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

(Autonomous),

Shivajinagar, Pune - 5

(An Autonomous College Affiliated to
Savitribai Phule Pune University, Pune: 7)

Framework of Syllabus

For

M.Sc. (Computer Application)
(Based on NEP 2020 framework)
(To be implemented from the Academic Year 2023-24

Semester 1 (First Year)

Course Type	Code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4+4+2)	23CsCmaP111	Major Paper 1 (Theory)	Design and Analysis of Algorithms	4	4	50	50	100
	23CsCmaP112	Major Paper 2 (Theory)	.NET	4	4	50	50	100
	23CsCmaP113	Major Paper 3 (Theory)	Web Programming - I	4	4	50	50	100
	23CsCmaP114	Major Paper 4 (Practical/Theory)	Lab on .NET and Web Programming-I	4	2	25	25	50
Major Electives (4)	23CsCmaP121	Major Elective 1 (T/P)	Software Development Engineering in Testing	4	4	50	50	100
		Major Elective 2 (T/P)	Advanced Database Concepts	4				
RM (4)	23CsCmaP122	RM Section 1	Research Methodology & Artificial Intelligence	2	4	50	50	100
		RM Section 2		2				
OJT(4),		–	–	–	–	–	–	–
Total				24	22	275	275	550

Semester 2 (First Year)

Course Type	Code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4+4+2)	23CsCmaP211	Major Paper 1 (Theory)	Paper1: Advanced Operating System	4	4	50	50	100
	23CsCmaP212	Major Paper 2 (Theory)	Paper2: Information System Security	4	4	50	50	100
	23CsCmaP213	Major Paper 3 (Theory)	Paper3: Web Programming-II	4	4	50	50	100
	23CsCmaP214	Major Paper 4 (Practical/Theory)	Lab on AOS and Web Programming-II	4	2	25	25	50
Major Electives (4)	23CsCmaP221	Major Elective 1 (T/P)	Soft Computing	4	4	50	50	100
	23CsCmaP222	Major Elective 2 (T/P)	Cloud and Grid Computing	4				
RM (4)	–	–	–	–	–	–	–	–
	–	–	–	–				
OJT(4),	23CsCmaP204	OJT	On Job Training	8	4	50	50	100
Total				28	22	275	275	550

Semester 3 (Second Year)

Course Type	Code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4+4+2)	23CsCmaP311	Major Paper 1 (Theory)	Mobile Technologies	4	4	50	50	100
	23CsCmaP312	Major Paper 2 (Theory)	Programming Language (Python)	4	4	50	50	100
	23CsCmaP313	Major Paper 3 (Theory)	Block Chain Technology	4	4	50	50	100
	23CsCmaP314	Major Paper 4 (Practical)	Lab Course on 23CsCmaP311 & 23CsCmaP312	8	2	25	25	50
Major Electives (4)	23CsCmaP321	Major Elective 1 (Theory + Practical)	Data Science (T + P)	6	4	50	50	100
	23CsCmaP322	Major Elective 2 (Theory)	User Experience and Design	4				
RP (4)	23CsCmaP304	RP	Research Project I	8	4	50	50	100
OJT(4),								
Total				34	22	275	275	550

Semester 4 (Second Year)

Course Type	Code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4+4)	23CsCmaP411	Major Project 1	Industrial Training	2	12	150	150	300
Major Electives (4)	23CsCmaP421	Major Elective 1 (Theory)	Data Mining and Data Warehousing	4	4	50	50	100
	23CsCmaP421	Major Elective 2 (Theory)	Full Stack Development	4				
RP (4)	23CsCmaP404	RP	Research Project II	12	6	75	75	150
OJT(4),								
Total				22	22	275	275	550

OJT : On Job Training: Internship/Apprenticeship
FP : Field Project
RM: Research Methodology
RP: Research Project