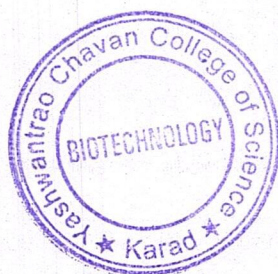


PSO's for B.Sc. Biotechnology	
	Upon successful completion of the course, students will be able to:
PSO1	Understand basics of Biotechnology.
PSO2	Develop the ability to apply the knowledge acquired in classroom and laboratories to specific problems in theoretical and experimental biotechnology
PSO3	Identify the area of interest in the academic research and development.
PSO4	Perform job in various fields like food, pharmaceutical, agriculture, health care, public services and business etc
PSO5	Be an entrepreneur with precision, analytical mind, innovative thinking, and clarity of thought, expression and systematic approach.
PSO6	To make the students knowledgeable with respect to the subject and its practicable applicability.
PSO7	To promote understanding of basic and advanced concepts in Biotechnology
PSO8	To expose the students to different processes used in industries and in research field
PSO9	To prepare the students to accept the challenges in life sciences
PSO10	To develop skills required in various industries, research labs and in the field of human health.

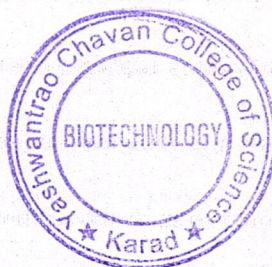
Course Outcomes (CO)	
B. Sc. - I	
Course Name	Course Outcome (CO)
	Upon successful completion of the course, students will be able to:
Basics of Biotechnology I	CO1. Information about the biotechnology institutes in India .
	CO2. Explain the different areas in biotechnology.
	CO3. Analyze the fundamental of biochemistry



	CO4 Make student aware of biotechnology techniques
Basics of Biotechnology II	CO1. Understand structure, function and types of nucleic acids.
	CO2. Explain classification, structure and functions of lipids.
	CO3 Basic concepts of instruments and its application.
	CO4. Students should be able to handle instruments during project.
Basics of Cell Biology and Microbiology	CO1. Explain cytology of cell structure and function.
	CO2. Explain the physical and optical properties of minerals.
	CO3 Basic concepts of pandemic diseases.
Basics of Microbiology	CO1. Nutritional requirements of microorganisms.
	CO2. Basic components of nutrient medium and their role.
	CO3. Explain methods of sterilization by various agents.

B. Sc. – II

Course Name	Course Outcome (CO)
	Upon successful completion of the course, students will be able to:
Biophysics and Enzyme Technology	CO1. To know the scope and importance of the enzyme technology.
	CO2. To understand enzyme definition, classification, nomenclature.
	CO3. To explain the derivation of Km and its significant.
	CO4. To understand principal application of spectroscopy.
Molecular biology	CO1. Explain differentiate between transcription and translation .
	CO2 To understand modes of gene transfer in bacteria.
	CO3. To know DNA replication in prokaryotes and eukaryotes.



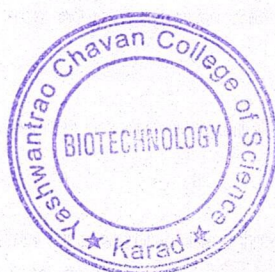
	CO4. To summerise concept of central dogma and genetic code.
	CO5. Understand ability to evaluate the impact of structure or part modifications on biological system.
Immunology	CO1. Explain types of immunity and defense mechanism.
	CO2. To understand organs of human system.
	CO3. Know definations and structure of antibody.
	CO4. Evaluate antibody antigen reactions.
r-DNA Technology	CO1. To illustrate creative use of modern tools and techniques.
	CO2. Understand the application of r-DNA technology.
	CO3. Explain the methods of purification of DNA.
	CO4. Explain cloning vectors, probes, PCR and its applications.

B. Sc. – III

Course Name	Course Outcome (CO)
Biochemical Techniques	Upon successful completion of the course, students will be able to:
	CO1. Understand the principle, methods and applications of centrifugation.
	CO2. Understand the electrophoresis, nucleic acid and protein
	CO3. Understand the electrophoresis, nucleic acid and protein
	CO4 Explain methods of measurement of radioactivity.
Animal Cell Culture	CO1. Explain characteristicks of animal cell culture
	CO2. .Understand the develop, test and make new products such as monoclonal antibodies.



	CO3 Know the developing DNA-based diagnostics and genetically engineered vaccines for animals.
	CO4. Know developing embryo -transfer technology, cloning, transgenic animals.
Bioprocess Engineering	CO1. Understand design and processes for the bioprocessing and biotechnology industries.
	CO2. Evaluate the scale up and strain improvement methods.
	CO3. Explain different methods of downstream processing.
Fermentation technology	CO1. Understand the different fermentation methods and fermentation economics.
	CO2.. Explain introduction and process or petenting.
	CO3. Understand trademarks, trade secrets, copyrights.
Plant Biotechnology	CO1 Understand basic concepts with the brief history and practical and applications of plant cell culture.
	CO2. Get the brief idea about the protoplast culture, somatic hybridization along with the practical applications of organ and tissue culture
	CO3. Learn about the haploid production, endosperm culturing suspension cultures and somaclonal variations.
	CO4. Understand the concepts and protocols of callus culture, organogenesis, embryo culture with its advantages and disadvantages.
Environmental Biotechnology	CO1. Understand environmental aspects of conventional and non conventional fuels and advantages of modern fuels over the conventional fuels.
	CO2. Learn waste water treatments at various levels using different techniques.
	CO3. Get an insights of greenhouse effects ,global warming ,ozone depletion ,UV radiations and acid rain.
	CO4. Understand the concepts and significance of bioremediation,



	biopesticides, bioleaching and microbial enhancement of oil recovery.
Cell Metabolism and Virology	CO1. Understand the general concepts and terminologies of metabolism and different metabolic pathways.
	CO2. Learn the important steps of Urea cycle.
	CO3. Explain the carbohydrate, lipid, protein metabolism pathway.
	CO4. Learn the structure of viruses, mode of reproduction, isolation and cultivation of plant and animal viruses.
Gene Biotechnology and Bioinformatics	CO1. Understand gene targeting, human gene therapy and antisense therapy.
	CO2. Learn basic concepts of bioinformatics and databases of different biomolecules.
	CO3. Learn about genomics, proteomics and major concepts and applications.
	CO4. Understand various structural databases.

Swalamb

Course Co-ordinator
Department of Biotechnology

[Signature]

Principal,
Yashwantrao Chavan College
of Science, Karad

