Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

First Year: Certificate in Physics (1st Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
				L	T	P	CT	TA	CIE Total	ESE											
THEORY																					
1	B010101T/ PY113	Mathematical Physics and Newtonian Mechanics	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
2	**B010103T / PY119**	**Renewable Energy and Energy Harvesting**	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓		✓			
3	A050101T/ HM101	Rashtra Gaurav	Audit Course	2	0	0	--	--	--	100	100	0:0:0	0						✓		
4	I010101V/ PY117	Electrician	Minor (Vocational)	2	1	0	--	--	--	100	100	3:0:0	3	✓		✓					
5	Z010101T/ BE105	Food, Nutrition and Hygiene	Minor (Co-Curricular)	2	0	0	15	10	25	75	100	2:0:0	2	✓	✓	✓		✓	✓	✓	
PRACTICAL																					
6	B010102P/ PY114	Mechanical Properties of Matter	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
7	B010104P / PY120	**Solar Energy Lab**	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
			Total	**16**	**3**	**8**	**75**	**50**	**125**	**575**	**700**	**17**	**17**								

Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

First Year: Certificate in Physics (2nd Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE											
				L	T	P	CT	TA	CIE Total	ESE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
THEORY																					
1	B010201T/ PY115	Thermal Physics and Semiconductor Devices	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					4, 9
2	**B010203T/ PY122**	**Basics of Astrophysics and Cosmology**	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					4, 9
3	(a) B030201T/ MT138 OR (b) B020201T/ CH139 + B020202P/ CH141 OR (c) B070201T/ CS129 + B070202P/ CS130	Choose anyone from following (a) Matrices and Differential Equations & Geometry (T-6) (b) Bioorganic and Materials Chemistry (T-4) + Biochemical Analysis (P-2) (c) Database Management Systems (T-4) + Database Management Systems Lab (P-2)	Minor (T + P)	5	1	0	15	10	25	75	100	6:0:0	6	✓		✓					4, 9
4	B010205/ PY118	Artificial Intelligence and Physics	Audit Course	2	0	0	--	--	--	100	100	0:0:0	0	✓		✓					4, 9
5	I010201V/ ME161	Refrigeration and Air-conditioning	Minor (Vocational)	2	1	0	--	--	--	100	100	3:0:0	3	✓	✓	✓					4, 9
6	Z020201T/ NS110	First Aid and Health	Minor (Co-Curricular)	2	0	0	15	10	25	75	100	2:0:0	2	✓		✓		✓	✓		3
PRACTICAL																					
7	B010202P/ PY116	Thermal Properties of Matter and Electronic Circuits-1	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					4, 9
8	**B010204P/ PY121**	**Thermal Properties of Matter and Electronic Circuits-2**	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					4, 9
			Total	**21**	**4**	**8**	**90**	**60**	**150**	**650**	**800**	**23**	**23**								

Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

Second Year: Diploma in Physics (3rd Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
				L	T	P	CT	TA	CIE Total	ESE											
THEORY																					
1	B010301T/ PY207	Electromagnetic Theory and Modern Optics	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
2	**B010303T / PY211**	**Programming with Python**	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
3	I010301V/ ME261	Welding Science and Technology	Minor (Vocational)	2	1	0	---	---	---	100	100	3:0:0	3	✓		✓					
4		Indian / Regional Language	Minor (Co-Curricular)	2	0	0	15	10	25	75	100	2:0:0	2	✓	✓	✓					
PRACTICAL																					
5	B010302P/ PY208	Demonstrative Aspects of Electricity and Magnetism	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
6	**B010304T / PY212**	**Python Programming Lab**	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
			Total	**14**	**3**	**8**	**75**	**50**	**125**	**475**	**600**	**17**	**17**								

Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

Second Year: Diploma in Physics (4th Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
				L	T	P	CT	TA	CIE Total	ESE											
THEORY																					
1	B010401T/ PY209	Perspectives of Modern Physics and Basic Electronics	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
2	**B010403T / PY213**	**Mathematical Methods and Numerical Techniques**	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
3	B030401T/ MT229 OR B020401T/ CH239 + B020402P/ CH241 OR B070401T/ CS275 + B070402P/ CS276	Choose any ONE from the Followings: (a) Differential Equations & Mechanics (T-6) OR (b) Quantum Mechanics and Analytical Techniques (T-4) + Instrumental Analysis (P-2) OR (c) Computer System Architecture (T-4) + Computer System Architecture Lab (P-2)	Minor (T + P)	5	1	0	15	10	25	75	100	6:0:0	6	✓		✓					
4	Z040401T/ PH201	Physical Education and Yoga	Minor (Co-Curricular)	2	0	0	15	10	25	75	100	2:0:0	2	✓	✓	✓		✓	✓	✓	
PRACTICAL																					
5	B010402P/ PY210	Basic Electronics Instrumentation	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
6	**B010404P/ PY214**	**Numerical Techniques Lab**	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
7	B010405P/ PY215	Project	Major	0	0	6	---	---	25	75	100	0:0:3	3	✓		✓				✓	
			Total	**17**	**3**	**14**	**90**	**60**	**175**	**525**	**700**	**23**	**23**								

Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

Third Year: Degree in B.Sc.- Physics (5th Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE											
				L	T	P	CT	TA	CIE Total	ESE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
THEORY																					
1	B010501T/ PY311	Classical and Statistical Mechanics	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
2	B010502T/ PY312	Quantum Mechanics and Spectroscopy	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
3	**B010504T/ PY318**	**Nanoscience and Nanotechnology**	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
4	**B010505T/ PY319**	**Biological Physics**	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
PRACTICAL																					
5	B010503P/ PY313	Demonstrative Aspects of Optics and Lasers – 1	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
6	**B010506P/ PY313**	**Demonstrative Aspects of Optics and Lasers – 2**	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
7	B010507P/ PY323	**Project**	Major	0	0	4	---	---	25	75	100	0:0:5	5	✓		✓				✓	
		Total		**20**	**4**	**12**	**90**	**60**	**175**	**525**	**700**	**25**	**25**								

Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

Third Year: Degree in B.Sc. Honours in Physics (6th Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
				L	T	P	CT	TA	CIE Total	ESE											
THEORY																					
1	B010601T/ PY314	Solid State and Nuclear Physics	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
2	B010602T/ PY315	Analog and Digital Principles and Applications	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
3	**B010604T/ PY321**	**Quantum Computation**	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
4	**B010605T/ PY322**	**Atmospheric Physics**	Major	5	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
PRACTICAL																					
5	B010603P/ PY316	Analog and Digital Circuits-1	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
6	**B010606P/ PY320**	**Analog and Digital Circuits-2**	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
7	B010607P/ PY324	Project	Major	0	0	4	---	---	25	75	100	0:0:5	5	✓		✓				✓	
			Total	**20**	**4**	**12**	**90**	**60**	**175**	**525**	**700**	**25**	**25**								

Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

Fourth Year: B.Sc. Honours in Physics (7th Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
				L	T	P	CT	TA	CIE Total	ESE											
THEORY																					
1	B010701T/ PY413	Advanced Mathematical Physics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
2	B010702T/ PY414	Quantum Mechanics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
3	B010703T/ PY415	Classical Mechanics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
4	B010704T/ PY416	Statistical Mechanics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
PRACTICAL																					
5	B010705T/ PY417	Advanced Physics Lab - I	Major	0	0	4	15	10	25	75	100	0:0:4	4	✓		✓					
			Total	**12**	**4**	**4**	**75**	**50**	**125**	**375**	**500**	**20**	**20**								

Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

Fourth Year: B.Sc. Honours in Physics (8th Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE											
				L	T	P	CT	TA	CIE Total	ESE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
THEORY																					
1	B010801T/ PY418	Condensed Matter Physics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
2	B010802T/ PY419	Electrodynamics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
3	B010803T/ PY420	Nuclear and Particle Physics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
4	B010804T/ PY421	Solid State Electronics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
PRACTICAL																					
5	B010805P/ PY422	Advanced Physics Lab - II	Major	0	0	4	15	10	25	75	100	0:0:4	4	✓		✓					
			Total	**14**	**4**	**4**	**75**	**50**	**125**	**375**	**500**	**20**	**20**								

Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

Fourth Year: B.Sc. Honours with Research in Physics (7th Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
				L	T	P	CT	TA	CIE Total	ESE											
THEORY																					
1	B010701T/ PY413	Advanced Mathematical Physics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
2	B010702T/ PY414	Quantum Mechanics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
3	B010703T/ PY415	Classical Mechanics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
4	B010704T/ PY416	Statistical Mechanics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
PRACTICAL																					
5	B010706P/ PY423	**Project**	Major	0	0	4	---	---	25	75	100	0:0:4	4	✓		✓					
			Total	**12**	**4**	**4**	**60**	**40**	**125**	**375**	**500**	**20**	**20**								

Department of Physics

Study and Evaluation Scheme of Examination: B.Sc. Honours in Physics / B.Sc. Honours with Research in Physics

As per NEP-2020 Guidelines **w.e.f. Session 2024-25**

Fourth Year: B.Sc. Honours with Research in Physics (8th Semester)

S. No.	Course Code	Course Title	Type of Paper	Periods Per Week			Evaluation Scheme				Subject Total	Credit	Total Credit	Attributes							SDG
							CIE			UE				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
				L	T	P	CT	TA	CIE Total	ESE											
THEORY																					
1	B010801T/ PY418	Condensed Matter Physics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
2	B010802T/ PY419	Electrodynamics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
3	B010803T/ PY420	Nuclear and Particle Physics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
4	B010804T/ PY421	Solid State Electronics	Major	3	1	0	15	10	25	75	100	4:0:0	4	✓		✓					
PRACTICAL																					
5	B010806P/ PY424	**Project**	Major	0	0	4	---	---	25	75	100	0:0:4	4	✓		✓					
Total				**12**	**4**	**4**	**60**	**40**	**125**	**375**	**500**	**20**	**20**								