

Vivekanand College, Kolhapur (Empowered Autonomous)

**B.Sc.II BIOTECHNOLOGY (OPTIONAL)**

CBCS syllabus with effect from July 2024  
Course outcome for major minor and open elective

	DSC0BIT31- Fundamentals of enzyme technology
	CO1: Enzyme Technology deals with the study of the detailed structure & and function of Enzymes. Understand use of biosensors in daily life. CO2: The course will give the opportunity to understand the following concepts; IUB classification Steady-state kinetics CO3: Students are able to understand the effect of various factor on enzyme activity. CO4: Students are gaining knowledge regarding various methods in industries used for enzyme and cell immobilization.
	DSC0BIT32- Fundamentals of molecular biology
	CO1: Molecular Biology gives knowledge about the structure and function of the macromolecules, essential to life. Molecular Biology gives detailed knowledge of biological and/or medicinal processes through the investigation of the underlying molecular mechanisms.  CO2: Students will gain an understanding of chemical and molecular processes that occur in and between cells. Students understanding will become such that they will able to describe and explain processes and their meaning for the characteristics of living organisms.  CO3: Students will gain insight into the most significant molecular and cell-based methods used today to expand our understanding of biology.  CO4: After completion of this course students will understand following techniques; a) Gel Electrophoresis b) Blotting Techniques c) Polymerase Chain Reaction d) Genetic Engineering
	MIN03BIT31-BASICS OF ENZYMOLOGY
	CO1: Enzyme Technology deals with the study of the detailed structure & and function of Enzymes. Understand use of biosensors in daily life. CO2: The course will give the opportunity to understand the following concepts; IUB classification Steady-state kinetics CO3: Students are able to understand the effect of various factor on enzyme activity. CO4: Students are gaining knowledge regarding various methods in industries used for enzyme and cell immobilization.
	MIN03 BIT32- Basics of molecular biology
	CO1: Molecular Biology gives knowledge about the structure and function of the macromolecules, essential to life. Molecular Biology gives detailed knowledge of biological and/or medicinal processes through the investigation of the underlying molecular mechanisms.  CO2: Students will gain an understanding of chemical and molecular processes that occur



	<p>in and between cells. Students understanding will become such that they will be able to describe and explain processes and their meaning for the characteristics of living organisms.</p> <p>CO3: Students will gain insight into the most significant molecular and cell-based methods used today to expand our understanding of biology.</p> <p>CO4: After completion of this course students will understand following techniques; a) Gel Electrophoresis b) Blotting Techniques c) Polymerase Chain Reaction d) Genetic Engineering</p>
	DSC03BIT41- Fundamentals of immune technology
	<p>CO1: The immune system governs defence against pathogens and is of importance for the development of autoimmune diseases, allergy and cancer.</p> <p>CO2: The course discusses basic immunology including cellular and molecular processes that represent the human immune system.</p> <p>CO3: This subject offers a detailed study of the following concepts; a) Immunological processes at a cellular and molecular level b) Defence mechanism ( Physico-chemical barriers ) c) Innate and acquired Immunity Hypersensitivity</p> <p>CO4: Students can understand serological tests in pathological laboratories</p>
	DSC03BIT42- Fundamentals of genetic engineering
	<p>CO1: In genetic engineering different enzymes are studied</p> <p>CO2: The course discusses different vectors and cDNA and genomic library are studied</p> <p>CO3: This subject offers a detailed study of different DNA sequencing methods and probe and blotting techniques were studied</p> <p>CO4: Students can understand PCR and Screening of transformed cells and applications of gene cloning as well as safety measures and biological risk for r-DNA work</p>
	MIN03BIT41- Pharmaceutical biotechnology
	<p>CO1: Students are eligible to study impact of biotechnology on pharma industry</p> <p>CO2: The course discusses different genetic manipulation methods</p> <p>CO3: This subject offers a detailed study basic principles of biochemical engineering</p> <p>CO4: Students can understand application of fermentation technology in producing compounds of pharmaceutical interests</p>
	MIN03BIT42- Basics of genetic engineering
	<p>CO1: In genetic engineering different enzymes are studied</p> <p>CO2: The course discusses different vectors .</p> <p>CO3: This subject offers a detailed study of different DNA sequencing methods and probe and blotting techniques were studied</p> <p>CO4: Students can understand PCR and Screening of transformed cells and applications of gene cloning as well as safety measures and biological risk for r-DNA work</p>



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DEPARTMENT OF BIOTECHNOLOGY (OPTIONAL)  
VIVEKANAND COLLEGE, KOLHAPUR  
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