COURSE OUTCOMES

2017 ONWARDS

DEPARTMENT : BIOTECHNOLOGY

PROGRAMME : B.Sc. BIOTECHNOLOGY

SEMESTER I

COURSE CODE : EN1CC01

COURSE NAME : FINE TUNE YOUR ENGLISH

SL.NO	DESCRIPTION
C101.1	Recogniz the terms and concepts of elementary grammer
C101.2	Locate the elements of language and grammer studied in earlier classes
C101.3	Identify the principles of grammer
C101.4	Analyse the situations where different grammatical units are used
C1051.	Determine the appropriate usages to be employed in various aspects of the use of language

COURSE CODE : BT1CRT01

COURSE NAME : BASIC LIFE SCIENCES

SL.NO	DESCRIPTION
C102.1	Describe the metabolic systems of the body
C102.2	Explain the mechanism of developmental biology
C102.3	Illustrate the pathways of photosynthesis
C102.4	Explain the mechanism of Plant growth regulators

COURSE CODE : BT1CRT02

COURSE NAME : METHODOLOGY IN BIOTECHNOLOGY

SL.NO	DESCRIPTION
C103.1	Analyse scope and multidisciplinary nature of biotechnology
C103.2	Explain about conventional and modern biotechnology
C103.3	Analyse the impact of biotechnology in society
C103.4	Describe Applications of biotechnology in different fields
C103.5	Describe Nano biotechnology and Nano materials

COURSE CODE : BT1CRP01

COURSE NAME : PRACTICAL - BASIC BIOLOGY AND CHEMISTRY

SL.NO	DESCRIPTION
C104.1	Determine the concentration of solutions.
C104.2	To perform the standardization of acids
C104.3	To perform the qualitative analysis of organic compounds
C104.4	To perform pollen germination
C104.5	To demonstrate developmental stages of chick embryo

COURSE CODE : BC1CMT01

COURSE NAME : ELEMENTARY BIOCHEMISTRY

SL.NO	DESCRIPTION
C105.1	Explain the basic principles of chemical interactions
C105.2	Analyse the chemical interactions in aqueous systems
C105.3	Describe the mechanism of membrane transport
C105.4	Demonstrate photosynthetic pathways
C105.5	To perform colorimetry and spectrophotometry

COURSE CODE : MB1CMT01

COURSE NAME : FUNDAMENTALS OF MICROBIOLOGY

SL.NO	DESCRIPTION
C106.1	Explain about microbiology, the fields and scope of microbiology and ultra-structure of bacteria
C106.2	Explain and perform different kinds of microscopy
C106.3	Explain and perform specimen preparation for staining and microscopic examination of bacterial cells.

SEMESTER II

COURSE CODE : EN2CC03

COURSE NAME : ISSUES THAT MATTER

Sl. No.	DESCRIPTION
C201.1	Identify the major issues of contemporary significance
C201.2	Respond rationally and positively to the issues raised
C201.3	Internalize the values imparted through the selections

COURSE CODE : BT2CRT03

COURSE NAME : CELL BIOLOGY

Sl. No.	DESCRIPTION
C202.1	Introduction to cell
C202.2	Cell membrane, composition and transport
C202.3	Nucleus- structure and function, chromosomes
C202.4	Structure and function of cell organelles
C202.5	Cell signaling and cell cycle

COURSE CODE : BT2CRT04

COURSE NAME : ELEMENTARY CHEMISTRY FOR BIOLOGY

Sl. No.	DESCRIPTION
C103.1	Explain the basics of elementary chemistry
C103.2	Calculation and determination of molecular weight
C103.3	Perform the standardisation of solutions
C103.4	Predict the structure of organic compounds

COURSE CODE : BT2CRT05

COURSE NAME : EVOLUTIONARY BIOLOGY AND ENVIRONMENTAL SCIENCE

Sl. No.	DESCRIPTION
C204.1	Explain the theories and postulates of evolution
C204.2	Describe different kinds of speciation
C204.3	Illustrate the hierarchy of evolution
C204.4	Explain the various stages in development of plant

COURSE CODE : BT2CRP02

COURSE NAME : PRACTICAL CELL BIOLOGY

Sl. No.	DESCRIPTION
C205.1	To perform cell counting
C205.2	To perform Micrometry
C205.3	To perform squash preparation of cells
C205.4	To perform Cell fractionation
C205.5	To perform staining of chromosomes

COURSE CODE : BC2CMT02

COURSE NAME : BIOMOLECULES

Sl. No.	DESCRIPTION
C206.1	Explain the isomerization of carbohydrates
C206.2	Classify and structure prediction of lipids
C206.3	Predict the primary, secondary, tertiary and quaternary structure of proteins
C206.4	Analyse the chemical structure and function of biomolecules

COURSE CODE : MB2CMT02

COURSE NAME : FUNDAMENTALS OF MICROBIOLOGY-II

Sl. No.	DESCRIPTION
C207.1	Determine the nutritional requirements of bacteria, different culture methods and action of different antibiotics on bacterial cells.
C207.2	Classify bacteria based on nutritional requirements and explain bacterial metabolism
C207.3	Explain genetic exchange in bacteria and Genetic mechanisms of drug resistance in bacteria

