

*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)	<a href="#">24CpCopU1901</a>	<a href="#">Generic IKS</a>	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)	<a href="#">24CpCopU1701 / 24CpCopU1702</a>	<a href="#">MIL-I (Hindi) / MIL-I (Marathi)</a>	2		2		20	30	50
VECT (2)	<a href="#">24CpCopU1801</a>	<a href="#">Environmental Science</a>	2		2		20	30	50
<b>Total</b>			<b>14</b>	<b>08</b>	<b>14</b>	<b>16</b>			<b>550</b>

## 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
<b>Total</b>			<b>14</b>	<b>08</b>	<b>14</b>	<b>16</b>			<b>550</b>

### 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
<b>Total</b>			<b>14</b>	<b>08</b>	<b>14</b>	<b>16</b>			<b>550</b>

## 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)	<a href="#">24ScCopU4003</a>	<a href="#">Community Engagement Project</a>		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)	<a href="#">24CpCopU4701</a> <a href="#">/ 24CpCopU4702</a>	<a href="#">MIL-II (Hindi) / MIL-II (Marathi)</a>	2		2		20	30	50
CC T(2)	<a href="#">24CpCopU4001</a>	<a href="#">Health and Wellness</a>	2		2		20	30	50
<b>Total</b>			<b>14</b>	<b>08</b>	<b>14</b>	<b>16</b>			<b>550</b>

## 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
<b>Total</b>			<b>10</b>	<b>12</b>	<b>10</b>	<b>24</b>			<b>550</b>

## 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
<b>Total</b>			<b>10</b>	<b>12</b>	<b>10</b>	<b>24</b>			<b>550</b>

