	0	25	-	25	50	-
29.	PHN-638	Advanced Light Sources	PEC	4	3	1	0	3	0	25	-	25	50	-
30.	PNN-639	Superconducting Radio Frequency for particle accelerators	PEC	4	3	1	0	3	0	25	-	25	50	-