COURSE CODE : BC2C102U

COURSE NAME : ELEMENTARY BIOCHEMISTRY I& II

Sl. No.	DESCRIPTION
C208.1	To prepare solutions according to concentration
C208.2	To prepare buffers using the Henderson Hasselbalch equation
C208.3	To prepare colloids
C208.4	To perform chromatographic technique
C208.5	To perform colorimetric and spectrophotometric techniques
C208.6	To identify carbohydrates, lipids, proteins and NPN in different samples

COURSE CODE : MB1CMT01

COURSE NAME : MICROBIOLOGY PRACTICAL-I

Sl. No.	DESCRIPTION
C209.1	Perform the working principles behind different lab equipment's
C209.2	Perform preparation of different culture media
C209.3	Explain and perform specimen preparation for staining and microscopic examination of bacterial cells

SEMESTER III

COURSE CODE : BT3CRT06 COURSE NAME : IMMUNOLOGY

SL.NO	DESCRIPTION
C301.1	Describe about the types of immunity
C301.2	Explain about cells and organs of immune system
C301.3	Analyse and perform antigen antibody interactions
C301.4	Predict the complications in transplantation immunity

COURSE CODE : BT3CRT07

COURSE NAME : GENETICS

SL.NO	DESCRIPTION
C302.1	Explain and perform the laws and patterns of mendalian inheritance
C302.2	To explain and illustrate the mechanism of sex linked inheritance
C302.3	To describe the process of extra chromosomal inheritance
C302.4	To analyse and explain the karyotypic and pedigree analysis
C302.5	To solve and find out the allelic frequencies and genotypic frequencies of a population.

COURSE CODE : BT3CRT08

COURSE NAME : BIOSTATISTICS AND COMPUTER APPLICATION

SL.NO	DESCRIPTION
C303.1	Explain the application of statistics in life sciences
C303.2	Perform tabulation and representation of data
C303.3	Perform the testing of hypothesis
C303.4	Explain low level and high level computer languages
C303.5	Computation of mean variance and standard deviation

COURSE CODE : BT4CRP03

COURSE NAME : PRACTICAL IMMUNOLOGY AND GENETICS

SL.NO	DESCRIPTION
C304.1	To perform blood grouping
C304.2	To perform slide agglutination test
C304.3	To perform diffusion test
C304.4	To solve the problems in genetics

COURSE CODE : BC3C103U

COURSE NAME : ENZYMOLOGY AND METABOLISM

SL.NO	DESCRIPTION
C305.1	Classify enzymes.
C305.2	Illustrate the metabolic pathways with structure.
C305.3	Explain the reactions of metabolism.
C305.4	Explain the aspects of plant metabolism.

COURSE CODE : MB3C05U

COURSE NAME : APPLIED MICROBIOLOGY

SL.NO	DESCRIPTION
C306.1	Explain the principles of food spoilage and preservation, Microbiological production of valuable products
C306.2	Explain microbial interactions in soil and illustrate biogeochemical cycles
C306.3	Explain microbial assessment of water and air, microbial production of medicinal products

SEMESTER IV

COURSE CODE : BT2CRT09

COURSE NAME : MOLECULAR BIOLOGY

SL.NO	DESCRIPTION
C401.1	Demonstrate experiments regarding DNA and RNA as genetic material
C401.2	Explain the structure of prokaryotic and eukaryotic genome
C401.3	Explain the mechanism of DNA replication
C401.4	Describe the mechanism of central dogma

COURSE CODE : BT4CRT10

COURSE NAME : ENZYMOLOGY

SL.NO	DESCRIPTION
C402.1	To perform enzyme extraction and purification
C402.2	To describe and analyse the structure and properties of enzymes
C402.3	To calculate the kinetics of enzyme catalysed reactions.
C402.4	To explain and demonstrate enzyme inhibitions
C402.5	To apply enzymes in various sectors.

COURSE CODE : BT4CRT11

COURSE NAME : BIOPHYSICS AND BIOINFORMATICS

SL.NO	DESCRIPTION
C403.1	Explain the laws of thermodynamics
C403.2	Perform colorimetric and spectrophotometry
C403.3	Predict protein conformations
C403.4	Handle the biological databases
C403.5	Apply the global and local alignment tools

COURSE CODE : BT4B15U

COURSE NAME : PRACTICAL MOLECULAR BIOLOGY AND ENZYMOLOGY

SL.NO	DESCRIPTION
C404.1	To perform Estimation of enzyme activity
C404.2	To perform Immobilization of enzymes
C404.3	To perform DNA Isolation
C404.4	To perform RNA isolation
C404.5	To perform Separation of nucleic acids by Agarose gel electrophoresis

COURSE CODE : BC4CMT04

COURSE NAME : NUTRITIONAL AND CLINICAL BIOCHEMISTRY

SL.NO	DESCRIPTION
C405.1	Explain and analyze the nutritional aspects in biochemistry
C405.2	Explain the constituents of blood, blood cells and platelets
C405.3	Define the basic concepts of clinical biochemistry
C405.4	Describe the biochemical basis of metabolic disorders

COURSE CODE : MB4CMT05

COURSE NAME : MEDICAL MICROBIOLOGY

SL.NO	DESCRIPTION
C406.1	Explain the mechanisms of transfer of infection and different types of infectious bacteria
C406.2	Describe the structural properties of different viruses
C406.3	Explain and classify different types of fungi and explain types of infections and importance of mycotoxins.

