CRITERION 1-CURRICULAR ASPECTS

1.1 Curriculum design and development

PROGRAMMES & COURSES

Department offers Under Graduate (B.Sc), Post Graduate (M.Sc-Physics) and Ph.D. (Physics) programmes.

Programme	Duration	Eligibility*
B.Sc. (with Physics)	3 Years (6 Semesters)	10+2 (with science group having Physics and Mathematics)
M.Sc. Physics	2 Years (4 Semesters)	B.Sc. (Physics)
Ph.D. Physics	2-6 years	Post Graduation

*Admission in each programme is through all India entrance test. Reservation and relaxations to candidates of various categories are as per University and Government of India norms.

1.2 Course structure

Course work for Ph.D. (Physics)

Session 2020-21

Course Structure

I Semester

Core Courses:

		L	T	P	C
PHY CC 141	Research Methodology	3	1	0	4
PHY CC 142	Advances in Physics	3	1	0	4
PHY CC 143	Review of Literature (Dissertation)	Self Study			4
PHY CC 144	Research and Publication Ethics (RPE)	2	-	-	2

Elective Course (any one of the following)

PHY EC 141	Advanced Theoretical Methods	3	1	0	4
PHY EC 142	Advanced Experimental Methods	3	0	1	4
PHY EC 143	Advanced Electronic Systems	3	0	1	4

Core credits	=	10
Elective Credits	=	4
Review of Literature (Dissertation)	=	4
Total Credits	=	**18**

Courses offered under CBCS Programme

M. Sc. (Physics) : Session 2020-2021

Semester – I	Compulsory Courses (22 Credits)	L	T	P	C
PHY CC 121	Mathematical Physics	3	1	0	4
PHY CC 122	Classical Mechanics	3	1	0	4
PHY CC 123	Digital Electronics and Operational Amplifiers	3	1	0	4
PHY CC 124	Atomic, Molecular and Laser Physics	3	1	0	4
PHY CC 125	Laboratory Course – I (General-I)	0	0	2	2
PHY CC 126	Laboratory Course – II (Electronics-I)	0	0	2	2
PHY SE 121	Seminar				2
Semester – II	Compulsory Courses (22 Credits)				
PHY CC 221	Quantum Mechanics	3	1	0	4
PHY CC 222	Electrodynamics and Plasma Physics	3	1	0	4
PHY CC 223	Electronic Devices	3	1	0	4
PHY CC 224	Condensed Matter Physics	3	1	0	4
PHY CC 225	Laboratory Course –III (General -II)	0	0	2	2
PHY CC 226	Laboratory Course – IV (Electronics -II)	0	0	2	2
PHY SE 221	Seminar				2
Open Elective Courses					
PHY OE 221	Energy and Environment	2	0	0	2

Semester – III	(Compulsory Courses : 14 credits; Electives: 6/8 credits)				
PHY CC 321	Statistical Mechanics	3	1	0	4
PHY CC 322	Computational Methods and Programming	3	1	0	4
PHY CC 323	Laboratory Course (Computer Programming)	0	0	2	2
PHY CC 324	Instrumentation Skill Development	0	0	2	2
PHY SE 321	Seminar				2
Elective Courses	(any two of the followings)				
PHY EC 321	Microprocessor and Microcontroller	3	0	1	4
PHY EC 322	Materials Science	3	1	0	4
PHY EC 323	Laser Physics and Optical Fiber	3	1	0	4
Open Elective Courses					
PHY OE 321	Nanomaterials and Nanotechnology	2	0	0	2
Semester – IV	(Core : 12 credits ; Electives: 10/8 credits)				
PHY CC 421	Advanced Quantum Mechanics	3	1	0	4
PHY CC 422	Nuclear and Particle Physics	3	1	0	4
PHY SE 423	Digital Communication Skills Development	0	0	2	2
PHY SE 422	Seminar				2
Elective Courses	(any two of the followings)				
PHY EC 421	VLSI Design	3	0	1	4
PHY EC 422	Physics of Nanomaterials	3	1	0	4
PHY EC 423	Plasma Physics	3	1	0	4
PHY EC 425	Project				4

*The students must earn at least **4** credits from other departments.*

Courses offered under CBCS Programme

B.Sc. Programme in Physics

Session 2020-2021

Course structure of B.Sc. (Physics)

Semester – I

		L	T	P	C
PHY CC 111	Mechanics	4	0	0	4
PHY CC 112	Mechanics Lab.	0	0	2	2

Semester – II

PHY CC 211	Electricity and Magnetism	4	0	0	4
PHY CC 212	Electricity and Magnetism Lab.	0	0	2	2

Semester – III

PHY CC 311	Thermal Physics And Statistical Mechanics	4	0	0	4
PHY CC 312	Thermal Physics And Statistical Mechanics Lab.	0	0	2	2
PHY SE 311	Electrical Circuits And Network Skills	2	0	0	2

Semester – IV

PHY CC 411	Waves and Optics	4	0	0	4
PHY CC 412	Waves and Optics Lab.	0	0	2	2
PHY SE 411	Basic Instrumentation Skills	2	0	0	2

Semester –V

PHY SE 511	Applied Optics	2	0	0	2
PHY EC 511	Digital and Analog Circuits And Instrumentation	4	0	0	4
PHY EC 512	Digital and Analog Circuits And Instrumentation Lab.	0	0	2	2
PHY EC 513	Solid State Physics	4	0	0	4
PHY EC 514	Solid State Physics Lab.	0	0	2	2

Semester – VI

PHY SE 611	Renewable Energy And Energy Harvesting	2	0	0	2
PHY EC 613	Nuclear and Particle Physics	6	0	0	6
PHY EC 614	Elements of Modern Physics	4	0	0	4
PHY EC 615	Elements of Modern Physics Lab.	0	0	2	2

- *Students have to "Opto" any one Elective Courses form (PHY EC 511, 512 or PHY EC 513, 514) in V Semester and from (PHY SE 611, PHY EC 613 or PHY EC 614, 615) in VI Semester respectively.*

Skill Enhancement Course are Optional.