

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 for

B. Sc. (Computer Science)

Choice Based Credit System (CBCS) Syllabus Under National Education Policy
(NEP)

To be implemented from Academic Year 2024-2025

Level 4.5 (First Year) Semester 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)	24CsCmpU1101	Programming in 'C'	2		2		20	30	50
	24CsCmpU1102	Lab Course on 24CsCmpU1101		2		4	20	30	50
Subject 2 T(2) + (T/P) (2) or T(4)	24CsMatU1201	Discrete Mathematics	2		2		20	30	50
	24CsMatU1202	Lab Course on 24CsMatU1201		2		4	20	30	50
Subject 3 T(2) + (T/P) (2) or T(4)	24CsEleU1301	Basics of Electronics Components and Circuits	2		2		20	30	50
	24CsEleU1302	Lab course on 24CsEleU1301		2		4	20	30	50
IKS T(2)	24CpCopU1901	Generic IKS	2		2		20	30	50
GE/OE (T/P) (2)	24CsCopU1401	Computer Fundamentals	2		2		20	30	50
SEC (P) (2)	24CsStaU1601	Lab Course on Statistical Analysis using R Programming 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) Semester 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)	24CsCmpU2101	Advanced 'C' Programming	2		2		20	30	50
	24CsCmpU2102	Lab Course on 24CsCmpU2101		2		4	20	30	50
Subject 2 T(2) + P(2)	24CsMatU2201	Matrix Theory	2		2		20	30	50
	24CsMatU2202	Lab Course on 24CsMatU2201		2		4	20	30	50
Subject 3 T(2) + P(2)	24CsEleU2301	Basics of Electronic Instrumentation	2		2		20	30	50
	24CsEleU2302	Lab course on 24CsEleU2301		2		4	20	30	50
GE/OE (T/P) (2)	24CsCopU2401	Digital Marketing	2		2		20	30	50
SEC P(2)	24CsStaU2601	Lab Course on Statistical Analysis using R Programming II		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) Semester III

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr /Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CE	ESE	Total
Major Core T(2+2 or 4), (T/P) (2)	24CsCmpU3101	Data Structures	2		2		20	30	50
	24CsCmpU3102	Database Management System	2		2		20	30	50
Subject 2 T(2) + (T/P) (2) or T(4)	24CsCmpU3103	Lab Course on 24CsCmpU3101 and 24CsCmpU3102		2		4	20	30	50
VSC P(2)	24CsCmpU3501	Lab Course on Scripting Languages		2		4	20	30	50
IKS (T/P)(2)	24CsCmpU3901	Vedic Maths and Computer Fundamentals	2		2		20	30	50
FP P(2)	24CsCmpU3002	Field Project I		2		4	20	30	50
Minor (T/P) (2+2 or 4)	24CsMatU3301 / 24CsEleU3301	Intel 8051 and Raspberry Pi/ Advanced Discrete Mathematics	2		2		20	30	50
GE/OE (T/P) (2)	24CsMatU3302/ 24CsEleU3302	Lab course on 24CsMatU3301 / Lab course on 24CsEleU3301		2		4	20	30	50
GE/OE (T/P) (2)	24CsCopU3401	Cyber Security	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	8	14	16			550

Level 5.0 (Second Year) Semester IV

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr /Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CE	ESE	Total
Major Core T(2+2 or 4), (T/P)(2)	24CsCmpU4101	Advanced Data Structures	2		2		20	30	50
	24CsCmpU4102	Advanced Database Management System	2		2		20	30	50
Subject 2 T(2) + (T/P) (2) or T(4)	24CsCmpU4103	Lab Course on 24CsCmpU4101 and 24CsCmpU4102		2		4	20	30	50
VSC P(2)	24CsCmpU4501	Lab Course on OOP using C++		2		4	20	30	50
CEP P(2)	24CsCmpU4003	Community Engagement Project		2		4	20	30	50
Minor (T/P) (2+2 or 4)	24CsMatU4301 / 24CsEleU4301	Analog and Advanced Digital Communication/ Groups and Coding Theory	2		2		20	30	50
	24CsMatU4302 / 24CsEleU4302	Lab course on 24CsMatU4301 / Lab course on 24CsEleU4301		2		4	20	30	50
GE/OE (T/P) (2)	24CsCopU4401	Web Designing	2		2		20	30	50
SEC T(2)	24CsStaU4601	Data Mining	2		2		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			14	08	14	16			550

