D.N.R College (A): Bhimavaram, W.G. Dist. A.P
(A College with Potential for Excellence)
P.G. DEPARTMENT OF BIOTECHNOLOGY
M.Sc. Course Objectives

Semester	Paper Code	Paper Name	Course Objective
Semester - I	BT-101	Cell Biology	To make the student to understood the concept of cell and their activities. This course presents the types and structural details of the basic unit by which all the living things are made of (the cell). To make the student to understood the concept of cell and their activities. Bioinstrumentation.
	BT-102	Biomolecules	This course presents the chemical reactions or metabolic functions in the living system and their regulations. To make the student to understand the concept of biochemical regulations Objectives, On successful completion of the subject the student should have understood Basic Structure and metabolism of Biomolecules.
	BT-103	Microbiology	This course presents the study of Micro organisms. To make the student to understood Micro organisms and their participation in day to day activities. On successful completion of the subject the student should have understood the Role of microorganisms in the diversity Biochemistry This course presents the chemical reactions or metabolic functions in the
	BT-104	Analytical Techniques	Enable the student to get sufficient knowledge in principles and applications of bio instruments.
Semester II	BT-201	Molecular Biology	Enable the student with concepts in DNA Replication & Repair and knowledge of molecular Biology Techniques.
	BT-202	Enzymology	Enable the student to study enzymology for diagnostic and research tools in the specificity that they exhibit relative to the reactions they catalyze.
	BT-203	Immunology	This course presents the basic defense mechanism of animals. To make the student to understood the concept immunology. On successful completion of the subject the student should have understood: Immunity, Antigen, Antibody, Cells of immune system and their function and regulations
	BT-204	Biostatistics	Enable the students to know the goal of biostatistics is to disentangle the data received and make valid inferences that can be used to solve problems in public health. Biostatistics uses the application of statistical methods to conduct **research** in the areas of biology, public health, and medicine.
Semester III	BT-301	Cell Culture Technology & Tissue Engineering	Enable the students to know about Cell cultures which are typically used for the production of biologics products (such as monoclonal antibodies, recombinant proteins, vaccines) and other high value molecules (such as enzymes, flagrances and flavours).

	BT-302	Plant Biotechnology	Enable the student to know the Plant biotechnology, in which it facilitates the farming of crops with multiple durable resistances to pests and diseases, particularly in the absence of pesticides.
	BT-303	Animal & Aquaculture Biotechnology	Enable the student to know the animal & Aquaculture biotechnology, in which it provides new tools for improving human health and animal health and welfare and increasing livestock productivity.
	BT-304	Medical & Environmental Biotechnology	Enable the student to know the Medical & Environmental biotechnology, in which it provides new tools for improving techniques in sewage treatment and synthesis of vaccines and antibiotics
Semester IV	BT-401	Heterologous Expression & Downstream Processing	Enable the student to know the Heterologous Expression & Downstream Processing in which imporoving harvesting of microbial cells & production of microbial metabolites.
	BT-402	Bioinformatics	Enable the student to know the research in biotechnology especially that involving sequence data management and drug design occurred at a speedy rate due to development of bioinformatics.
	BT-403	Proteomics & Genomics	This paper presents the basics of: mapping, Genome sequencing, and Genome sequence assembly: Base calling and assembly programs, Genome annotation: Gene ontology, Automated genome annotation, Annotation of hypothetical proteins and Genome economy. Comparative genomics: Whole genome alignment, Finding a minimal genome, Lateral gene transfer, Within-genome approach and Gene order and Gene.
	BT-404	Bioethics ,IPR & Research Methodology	This course presents the principles and applications of Biotechnology explaining the biomolecules and applications of biophysical methods. Goals: To enable the students to learn the immune techniques and radio labeling techniques. Objectives: On successful completion of the course the students will be aware of 1. Microscopic techniques 2. Electro physiological methods. 3. Biomolecules structure determination using x-ray diffraction Biotechniques.