COURSE OUTLINE: YEAR1
BSc-BIOTECHNOLOGY 2024 AB ONWARDS

SEM-I (July-December, 90 Working Days)											
SN	Code	Paper	Credit	Instr. Hrs	Attendance	Sessional		Mid-Sem		End-Sem	
						STest/ Quiz	Assign/ Present	Theory	Practical	Theory	Practical
1	Major-I-P1	Cell Biology and Genetics	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
2	Major-I -P2	Biochemistry and Metabolism	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
3	Min-I-P1	Zoology Botany Chemistry	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
4	MDC-1	Computer Fundamentals	3	T-45	5M	10M	5M	20M	--	60M	--
5	AEC-1	Odia / Hindi	4	T-60	5M	10M	5M	20M	--	60M	--
6	VAC-1	Environmental Studies & Disaster Management	3	T-45	5M	10M	5M	20M	--	60M	--
		Total Credits	22	Mid-Sem Exam: 1 Hr | End-Sem Exa-3 Hrs (FM 100)							

SEM-II (January-June, 90 Working Days)											
SN	Code	Paper	Credit	Instr. Hrs	Attendance	Sessional		Mid-Sem		End-Sem	
						STest/ Quiz	Assign/ Present	Theory	Practical	Theory	Practical
1	Major-I-P3	Microbiology and Microbial Technology	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
2	Major-I-P4	Biostatistics and Computer Applications	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
3	Minor-II-P2	Zoology Botany Chemistry	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
4	MDC-2	Biofertilizer and Biopesticides	3	T-45	5M	10M	5M	20M	--	60M	--
5	AEC-2	English	4	T-60	5M	10M	5M	20M	--	60M	--
6	SEC-1	Logical Reasoning	3	T-45	5M	10M	5M	20M	--	60M	--
		Total Credits	22	Mid-Sem Exam: 1 Hr | End-Sem Exa-3 Hrs (FM 100)							

COURSE OUTLINE: YEAR2
BSc-BIOTECHNOLOGY 2024 AB ONWARDS

SEM-III (July-December, 90 Working Days)											
SN	Code	Paper	Credit	Instr. Hrs	Attendance	Sessional		Mid-Sem		End-Sem	
						S.Test/ Quiz	Assign/ Present	Theory	Practical	Theory	Practical
1	Major-I-P5	Instrumentation and Analytical Techniques	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
2	Major-I -P6	Molecular Biology	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
3	Major-I -P7	Immunology and Immuno-Technology	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
4	Minor-I-P3 Zoo/Bot	Zoology (Diversity of Chordates: Protochord-ates to Mammalia)	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
5	MDC-3	C++	3	T-45	5M	10M	5M	20M	--	60M	--
6	VAC-2	Ethics and Values	3	T-45	5M	10M	5M	20M	--	60M	--
		Total Credits	22	Mid-Sem Exam: 1 Hr | End-Sem Exa-3 Hrs (FM 100)							

SEM-IV (January-June, 90 Working Days)											
SN	Code	Paper	Credit	Instr. Hrs	Attendance	Sessional		Mid-Sem		End-Sem	
						S.Test/ Quiz	Assign/ Present	Theory	Practical	Theory	Practical
1	Major-IP8	Genetic Engg & Gene Therapy	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
2	Major-IP9	Bioprocess Engg & Industrial Biotechnology	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
3	Major-IP10	Plant Biotechnology	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
4	Minor –IP4	Zoology Botany Chemistry	3	T-30 L-30	5M	5M	--	10M	10M	50M	20M
5	VAC-3	Community Engagement & Services/ Field work / Internship	3	120	100 Marks						
		Total Credits	18	Mid-Sem Exam: 1 Hr | End-Sem Exa-3 Hrs (FM 100)							

COURSE OUTLINE: YEAR3
BSc-BIOTECHNOLOGY 2024 AB ONWARDS

SEM-V (July-December, 90 Working Days)											
SN	Code	Paper	Credit	Instr. Hrs	Attendance	Sessional		Mid-Sem		End-Sem	
						S.Test/ Quiz	Assign/ Present	Theory	Practical	Theory	Practical
1	Major-I-P11	Environmental Biotechnology	4	T-60	5M	10M	5M	20M	--	60M	--
2	Major-I-P12	Animal Biotechnology	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
3	Major-I-P13	Pharmaceutical Biotechnology & Drug Designing	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
4	Minor -I – P5	Zoology (microbiology)	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
5	SEC-2	Marine Biotechnology	3	T-45	5M	10M	5M	20M	--	60M	--
6	VAC-4	Introduction to AI	3	T-45	5M	10M	5M	20M	--	60M	--
		Total Credits	22	Mid-Sem Exam: 1 Hr | End-Sem Exa-3 Hrs (FM 100)							

SEM-VI (January-June, 90 Working Days)											
SN	Code	Paper	Credit	Instr. Hrs	Attendance	Sessional		Mid-Sem		End-Sem	
						S.Test/ Quiz	Assign/ Present	Theory	Practical	Theory	Practical
1	Major-I-P14	Bio-Entrepreneurship, Biosafety, Bioethics & IPR	4	T-60	5M	10M	5M	20M	--	60M	--
2	Major-I-P15	Computational Biology	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
3	C-III-3	Zoology Botany Chemistry	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
4	SEC-3		3	T-45	5M	10M	5M	20M	--	60M	--
5	VAC-5		3	T-45	5M	10M	5M	20M	--	60M	--
		Total Credits	18	Mid-Sem Exam: 1 Hr | End-Sem Exa-3 Hrs (FM 100)							

COURSE OUTLINE: YEAR4
BSc-BIOTECHNOLOGY 2024 AB ONWARDS

SEM-VII (July-December, 90 Working Days)											
SN	Code	Paper	Credit	Instr. Hrs	Attendance	Sessional		Mid-Sem		End-Sem	
						S.Test/ Quiz	Assign/ Present	Theory	Practical	Theory	Practical
1	Major-I-P16	Medical Biotechnology and Molecular Diagnostics	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
2	Major-I-P17	Bioresource Technology and Bioproducts	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
3	Major -I-P18/19	Ethno pharmacology or Agricultural Biotechnology	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
4	Minor-1	Zoology / Botany / Chemistry	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
5	Minor-2	Zoology / Botany / Chemistry	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
		Total Credits	20	Mid-Sem Exam: 1 Hr | End-Sem Exa-3 Hrs (FM 100)							

SEM-VIII (January-June, 90 Working Days)											
SN	Code	Paper	Credit	Instr. Hrs	Attendance	Sessional		Mid-Sem		End-Sem	
						S.Test/ Quiz	Assign/ Present	Theory	Practical	Theory	Practical
1	Major-I-P20	Cancer Biology and Stem Cell Therapy	4	T-45 L-30	5M	5M	--	10M	10M	50M	20M
2	Major-I-P21	Review Methodology & Communication Skills	4	T-60	5M	10M	5M	20M	--	60M	--
3		Project	12								
		Total Credits	20	Mid-Sem Exam: 1 Hr | End-Sem Exa-3 Hrs (FM 100)							