

*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 . (Botany)**

(Based on NEP 2020 framework)

(To be implemented from the Academic Year 2023-24)

### Semester 1 (First Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ES E	Total
<b>Major Mandatory (4 + 2)</b>	Major Paper 1 (Theory) Section 1	23ScBotU1101	<b>Phycology and Mycology</b>	2	4	40	60	100
	Major Paper 1 (Theory) Section 2			2				
	Major Paper 2 (Practical)	23ScBotU1102	<b>Lab Course on 23ScBotU1101</b>	4	2	20	30	50
<b>Major Electives</b>	-							
<b>Minor</b>	-							
<b>OE (2 + 2)</b>		23ScBotU1401	<b>Organic Farming</b>	2	4	40	60	100
		23CpCopU1402	Democracy, Election and Governance	2				
<b>VSC (2)</b>	Major Specific Practical I	23ScBotU1501	<b>Lab Course on Microbial Biotechnology</b>	4	2	20	30	50
<b>SEC (2)</b>	Skill Paper 1 (Practical)	23ScBotU1601	<b>Lab Course on Mushroom Cultivation and Biofertilizer Technology</b>	4	2	20	30	50
<b>AEC(2),</b>	MIL	23CpCopU1701	MIL-I (Hindi) / MIL-I (Marathi)	2	2	20	30	50
		23CpCopU1702						
<b>VEC (2)</b>	EVS Theory	23CpCopU1801	Environment Science I	2	2	20	30	50
<b>IKS (2)</b>	Major Specific Theory	23ScBotU1901	<b>Ayurvedic Science of Nutrition and Diet</b>	2	2	20		50
<b>CC (2)</b>	CC-I Course	23CpCopU1001	Online Course Based on Yoga	2	2	20	30	50
<b>Total</b>				28	22	220	330	550

### Semester 2 (First Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 2)	Major Paper 3 (Theory) Section 1	23ScBotU2101	Biomolecules and Cell Biology	2	4	40	60	100
	Major Paper 3 (Theory) Section 2			2				
	Major Paper 4 (Practical)	23ScBotU2102	Lab Course on 23ScBotU2101	4	2	20	30	50
Major Electives	-							
Minor	Minor Paper I (Practical)	23ScBotU2301	Lab Course on Fundamentals of Botany	4	2	20	30	50
OE (2 + 2)	Theory	23ScBotU2401	Gardening	2	4	40	60	100
		23CpCopU2402	Fundamentals of Music	2				
VSC (2)	Major Specific Practical II	23ScBotU2501	Lab Course on Plant Biotechnology	4	2	20	30	50
SEC (2)	Skill Paper 11 (Practical)	23ScBotU2601	Lab Course on Seed Technology	4	2	20	30	50
AEC(2),	English Theory	23CpCopU2703	English Communication Skills I	2	2	20	30	50
VEC (2)	EVS Theory	23CpCopU2801	Environment Science II	2	2	20	30	50
IKS (2)	-	-	-	-	-	-	-	-
CC (2)	CC-II Course	23CpCopU2001 / 23CpCopU2011 / 23CpCopU2021 / 23CpCopU2031 / 23CpCopU2041 / 23CpCopU2051 / 23CpCopU2061 / 23CpCopU2071	Physical Education / Cultural Activities / NSS / NCC / Fine Arts / Applied Arts / Visual Arts / Performing Arts	2	2	20	30	50
<b>Total</b>				<b>30</b>	<b>22</b>	<b>220</b>	<b>330</b>	<b>550</b>

### Semester 3 (Second Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
<b>Major Mandatory (4 + 4)</b>	Major Core Paper 5 (Theory) Section 1	23ScBotU3101	Archegoniate and Reproductive Biology of Angiosperms	2	4	40	60	100
	Major Core Paper 5 (Theory) Section 2			2				
	Major Paper 6 (Practical)	23ScBotU3102	Lab Course on 23ScBotU3101	4	4	40	60	100
				4				
<b>Major Electives</b>	-							
<b>Minor (4)</b>	Minor Paper II (Theory +Practical)	23ScBotU3301	Morphology of Angiosperms (T + P)	2	4	40	60	100
				4				
<b>OE (2)</b>	Theory	23ScBotU3401	Herbal Medicine	2	2	20	30	50
<b>VSC (2)</b>	Major Specific Practical III	23ScBotU3501	Lab Course on Herbal Technology	4	2	20	30	50
<b>SEC (2)</b>	-		--	--	--	--	--	--
<b>AEC(2),</b>	English Theory	23CpCopU3703	English Communication Skills II	2	2	20	30	50
<b>VEC (2)</b>	--		--	--	--	--	--	--
<b>IKS (2)</b>	--		--	--	--	--	--	--
<b>FP/CEP (2)</b>	FP –I	23ScBotU3002	Field Project I	4	2	20	30	50
<b>CC(2)</b>	CC III	23CpCopU3001	Fitness	2	2	20	30	50
<b>Total</b>				<b>32</b>	<b>22</b>	<b>220</b>	<b>330</b>	<b>550</b>

