

## **M. Sc. Bioinformatics (Scheme of Courses)**

### **Semester-I**

Basic Concepts in Biology  
Basic Mathematics  
Basic Biostatistics  
Computer Fundamentals, Networking and Web technology  
Introduction to Bioinformatics & Biological Databases  
Practicals based on Computer Fundamentals, Networking and Web technology  
Practicals based on Introduction to Bioinformatics & Biological Databases

### **Semester-II**

Concepts in Molecular Biology & r-DNA technology  
Programming in C and C++  
Database Management and Data Mining  
Computational Methods for Sequence Analysis  
Structural Biology and Bioinformatics  
Practicals based on Programming in C and C++ &  
Database Management and Data Mining  
Practicals based on Computational Methods for Sequence Analysis  
& Structural Biology and Bioinformatics

### **Semester-III**

Genomics and Proteomics  
Advanced Algorithms for Computational Biology  
System Biology and Metabolic Pathway Engineering  
Molecular Modeling and Computer aided Drug Design  
Programming in PERL for Bioinformatics  
Practicals based on System Biology and Metabolic Pathway Engineering  
& Molecular Modeling and Computer aided Drug Design  
Practicals based on Genomics and Proteomics & Programming in PERL

### **Semester-IV**

**Major project in Industry.**

## **M. Sc. Biotechnology (Scheme of Courses)**

### **Semester-I**

Cell Biology  
Biomolecules  
Biochemical & Biophysical Techniques  
Biology of Immune System  
Microbial Physiology  
Molecular Genetics  
Lab in Biochemistry  
Lab in Microbiology

### **Semester-II**

Plant Tissue Culture  
Animal Tissue Culture  
Molecular Biology  
Genetic Engineering – Tools & Techniques  
Bioprocess Engineering & Technology  
Lab in Plant Tissue Culture  
Lab in Immunology & Animal Tissue Culture

### **Semester-III**

Fermentation Technology  
Genetic Engineering – Applications  
Macromolecules & Enzymology  
Computer Applications & Biostatistics  
Lab in Genetic Engineering  
Lab in Bioprocess Engineering & Technology  
Lab in Computer Applications & Biostatistics

### **Semester-IV**

Research Project  
Seminar and invited Lectures on GLP, IPR, Biosafety etc  
Genomics & Functional Genomics