

Topics Covered

MODULE 1

- Introduction to Bioinformatics
- Concepts of Bioinformatics, Future Scope and Its Applications
- Biological Data Bases and its Types
- Integration of molecular biology with bioinformatics
- Assignment and Test

MODULE 2

- Biological Data Mining
- Sequence Retrieval Techniques
- Sequence Alignment
- Genome Analysis
- Assignment and Test

MODULE 3

- Homology and Similarity
- Type of Divergence
- Conserved Region
- Substitution Matrix
- Assignment and Test

MODULE 4

- Protein: Structure and Function Analysis
- Molecular Modeling
- Cladogram Analysis
- Protein Structure Validation using RC Plot
- Primer Designing
- Assignment and Test

Contact Information: *Rapture Biotech D-201, Sector - 10, Noida Uttar Pradesh.*

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MODULE 5

- Natural Biomarkers Identifications
- Molecular Docking
- Assignment and Test

MODULE 6

- