**Subject Code : ECNXC**

## ELECTIVE COURSE III - BIOINFORMATICS

1. Introduction to Bioinformatics – scope and applications

2. Basics of Computer Systems – Components number system, character codes, Programming – Flow charts, Compression of BASIC and FORTRAN.

3. Simple programs – Concepts of artificial intelligence languages, Operating system – MS-DOS, UNIX, VAX, VMS networking.

4. Computer applications in biology – uses of databases in in biology – sequence database – EMBL – NBRF.

5. Protein structural data bank, sequence analysis of proteins and nucleic acids – structure prediction, simple molecular modeling.

6. Fundamentals of mathematical and statistical techniques, Algorithms
   Calculus : Limits, Complete differentials Partial differentials of functions with one variable & multiple variables.
   Integration: Definite & Non-definite integral, series, Logarithms
   2D Coordinate geometry, ellipse
   3D Geometry Parabola, Hyperbola
   Trigonometric functions: Sin, Cos, Tan, Cot.