

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. C. A. (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)	24CsBcaU1101	Programming in 'C'	2		2		20	30	50
	24CsBcaU1102	Lab Course on 24CsBcaU1101		2		4	20	30	50
Subject 2 T(2) + (T/P) (2) or T(4)	24CsBcaU1201	Lab Course on Database Management System		2		4	20	30	50
	24CsBcaU1202	Mathematical Foundation	2		2		20	30	50
Subject 3 T(2) + (T/P)(2) or T(4)	24CsBcaU1301	Project Management I (Software Analysis and Design)	2		2		20	30	50
	24CsBcaU1302	Project Management II (User Interface Design)		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)	24CsBcaU1601	Lab Course on Statistical Methods		2		4	20	30	50
AEC T (2)	24CpCopU1701 / 24CpCopU1702	MIL-I (Hindi) / MIL-I (Marathi)	2		2		20	30	50
VECT (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)	24CsBcaU2101	Advanced Programming in 'C'	2		2		20	30	50
	24CsBcaU2102	Lab Course on 24CsBcaU2101		2		4	20	30	50
Subject 2 T(2)+ T/P(2) or T(4)	24CsBcaU2201	Advanced Database Management System	2		2		20	30	50
	24CsBcaU2202	Lab Course on 24CsBcaU2201		2		4	20	30	50
Subject 3 T(2) + T/P(2) or T(4)	24CsBcaU2301	Project Management III (SE Practices)	2		2		20	30	50
	24CsBcaU2302	Project Management IV (Case Study: Project Report)		2		4	20	30	50
GE/OE (T/P) (2)	24CsCopU2401	Digital Marketing	2		2		20	30	50
SEC T(2)	24CsBcaU2601	Computer Organization	2		2		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 / 24CpCopU202 / 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			16	06	16	12			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)	24CsBcaU3101	Data Structure	2		2		20	30	50
	24CsBcaU3102	Object Oriented Programming using CPP	2		2		20	30	50
	24CsBcaU3103	Lab Course on 24CsBcaU3101 & 24CsBcaU3102		2		4	20	30	50
VSC P(2)	24CsBcaU3501	Lab Course on Advanced Spreadsheet Concepts using R Package		2		4	20	30	50
IKS (T/P)(2)	24CsBcaU3901	Vedic Maths and Computer Fundamentals	2		2		20	30	50
FP P(2)	24CsBcaU3002	Field Project I		2		4	20	30	50
Minor (T/P) (2+2 or 4)	24CsBcaU3301	Project Management - V (Object Oriented Software Engineering)	4		4		40	60	100
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			16	06	16	12			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)	24CsBcaU4101	Operating Systems	2		2		20	30	50
	24CsBcaU4102	Programming in Python	2		2		20	30	50
	24CsBcaU4103	Lab Course on 24CsBcaU4101 & 24CsBcaU4102		2		4	20	30	50
VSC P(2)	24CsBcaU4501	Lab Course on Web Technologies-I		2		4	20	30	50
CEP P(2)	24CpCopU4003	Community Engagement Project		2		4	20	30	50
Minor (T/P) (2+2 or 4)	24CsBcaU4301	Project Management - VI (Software Project Management)	4		4		40	60	100
GE/OE (T/P) (2)	24CsCopU4401	Web Designing	2		2		20	30	50
SEC T(2)	24CsBcaU4601	Introduction to Data Science	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			16	06	16	12			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	CE	ESE	Total
Major Core T (2+2+2+2or 4 + 2+2 or 4 + 4) P(2+2 or 4)	24CsBcaU5101	Programming in Java	2		2		20	30	50
	24CsBcaU5102	Server-Side Scripting Languages	2		2		20	30	50
	24CsBcaU5103	Advanced Python	2		2		20	30	50
	24CsBcaU5104	Artificial Intelligence	2		2				
	24CsBcaU5105	Lab Course on 24CsBcaU5101		2		4	20	30	50
	24CsBcaU5106	Lab Course on 24CsBcaU5103		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24CsBcaU5201	Data Mining and Data Warehousing	4		4		40	60	100
	OR								
	24CsBcaU5203	Computer Networks and Cyber Security	4		4		40	60	100
VSC P(2)	24CsBcaU5501	Lab on Course on Web Technologies-II		2		4	20	30	50
FP (2)	24CsBcaU5001	Field Project II		2		4	20	30	50
Minor (T/P) (2)	24CsBcaU5302	Project Management - VII (Software Testing)	2		2		20	30	50
Total			14	8	14	16			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	CE	ESE	Total
Major Core T (2+2+2+2 or 4+2+2 or 4+4) P (2+2 or 4)	24CsBcaU6101	Programming in Advanced Java	2		2		20	30	50
	24CsBcaU6102	Machine Learning	2		2		20	30	50
	24CsBcaU6103	Data Analytics	4		4		40	60	100
	24CsBcaU6104	Lab Course on 24CsBcaU6101		2		4	20	30	50
	24CsBcaU6105	Lab Course on Android Programming		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24CsBcaU6201	Database Technologies	2		2		20	30	50
	24CsBcaU6202	Lab Course on 24CsBcaU6201		2		4	20	30	50
	OR								
	24CsBcaU6203	Cloud Computing	4		4		40	60	100
VSC P(2)	24CsBcaU6501	Lab Course on IoT		2		4	20	30	50
OJT (2)	24CsBcaU6004	On Job Training		4		8	40	60	100
Total			10	12	10	24			550