

Progressive Education Society's
Modern College of Arts, Science and Commerce (*Autonomous*),
Shivajinagar, Pune -05

(An Autonomous College Affiliated to Savitribai Phule Pune University)

Framework of Syllabus For M.Sc. (Organic Chemistry)

(Based on NEP 2020 framework)

(To be implemented from the Academic Year 2025-26)

M. Sc. Part I (Semester I)

Course Type	Code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4+4+2)	23ScCheP111	Major Paper 1 (Theory)	Fundamentals of Physical Chemistry I	4	4	50	50	100
	23ScCheP112	Major Paper 2 (Theory)	Molecular Symmetry and Main group Chemistry	4	4	50	50	100
	23ScCheP113	Major Paper 3 (Practical)	Lab Course on 23ScCheP111 & 23ScCheP112	8	4	50	50	100
	23ScCheP114	Major Paper 4 (Theory)	Basic Organic Chemistry	2	2	25	25	50
Major Electives (4)	23ScCheP121	Major Elective (T+P)	Organic Reactions (T + P)	6	4	50	50	100
Major Electives (4)	23ScChOP122	Major Elective (T+P)	Organic Intermediates and Applications in Organic Synthesis (T + P)	6	4	50	50	100
RM (4)	23ScCheP131	RM Paper 1	RM Core Paper	2	4	50	50	100
	23ScCheP131	RM Paper 2	Department Specific Paper	2				
OJT (4)		—	—	—	—	—	—	—
Total				26	22	275	275	550

M. Sc. Part I (Semester II)

Course Type	Code	Course	Course / Paper Title	Hours/ Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4+4+2)	23ScCheP211	Major Paper 1 (Theory)	Molecular Spectroscopy and Nuclear Chemistry	4	4	50	50	100
	23ScCheP212	Major Paper 2 (Theory)	Coordination and Bioinorganic Chemistry	4	4	50	50	100
	23ScCheP213	Major Paper 3 (Practical)	Lab Course on 23ScCheP211 & 23ScCheP212	8	4	50	50	100
	23ScCheP214	Major Paper 4 (Theory)	Organic Spectroscopy	2	2	25	25	50
Major Electives (4)	23ScCheP221	Major Elective (T+P)	Synthetic Organic Chemistry (T + P)	6	4	50	50	100
Major Electives (4)	23ScChOP222	Major Elective (T+P)	Advanced Green Chemistry (T + P)	6	4	50	50	100
RM (4)								
OJT (4)	23ScCheP241	OJT	On Job Training	8	4	50	50	100
Total				32	22	275	275	550

M. Sc. Part II (Semester III)

Course Type	Code	Course	Course / Paper Title	Hours/ Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4+4+2)	23ScChOP311	Major Paper 1 (Theory)	Photochemistry, Free radicals and Pericyclic Reactions	4	4	50	50	100
	23ScChOP312	Major Paper 2 (Theory)	Heterocyclic Chemistry	4	4	50	50	100
	23ScChOP313	Major Paper 3 (Practical)	Lab Course on Organic Chemistry I	8	4	50	50	100
	23ScChO314	Major Paper 4 (Theory)	Organic Reaction Mechanism	2	2	25	25	50
Major Electives (4)	23ScChOP321	Major Elective (T+P)	2D Spectroscopy of Organic Compounds (T + P)	6	4	50	50	100
Major Electives (4)	23ScChOP322	Major Elective (T+P)	Protection and Deprotection of Organic Compounds (T + P)	6	4	50	50	100
RP (4)	23ScChOP351	RP	Research Project	8	4	50	50	100
OJT (4)	-	-	-	-	-	-	-	-
Total				30	22	275	275	550

M. Sc. Part II (Semester IV)

Course Type	Code	Course	Course / Paper Title	Hours/Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4+4+2)	23ScChOP411	Major Paper 1 (Theory)	Retrosynthesis and Advanced Synthesis of New Reagents	4	4	50	50	100
	23ScChOP412	Major Paper 2 (Theory)	Natural Products	4	4	50	50	100
	23ScChOP413	Major Paper 3 (Practical)	Lab Course on Organic Chemistry II	8	4	50	50	100
Major Electives (4)	23ScChOP421	Major Elective (T+P)	Chiron approach (T + P)	6	4	50	50	100
Major Electives (4)	23ScChOP422	Major Elective (T+P)	Biogenesis (T + P)	6	4	50	50	100
RP (4)	23ScChOP451	RP	Research Project	12	6	75	75	150
OJT (4)	-	-	-	-	-	-	-	-
Total				34	22	275	275	550