




**VIVEKANAND COLLEGE, KOLHAPUR (EMPOWERED AUTONOMOUS)**

**Department of Biotechnology (Entire)**

**Curriculum Relevance- Course outcome with relevance to Local, Regional, National, Global Needs**

Sr No.	Course Name Biotechnology- Entire	Course Code	Year of implementation	COs local regional needs	COs related to national needs	COs relevance to global needs	
1			2018-19	CO1- Understand the importance of Chemicals in Day to day life.		CO2- Construct the thermodynamic model for reaction rate.	
2	Chemistry	DSC-1331-A DSC-1332-A	2018-19		CO2- Outline the importance of carbohydrates, lipids in diet.	CO1- Understand the concept of Origin of life	
3	Biochemistry	DSC-1333-A	2018-19		CO1- Understand general classification of plant Kingdom	CO4- Explain the rules of Taxonomy.	
4	Plant Science	DSC-1334-A	2018-19		CO4- Discuss the mathematical Theorem		
5	Mathematics	DSC-1335-A	2018-19		CO2- Learn different aspects of Office operation	CO3- Outline the database management .	
6	Computer-I	DSC-1336-A	2018-19				CO2- Demonstrate different lab instruments.
	Instrumentation						

  
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7	Microbiology	DSC-1337-A	2018-19			CO3- Understand the Bacterial Taxonomy
8	Physics-I	DSC-1338-A	2018-19			CO1- Reflect the importance of Various temperature scale.
9	Chemistry	DSC-1331-B	2018-19			CO1- Describe the mechanism of Organic evolution.
10	Biochemistry	DSC-1332-B	2018-19		CO4- Explain the IUB Classification of Enzymes.	
11	Animal Science	DSC-1333-B	2018-19		CO1- Understanding the Diversity Life.	
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12	Statistics	DSC-1334-13B	2019-2020			CO1- Differentiate between correlation and regression
13	Computer-II	DSC-141335-B	2019-2020		CO1- Importance of Programming	
14	Cell biology	DS15C-1336-16B	2019-2020		CO4- Understanding of	

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15	Microbiology	DSC-133177-B	2019-2020		cytoskeleton elements. CO1- Acquire the knowledge about isolation of Microorganisms	
16	Physics-II	DSC-118338-B	2019-2020	CO1- to correlate optics with microscopy.		
17	Genetics	DSC19-1345-C	2020-2021		CO4- Predict and illustrate model of Pedigree analysis.	CO3- Perceive knowledge about the genetic disease.
18	Biophysics & Enzymology	DSC-1346-C	2020-2021	CO4- Able to construct models explaining mech of enzyme action.	CO2- Study and select spectroscopy fr elucidation of structure of Biolmolecule	
19	Metabolic Path	DSC-1347-C	2020-2021			CO2- explain different methods to study metabolism
20	Ecology	DSC-1348-C	2020-2021		CO2- Construct the relationship between different biogeochemical cycles.	CO4- Reflect the importance of Evolution theories in ecology
21	Molecular Biology-I	DSC-1349-C	2020-2021			
<b>Sr No.</b>	<b>Course Name Biotechnology-Entire</b>	<b>Course Code</b>	<b>Year of implementation</b>	<b>COs local regional needs</b>	<b>COs related to national needs</b>	<b>COs relevance to global needs</b>
22	Plant Tissue	DSC-1350-C	2021-2022		CO1- Construct	

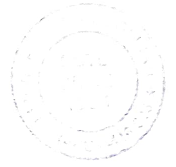
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	Culture				the design fr PTC lab	
23	Immunology	DSC-1345-D	2021-2022			CO4- Perform various serological test fr Diagnosis of Diseases.
24	Advances in Cell Biology	DSC-1346-D	2021-2022			CO3- Predict causes of Cancer
25	PlantBiochemistry	DSC-1347-D	2021-2022			CO2- Illustrate concept of Photosynthesis
26	Environment Biotechnology	DSC-1348-D	2022-2023			CO4- Discover the different ways of Bioremediation.
27	Molecular Biology -II	DSC-1349-D	2022-2023			CO2- Outline the character of Genetic code.
28	Animal Tissue Culture	DSC-1350-D	2022-2023			CO4- importance of stem cell tech.
29	Basics in Genetic Engineering	DSC-1355-E	2022-2023			CO1 – Understand the concept of Cloning
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30	Industrial Biotechnology	DSC-1356-E	2022-2023	CO1 – Construct the design required for Industrial set up.		CO3. Discover various ways of illustration the Nature of industrial Processes.



  
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31	Application Biotech Agriculture	DSC-1357-E	2022-2023			
32	Development Biology	DSC-1358-E	2022-2023	CO1- Learn the Concept of apomixes poly embryony.		CO4- Elaborate mechanism of regeneration
33	Advances in Genetic engineering	DSC-1355-F	2022-2023			CO4- Impact of GM Foods on Human health
34	Food & Microbial Biotechnology	DSC-1356-F	2022-2023	CO3- Study of Characteristics of Food Supply	CO4- Outline the importance of food preservation	
35	Application of Biotech Health	DSC-1357-F	2022-2023	CO2 Students will be able to study the importance of Vaccine for human Therapy.		
36	Bioinformatics	DSC-1358-F	2022-2023			CO1- Outline the importance of Human Genome Project.

