Course Objectives- To enable the students to-
• Explore various Biological Databases- Nucleic acid and protein databases
• Learn to perform Pairwise alignment
• Conduct Multiple sequence alignment
• Acquire knowledge on SDS-PAGE
• Understand the concept of MALDI-TOF

Course Outcomes: Students will be able to-
CO1: Retrieve data from various Biological Databases- Nucleic acid and Protein Databases
CO2: Perform Pairwise alignment and analyse results
CO3: Perform Multiple sequence alignment and analyze results
CO4: Conduct SDS-PAGE and separate proteins
CO5: Learn to perform MALDI-TOF and perform basics of docking

List of Experiments

1. Searching data from Biological data bases

2. Demonstration on Nucleic acid and protein databases

3. Simple and multiple Sequence alignment

4. Searching structural data from PDB

5. Database search using BLAST

6. SDS-PAGE

7. IEF (2-D gel analysis)

8. Demonstration of MALDI -TOF

Suggested books

1. Genome Mapping: A practical approach. Dear P (Editor). 1st Ed. 2000. Oxford University.

2. Developing Bioinformatics Skills. Alfonso Valencia and Blaschke. L (2005) Oreilles

3. Bioinformatics sequence, structure and data banks ed. By Des Higgins Willie Taylor (2006).

4. Bioinformatics: A Practical Guide to the Analysis of Genes and Proteins" (Andreas D. Baxevanis, B.

F. Ouellette), Paperback, 2nd ed., 470 pp., ISBN: 0471383910, Publisher: Wiley, John & Sons, Inc.Pub.

5. David W. Mount, Bioinformatics: Sequence and Genome Analysis, 2nd edition, Cold Spring Harbor

Laboratory, 2004.

6. Introduction to Bioinformatics by T.K. Altwood and D.J Parry-Smith (Pearson Education Asia1999).