

“Education for Knowledge, Science and Culture”

-Shikshamharshi Dr. Bapuji Salunkhe

VIVEKANAD COLLEGE, KOLHAPUR (EMPOERWED AUTONOMOUS), KOLHAPUR

Department of Biotechnology

Subject – Biotechnology Optional

Content with a focus on Employability, Entrepreneurship, Skill Development

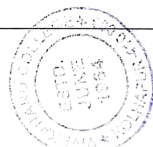
S.N.	Name of Course	Course code	Year of introduced	Employability	Content with a focus on entrepreneurship	Content with a focus on skill development
1	B.Sc. I					
1	Basics of Biotechnology	DSC-1009A	2018-19	Students can study the scope of Biotechnology in various fields with applications of biomolecules.	-	Students to deal with colorimetry, Spectrophotometry, and Microscopy as basic techniques in Biotechnology with applications
2	Basics of Cell Biology and Microbiology	DSC-1009B	2018-19	-	-	Nutritive requirements, cultivation media, growth conditions for various microorganisms, and their control
2	B.Sc. II					
1	Enzyme Technology and Molecular Biology	DSC-1009C	2019-20	-	-	Use of biosensors in daily life Understanding of the following techniques; a) Gel Electrophoresis b) Blotting Techniques c) Polymerase Chain Reaction
2	Immunology and r-DNA technology	DSC-1009D	2019-20	-	-	Concepts; a) Restriction Digestion b) Ligation c) Plasmid Construction d) Gene Transfer Methods e) Recombinant Insulin f) Recombinant Vaccine,



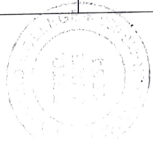
S.N.	Name of Course	Course code	Year of introduced	Employability	Content with a focus on entrepreneurship	Content with a focus on skill development
3	B.Sc.III					
1	Plant tissue culture and Environmental Biotechnology	DSC-1009E1	2020-21	Formulation of media to produce plantlets on an industrial scale by plant tissue culture techniques	-	Different ways of Bioremediation
2	Large-scale manufacturing process	DSC-1009E2	2020-21		-	Enumerate steps of downstream processing to purify industrially important product
3	Advances in Biotechnology	DSC-1009F1	2020-21	Construct a drug molecule	-	Understand various tracer techniques & and their applications
4	Cell metabolism virology and Gene technology and Bioinformatics	DSC-1009F2	2020-21	A good entrepreneur to set up ATC-based industries	-	-
	SEC	SEC Sem V and VI	2020-21	Students get knowledge about business organizations by completing the course students can incubate their business idea	-	concepts of business finance. Students can become successful entrepreneurs
4	B.Sc.I					
1	Paper-I Basics of Biotechnology I	DSC-1009A1	2021-22	-	-	Qualitative and quantitative analysis of biomolecules
	Paper-II Basics of Biotechnology II	DSC-1009A2	2021-22			the principle of centrifugation. the working of Microscope. The instrumentation and working of UV visible spectroscopy
	Paper-III Microbiology	DSC-1009B1	2021-22	-	-	-
	Paper-IV Cell biology and genetics	DSC-1009B2	2021-22	-	-	Predict how crossing over helps in species diversity & and evolution



S.N.	Name of Course	Course code	Year of introduced	Employability	Content with a focus on entrepreneurship	Content with a focus on skill development
5.1	B.Sc.II Paper-V- Enzyme technology	DSC-1009C1	2022-23	knowledge regarding various methods in industries used for enzyme and cell immobilization.	-	-
2	Paper-VI- Molecular Biology	DSC-1009C2	2022-23	-	-	a) Gel Electrophoresis b) Blotting Techniques c) Polymerase Chain Reaction d) Genetic Engineering all techniques are important in molecular biology
3	PaperVII- Immunology	DSC-1009 D1	2022-23	-	-	to understand serological tests in pathological laboratories
4	Paper VIII- r-DNA technology	DSC-1009D2	2022-23	-	-	-
5	SEC- Introduction to molecular diagnostic	SEC Sem IV	2022-23	Students will analyse the applications of molecular methods in clinical research	Knowing the procedure for high-end Instrumentation	-
6	B.Sc. III					
1	Plant Biotechnology	DSC-1009E1	2023-24	Construct to design the commercial plant tissue culture laboratory	-	To study various types of tissue culture
2	Animal Tissue Culture	DSCE2	2023-24	-	Construct to design the commercial Animal tissue culture Laboratory	How to prepare and maintain animal tissues using various media and hormones is part of the syllabus
3	Large Scale Manufacturing I	DSC-1009E3	2023-24	-	-	Content regarding Upstream and Downstream processing in fermentation industries for recovery of product
4	Large Scale Manufacturing II	DSC-1009E4	2023-24	-	the fermentation industry and patenting	-




S.N.	Name of Course	Course code	Year of introduced	Employability	Content with a focus on entrepreneurship	Content with a focus on skill development
5	Advances in Biotechnology Biochemical techniques	DSC-1009F1	2023-24	-	Content about various advancements in applied biotechnology	knowledge of electrophoresis in protein research
6	Gene Technology and Bioinformatics	DSC-1009F2	2023-24	-	Content different therapies in gene technology	to work in a molecular diagnostic and Bioinformatics laboratory.
7	Cell Metabolism and Virology	DSC-1009F3	2023-24	-	-	Study of different virus cultivation techniques
8	Environmental Biotechnology	DSC1009F4	2023-24	Implementation of green revolution i.e. to attain reduce, reuse & recycle	-	-
9	Entrepreneurship development	SEC Sem V	2023-24	Students can incubate their business idea	students can become successful entrepreneurs	business organization
10	Ecology	SEC Sem VI	2023-24	-	-	-
7	B.Sc,I NEP	Sem I	2023-24			
1	Fundamentals of Biotechnology Paper I	Major	2023-24	-	-	Specify types of Diabetes & and symptoms and remedies.
2	Fundamentals of Biotechnology Paper II	Major	2023-24	-	-	Discussion of the instrumentation & and working of UV visible spectroscopy.
3	Microbiology	Major	2023-24	-	-	Designing media to culture-specific bacterial strains.



S.N.	Name of Course	Course code	Year of introduced	Employability	Content with a focus on entrepreneurship	Content with a focus on skill development
4	Cell Biology and genetics	Major	2023-24	-	-	Prediction of how crossing over helps in species diversity and evolution
5	Basics of Biotechnology -I	Minor	2023-24	-	-	Specify types of Diabetes & and symptoms and remedies.
6	Basics of Biotechnology -II	Minor	2023-24	-	-	Content focused on the instrumentation & and working of UV visible spectroscopy
7	Basics of Microbiology	Minor	2023-24	-	-	Conclude the importance of sterilization
8	Basics of Cell biology	Minor	2023-24	-	-	-
9	Scope of Biotechnology -I	OEC	2023-24	-	-	Understanding of food Biotechnology
10	Scope of Biotechnology -II	OEC	2023-24	-	-	Understanding of the construction, and applications of Plant tissue culture , applications of animal tissue culture
11	Immunology	OEC	2023-24	-	-	-
12	Techniques in rDNA technology	OEC	2023-24	-	-	Understand the DNA sequencing techniques
13	Basic Instrumentation in Biotechnology	SEC	2023-24	-	-	Understand the workings of Microscope the instrumentation & working of UV visible spectroscopy.




 HEAD
 DEPARTMENT OF BIOTECHNOLOGY (OF
 VIVEKANAND COLLEGE, KOLHAPUR
 (EMPOWERED AUTONOMOUS)