

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. (Microbiology)

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)	24ScMicU1101	Fundamentals of Microbiology	2		2		20	30	50
	24ScMicU1102	Lab Course on 24ScMicU1101		2		4	20	30	50
Subject 2 T(2)+ (T/P) (2) or T(4)	24ScBotU1201 / 24ScZooU1201	<<Subject 2 Theory>>	2		2		20	30	50
	24ScBotU1202 / 24ScZooU1202	<<Subject 2 Practical>>		2		4	20	30	50
Subject 3 T(2)+ (T/P) (2) or T(4)	24ScZooU1301/ 24ScCheU1301	<<Subject 3 Theory>>	2		2		20	30	50
	24ScZooU1302 / 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)	24ScMicU1401	History of Microbiology	2		2		20	30	50
SEC (P) (2)	24ScMicU1601	Lab Course on Basic Laboratory Practices		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)	24ScMicU2101	Biochemistry and Microbiology	2		2		20	30	50
	24ScMicU2102	Lab Course on 24ScMicU2101		2		4	20	30	50
Subject 2 T(2) + P(2)	24ScBotU2201 / 24ScZooU2201	<<Subject 2 Theory>>	2		2		20	30	50
	24ScBotU2202 / 24ScZooU2202	<<Subject 2 Practical>>		2		4	20	30	50
Subject 3 T(2) + P(2)	24ScZooU2301/ 24ScCheU2301	<<Subject 3 Theory>>	2		2		20	30	50
	24ScZooU2302 / 24ScCheU2302	<<Subject 3 Practical>>		2		4	20	30	50
GE/OE (T/P)(2)	24ScMicU2401	Introduction to Microbial World I	2		2		20	30	50
SEC P(2)	24ScMicU2601	Lab course on Introduction to Microscopy		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	EE	Total
Major Core T(2+2 or 4), (T/P)(2)	24ScMicU3101	Environmental Microbiology I & Metabolism	4		4		40	60	100
	24ScMicU3102	Lab Course on 24ScMicU3101		2		4	20	30	50
VSC P(2)	24ScMicU3501	Lab Course on Dairy Microbiology		2		4	20	30	50
IKS (T/P)(2)	24ScMicU3901	Vedic Microbiology	2		2		20	30	50
FP P(2)	24ScMicU3002	Field Project I		2		4	20	30	50
Minor (T/P)(2+2 or 4)	24ScMicU3301	Soil and Agricultural Microbiology	2		2		20	30	50
	24ScMicU3302	Lab Course on 24ScMicU3301		2		4	20	30	50
GE/OE (T/P) (2)	24ScMicU3401	Introduction to Microbial World II	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	EE	Total
Major Core T(2+2 or 4), (T/P)(2)	24ScMicU4101	Environmental Microbiology II and Bacterial Genetics	4		4		40	60	100
	24ScMicU4102	Lab Course on 24ScMicU4101		2		4	20	30	50
VSC P(2)	24ScMicU4501	Lab Course on Food Microbiology		2		4	20	30	50
CEP P(2)	24ScCopU4003	Community Engagement Project		2		4	20	30	50
Minor (T/P)(2+2 or 4)	24ScMicU4301	Air and Water Microbiology	2		2		20	30	50
	24ScMicU4302	Lab Course on 24ScMicU4301		2		4	20	30	50
GE/OE (T/P) (2)	24ScMicU4401	Community Hygiene	2		2		20	30	50
SEC T(2)	24ScMicU4601	Basics of Fermentation Technology	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	CE	EE	Total
Major Core T(2+2+2+2 or 4 + 2+2 or 4 + 4) P(2+2 or 4)	24ScMicU5101	Medical Microbiology I	2		2		20	30	50
	24ScMicU5102	Immunology I	2		2		20	30	50
	24ScMicU5103	Biochemistry I	2		2		20	30	50
	24ScMicU5104	Molecular Biology I	2		2		20	30	50
	24ScMicU5105	Lab Course on 24ScMicU5101 & 24ScMicU5102		2		4	20	30	50
	24ScMicU5106	Lab Course on 24ScMicU5103 & 24ScMicU5104		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24ScMicU5201	Applied Microbiology I	2		2		20	30	50
	24ScMicU5202	Lab Course on 24ScMicU5201		2		4	20	30	50
	OR								
	24ScMicU5203	Biostatistics and Biophysics I	2		2		20	30	50
	24ScMicU5204	Lab Course on 24ScMicU5203		2		4	20	30	50
VSC P (2)	24ScMicU5501	Lab Course on Clinical Microbiology & Haematology		2		4	20	30	50
FP (2)	24ScMicU5001	Field Project II		2		4	20	30	50
Minor (T/P) (2)	24ScMicU5302	Introduction to Fermentation		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	CE	EE	Total
Major Core T(2+2+2+2 or 4+2+2 or 4+4) P(2+2 or 4)	24ScMicU6101	Medical Microbiology II	2		2		20	30	50
	24ScMicU6102	Immunology II	2		2		20	30	50
	24ScMicU6103	Biochemistry II	2		2		20	30	50
	24ScMicU6104	Molecular Biology II	2		2		20	30	50
	24ScMicU6105	Lab Course on 24ScMicU6101 & Lab Course on 24ScMicU6102		2		4	20	30	50
	24ScMicU6106	Lab Course on 24ScMicU6103 & Lab Course on 24ScMicU6104		2		4	20	30	50
Major Elective (T/P) (2+2 or 4)	24ScMicU6201	Applied Microbiology II	2		2		20	30	50
	24ScMicU6202	Lab Course on 24ScMicU6201		2		4	20	30	50
	OR								
	24ScMicU6203	Biostatistics and Biophysics II	2		2		20	30	50
	24ScMicU6204	Lab Course on 24ScMicU6203		2		4	20	30	50
VSC P(2)	24ScMicU6501	Lab Course on in Industrial Microbiology		2		4	20	30	50
OJT (2)	24ScMicU6004	On Job Training		4		8	40	60	100
Total			10	12	10	24			550