COURSE CODE : BC4CMP05

COURSE NAME : BIOCHEMISTRY PRACTICAL II

SL.NO	DESCRIPTION
C407.1	To perform extraction of different enzymes
C407.2	To perform enzyme assays
C407.3	To estimate of Biomolecules

COURSE CODE : MB4CMP06

COURSE NAME : APPLIED MICROBIOLOGY AND MEDICAL MICROBIOLOGY PRACTICAL II

SL.NO	DESCRIPTION
C408.3	Perform isolation and enumeration of microorganisms from different sources
C408.3	Perform the quality of milk and air
C408.3	Perform and identify different microbial strains

SEMESTER V

COURSE CODE : BT5CRT12

COURSE NAME : RECOMBINANT DNA TECHNOLOGY

SL.NO	DESCRIPTION
C501.1	To describe the steps and enzymes involved in genetic engineering
C501.2	To describe and analyse the structure and properties of gene cloning vectors
C501.3	To perform gene transfer using various methods
C501.5	To perform the screening and identification of recombinants
C501.5	To perform DNA sequencing.

COURSE CODE : BT5CRT13

COURSE NAME : ENVIRONMENTAL BIOTECHNOLOGY

SL.NO	DESCRIPTION
C502.1	Explain the causes of environmental pollution
C502.2	Explain the components of ecosystem
C502.3	To perform treatment of waste water
C502.4	To explain the biodegradation of organic compounds
C502.5	Explain the causes of environmental pollution

COURSE CODE : BT5CRT14

COURSE NAME : ANIMAL BIOTECHNOLOGY

SL.NO	DESCRIPTION
C503.1	Design the composition of culture media
C503.2	Perform primary cell culture and its maintenance
C503.3	Demonstrate the pathway of cell differentiation
C503.4	Explain the production of monoclonal antibodies and vaccines
C503.5	Demonstrate animal cloning

COURSE CODE : BT5OP1U

COURSE NAME : IPR AND PATENTS

SL.NO	DESCRIPTION
C504.1	To describe the General guidelines of a research
C504.2	To explain the different forms of IPR and patents
C504.3	To describe the registration process of copyrights
C504.4	To explain the contents of patent specification
C504.5	To explain and analyse IPR laws

COURSE CODE : BT5CRP05

COURSE NAME : PRACTICAL RECOMBINANT DNA TECHNOLOGY AND ENVIRONMENTAL BIOTECHNOLOGY

SL.NO	DESCRIPTION
C505.1	To perform Competent cell preparation and transformation of the competent cell
C505.2	To perform Isolation of plasmid and separation of plasmid by agarose gel electrophoresis
C505.3	To perform BOD and COD
C505.4	To peform DO
C505.5	To find TDS

SEMESTER VI

COURSE CODE : BT6CRT15

COURSE NAME : PLANT BIOTECHNOLOGY

SL.NO	DESCRIPTION
C601.1	To explain the basics of plant tissue culture
C601.2	To prepare tissue culture medias
C601.3	To perform callus culture and suspension culture
C601.4	To perform and maintain protoplast culture
C601.5	To perform gene transfer in plants

COURSE CODE : BT6CRT16

COURSE NAME : INDUSTRIAL BIOTECHNOLOGY

SL.NO	DESCRIPTION
C602.1	Explain bioprocess technology
C602.2	Perform isolation and screening of industrially important microorganisms
C602.3	Design fermentation media
C602.4	Design and instrument bioreactor
C602.5	Explain the methods of downstream processing

COURSE CODE : BT06CBT01

COURSE NAME : DISEASE AND DIAGNOSTIC BIOTECHNOLOGY

SL.NO	DESCRIPTION
C602.1	Describe the mechanisms of various diseases
C602.2	Perform the diagnostics methods of diseases
C602.3	Explain the DNA diagnostic mechanism of chromosomal disorders
C602.4	Perform DNA Typing
C602.5	Perform PCR

COURSE CODE : BT6CRP06

COURSE NAME : PRACTICAL ENVIRONMENTAL BIOTECHNOLOGY AND PLANT BIOTECHNOLOGY

SL.NO	DESCRIPTION
C604.1	To perform BOD and COD
C604.2	To perform Plant tissue culture, meristem culture and surface sterilization.
C604.3	To perform treatment of waste water
C604.4	To explain the biodegradation of organic compounds

COURSE CODE : BT6CRP07

COURSE NAME : PROJECT AND VIVA

SL.NO	DESCRIPTION
C605.1	To describe the general guidelines of research
C605.2	To design an experiment
C605.3	To carry out a research project .