

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	ESE
Major Mandatory (4 + 2)	23ScBLEU1101	Major Paper 1 (Theory)	Biology I (The Diversity of Life)	2	4	40	60
				4			
	23ScBLEU1102	Major Paper 2	Introductory and Organic Chemistry	4	2	20	30
Major Electives		-					
Minor		-					
OE (2 + 2)	23ScBLEU1401		Democracy, Election and Governance	4	4	40	60
	23CpCopU1402		Applications of Biology 1				
VSC (2)	23ScBLEU1501	Major Specific Practical I	Biology Practical-1	4	2	20	30
SEC (2)	23ScBLEU1601	Skill Paper 1	Chemistry Practical 1	4	2	20	30
AEC(2),	23CpCopU1701		MIL (Hindi)	2	2	20	30
	23CpCopU1702		MIL (Marathi)				
VEC (2)	23CpCopU1801	EVS	Environment Science I	2	2	20	30
IKS (2)	23CpCopU1901	Major Specific Theory	Generic IKS	2	2	20	30
CC (2)	23CpCopU1001	CC-I Course	Online Course Based on Yoga	2	2	20	30
Total				26	22	220	330
Non CGPA credits	23ScBLEU129 1		Calculus	4	4	40	60
Non CGPA credits	23ScBLEU129 2		Introductory classical Physics + Physics Practical 1	4+2	4	40	60

Semester 2 (First Year)

Course Type	Subject code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 2)	23ScBLEU2101	Major Paper 3 (Theory+ Practical)	Biology 2 (Biology of Cells) + Biology Practical 2	4	4	40	60	10
		Major Paper 4 (Theory)	Introduction to Biochemistry	2	2	20	30	5
Major Electives								
Minor	23ScBLEU2301	Minor Paper I (Theory)	Inorganic and Physical Chemistry	2	2	20	30	5
OE (2 + 2)	23ScBLEU2401		Fundamentals of Music	4	4	40	60	10
	23CpCopU2402		Applications of Biology 2					
VSC (2)	23ScBLEU2501	Major Specific Practical II	Biochemical techniques: Chemistry Practical 2	4	2	20	30	5
SEC (2)	23ScBLEU2601	Skill Paper II (Practical)	Introduction to Biochemistry	4	2	20	30	5
AEC(2),	23CpCopU2703		English Communication and Critical Thinking	2	2	20	30	5
VEC (2)	23CpCopU2801	EVS Theory	Environment Science II	2	2	20	30	5
IKS (2)		–	–	-	–	–	–	-
CC (2)	23CpCopU2001 / 23CpCopU2011 / 23CpCopU2021 / 23CpCopU2031 / 23CpCopU2041 / 23CpCopU2051 / 23CpCopU2061 / 23CpCopU2071	CC-II Course	Physical Education / Cultural Activities / NSS / NCC / Fine Arts / Applied Arts / Visual Arts / Performing Arts	2	2	20	30	5
Total				26	22	220	330	53
Non CGPA credits	23ScBLEU2291	Theory	Algebra	4	4	40	60	10
Non CGPA credits	23ScBLEU2292	(Theory + Practical)	Modern Physics	2	4	40	60	10
				4				

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Semester 3 (Second Year)

