

STRUCTURE OF THE SYLLABUS FOR 4 YEAR UG PROGRAMME

SCHOOL NAME – ROYAL SCHOOL OF APPLIED AND PURE SCIENCES

DEPARTMENT NAME – MATHEMATICS

PROGRAMME NAME – B.Sc. in MATHEMATICS

1ST SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	MAT012M101	Calculus	100	3	3-0-0
	MAT012M102	Classical Algebra and Trigonometry	100	3	3-0-0
Minor	MAT012N101	Fundamental Mathematics-I	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-I	100	1	1-0-0
	BHS982A102	Behavioural Science-I	100	1	1-0-0
Skill Enhancement Course (SEC)	MAT012S111	Mathematical programming tools-I	100	3	0-0-6
Value Added Course (VAC)	VAC-1	VAC- (Basket Course)	100	3	3-0-0
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)	MAT012M201	Vector analysis and Linear Algebra	100	3	3-0-0
	MAT012M202	Analytical Geometry (2D & 3D)	100	3	3-0-0
Minor	MAT012N201	Fundamental Mathematics-II	100	3	3-0-0
IDC	IKS-II	Introduction to Indian Knowledge System – II	100	3	3-0-0
AEC	CEN982A201	Communicative English-I	100	1	1-0-0
	BHS982A202	Behavioural Science-I	100	1	1-0-0
SEC	MAT012S211	Mathematical programming tools-II	100	3	0-0-6
VAC	VAC-2	VAC- (Basket Course)	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	
3RD SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	MAT012M301	Ordinary Differential Equations	200	4	4-0-0
	MAT012M302	Real Analysis	200	4	4-0-0
Minor	MAT012N301	Matrix algebra and Vector calculus	200	4	4-0-0
IDC	IDC-3	Basket Course	200	3	3-0-0
AEC	CEN982A301	Communicative English-I	200	1	1-0-0
	BHS982A302	Behavioural Science-I	200	1	1-0-0
SEC	MAT012S311	Introduction to data science	200	3	2-0-2
SWAYAM 3	SWAYAM CODE 3	Swayam 3	100	3/4/5	
TOTAL CREDIT FOR 3RD SEMESTER				20+3/4/5	
4TH SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	MAT012M401	Complex Analysis	200	4	4-0-0
	MAT012M402	Abstract Algebra	200	4	4-0-0
	MAT012M403	Partial Differential Equations	200	4	4-0-0
Minor	MAT012N401	Coordinate Geometry	200	3	3-0-0
	MAT012N402	Differential Equations	200	3	3-0-0
AEC	CEN982A401	Communicative English-I	200	1	1-0-0
	BHS982A402	Behavioural Science-I	200	1	1-0-0
Swayam 4	SWAYAM CODE 4	Swayam 4	200	3/4/5	
TOTAL CREDIT FOR 4TH SEMESTER				20+3/4/5	

5 TH SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	MAT012M501	Numerical Methods	300	4	4-0-0
	MAT012M502	Number Theory and Graph Theory	300	4	4-0-0
	MAT012M503	Mechanics-I	300	4	4-0-0
Minor	MAT012N501	Real Analysis	300	4	4-0-0
Internship	MAT012M521	Internship	300	4	
TOTAL CREDIT FOR 5 TH SEMESTER				20	
6 TH SEMESTER					
COMPONENT	COURSE CODE	COURSE TITLE	LEVEL	CREDIT	L-T-P
Major (Core)	MAT012M601	Transform Calculus (Laplace & Fourier)	300	4	4-0-0
	MAT012M602	Metric Space and Topology	300	4	4-0-0
	MAT012M603	Linear Programming	300	4	4-0-0
	MAT012M604	Mechanics-II	300	4	4-0-0
Minor	MAT012N601	Modern Algebra	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)	MAT012M701	Advanced Calculus	400	4	4-0-0
	MAT012M702	Spherical Trigonometry and Tensor Calculus	400	4	4-0-0
	MAT012M703	Mathematical Logic & Combinatorics	400	4	4-0-0
	MAT012M704	Python Programming	400	4	3-0-2
Minor	MAT012N701	Numerical Methods	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)	MAT012M801	Guide specific paper	400	4	4-0-0
	MAT012M802	Research Methodology	400	4	4-0-0
	MAT012M823	Dissertation/Research Project	400	12	
For the students who are not eligible for the Research Project*					
Or 400 level advanced course Core (in lieu of Project / Dissertation)	MAT012M803	Advanced Real Analysis	400	4	4-0-0
	MAT012M804	Fuzzy set theory	400	4	4-0-0
	MAT012M805	Mathematical Modelling	400	4	4-0-0
TOTAL CREDIT FOR 8 TH SEMESTER				20	