

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. (Chemistry)

Choice Based Credit System (CBCS) Syllabus

Under National Education Policy (NEP)

To be implemented from Academic Year 2024-2025

Level:- 4.5 (First Year)**Sem:I**

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr/Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CE	ESE	Total
Subject 1 T(2)+ (T/P) (2) or T(4)	24ScCheU1101	Physical & Inorganic Chemistry	2		2		20	30	50
	24ScCheU1102	Lab Course on 24ScCheU1101		2		4	20	30	50
Subject 2 T(2)+ (T/P) (2) or T(4)	24ScCheU1201	<<Subject 2 Theory>>	2		2		20	30	50
	24ScCheU1202	<<Subject 2 Practical>>		2		4	20	30	50
Subject 3 T(2)+ (T/P)(2) or T(4)	24ScCheU1301	<<Subject 3 Theory>>	2		2		20	30	50
	24ScCheU1302	<<Subject 3 Practical>>		2		4	20	30	50
IKS T(2)	24CpCopU1901	Generic IKS	2		2		20	30	50
GE/OE (T/P) (2)	24ScCheU1401	General Chemistry -I	2		2		20	30	50
SEC (P) (2)	24ScCheU1601	Lab Course on Basic Analytical Skills-I		2		4	20	30	50
AEC T(2)	24CpCopU1701 / 24CpCopU1702	MIL-I (Hindi) / MIL-I (Marathi)	2		2		20	30	50
VEC T (2)	24CpCopU1801	Environmental Science	2		2		20	30	50
Total			14	08	14	16			550

Level:- 4.5 (First Year)**Sem:II**

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr/Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CE	ESE	Total
Subject 1 T(2)+ T/P(2) or T(4)	24ScCheU2101	Physical & Organic Chemistry	2		2		20	30	50
	24ScCheU2102	Lab Course on 24ScCheU2101		2		4	20	30	50
Subject 2 T(2)+ T/P(2) or T(4)	24Sc***U2201	<<Subject 2 Theory>>	2		2		20	30	50
	24Sc***U2302	<<Subject 2 Practical>>		2		4	20	30	50
Subject 3 T(2)+ T/P(2) or T(4)	24Sc***U2301	<<Subject 3 Theory>>	2		2		20	30	50
	24Sc***U2302	<<Subject 3 Practical>>		2		4	20	30	50
GE/OE (T/P)(2)	24ScCheU2401	General Chemistry- II	2		2		20	30	50
SEC P(2)	24ScCheU2601	Lab Course on Basic Instrumentation Skills		2		4	20	30	50
AEC T(2)	24CpCopU2703	English Communication Skills I	2		2		20	30	50

VEC T(2)	24CpCopU2801	Democracy, Election and Governance	2		2		20	30	50
CC(2)	24CpCopU2001 / 24CpCopU2011 / 24CpCopU2021 / 24CpCopU2031 / 24CpCopU2041 / 24CpCopU2051 / 24CpCopU2061 / 24CpCopU2071	Physical Education / Cultural Activities / NSS / NCC / Fine Arts / Applied Arts / Visual Arts / Performing Arts	2		2		20	30	50
Total			14	08	14	16			550

Level:- 5.0 (Second Year) Sem:III

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr/Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CE	EE	Total
Major Core T(2+2 or 4), (T/P)(2)	24ScCheU3101	Physical, Inorganic & Organic Chemistry	4		4		40	60	100
	24ScCheU3102	Lab Course on 24ScCheU3101		2		4	20	30	50
VSC P(2)	24ScCheU3501	Lab Course on Chemistry of Cosmetic Ingredients		2		4	20	30	50
IKS (T/P)(2)	24ScCheU3901	Ancient Metallurgy in India	2		2		20	30	50
FP P(2)	24ScCheU3002	Field Project I		2		4	20	30	50
Minor (T/P) (2+2 or 4)	24ScCheU3301	Fundamentals of Biochemistry	2		2		20	30	50
	24ScCheU3302	Lab Course on 24ScCheU3301		2		4	20	30	50
GE/OE (T/P) (2)	24ScCheU3401	General Chemistry -III	2		2		20	30	50
AEC T(2)	24CpCopU3703	English Communication Skills II	2		2		20	30	50
CC T(2)	24CpCopU3001	Online Course on Yoga	2		2		20	30	50
Total			14	08	14	16			550