**B.Sc-I Biotechnology Entire NEP 2023 (As Per NEP 2020)**

**Sem - I**

Sr No.	Course Name Biotechnology-Entire	Course Code	Year of implementation	COs local regional needs	COs related to national needs	COs relevance to global needs
1	Biotechnology-I (Biotechnology for human welfare-I)	DSC07BTE11	2023	CO4- To learn the techniques of production of Biofertilizer	CO2- To learn the different aspect of Biotechnology	CO1- To enumerate the importance of biotechnology in human development

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31	Application Biotech Agriculture	DSC-1357-E	2022-2023			
32	Development Biology	DSC-1358-E	2022-2023	CO1- Learn the Concept of apomixes poly embryony.		CO4- Elaborate mechanism of regeneration
33	Advances in Genetic engineering	DSC-1355-F	2022-2023			CO4- Impact of GM Foods on Human health
34	Food & Microbial Biotechnology	DSC-1356-F	2022-2023	CO3- Study of Characteristics of Food Supply	CO4- Outline the importance of food preservation	
35	Application of Biotech Health	DSC-1357-F	2022-2023	CO2 Students will be able to study the importance of Vaccine for human Therapy.		
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1	Biotechnology-I (Biotechnology for human welfare-I)	DSC07BTE11	2023	CO4- To learn the techniques of production of Biofertilizer	CO2- To learn the different aspect of Biotechnology	CO1- To enumerate the importance of biotechnology in human development

  
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 (NEP 2020)






2	Biotechnology-II (Biochemistry-I)	DSC07BTE12	2023	CO2- Outline the importance of carbohydrates, lipids in diet.	CO1- Understand the concept of Origin of life	
3	Microbiology-I (Introduction to Microbial world)	MIN07BTE11	2023		CO1- Understand historical background for development of Microbiology CO3- Understand the Bacterial Taxonomy	
4	Microbiology-II (Techniques in Microbiology)	MIN07BTE12	2023		CO1- Acquire the knowledge about different sterilization techniques.	
5	(Bio-6Instrumentation-I)	OEC07BTE11	2023		CO2- Demonstrate different lab instruments.	
6	(Plant Sciences)	OEC07BTE12	2023		CO1- Understand general classification of plant kingdom CO4- Explain the rules of Taxonomy.	
7	English	AEC07ENG11	2023			
<b>Sem - II</b>						
	Biotechnology -III				CO2-- Acquire CO4- Acquire	

  
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Sr No.	Course Name Biotechnology- Entire	Course Code	Year of implementation	COs local regional needs	COs related to national needs	COs relevance to global needs
1	(Biotechnology for human welfare-II)	DSC07BTE21	2023		the knowledge about applications of biotechnology in commercial products.	the knowledge about applications of biotechnology in conservation of enviornment
2	Biotechnology-IV (Biochemistry-II)	DSC07BTE22	2023		CO4- Explain the IUB Classification of Enzymes.	
3	Microbiology-III (Bacterial Cytology and Cultivation)	MIN07BTE21	2023		CO1- Acquire the knowledge about isolation of Microorganisms	
4	Microbiology-IV (Virology)	MIN07BTE22	2023			CO3- Compare the replication of Viruses.
5	(Ecology)	OEC07BTE21	2023		CO2- Construct the relationship between different biogeochemical cycles.	CO4- Reflect the importance of Evolution theories in ecology
6	(Animal Sciences)	OEC07BTE22	2023		CO1- Understanding the Diversity Life.	
7	(Basics in Cell Biology)	SEC07BTE21	2023		CO4- Undrstanding of cytoskeleton elements.	
8	English	AEC07ENG21	2023			

  
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**M.Sc-I Biotechnology Entire NEP 2023 (As Per NEP 2020) Sem – I**

Sr No.	Course Name Biotechnology - Entire	Course Code	Year of implementation	COs local regional needs	COs related to national needs	COs relevance to global needs
1	Biological Chemistry	DSC21MBT11	2023			CO1- Understand the concept of Origin of life
2	Microbial technology	DSC21MBT12	2023	CO4- Appreciate the relation between microbes and Environment		CO1- To describe the microbial diversity.
3 Optional Subject	Environmental Biotechnology and Ecology	DSE21MBT11	2023	CO4-To learn the different concept of Evolution		CO3- To study renewable and non renewable natural resources
	Genetics and Basic Cell Biology	DSE21MBT12	2023			Co1- Learn the concept of Genetics.
4	Research Methodology	RMD21MBT11	2023	Co1- To understand the different types of research work.		CO2- To present the research work scientifically