

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
B. Sc.

(Based on NEP 2020 framework)
(To be implemented from the Academic Year 2023-24)

Semester 1 (First Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 2)	Major Paper 1	23ScCheU1101	Physical & Inorganic Chemistry	2	4	40	60	100
				2				
	Major Paper 2	23ScCheU1102	Lab Course on 23ScCheU1101	4	2	20	30	50
Major Electives	-							
Minor	-							
OE (2 + 2)		23ScCheU1401	General chemistry -I	2	4	40	60	100
		23ScCopU1402	Democracy, Election and Governance	2				
VSC (2)	Major Specific Practical I	23ScCheU1501	Lab Course on Chemistry of Cosmetic Ingredients	4	2	20	30	50
SEC (2)	Skill Paper I (Practical)	23ScCheU1601	Lab Course on Basic Analytical Skills-I	4	2	20	30	50
AEC(2),	English Theory	23ScCopU1701 23ScCopU1702	MIL-I (Hindi) / MIL-I (Marathi)	2	2	20	30	50
VEC (2)	EVS Theory	23ScCopU1801	Environment Science I	2	2	20	30	50
IKS (2)	Major Specific Theory	23ScCheU1901	Ancient Metallurgy in India	2	2	20	30	50
CC (2)	CC-I Course	23ScCopU1001	Online Course Based on Yoga	2	2	20	30	50
Total				28	22	220	330	550

Semester 2 (First Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 2)	Major Paper 3	23ScCheU2101	Physical & Organic Chemistry	2	4	40	60	100
				2				
	Major Paper 4 (Practical)	23ScCheU2102	Lab Course on 23ScCheU2101	4	2	20	30	50
Major Electives	-							
Minor	Minor Paper I (Practical)	23ScCheU2301	Practical Course-I Fundamentals of Chemistry	4	2	20	30	50
OE (2 + 2)		23ScCheU2401	General Chemistry- II	2	4	40	60	100

		23ScCheU2402	Fundamentals of Music	2				
VSC (2)	Major Specific Practical II	23ScCheU2501	Drug Analysis	4	2	20	30	50
SEC (2)	Skill Paper II (Practical)	23ScCheU2601	Lab Course on Basic Instrumentation Skills	4	2	20	30	50
AEC(2),	English Theory	23ScCheU2703	English Communication Skills I	2	2	20	30	50
VEC (2)	EVS Theory	23ScCheU2801	Environment Science II	2	2	20	30	50
IKS (2)								
CC (2)	CC-II Course	23CpCopU2001 / 23CpCopU2011 / 23CpCopU2021 / 23CpCopU2031 / 23CpCopU2041 / 23CpCopU2051 / 23CpCopU2061 / 23CpCopU2071	Physical Education / Cultural Activities / NSS / NCC / Fine Arts / Applied Arts / Visual Arts / Performing Arts	2	2	20	30	50
Total				30	22	220	330	550

Semester 3 (Second Year)

Course Type	Course	Course code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4)	Major Core Paper 5 (Theory)	23ScCheU3101	Physical, Inorganic & Organic Chemistry	2	4	40	60	100
				2				
	Major Paper 6 (Practical)	23ScCheU3102	Lab Course on 23ScCheU3101	4	4	40	60	100
				4				
Major Electives	-							
Minor (4)	Minor Paper II (Theory + Practical)	23ScCheU3301	Fundamentals of Biochemistry (T + P)	2	4	40	60	100
				4				
OE (2)		23ScCheU3401	General Chemistry -III	2	2	20	30	50
VSC (2)	Major Specific Practical III	23ScCheU3501	Lab Course on Raw material Analytical Methods	4	2	20	30	50
SEC (2)	--		--	--	--	--	--	--
AEC(2),	MIL	23ScCopU3703	English Communication Skills II	2	2	20	30	50
VEC (2)	--		--	--	--	--	--	--
IKS (2)	--		--	--	--	--	--	--
FP/CEP (2)	FP -I	23ScCheU3002	Field Project I	4	2	20	30	50
CC(2)	CC III	23ScCopU3001	Fitness	2	2	20	30	50
Total				32	22	220	330	550

