

*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. (Statistics)**

(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	ESE	Total
Major Mandatory (4 + 2)	Major Paper 1 (Theory)	23ScStaU1101	Descriptive Statistics	4	4	40	60	100
	Major Paper 2 (Practical)	23ScStaU1102	Lab Course on 23ScStaU1102	4	2	20	30	50
Major Electives	-							
Minor	-							
OE (2 + 2)	Theory	23ScStaU1401	Fundamentals of Statistics-I	2	4	40	60	100
		23CpCopU1402	Democracy, Election and Governance	2				
VSC (2)	Major Specific Practical I	23ScStaU1501	Lab Course on Data Analysis Using MS-EXCEL	4	2	20	30	50
SEC (2)	Skill Paper 1 (Practical)	23ScStaU1601	Lab Course on Data Analysis Using R Software	4	2	20	30	50
AEC(2),	Theory	23CpCopU3701 / 23CpCopU3702	MIL-I (Hindi ) / MIL-I (Marathi)	2	2	20	30	50
VEC (2)	EVS Theory	23CpCopU1801	Environment Science I	2	2	20	30	50
IKS (2)	Major Specific Theory	23ScStaU1901	Indian official Statistics	2	2	20	30	50
CC (2)	CC-I Course	23CpCopU1001	Online Course Based on Yoga	2	2	20	30	50
Total				28	22	220	330	550

## Semester 2 (First Year)

Course Type	Course	Course Code	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
<b>Major Mandatory (4 + 2)</b>	Major Paper 3 (Theory)	23ScStaU2101	Discrete Probability Distributions	4	4	40	60	100
	Major Paper 4 (Practical)	23ScStaU2101	Lab Course on 23ScStaU2101	4	2	20	30	50
<b>Major Electives</b>	-							
<b>Minor</b>	Minor Paper I (Practical)	23ScStaU2301	Lab Course on Exploratory Data Analysis	4	2	20	30	50
<b>OE (2 + 2)</b>	Theory	23ScStaU2401	Fundamentals of Statistics- II	2	4	40	60	100
		23CpCopU2402	Fundamentals of Music	2				
<b>VSC (2)</b>	Major Specific Practical II	23ScStaU2501	Lab Course on MS-EXCEL for Discrete Probability Models	4	2	20	30	50
<b>SEC (2)</b>	Skill Paper II (Practical)	23ScStaU2601	Lab Course on R Software for Discrete Probability Models	4	2	20	30	50
<b>AEC(2),</b>	Theory	23CpCopU2703	English Communication Skills I	2	2	20	30	50
<b>VEC (2)</b>	EVS Theory	23CpCopU2801	Environment Science II	2	2	20	30	50
<b>IKS (2)</b>								
<b>CC (2)</b>	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)	23ScStaU3101	Discrete Probability Distributions and Time Series Analysis	4	4	40	60	100
	Major Paper 6 (Practical)	23ScStaU3102	Lab Course on 23ScStaU3101	4	4	40	60	100
<b>Major Electives</b>	-							
<b>Minor (4)</b>	Minor Paper II (Theory + Practical)	23ScStaU3301	Introduction to Probability (T + P)	2	4	40	60	100
				4				
<b>OE (2)</b>	Theory	23ScStaU3401	Applied Statistics-I	2	2	20	30	50
<b>VSC (2)</b>	Major Specific Practical III	23ScStaU3501	Lab Course on R-Programming	4	2	20	30	50
<b>SEC (2)</b>	--	23ScStaU3601	--	--	--	--	--	--
<b>AEC(2),</b>	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	23ScStaU3002	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>28</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)	23ScStaU4101	Continuous Probability Distributions	4	4	40	60	100
	Major Paper 8 (Practical)	23ScStaU4102	Lab Course on 23ScStaU4101	4	4	40	60	100
<b>Major Electives</b>	-							
<b>Minor (4)</b>	Minor Paper III (Theory + Practical)	23ScStaU4301	Probability Distributions ( T + P )	2	4	40	60	100
				4				
<b>OE (2)</b>	Theory	23ScStaU4401	Applied Statistics-II	2	2	20	30	50
<b>VSC (2)</b>	--		--	--	--	--	--	--
<b>SEC (2)</b>	Skill Paper III (Practical)	23ScStaU4601	Lab Course on C-programming	4	2	20	30	50
<b>AEC(2),</b>	Theory	23CpCopU4701/ 23CpCopU4702	MIL-II (Hindi ) / MIL-II (Marathi)	2	2	20	30	50
<b>VEC (2)</b>	--		--	--	--	--	--	--
<b>IKS (2)</b>	--		--	--	--	--	--	--
<b>FP / CEP(2)</b>	CEP -I	23ScStaU4003	Community Engagement Project	4	2	20	30	50
<b>CC(2)</b>	CC-4	23CpCopU4001	Health and Wellness	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)	23ScStaU5101	Distribution Theory	4	4	40	60	100
	Major Paper 10 (Theory)	23ScStaU5102	Statistical Inference	4	4	40	60	100
	Major Paper 11 (Practical)	23ScStaU5103	Lab Course on 23ScStaU5101 & 23ScStaU5102	4	2	20	30	50
<b>Major Electives</b>	Elective I (Theory + Practical)	23ScStaU5201	Regression Analysis (T + P)	2	4	40	60	100
				4				
	Elective II (Theory + Practical)	23ScStaU5202	Stochastic Processes (T + P)	2	4	40	60	100
				4				
<b>Minor (4)</b>	Minor Paper IV (Theory) + Practical)	23ScStaU5301	Applied Statistics-I (T + p0	2	4	40	60	100
				4				
<b>OE (2)</b>	--		--	--	--	--	--	--
<b>VSC (2)</b>	Major Specific Practical IV	23ScStaU5501	Lab Course on Statistical Analysis using Python Programming	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	23ScStaU5002	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	23ScStaU6101	Sampling Theory and Statistical Quality Control	2	4	40	60	100
	Major Core Paper 12 (Theory) Section 2			2				
	Major Paper 13 (Theory) Section 1	23ScStaU6102	Data Mining and Reliability Theory	2	4	40	60	100
	Major Paper 13 (Theory) Section 2			2				
	Major Paper 14 (Practical)	23ScStaU6103	Lab Course on 23ScStaU6101 & 23ScStaU6102	4	2	20	30	50
<b>Major Electives</b>	Elective III (Theory & Practical)	23ScStaU6201	Design of Experiments ( T + P )	2	4	40	60	100
				4				
	Elective IV (Theory)	23ScStaU6202	Operations Research ( T + P )	2	4	40	60	100
Elective IV (Practical)	4							
<b>Minor (4)</b>	Minor Paper V (Theory + Practical)	23ScStaU6301	Applied Statistics-II ( 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	23ScStaU6004	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