

DEPARTMENT OF PHYSICS

M.Sc. (Physics)

[illegible]

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	-
2.	PHN-603	Advanced Atmospheric Physics	PEC	4	3	0	3	3	0	20	20	20	40	-
3.	PHN-605	Advanced Laser Physics	PEC	4	3	0	3	3	0	20	20	20	40	-
4.	PHN-607	Advanced Nuclear Physics	PEC	4	3	0	3	3	0	20	20	20	40	-
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.	PHN-639	Superconducting Radio Frequency for particle accelerators	PEC	4	3	1	0	3	0	25	-	25	50	-

Pre PhD courses

1.	PHN-785 Senate 62.7	CLASSICAL MECHANICS AND ELECTRODYNAMICS	PEC	4	3	1	0	3	0	25	0	25	50	0
2.	PHN-786 Senate 62.7	ADVANCED QUANTUM AND STATISTICAL MECHANICS	PEC	4	3	1	0	3	0	25	0	25	50	0
3.	PHN-788 Senate 62.7	ADVANCED CHARACTERIZATION TECHNIQUES	PEC	4	3	1	0	3	0	25	0	25	50	0
4.	PHN-789 Senate 62.7	MATHEMATICAL AND COMPUTATIONAL TECHNIQUES	PEC	4	3	1	0	3	0	25	0	25	50	0
5.	PHN-915	INTRODUCTION TO SUPER STRING THEORY AND COMPLEX GEOMETRY	PEC	4	3	1	0	3	0	25	0	25	50	0
6.	PHN-921 (IAPC 98.2.2 dated 3.2.2021)	INTRODUCTION TO QUANTUM COMPUTATION AND INFORMATION	PEC	4	3	1	0	3	0	20-35	0	20-30	40-50	0

Pre PhD courses

1.	PH-901	Advanced Nuclear Reaction Models And Experimental Techniques	PEC	4	3	1	0	3	0	20-35	0	20-30	40-50	0
2.	PH-908	Nuclear Many-Body Problem	PEC	4	3	1	0	3	0	20-35	0	20-30	40-50	0
3.	PH-915	Superstring Theory and Complex Geometry	PEC	4	3	1	0	3	0	20-35	0	20-30	40-50	0
4.	PH-917	Earth's Magnetosphere and its disturbances	PEC	4	3	1	0	3	0	20-35	0	20-30	40-50	0
5.	PH-918	Advanced Direct Nuclear Reaction Theory	PEC	4	3	1	0	3	0	20-35	0	20-30	40-50	0