



Course Structure, Study and Evaluation Scheme UG (PME) + PG (Physics) as per NEP-2020

		Subject I (Physics)	Subject II (Mathematics)	Subject III (Electronics)	Subject IV	Vocational	Co-curricular**	Industrial Training Survey/ Research Project	Total Credit of the Year	Cumulative Minimum Credits (Required for the award of certificates/ diploma/ degree)
		Major	Major	Major	Minor Elective	Minor	Minor	Major		
		4/5/6 Credits	4/5/6 Credits	4/5/6 Credits	4/5/6 Credits	3 Credits	2	4 Credits		
Year	Sem.	Own Faculty	Own Faculty	Any Faculty	Other Faculty	Vocational/ Skill Development Course	Co-curricular (Qualifying)	Inter/Intra Faculty related to main subject		
1	I	(B010101T)/(PY113) Mathematical Physics & Newtonian Mechanics (T-4)	(B030101T)/(MT136) Differential Calculus & Integral Calculus (T-4)	(B140101T)/(EC131) Basic Circuit Theory and Network Analysis (T-4)		(I010101V) Electrician (V-3)	(Z010101T) Food, Nutrition and Hygiene (Th-2)		50 (36+4+6+4)	46 Certificate in Science (Physics, Mathematics & Electronics)
		(B010102P)/(PY114) Mechanical Properties of Matter (P-2)	(B030102P)/(MT137) Practical to be done using Mathematica /MATLAB (P-2)	(B140102P)/(EC132) Circuits and Networks Lab (P-2)						
	II	(B010201T)/(PY115) Thermal Physics & Semiconductor Devices (T-4)	(B030201T)/(MT138) Matrices and Differential Equations & Geometry (T-6)	(B140201T)/(EC133) Semiconductor devices and Electronic Circuits (T-4)	(ES115) Fundamentals of Environmental Science/ Fundamentals of Mechanical Engineering (ME131) (T-4)	(I010201V) Refrigeration and Air conditioning (V-3)	(Z020201) First Aid and Health (Th-2)			
		(B010202P)/(PY116) Thermal Properties of Matter & Electronic Circuits (P-2)		(B140202P)/(EC134) Semiconductor devices and Circuits Lab (P-2)						
2	III	(B010301T)/(PY207) Electromagnetic Theory & Modern Optics (T-4)	(B030301T)/(MT228) Algebra & Mathematical Methods (T-6)	(B140301T)/(EC291) Analog Electronics (T-4)		(I010301V) Welding Science and Technology (V-3)	(Z030301) Human Values and Environment studies (Th-2)		50 (36+4+6+4)	92 Diploma in Science (Physics, Mathematics & Electronics)
		(B010302P)/(PY208) Demonstrative Aspects of Electricity & Magnetism (P-2)		(B140302P)/(EC292) Analog Electronics Lab (P-2)						
	IV	(B010401T)/(PY209) Perspectives of Modern Physics & Basic Electronics (T-4)	(B030401T)/(MT229) Differential Equation & Mechanics (T-6)	(B140401T)/(EC293) Digital Electronics (T-4)	(LN104) Essential Professional Communication/ Basic Manufacturing Process (ME231) (T-4)	(I010401V) Mechanical AutoCAD (V-3)	(Z040401) Physical Education and Yoga (Th-2)			
		(B010402P)/(PY210) Basic Electronics Instrumentation (P-2)		(B140402P)/(EC294) Digital Electronics Lab (P-2)						

