

STRUCTURE OF THE SYLLABUS FOR 4 YEAR UG PROGRAMME

ROYAL SCHOOL OF APPLIED AND PURE SCIENCES

B.Sc. Physics (Honours/Honours with Research)

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

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

COMPONENT	COURSE CODE	COURSE TITLE	CREDIT
Major (Core)	PHY012M601	Electronics	4
	PHY012M602	Advanced Classical and Quantum Mechanics	4
	PHY012M603	Atomic & Molecular Physics	4
	PHY012M611	Physics Lab IV	4
Minor	PHY012N601	Physical Optics	4
TOTAL CREDIT FOR 6th SEMESTER			20
7th SEMESTER			
COMPONENT	COURSE CODE	COURSE TITLE	CREDIT
Major (Core)	PHY012M701	Theory of relativity	4
	PHY012M702	Astronomy	4
	PHY012M703	Mathematical Physics-III	4
	PHY012M704	Waves Oscillation & Sound	4
Minor	PHY012N701	Basics of electronics	4
TOTAL CREDIT FOR 7th SEMESTER			20
8th SEMESTER			
COMPONENT	COURSE CODE	COURSE TITLE	CREDIT
Major (Core)	PHY012M801	Methods of selected instruments used Physical Sciences Research	4
Minor	PHY012N801	Research Methodology	4
Project / Dissertation	PHY012M821	Research Project	12
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	4
	PHY012M804	Plasma and space physics	4
	PHY012M805	Nanophysics	4
TOTAL CREDIT FOR 8th SEMESTER			20