Level 5.5 (Third Year) Semester V

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr/Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CIE	ESE	Total
Major Core T(2+2+2+2 or 4 + 2+2 or 4 + 4) P(2+2 or 4)	24CsCmpU5101	System Programming	2		2		20	30	50
	24CsCmpU5102	Programming in Core Java	2		2		20	30	50
	24CsCmpU5103	Object Oriented Software Engineering	2		2		20	30	50
	24CsCmpU5104	Theory of Computer Science	2		2		20	30	50
	24CsCmpU5105	Lab Course on 24CsCmpU5101		2		4	20	30	50
	24CsCmpU5106	Lab Course on 24CsCmpU5102		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24CsCmpU5201	Android Programming	2		2		20	30	50
	24CsCmpU5202	Lab Course on 24CsCmpU5201		2		4	20	30	50
	OR								
	24CsCmpU5203	Software Testing	2		2		20	30	50
	24CsCmpU5204	Lab Course on 24CsCmpU5203		2		4	20	30	50
	OR								
	24CsMatU5205	Numerical Methods	2		2		20	30	50
	24CsMatU5206	Lab Course on 24CsMatU5205		2		4	20	30	50

	OR								
	24CsEleU5207	Embedded System	2		2		20	30	50
	24CsEleU5208	Lab course on 24CsEleU5207		2		4	20	30	50
VSC P(2)	24CsCmpU5501	Lab Course on Web Technology		2		4	20	30	50
FP (2)	24CsCmpU5001	Field Project II		2		4	20	30	50
Minor (T/P) (2)	24CsMatU5301	Lab course on Operations Research		2		4	20	30	50
	OR								
	24CsEleU5302	Lab Course on Embedded System and IoT		2		4	20	30	50
Total			10	12	10	24			550

Level 5.5 (Third Year) Semester VI

Course Type	Course Code	Course Title	Credits		Teaching Scheme Hr/Week		Evaluation Scheme and Max Marks		
			TH	PR	TH	PR	CIE	ESE	Total
Major Core T(2+2+2+2 or 4+2+2 or 4+4) P(2+2 or 4)	24CsCmpU6101	Operating System Concepts	2		2		20	30	50
	24CsCmpU6102	Programming in Advanced Java	2		2		20	30	50
	24CsCmpU6103	Computer Networks	2		2		20	30	50
	24CsCmpU6104	Foundation of Data Science	2		2		20	30	50
	24CsCmpU6105	Lab Course on 24CsCmpU6101		2		4	20	30	50
	24CsCmpU6106	Lab Course on 24CsCmpU6102		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24CsCmpU6201	Big Data Analytics	2		2		20	30	50
	24CsCmpU6202	Lab Course on 24CsCmpU6201		2		4	20	30	50
	OR								
	24CsCmpU6203	C# DOT NET	2		2		20	30	50
	24CsCmpU6204	Lab Course on 24CsCmpU6203		2		4	20	30	50
	OR								

	24CsMatU6205	Computational Geometry	2		2		20	30	50
	24CsMatU6206	Lab Course on 24CsMatU6205		2		4	20	30	50
	OR								
	24CsEleU6207	Wireless Sensor Network and IOT	2		2		20	30	50
	24CsEleU6208	Lab course on 24CsEleU6207		2		4	20	30	50
VSC P(2)	24CsCmpU6501	Python Programming		2		4	20	30	50
OJT (2)	24CsCmpU6004	On Job Training		4		8	40	60	100
Total			10	12	10	24			550