Semester 4 (Second Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4)	Major Core Paper 7 (Theory)	23ScCheU4101	Physical, Inorganic & Organic Chemistry	2	4	40	60	100
				2				
	Major Paper 8 (Practical)	23ScCheU4102	Lab course on 23ScCheU4101	4	4	40	60	100
				4				
Major Electives	-							
Minor (4)	Minor Paper III (Theory + Practical)	23ScCheU4301	Fundamentals of Bioinorganic Chemistry (T + P)	2	4	40	60	100
				4				
OE (2)		23ScCheU4401	General Chemistry - IV	2	2	20	30	50
VSC (2)	--		--	--	--	--	--	--
SEC (2)	Skill Paper III (Practical)	23ScCheU4601	Lab Course on Computer Applications in Chemistry	4	2	20	30	50
AEC(2),	MIL	23ScCopU4701 23ScCopU4702	MIL-II (Hindi) / MIL-II (Marathi)	2	2	20	30	50
VEC (2)	--		--	--	--	--	--	--
IKS (2)	--		--	--	--	--	--	--
FP / CEP(2)	CEP -I	23ScCheU4003	Community Engagement Project I	4	2	20	30	50
CC(2)	CC-4	23ScCopU4001	Health and Wellness	2	2	20	30	50
Total				32	22	220	330	550

Semester 5 (Third Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4 + 2)	Major Core Paper 9 (Theory + Practical)	23ScCheU5101	Organic Chemistry (T + P)	2	4	40	60	100
	Major Paper 10 (Theory)	23ScCheU5102	Physical Chemistry	4	4	40	60	100
	Major Paper 11 (Practical)	23ScCheU5103	Lab Course on 23ScCheU5102	4	2	20	30	50

Major Electives	Elective I (Theory + Practical)	23ScCheU5201	Green Chemistry (T + P)	2	4	40	60	100
				4				
	Elective II (Theory + Practical)	23ScCheU5202	Instrumental methods of Analysis (T + P)	2	4	40	60	100
				4				
Minor (4)	Minor Paper IV (Theory + Practical)	23ScCheU5301	Fundamentals of Chromatographic Separations	2	4	40	60	100
				4				
OE (2)	--		--	--	--	--	--	--
VSC (2)	Major Specific Practical IV	23ScCheU5501	Lab Course in Paint and dyes	4	2	20	30	50
SEC (2)	--		--	--	--	--	--	--
AEC(2),	--		--	--	--	--	--	--
VEC (2)	--		--	--	--	--	--	--
IKS (2)	--		--	--	--	--	--	--
FP / CEP(2)	FP –II		Field Project II	4	2	20	30	50
Total				30	22	220	330	550

Semester 6 (Third Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4 + 2)	Major Core Paper 12 (Theory)	23ScCheU6101	Inorganic Chemistry	2	4	40	60	100
				2				
	Major Paper 13 (Theory + Practical)	23ScCheU6102	Organic Chemistry (T + P)	2	4	40	60	100
				2				
Major Paper 14 (Practical)	23ScCheU6103	Lab Course on 23ScCheU6101	4	2	20	30	50	
Major Electives	Elective III (Theory + Practical)	23ScCheU6201	Environmental Chemistry (T + P)	2	4	40	60	100
				4				
	Elective IV (Theory + Practical)	23ScCheU6202	Industrial Chemicals and Environment (T + P)	2	4	40	60	100
				4				
Minor (4)	Minor Paper V (Theory + Practical)	23ScCheU6301	Advanced Analytical Techniques (T +	2	4	40	60	100

			P)	4				
OE (2)	--		--	--	--	--	--	--
VSC (2)	--		--	--	--	--	--	--
SEC (2)	--		--	--	--	--	--	--
AEC(2),	--		--	--	--	--	--	--
VEC (2)	--		--	--	--	--	--	--
IKS (2)	--		--	--	--	--	--	--
FP / CEP(2)	--		--	--	--	--	--	--
OJT(4)	OJT	23ScCheU6004	On Job Training	8	4	40	60	100
Total				32	22	220	330	550

OE : Open Elective,

AEC: Ability Enhancement Course,

VEC: Value Education Courses,

CC : Co-Curricular Courses,

IKS : Indian Knowledge System,

OJT : On Job Training,

FP : Field Project,

VSC : Vocational Skill Courses,

CEP : Community Engagement Project