

*Progressive Education Society's*

Modern College of Arts, Science and Commerce (Autonomous),

Shivajinagar, Pune 5

(An Autonomous College Affiliated to SavitribaiPhule Pune University)

Framework of Syllabus For

B.Sc. Blended (Bioscience)  
(Based on NEP 2020 framework)

## Semester 1 (First Year)

Course Type	Subject code	Course	Course / Paper Title	Hours / Week	Credit	CIA	E S E	Total
Major Mandatory (4 + 2)	23ScU1101	Major Paper 1 (Theory)	Biology I (The Diversity of Life)	4	4	40	60	100
	23ScBOU1102	Major Paper 2	Introductory and Organic Chemistry	4	2	20	30	50
Major Electives		-						
Minor		-						
OE (2 + 2)	23ScBOU1401		Applications of Biology 1	4	4	40	60	100
	23CpCopU1402		Democracy, Election and Governance					
VSC (2)	23ScBOU1501	Major Specific Practical I	Biology Practical-1	4	2	20	30	50
SEC (2)	23ScBOU1601	Skill Paper 1	Chemistry Practical 1	4	2	20	30	50
AEC(2),	23CpCopU1701		MIL (Hindi) / MIL (Marathi)	2	2	20	30	50
VEC (2)	23CpCopU1801		Environment Science I	2	2	20	30	50
IKS (2)	23ScBOU1901	Major Specific Theory	Application of IKS in Bioscience	2	2	20	30	50
CC (2)	23CpCopU1001	CC-I Course	Online Course Based on Yoga	2	2	20	30	50

Total				26	22	220	330	550
Non CGPA credits	23ScBOU1291		Calculus	4	4	40	60	100
Non CGPA credits	23ScBOU1292		Introductory classical Physics + Physics Practical 1	4+2	4	40	60	100

Semester 2 (First Year)

Course Type	Subject code	Course	Course / Paper Title	Hours / Week	Credit	CI A	E S E	Total
Major Mandatory (4 + 2)	3ScBOU2101	Major Paper 3 (Theory+ Practical)	Biology 2 (Biology of Cells) + Biology Practical 2	4	4	40	60	100
	3ScBOU2102	Major Paper 4 (Theory)	Introduction to Biochemistry	2	2	20	30	50
Major Electives		-						
Minor	23ScBOU2301	Minor Paper I (Theory)	Inorganic and Physical Chemistry	2	2	20	30	50
OE (2 + 2)	3ScBOU2401		Applications of Biology 2	4	4	40	60	100
	23CpCopU2402		Fundamentals of Music					
VSC (2)	3ScBOU2501	Major Specific	Biochemical techniques:	4	2	20	30	50



## Semester 3 (Second Year)

Course Type	Subject code	Course	Course / Paper Title	Hours / Week	Credit	CI A	E S E	Total
Major Mandatory (4 + 4)	23ScBOU3101	Major Core Paper 5 (Theory)	Functional Biology of Organisms + Biology Practical-3	1	2	40	60	100
				4				
	23CopU1901		Generic IKS	2	2			
	23ScBOU3102	Major Paper 6 (Theory+ Practical)	Introduction to Microbiology	2	4	40	60	100
4								
Major Electives		-						
Minor (4)	23ScBOU3301	Minor Paper II Theory+ Practical)	Reactions and Synthesis +Chemistry Practical 3	2	4	40	60	100
				4				
OE (2 + 2)	23ScBOU3401		Biology Applications 3	4	4	40	60	100
VSC (2)	23ScBOU3501	Major Specific Practical II	Introductory Scientific Computing and modelling for biology	4	2	20	30	50
SEC (2)		--	--	--	--	--	--	--
AEC(2),	3CpCopU3703		English Communication and Critical Thinking	2	2	20	30	50

VEC (2)		--	--	--	--	--	--	--
IKS (2)		--	--	--	--	--	--	--
FP/CEP (2)	23ScBOU3002	FP –I	Major Specific Project	2	2	20	30	50
Total				24	22	220	330	550
Non CGPA credits	23ScBOU3901	( Theory+ Practical)	Quantum mechanics and thermodynamics ( Theory+ Practical)	2	4	40	60	100
				4				
Non CGPA credits	23ScBOU3902	Theory	Vector calculus and Differential Equations	4	4	40	60	100