Course Type	Subject code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4)	23ScBLEU3101	Major Core Paper 5 (Theory)	Functional Biology of Organisms + Biology Practical-3	4	4	40	60	100
	23ScBLEU3102	Major Paper 6 (Theory)	Introduction to Microbiology	2	2	20	30	100
	23ScBLEU1901	Major Specific IKS	Application of IKS in Bioscience	2	2	20	30	50
Major Electives		-						
Minor (4)	23ScBLEU3301	Minor Paper II Theory + Practical)	Reactions and Synthesis +Chemistry Practical 3	2	4	40	60	100
				4				
OE (2 + 2)	23ScBLEU3401		Biology Applications 3	2	2	20	30	50
VSC (2)	23ScBLEU3501	Major Specific Practical II	Introductory Scientific Computing and modelling for biology	4	2	20	30	50
SEC (2)		--	--	--	--	--	--	--
AEC(2),	23CpCopU3703		English Communication and Critical Thinking	2	2	20	30	50
VEC (2)		--	--	--	--	--	--	--
IKS (2)		--	--	--	--	--	--	--
FP/CEP (2)	23ScBLEU3002	FP –I	Major Specific Project	2	2	20	30	50
CC(2)	CC III	23CpCopU3001	Fitness	2	2	20	30	50
Total				26	22	220	330	550
Non CGPA credits	23ScBLEU3291	(Theory+ Practical)	Quantum mechanics and thermodynamics (Theory+ Practical)	2	4	40	60	100
				4				
Non CGPA credits	23ScBLEU3292	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	CIA	ESE	Total
Major Mandatory (4 + 4)	23ScBLEU410 1	Major Paper 7 (Theory+ Practical)	Genetics + Biology Practical 4 (T + P)	2	4	40	60	100
				4				
	23ScBLEU410 2	Major Paper 8 (Theory+ Practical)	Ecology, Environment and Biodiversity (T +P)	2	4	40	60	100
				4				
Major Electives		-						
Minor (4)	23ScBLEU430 1	Minor Paper III	Structure and Properties + Chemistry Practical 4	4	4	40	60	100
OE (2)	23ScBLEU440 1		Biology applications IV	2	24	20	30	50
VSC (2)		--	--	--	--	--	--	--
SEC (2)	23ScBLEU460 1	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)	23ScBLEU400 3	CEP –I	Community Engagement Project I	4	2	20	30	50
CC(2)	CC-4	23CpCopU400 1	Health and Wellness	2	2	20	30	50

Total				28	22	220	330	550
Non CGPA credits	23ScBLEU4291	(Theory+ Practical)	Electricity ,Magnetism , Special Relativity and Optics	2	4	40	60	100
				4				
Non CGPA credits	223ScBLEU4291	Theory	Probability and Statistics	4	4	40	60	100

Semester 5 (Third Year)

Course Type	Subject code	Course	Course / Paper Title	Hours / Week	Credit	CIA	ESE	Total
Major Mandatory (4 + 4 + 2)	23ScBleU5101	Major Core Paper 9 (Theory + Practical)	Biochemistry (T +P)	2	4	40	60	100
				4				
	23ScBleU5102	Major Paper 10 (Theory + Practical)	Molecular Biology (T +P)	2	4	40	60	100
				4				
	23ScBleU5103	Major Paper 11 (Theory)	Methods in biology	2	2	20	30	50
Major Electives	23ScBleU5201	Elective I (Theory + Practical)	Animal Sciences (T +P)	2	4	40	60	100
				4				
	23ScBleU5202	Elective II (Theory + Practical)	Genetic Engineering (T +P)	2	4	40	60	100
				4				
Minor (4)	23ScBleU5301	Minor Paper IV (Theory +Practical)	Plant Sciences (T +P)	2	4	40	60	100
				4				
OE (2 + 2)		--	--	--	--	--	--	--
VSC (2)	23ScBleU5501	Major Specific Practical III	Analysis of Biological Data	4	2	20	30	50
SEC (2)		--	--	--	--	--	--	--
AEC(2),		--	--	--	--	--	--	--
VEC (2)		--	--	--	--	--	--	--
IKS (2)		--	--	--	--	--	--	--
FP / CEP(2)	23ScBleU5002	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	CIA	ESE	Total
Major Mandatory (4 + 4 + 2)	23ScBleU6101	Major Paper 12 (Theory + Practical)	Evolutionary Developmental Biology (T +P)	2	4	40	60	100
				4				
	23ScBleU6102	Major Paper 13 (Theory + Practical)	Systematics and Evolution (T +P)	2	4	40	60	100
				4				
	23ScBleU6103	Major Paper 14 (Theory)	Applied Biology	2	2	20	30	50
Major Electives	23ScBleU6201	Elective II (Theory + Practical)	Microorganisms and Diseases (T +P)	2	4	40	60	100
				4				
	23ScBleU6202	Elective II (Theory + Practical)	Scientific Writing (T +P)	2	4	40	60	100
				4				
Minor (4)	23ScBleU6301	Minor Paper IV (Theory)	Computational Biology (T +P)	2	4	40	60	100
		Minor Paper IV (Practical)		4				
OE (2 + 2)		--	--	--	--	--	--	--
VSC (2)		--	--	--	--	--	--	--
SEC (2)		--	--	--	--	--	--	--
AEC(2),		--	--	--	--	--	--	--
VEC (2)		--	--	--	--	--	--	--
OJT (4)	23CpCopU6004	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