3	V	(B010501T)/(PY311) Classical & Statistical Mechanics (T-4)	(B030501T)/(MT320) Group and Ring Theory & Linear Algebra (T-5)	(B140501T)/(EC391) Electromagnetics and Antenna Fundamentals (T-4)			(Z050501) Analytic Ability and Digital Awareness (Th-2)	(B010504R) Project-1 (R-3)	50 (40+4+6)	138 Bachelor in Science (Physics, Mathematics & Electronics)	
		(B010502T)/(PY312) Quantum Mechanics & Spectroscopy (T-4)	Any one of the followings: (a) Number Theory & Game Theory (b) Graph Theory & Discrete Mathematics (c) Differential Geometry & Tensor Analysis (T-5)	(B140502T)/(EC392) Microprocessor Programming and Interfacing (T-4)							
		(B010503P)/(PY313) Demonstrative Aspects of Optics & Lasers (P-2)		(B140503P)/(EC393) Antenna and Microprocessor Lab (P-2)							
	VI	(B010601T)/(PY314) Solid State & Nuclear Physics (T-4)	(B030601T)/(MT324) Metric Space & Complex Analysis (T-4)	(B140601T)/(EC394) Communication Electronics (T-4)			(Z060601) Communication Skills and Personality Development (Th-2)	(B010604R) Project-2 (R-3)			
		(B010602T)/(PY315) Analog & Digital Principles & Applications (T-4)	(B030602T)/(MT325) Numerical Analysis & Operations Research (T-4)	(B140602T)/(EC395) Linear Integrated Circuit (T-4)							
		(B010603P)/(PY316) Analog & Digital Circuits (P-2)	(B060603P)/(MT326) Practicals to be done using Mathematica /MATLAB (P-2)	(B140603P)/(EC396) IC and Communication Lab (P-2)							
4	VII	(B010701T)/(PY401) Mathematical Physics (T-4)							56 (32+8+4+12)	194 Bachelor (Research) in Science	
		(B010702T)/(PY402) Classical Mechanics (T-4)						(B010706R) Research Project- 1 (R-6)			
		(B010703T)/(PY403) Quantum Mechanics - I (T-4)									
		(B010704T)/(PY404) Statistical Mechanics – I (T-4)									
		(B010705P)/(PY406) General and Optics Lab (P-4)				(PY511) Computational Methods and Programming in ‘C’ Language (T-4)					
	VIII	(B010801T)/(PY407) Quantum Mechanics II (T-4)									
		(B010802T)/(PY408) Electrodynamics (T-4)									
		(B010803T)/(PY409) Condensed Matter Physics (T-4)						(B010806R) Research Project- 2 (R-6)			
		(B010804T)/(PY410) Nuclear and Particle Physics (T-4)									
		(B010805P)/(PY412) Programming and Condensed Matter Physics Lab (P-4)									

5	IX	(B010901T)/(PY501) Atomic and Molecular Physics (T-4)							
		(B010902T)/(PY502) Electronics Instrumentation (T-4)							
		(B010903T)/(PY503) Advanced Condensed Matter Physics (T-4)					(B010906R) Research Project- 1 (R-6)		
		(B010904T)/(PY505) Numerical techniques and Statistical Mechanics II (T-4)							
		(B010905P)/(PY515) Basic Material Science and Numerical Techniques Lab (P-4)							
	X	(B0101001T)/(PY509) Physics of Nanomaterials (T-4)							
		(B0101002T)/(PY512) Laser Physics (T-4)							
		(B0101003T)/(PY513) Microprocessor and its Applications (T-4)					(B0101006R) Research project- 2 (R-6)		
		(B0101004T)/(PY514) Renewable Energy Resources (T-4)							
		(B0101005P)/(PY516) Microprocessor Lab (P-4)							
							52 (32+8+12)	246 Master in Science	



Evaluation Scheme B. Sc. (Physics, Mathematics & Electronics)





1st Year: Certificate in Science (Physics, Mathematics & Electronics)

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	4	0	0	15	10	25	75	100	4:0:0	4	✓							
2	B030101T/ MT136	Differential Calculus and Integral Calculus	Major	4	0	0	15	10	25	75	100	4:0:0	4								
3	B140101T/ EC131	Basic Circuit Theory and Network Analysis	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓		✓					
4	I010101V	Electrician	Minor (Vocational)	3	0	0	15	10	25	75	100	3:0:0	3	✓		✓					
5	Z010101T	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	B030102P/ MT137	Practical to be done using Mathematica / MATLAB	Major	0	0	4	15	10	25	75	100	0:0:2	2								
8	B140102P/ EC132	Circuits and Networks Lab	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓	✓	✓					
Total				17	0	12	120	80	200	600	800	23	23								

- (MCQs only with 0.25 negative Marking)