#### Semester 4 (Second Year)

Course Type	Subject code	Course	Course / Paper Title	Hours / Week	Credit	CI A	E S E	Total
Major Mandatory (4 + 4)	23ScBOU4101	Major Paper 7 (Theory)	Genetics, Evolution and Ecology + Biology Practical 4	4	4	40	60	100
	23ScBOU4102	Major Paper 8 (Theory+ Practical)	Ecology, Environment and Biodiversity	2	4	40	60	100
Major Electives		-						

Minor (4)	23ScBOU4301	Minor Paper III	Structure and Properties + Chemistry Practical 4	4	4	40	60	100
OE (2)	23ScBOU4401		Biology applications IV	4	4	40	60	100
VSC (2)		--	--	--	--	--	--	--
SEC (2)	23ScBOU4601	Skill Paper III (Theory)	Introduction to Cyber security	2	2	20	30	50
AEC(2),	23CpCopU4701/ 23CpCopU4702	MIL	MIL (Hindi ) / MIL (Marathi)	2	2	20	30	50
VEC (2)		--	--	--	--	--	--	--
IKS (2)		--	--	--	--	--	--	--
FP / CEP(2)	23ScBOU4003	CEP –I	Community Engagement Project I	4	2	20	30	50
Total				30	22	220	330	550
Non CGPA credits	23ScBOU4901	( Theory+ Practical)	Electricity ,Magnetism , Special Relativity and Optics	2 4	4	40	60	100
Non CGPA credits	23ScBOU4902	Theory	Probability and Statistics	4	4	40	60	100

Semester 5 (Third Year)

Course Type	Subject code	Course	Course / Paper Title	Hours / Week	Credit	CI A	E S E	Total
Major Mandatory (4 + 4 + 2)	23ScBOU5101	Major Core Paper 9 (Theory)	Biochemistry	2	4	40	60	100
		Major Core Paper 9 (Practical)		4				
	23ScBOU5102	Major Paper 10 (Theory)	Molecular Biology	2	4	40	60	100
		Major Paper 10 (Practical)		4				
	23ScBOU5103	Major Paper 11 (Theory)	Methods in biology	2	2	20	30	50
	Major Electives	23ScBOU5201	Elective I (Theory)	Animal Sciences	2	4	40	60
		Elective I (Practical)	4					
23ScBOU5202		Elective II (Theory)	Genetic Engineering	2	4	40	60	100
		Elective II (Practical)		4				
Minor (4)	23ScBOU5301	Minor Paper IV (Theory +Practical)	Plant Sciences	4	4	40	60	100
OE (2 + 2)		--	--	--	--	--	--	--



VSC (2)	23ScBOU5501	Major Specific Practical III	Analysis of Biological Data	4	2	20	30	50
SEC (2)		--	--	--	--	--	--	--
AEC(2),		--	--	--	--	--	--	--
VEC (2)		--	--	--	--	--	--	--
IKS (2)		--	--	--	--	--	--	--
FP / CEP(2)	23ScBOU5002	FP –II	Field Project II	4	2	20	30	50
Total				26	22	220	330	550

Semester 6 (Third Year)

Course Type	Subject code	Course	Course / Paper Title	Hours / Week	Credit	CI A	E S E	Total
Major Mandatory (4 + 4 + 2)	23ScBOU6101	Major Paper 12 (Theory)	Evolutionary Developmental Biology	2	4	40	60	100
		Major Paper 12 (Practical)		4				
	23ScBOU6102	Major Paper 13 (Theory)	Systematics and Evolution	2	4	40	60	100
		Major Paper 13 (Practical)		4				
	23ScBOU6103	Major Paper 14 (Theory)	Applied Biology	2	2	20	30	50

Major Electives	23ScBOU6201	Elective II (Theory)	Microorganisms and Diseases	2	4	40	60	100
		Elective II (Practical)		4				
	23ScBOU6202	Elective II (Theory)	Scientific Writing	2	4	40	60	100
		Elective II (Practical)		4				
Minor (4)	23ScBOU6301	Minor Paper IV (Theory)	Computational Biology	2	4	40	60	100
		Minor Paper IV (Practical)		4				
OE (2 + 2)		--	--	--	--	--	--	--
VSC (2)		--	--	--	--	--	--	--
SEC (2)		--	--	--	--	--	--	--
AEC(2),		--	--	--	--	--	--	--
VEC (2)		--	--	--	--	--	--	--
OJT (4)	23ScBOU6004	OJT	On job Training	8	4	40	60	100
FP / CEP(2)		--	--	--	--	--	--	--
Total				26	22	220	330	550

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