### Semester 4 (Second Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
<b>Major Mandatory (4 + 4)</b>	Major Core Paper 7 (Theory) Section 1	23ScBotU4101	<b>Plant Morphology and Anatomy</b>	2	4	40	60	100
	Major Core Paper 7 (Theory) Section 2			2				
	Major Paper 8 (Practical)	23ScBotU4102	<b>Lab Course on 23ScBotU4101</b>	4	4	40	60	100
<b>Major Electives</b>	-							
<b>Minor (4)</b>	Minor Paper III (Theory) Practical	23ScBotU4301	<b>Plant Ecology (T + P)</b>	2	4	40	60	100
				4				
<b>OE (2)</b>	Theory	23ScBotU4401	<b>Wine Technology</b>	2	2	20	30	50
<b>VSC (2)</b>	--		--	--	--	--	--	--
<b>SEC (2)</b>	Skill Paper III (Practical)	23ScBotU4601	<b>Lab Course on Fruit and Vegetable Processing and Preservation</b>	4	2	20	30	50
<b>AEC(2),</b>	MIL	23CpCopU4701	MIL-II (Hindi ) / MIL-II (Marathi)	2	2	20	30	50
		23CpCopU4702						
<b>VEC (2)</b>	--		--	--	--	--	--	--
<b>IKS (2)</b>	--		--	--	--	--	--	--
<b>FP / CEP(2)</b>	CEP –I	23ScBotU4003	<b>Community Engagement Project I</b>	4	2	20	30	50
<b>CC(2)</b>	CC-4	23CpCopU4001	<b>Health and Wellness</b>	2	2	20	30	50
<b>Total</b>				<b>28</b>	<b>22</b>	<b>220</b>	<b>330</b>	<b>550</b>

## Semester 5 (Third Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
<b>Major Mandatory (4 + 4 + 2)</b>	Major Core Paper 9 (Theory) Section 1	23ScBotU5101	Paleobotany and Plant Systematics	2	4	40	60	100
	Major Core Paper 9 (Theory) Section 2			2				
	Major Paper 10 (Theory) Section 1	23ScBotU5102	Genetics and Plant Breeding	2	4	40	60	100
	Major Paper 10 (Theory) Section 2 Plant Breeding			2				
	Major Paper 11 (Practical)	23ScBotU5103	Lab Course on 23ScBotU5101 and 23ScBotU5102	4	2	20	30	50
<b>Major Electives</b>	Elective I (Theory + Practical)	23ScBotU5201	Ecology and Conservation (T + P)	2	4	40	60	100
				4				
	Elective II (Theory + Practical)	23ScBotU5202	Landscaping and Gardening (T + P)	2	4	40	60	100
				4				
<b>Minor (4)</b>	Minor Paper IV (Theory + Practical)	23ScBotU5301	Plant Physiology and Biochemistry (T + P)	2	4	40	60	100
				4				
<b>OE (2)</b>	--		--	--	--	--	--	--
<b>VSC (2)</b>	Major Specific Practical IV	23ScBotU5501	Lab Course on Phytochemical Techniques	4	2	20	30	50
<b>SEC (2)</b>	--		--	--	--	--	--	--
<b>AEC(2),</b>	--		--	--	--	--	--	--
<b>VEC (2)</b>	--		--	--	--	--	--	--
<b>IKS (2)</b>	--		--	--	--	--	--	--
<b>FP / CEP(2)</b>	FP –II	23ScBotU5002	Field Project II	4	2	20	30	50
<b>Total</b>				<b>32</b>	<b>22</b>	<b>220</b>	<b>330</b>	<b>550</b>

## Semester 6 (Third Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
<b>Major Mandatory (4 + 4 + 2)</b>	Major Core Paper 12 (Theory) Section 1	23ScBotU6101	Molecular Biology and Plant Biotechnology	2	4	40	60	100
	Major Core Paper 12 (Theory) Section 2:			2				
	Major Paper 13 (Theory) Section 1	23ScBotU6102	Plant Physiology and Metabolism	2	4	40	60	100
	Major Paper 13 (Theory) Section 2			2				
	Major Paper 14 (Practical)	23ScBotU6103	Lab Course on 23ScBotU6101 & 23ScBotU6102	4	2	20	30	50
<b>Major Electives</b>	Elective III (Theory + Practical)	23ScBotU6201	Plant Analytical Techniques and Biostatistics ( T + P )	2	4	40	60	100
				4				
	Elective IV (Theory + Practical)	23ScBotU6202	Industrial and Environmental Microbiology ( T + P )	2	4	40	60	100
				4				
<b>Minor (4)</b>	Minor Paper V (Theory + Practical)	23ScBotU6301	Plant Biotechnology ( T + P )	2	4	40	60	100
				4				
<b>OE (2)</b>	--		--	--	--	--	--	--
<b>VSC (2)</b>	--		--	--	--	--	--	--
<b>SEC (2)</b>	--		--	--	--	--	--	--
<b>AEC(2),</b>	--		--	--	--	--	--	--
<b>VEC (2)</b>	--		--	--	--	--	--	--
<b>IKS (2)</b>	--		--	--	--	--	--	--
<b>FP / CEP(2)</b>	--		--	--	--	--	--	--
<b>OJT(4)</b>	OJT	23ScBotU6004	On Job Training	8	4	40	60	100
<b>Total</b>				<b>32</b>	<b>22</b>	<b>220</b>	<b>330</b>	<b>550</b>

OE : Open Elective

AEC: Ability Enhancement Course

VEC: value Education Courses

CC : Co-Curricular Courses

IKS : Indian Knowledge System

OJT : On-Job Training

FP : Field Project

VSC : Vocational Skill Courses  
CEP : Community Engagement Project