Level:- 5.0 (Second Year) Sem:IV

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr/Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CE	EE	Total
Major Core T(2+2 or 4), (T/P)(2)	24ScCheU4101	Physical, Inorganic & Organic Chemistry	4		4		40	60	100
	24ScCheU4102	Lab Course on 24ScCheU4101		2		4	20	30	50
VSC P(2)	24ScCheU4501	Lab Course on Drug Analysis		2		4	20	30	50
CEP P(2)	24CpCopU4003	Community Engagement Project		2		4	20	30	50
Minor (T/P)(2+2 or 4)	24ScCheU4301	Fundamentals of Bioinorganic Chemistry	2		2		20	30	50
	24ScCheU4302	Lab Course on 24ScCheU4301		2		4	20	30	50

GE/OE (T/P) (2)	24ScCheU4401	General Chemistry -IV	2		2		20	30	50
SEC P(2)	24ScCheU4601	Lab Course on Computer Applications in Chemistry		2		4	20	30	50
AEC T(2)	24CpCopU4701 / 24CpCopU4702	MIL-II (Hindi) / MIL-II (Marathi)	2		2		20	30	50
CC T(2)	24CpCopU4001	Health and Wellness	2		2		20	30	50
Total			12	10	12	20			550

Level:- 5.5 (Third Year) Sem:-V

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr/Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CE	EE	Total
Major Core T(2+2+2+2 or 4 + 2+2 or 4 + 4) P(2+2 or 4)	24ScCheU5101	Organic Chemistry	2		2		20	30	50
	24ScCheU5102	Physical Chemistry	4		4		40	60	100
	24ScCheU5103	Introduction to Nanochemistry and Applications	2		2		20	30	50
	24ScCheU5104	Lab Course on 24ScCheU5101		2		4	20	30	50
	24ScCheU5105	Lab Course on 24ScCheU5102		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24ScCheU5201	Advanced Analytical Techniques	2		2		20	30	50
	24ScCheU5202	Lab Course on 24ScCheU5201		2		4	20	30	50
	24ScCheU5203	Instrumental Methods of Analysis	2		2		20	30	50
	24ScCheU5204	Lab Course on 24ScCheU5203		2		4	20	30	50
VSC P(2)	24ScCheU5501	Lab Course on Raw material Analytical Methods		2		4	20	30	50
FP (2)	24ScCheU5001	Field Project II		2		4	20	30	50
Minor (T/P) (2)	24ScCheU5302	Fundamentals of Chromatographic Separations	2		2		20	30	50
Total			12	10	12	20			550

Level:- 5.5 (Third Year) Sem:-VI

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr/Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CE	EE	Total
Major Core T(2+2+2+2 or 4+2+2 or 4+4) P(2+2 or 4)	24ScCheU6101	Organic Chemistry	2		2		20	30	50
	24ScCheU6102	Inorganic Chemistry	4		4		40	60	100
	24ScCheU6103	Organic Spectroscopy	2		2		20	30	50
	24ScCheU6104	Lab Course on 24ScCheU6101		2		4	20	30	50
	24ScCheU6105	Lab Course on 24ScCheU6102		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24ScCheU6201	Environmental and Green Chemistry	2		2		20	30	50
	24ScCheU6202	Lab Course on 24ScCheU6201		2		4	20	30	50

	24ScCheU6203	Industrial Chemicals and Environment	2		2		20	30	50
	24ScCheU6204	Lab Course on 24ScCheU6203		2		4	20	30	50
VSC P(2)	24ScCheU6501	Lab Course in Paint and dyes		2		4	20	30	50
OJT (2)	24ScCheU6004	On Job Training		4		8	40	60	100
Total			10	12	10	24			550