

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. (Mathematics)

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)	24ScMatU1101	Algebra	2		2		20	30	50
	24ScMatU1102	Lab Course on 24ScMatU1101		2		4	20	30	50
Subject 2 T(2) + (T/P) (2) or T(4)	24Sc***U1201	<<Subject 2 Theory>>	2		2		20	30	50
	24Sc***U1202	<<Subject 2 Practical>>		2		4	20	30	50
Subject 3 T(2) + (T/P) (2) or T(4)	24Sc***U1301	<<Subject 3 Theory>>	2		2		20	30	50
	24Sc***U1302	<<Subject 3 Practical>>		2		4	20	30	50
IKS T(2)	24CpCopU1901	Generic IKS	2		2		20	30	50
GE/OE (T/P) (2)	24ScMatU1401	Fundamentals of Mathematics	2		2		20	30	50
SEC (P) (2)	24ScMatU1601	Lab Course on Analytical Geometry		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)	24ScMatU2101	Calculus	2		2		20	30	50
	24ScMatU2102	Lab Course on 24ScMatU2101		2		4	20	30	50
Subject 2 T(2) + P(2)	24Sc***U2201	<<Subject 2 Theory>>	2		2		20	30	50
	24Sc***U2302	<<Subject 2 Practical>>		2		4	20	30	50
Subject 3 T(2) + P(2)	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)	24ScMatU2401	Business Mathematics	2		2		20	30	50
SEC P(2)	24ScMatU2601	Lab course on Logic		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 / 4CpCopU2031 /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)	24ScMatU3101	Multivariate Calculus	4		4		40	60	100
	24ScMatU3102	Lab Course on 24ScMatU3101		2		4	20	30	50
VSC P(2)	24ScMatU3501	Lab Course on Discrete Mathematics		2		4	20	30	50
IKS (T/P)(2)	24ScMatU3901	Ancient Indian Mathematics	2		2		20	30	50
FP P(2)	24ScMatU3002	Field Project I		2		4	20	30	50
Minor (T/P)(2+2 or 4)	24ScMatU3301	Numerical Methods and Its Applications	2		2		20	30	50
	24ScMatU3302	Lab Course on 24ScMatU3301		2		4	20	30	50
GE/OE (T/P) (2)	24ScMatU3401	Financial Mathematics	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) 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)	24ScMatU4101	Linear Algebra	4		4		40	60	100
	24ScMatU4102	Lab Course on 24ScMatU4101		2		4	20	30	50
VSC P(2)	24ScMatU4501	Lab Course on Computational Geometry		2		4	20	30	50
CEP P(2)	24CpCopU4003	Community Engagement Project		2		4	20	30	50
Minor (T/P)(2+2 or 4)	24ScMatU4301	Linear Algebra	2		2		20	30	50
	24ScMatU4302	Lab Course on 24ScMatU4301		2		4	20	30	50
GE/OE (T/P) (2)	24ScMatU4401	Basics of Operations Research	2		2		20	30	50
SEC P(2)	24ScMatU4601	Lab Course on Sci Lab		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) 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+2 or 4 + 2+2 or 4 + 4) P(2+2 or 4)	24ScMatU5101	Real Analysis	4		4		40	60	100
	24ScMatU5102	Groups and Rings	4		4		40	60	100
	24ScMatU5103	Vector Calculus	2		2		20	30	50
	24ScMatU5104	Lab Course on Operations Research		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24ScMatU5201	C Programming Language	2		2		20	30	50
	24ScMatU5202	Lab Course on 24ScMatU5201		2		4	20	30	50
	OR								
	24ScMatU5203	Metric Spaces	2		2		20	30	50
	24ScMatU5204	Lab Course on 24ScMatU5203		2		4	20	30	50
VSC P(2)	24ScMatU5501	Lab Course on Computer Oriented Numerical Methods		2		4	20	30	50
FP (2)	24ScMatU5001	Field Project II		2		4	20	30	50
Minor (T/P) (2)	24ScMatU5302	Lab Course on Ordinary Differential Equations		2		4	20	30	50
Total			12	10	12	20			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)	24ScMatU6101	Complex Analysis	4		4		40	60	100
	24ScMatU6102	Differential Equations	4		4		40	60	100
	24ScMatU6103	Number Theory	2		2		20	30	50
	24ScMatU6104	Lab Course on Graph Theory		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24ScMatU6201	Data Structures	2		2		20	30	50
	24ScMatU6202	Lab Course on 24ScMatU6201		2		4	20	30	50
	OR								
	24ScMatU6203	Laplace Transforms and Fourier Series	2		2		20	30	50
	24ScMatU6204	Lab Course on 24ScMatU6203		2		4	20	30	50
VSC P(2)	24ScMatU6501	Lab Course on Python		2		4	20	30	50
OJT P (2)	24ScMatU6004	On Job Training		4		8	40	60	100
Total			12	10	12	20			550

