

Progressive Education Society's
Modern College of Arts, Science and Commerce (Autonomous),

Shivajinagar, Pune 5

(An Autonomous College Affiliated to Savitribai Phule Pune University)

Framework and Syllabus

For

M.Sc. (Mathematics)

(Based on NEP 2020 framework)

(To be implemented from the Academic Year 2023-24)

Semester 1 (First Year)

Course Type	Course Code	Course	Course / Paper Title	Hours / Week	Credit	C I A	ES E	Total
Major Mandatory (4 +4 +4 +2)	23ScMatP 111	Major Paper 1(Theory)	Linear Algebra	4	4	50	50	100
	23ScMatP 112	Major Paper 2(Theory)	Group Theory	4	4	50	50	100
	23ScMatP 113	Major Paper 3(Theory)	Graph Theory	4	4	50	50	100
	23ScMatP 114	Major Paper 4(Practical)	Lab Course on 23ScMatP111, 23ScMatP112 & 23ScMatP113	4	2	25	25	50
Major Electives (4)	23ScMatP 121	Major Elective 1 (Theory + Practical)	Ordinary Differential Equations (T + P)	2	4	50	50	100
				4				
	23ScMatP 122	Major Elective 2 (Theory + Practical)	C- Programming Language (T + P)	2				
				4				
RM (4)	23ScMatP 131	RM Section 1(Theory)	Research Methodology Basics & Research in Discrete Mathematics	2	4	50	50	100
		RM Section 2 (Practical)		4				
OJT/FP								
RP								
Total				28	22	275	275	550

Semester 2 (First Year)

Course Type	Course Code	Course	Course / Paper Title	Hours / Week	Credit	Cl A	ESE	Total
Major Mandatory (4 +4 +4 +2)	23ScMatP 211	Major Paper 1(Theory)	Partial Differential Equations	4	4	50	50	100
	23ScMatP 212	Major Paper 2(Theory)	Rings and Modules	4	4	50	50	100
	23ScMatP 213	Major Paper 3(Theory)	General Topology	4	4	50	50	100
	23ScMatP 214	Major Paper 4(Practical)	Lab Course on 23ScMatP211, 23ScMatP212 & 23ScMatP213	4	2	25	25	50
Major Electives (4)	23ScMatP 221	Major Elective 1 (Theory + Practical)	Numerical Analysis (T + P)	2	4	50	50	100
				4				
	23ScMatP 222	Major Elective 2 (Theory + Practical)	C++ and Data Structures (T + P)	2				
				4				
RM								
OJT/FP (4)	23ScMatP 241		On Job Training	8	4	50	50	100
RP								
Total				30	22	275	175	550

Semester 3 (Second Year)

Course Type	Course Code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4+4+4+2)	23ScMatP311	Major Paper 1(Theory)	Measure and Integration	4	4	50	50	100
	23ScMatP312	Major Paper 2(Theory)	Field Theory	4	4	50	50	100
	23ScMatP313	Major Paper 3(Theory)	Functional Analysis	4	4	50	50	100
	23ScMatP314	Major Paper 4(Practical)	Lab Course on 23ScMatP311, 23ScMatP312 & 23ScMatP313	4	2	25	25	50
Major Electives (4)	23ScMatP321	Major Elective 1 (Theory + Practical)	Mathematical Statistics and Probability (T + P)	2	4	50	50	100
				4				
	23ScMatP312	Major Elective 2 (Theory + Practical)	Python Programming Language (T + P)	2				
				4				
RM								
OJT/FP								
RP (4)	23ScMatP351		Research Project-I	8	4			
Total				30	22	275	175	550

Semester 4 (Second Year)

Course Type	Course Code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4 + 4)	23ScMatP4 11	Major Paper 1(Theory)	Advanced Calculus	4	4	50	50	100
	23ScMatP4 12	Major Paper 2(Theory)	Applied Combinatorics	4	4	50	50	100
	23ScMatP4 13	Major Paper 3(Theory)	Number Theory	4	4	50	50	100
Major Electives (4)	23ScMatP4 21	Major Elective 1 (Theory +Practical)	Computational Geometry (T + P)	2	4	50	50	100
				4				
	23ScMatP4 22	Major Elective 2 (Theory +Practical)	Data Mining with R Package (T + P)	2				
				4				
RM								
OJT/FP								
RP (6)	23ScMatP4 51		Research Project-II	12	6	75	75	150
Total				30	22	275	175	550

OJT : On Job Training: Internship/Apprenticeship

FP : Field Project

RM: Research Methodology

RP: Research Project