

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