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				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
				L	T	P	CT	TA	CIE Total	ESE											
THEORY																					
1	B010201T/ PY115	Thermal Physics and Semiconductor Devices	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
2	B030201T/ MT138	Matrices and Differential Equations and Geometry	Major	6	0	0	15	10	25	75	100	6:0:0	6								
3	B140201T/ EC133	Semiconductor Devices and Electronic Circuits	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
4	ES115/ ME131	Fundamentals of Environmental Science/ Fundamentals of Mechanical Engineering	Minor (Elective)	4	0	0	15	10	25	75	100	4:0:0	4	✓	✓			✓	✓		
5	I010201V	Refrigeration and Air-conditioning	Minor (Vocational)	3	0	0	15	10	25	75	100	3:0:0	3	✓		✓					
6	Z020201	First Aid and Health	Minor (Co-Curricular)	2	0	0	15	10	25	75 ^{##}	100	2:0:0	2	✓		✓			✓		
PRACTICAL																					
7	B010202P/ PY116	Thermal Properties of Matter and Electronic Circuits	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓							
8	B140202P/ EC134	Semiconductor devices and Circuits Lab	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
Total				23	0	8	120	80	200	600	800	27	27								

- (MCQs only with 0.25 negative Marking)





2nd Year: Diploma in Science (Physics, Mathematics & Electronics)

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	4	0	0	15	10	25	75	100	4:0:0	4	✓							11 SUSTAINABLE CITIES AND COMMUNITIES 
2	B030301T/ MT228	Algebra and Mathematical Methods	Major	6	0	0	15	10	25	75	100	6:0:0	6								
3	B140301T/ EC291	Analog Electronics	Major	4	0	0	15	10	25	75	100	6:0:0	4	✓							12 RESPONSIBLE CONSUMPTION AND PRODUCTION 
4	I010301V	Welding Science and Technology	Minor (Vocational)	3	0	0	15	10	25	75	100	3:0:0	3	✓		✓					
5	Z030301	Human Values and Environment studies	Minor (Co-Curricular)	2	0	0	15	10	25	75 ^{##}	100	2:0:0	2	✓				✓	✓		
PRACTICAL																					
6	B010302P/ PY208	Demonstrative Aspects of Electricity and Magnetism	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					11 SUSTAINABLE CITIES AND COMMUNITIES 
7	B140302P/ EC292	Analog Electronics Lab	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					12 RESPONSIBLE CONSUMPTION AND PRODUCTION 
Total				19	0	8	105	70	175	450	700		23	23							



- (MCQs only with 0.25 negative Marking)

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	4	0	0	15	10	25	75	100	4:0:0	4	✓							
2	B030401T/ MT229	Differential Equation and Mechanics	Major	6	0	0	15	10	25	75	100	6:0:0	6								
3	B140401T/ EC293	Digital Electronics	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
4	LN104/ ME231	Essential Professional Communication/ Basic Manufacturing Process	Minor (Elective)	4	0	0	15	10	25	75	100	4:0:0	4	✓		✓			✓	✓	
5	I010401V	Mechanical AutoCAD	Minor (Vocational)	3	0	0	15	10	25	75	100	3:0:0	3	✓		✓					
6	Z040401	Physical Education and Yoga	Minor (Co-Curricular)	2	0	0	15	10	25	75 ^{##}	100	2:0:0	2	✓		✓					
PRACTICAL																					
7	B010402P/ PY210	Basic Electronics Instrumentation	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
8	B140402P/ EC294	Digital Electronics Lab	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
Total				23	0	8	120	80	200	600	800	27	27								




3rd Year: Bachelor in Science (Physics, Mathematics & Electronics)

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				Employability	Entrepreneurship	Skill Development	Gender Equality	Environment and Sustainability	Human Values	Professional Ethics	
				L	T	P	CT	TA	CIE Total	ESE											
THEORY																					
1	B010501T/ PY311	Classical and Statistical Mechanics	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
2	B010502T/ PY312	Quantum Mechanics and Spectroscopy	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
3	B030501T/ MT320	Group and Ring Theory and Linear Algebra	Major	5	0	0	15	10	25	75	100	5:0:0	5								
4	B030502T/ MT321/ B030503T/ MT322/ B030504T/ MT323	Any one of the followings: (a) Number Theory & Game Theory (b) Graph Theory & Discrete Mathematics (c) Differential Geometry & Tensor Analysis	Major	5	0	0	15	10	25	75	100	5:0:0	5								
5	B140501T/ EC391	Electromagnetics and Antenna Fundamentals	Major	4	0	0	15	10	25	75	100	4:0:0	4								
6	B140502T/ EC392	Microprocessor programming and interfacing	Major	4	0	0	15	10	25	75	100	4:0:0	4								
7	Z050501	Analytic Ability and Digital Awareness	Minor (Co-Curricular)	2	0	0	15	10	25	75 ^{##}	100	2:0:0	2	✓						✓	
PRACTICAL																					
8	B010503P/ PY313	Demonstrative Aspects of Optics and Lasers	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓		✓					
9	B140503P/ EC393	Antenna and Microprocessor Lab	Major	0	0	4	15	10	25	75	100	0:0:2	2								
10	B010504R	Industrial Training/ Survey/Project	Major	0	0	3	---	---	25	75	100	0:0:3	3			✓				✓ 	
Total				20	0	7	90	60	175	525	700	25	25								

