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 of

Syllabus For

M.Sc. (Electronic Science)

(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)	23ScEleP111	Major Paper 1 (Theory)	Analog Circuit Design	4	4	50	50	100
	23ScEleP112	Major Paper 2 (Theory)	Advanced Digital system designing using Verilog	4	4	50	50	100
	23ScEleP113	Major Paper 3 (Practical)	Lab Course on 23ScEleP111, 23ScEleP112 & 23ScEleP114	8	4	50	50	100
	23ScEleP114	Major Paper 4 (Theory)	Electronic Instrumentation System	2	2	25	25	50
Major Electives (4)	23ScEleP121	Major Elective 1 (Theory)	Network Circuits Analysis	4	4	50	50	100
	23ScEleP122	Major Elective 2 (Theory)	Sensors in Automation	4				
RM (4)	23ScEleP131	RM Paper 1	RM Paper : Core	2	4	50	50	100
		RM Paper 2	RM Paper : Electronic Science	2				
OJT(4),		–	–	–	–	–	–	–
Total				26	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)	23ScEleP211	Major Paper 1 (Theory)	Advanced Microcontrollers and its Applications	4	4	50	50	100
	23ScEleP212	Major Paper 2 (Theory)	Electromagnetic Fields and Antennas	4	4	50	50	100
	23ScEleP213	Major Paper 3 (Practical)	Lab Course on 23ScEleP211, 23ScEleP212 & 23ScEleP214	8	4	50	50	100
	23ScEleP214	Major Paper 4 (Theory)	Advanced Electronic communication Systems	2	2	25	25	50
Major Electives (4)	23ScEleP221	Major Elective 1 (Theory)	Solid State Devices	4	4	50	50	100
	23ScEleP222	Major Elective 2 (Theory)	Nanoelectronics	4	4			
RM (4)		–	–	–	–	–	–	–
		–	–	–				
OJT(4),	23ScEleP241	OJT	On Job Training	8	4	50	50	100
Total				30	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)	23ScEleP311	Major Paper 1 (Theory)	IoT based automation using Arduino and Raspberry Pi	4	4	50	50	100
	23ScEleP312	Major Paper 2 (Theory)	Digital Signal Processing	4	4	50	50	100
	23ScEleP313	Major Paper 3 (Practical)	Lab Course on 23ScEleP311, 23ScEleP312 & 23ScEleP314	8	4	50	50	100
	23ScEleP314	Major Paper 4 (Theory)	Robotics and its Applications	2	2	25	25	50
Major Electives (4)	23ScEleP321	Major Elective 1 (Theory)	Electronic Technology in Agriculture	4	4	50	50	100
	23ScEleP322	Major Elective 2 (Theory)	Microwave Engineering	4				
RP (4)	23ScEleP351	RP	Research Project I	8	4	50	50	100
Total				30	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+2)	23ScEleP411	Major Paper 1 (Theory)	Industry 4.0	4	4	50	50	100
	23ScEleP412	Major Paper 2 (Theory)	Process Control Systems	4	4	50	50	100
	23ScEleP413	Major Paper 3 (Theory)	E waste management	4	4	50	50	100
Major Electives (4)	23ScEleP421	Major Elective 1 (Theory)	Power Electronics & Renewable Energy Systems	4	4	50	50	100
	23ScEleP422	Major Elective 2 (Theory)	Automotive Electronics	4	4	50	50	100
RP (4)	23ScEleP451	RP	Research Project II	12	6	75	75	150
OJT(4),	---	----	-------	---	--	--	--	--
Total				28	22	275	275	550

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