

STRUCTURE OF THE SYLLABUS FOR 4 YEAR UG PROGRAMME

SCHOOL NAME – ROYAL SCHOOL OF APPLIED AND PURE SCIENCES

DEPARTMENT NAME - PHYSICS

PROGRAMME NAME - B.Sc. in PHYSICS

1st SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	PHY012 M101	Mechanics	100	3	3-0-0
	PHY012 M111	Physics Lab I	100	3	0-0-6
Minor	PHY012N101	Fundamentals of Physics	100	3	3-0-0
Interdisciplinary (IDC)	IKS-1	Introduction to Indian Knowledge System – I	100	3	3-0-0
Ability Enhancement course (AEC)	CEN982A101	Communicative English	100	1	1-0-0
	BHS982A102	Behavioral Science-I	100	1	1-0-0
Skill Enhancement Course (SEC)	PHY012S111	Physics Workshop Skills	100	3	0-0-6
Value Added Course (VAC)	VAC-1	From basket courses	100	3	0-0-6
Swayam 1	SWAYAM CODE 1	Swayam 1	100	3/4/5	
TOTAL CREDIT FOR 1st SEMESTER				20 + 3/4/5	
2nd SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	PHY012 M201	Electricity and Magnetism	100	3	3-0-0
	PHY012 M211	Physics Lab II	100	3	0-0-6
Minor	PHY012N211	General Physics Lab I	100	3	0-0-6
IDC	IKS-2	Introduction to Indian Knowledge System – II	100	3	3-0-0
AEC	CEN982A201	Communicative English	100	1	1-0-0
	BHS982A 202	Behavioral Science-II	100	1	1-0-0
SEC	PHY012S211	Electrical Circuit and Network Skills	100	3	0-0-6
VAC	VAC-2	From basket courses	100	3	3-0-0
Swayam 2	SWAYAM CODE 2	Swayam 2	100	3/4/5	
TOTAL CREDIT FOR 2nd SEMESTER				20 + 3/4/5	

3 rd SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	PHY012M301	Ray and wave optics	200	4	4-0-0
	PHY012M302	Mathematical Physics-I	200	4	4-0-0
Minor	PHY012N301	Modern Physics	200	4	4-0-0
IDC	PHY012I301	IKS related to the major field of Specialization (Introduction to Astrophysics)	200	3	3-0-0
AEC	CEN982A 301 & BHS982A 302	Communicative English and Behavioral Science-III	200	2	2-0-0
SEC	PHY012S 311	Basic Instrumentation skills	200	3	3-0-0
Swayam 3	SWAYAM CODE 3	Swayam 3	200	3/4/5	
TOTAL CREDIT FOR 3 rd SEMESTER				20 + 3/4/5	
4 th SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	PHY012M401	Thermal & Statistical Physics	200	4	4-0-0
	PHY012M402	Nuclear & Particle Physics	200	4	4-0-0
	PHY012 M411	Physics Lab III	200	4	0-0-8
Minor	PHY012N401	Atomic and Nuclear Physics	200	3	3-0-0
	PHY012N411	General Physics Lab II	200	3	0-0-6
AEC	CEN982A 401 & BHS982A 402	Communicative English and Behavioral Science-IV	200	2	2-0-0
Swayam 4	SWAYAM CODE 4	Swayam 4	200	3/4/5	
TOTAL CREDIT FOR 4 th SEMESTER				20 + 3/4/5	
5 th SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	PHY012M501	Classical and Quantum Mechanics	300	4	4-0-0
	PHY012M502	Solid State and Mathematical Physics-II	300	4	4-0-0
	PHY012M503	Electrodynamics	300	4	4-0-0
Minor	PHY012N501	Fundamentals of Thermal Physics	300	4	4-0-0
Internship	PHY012M521	Internship	300	4	4-0-0
TOTAL CREDIT FOR 5 th SEMESTER				20	

6 th SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	PHY012M601	Electronics	300	4	4-0-0
	PHY012M602	Advanced Classical and Quantum Mechanics	300	4	4-0-0
	PHY012M603	Atomic & Molecular Physics	300	4	4-0-0
	PHY012M611	Physics Lab IV	300	4	0-0-8
Minor	PHY012N601	Physical Optics	300	4	4-0-0
TOTAL CREDIT FOR 6 th SEMESTER				20	
7 th SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	PHY012M701	Theory of relativity	400	4	4-0-0
	PHY012M702	Astronomy	400	4	4-0-0
	PHY012M703	Mathematical Physics-III	400	4	4-0-0
	PHY012M704	Waves Oscillation & Sound	400	4	4-0-0
Minor	PHY012N701	Basics of electronics	400	4	4-0-0
TOTAL CREDIT FOR 7 th SEMESTER				20	
8 th SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	PHY012M801	Methods of selected instruments used Physical Sciences Research	400	4	4-0-0
	PHY012M802	Research Methodology	400	4	4-0-0
Project / Dissertation	PHY012M821	Research Project	400	12	0-0-0
For the students who are not eligible for the Research Project*					
Or 400 level advanced course Core (in lieu of Project / Dissertation)	PHY012M803	Fiber Optics and Basic of Laser	400	4	4-0-0
	PHY012M804	Plasma and space physics	400	4	4-0-0
	PHY012M805	Nanophysics	400	4	4-0-0
TOTAL CREDIT FOR 8 th SEMESTER				20	