- (MCQs only with 0.25 negative Marking)

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	4	0	0	15	10	25	75	100	4:0:0	4	✓							
2	B010602T/ PY315	Analog and Digital Principles and Applications	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
3	B030601T/ MT324	Metric Space and Complex Analysis	Major	4	0	0	15	10	25	75	100	4:0:0	4								
4	B030602T/ MT325	Numerical Analysis & Operations	Major	4	0	0	15	10	25	75	100	4:0:0	4								
5	B140601T/ EC394	Communication electronics	Major	4	0	0	15	10	25	75	100	4:0:0	4								
6	B140602T/ EC395	Linear integrated circuits EC	Major	4	0	0	15	10	25	75	100	4:0:0	4								
7	Z060601	Communication Skills and Personality Development	Minor (Co-Curricular)	2	0	0	15	10	25	75 ^{##}	100	2:0:0	2	✓		✓					
PRACTICAL																					
8	B010603P/ PY316	Analog and Digital Circuits	Major	0	0	4	15	10	25	75	100	0:0:2	2	✓							
9	B060603P/ MT326	Practicals to be done using Mathematica	Major	0	0	4	15	10	25	75	100	0:0:2	2								
10	B140603P/ EC396	IC and communication lab EC	Major	0	0	4	15	10	25	75	100	0:0:2	2								
11	B010604R	Industrial Training/ Survey/ Project	Major	0	0	3	---	---	25	75	100	0:0:3	3			✓					
Total				18	0	11	105	70	200	600	800	25	25								

- (MCQs only with 0.25 negative Marking)



4th Year: Bachelor (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/ PY401	Mathematical Physics	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
2	B010702T/ PY402	Classical Mechanics	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
3	B010703T/ PY403	Quantum Mechanics - I	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
4	B010704T/ PY404	Statistical Mechanics - I	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
5	PY511	Computational methods and programming in 'C' language	Minor (Elective)	4	0	0	15	10	25	75	100	4:0:0	4	✓		✓					
PRACTICAL																					
6	B010705P/ PY406	General and Optics Lab	Major	0	0	8	15	10	25	75	100	0:0:4	4	✓		✓					
7	B010706R	Industrial Training/ Survey/ Project	Major	0	0	6	---	---	25	75	100	0:0:6	6			✓				✓	
Total				20	0	14	90	60	175	525	700	30	30								









5th Year: Master of Science (Physics)

9th 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	B010901T/ PY501	Atomic and Molecular Physics	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
2	B010902T/ PY502	Electronics Instrumentation	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓						9 	
3	B010903T/ PY503	Advanced Condensed Matter Physics	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
4	B010904T/ PY505	Numerical techniques and Statistical Mechanics II	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓							
PRACTICAL																					
5	B010905P/ PY515	Basic Material Science and Numerical Techniques Lab	Major	0	0	8	15	10	25	75	100	0:0:4	4	✓		✓					
6	B010906R	Industrial Training/ Survey/ Project	Major	0	0	6	---	---	25	75	100	0:0:6	6			✓				4 	
Total				16	0	14	75	50	150	450	600	26	26								

10th 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	
				L	T	P	CT	TA	CIE Total	ESE										
THEORY																				
1	B0101001T /PY509	Physics of Nanomaterials	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓						
2	B0101002T /PY512	Laser Physics	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓						
3	B0101003T /PY513	Microprocessor and its Applications	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓						
4	B0101004T /PY514	Renewable Energy Resources	Major	4	0	0	15	10	25	75	100	4:0:0	4	✓			✓			
PRACTICAL																				
5	B0101005P /PY516	Microprocessor Lab	Major	0	0	8	15	10	25	75	100	0:0:4	4	✓		✓				
6	B0101006R	Industrial Training/Survey/Project	Major	0	0	6	---	---	25	75	100	0:0:6	6			✓		✓		
Total				16	0	14	75	50	150	450	600	26	26							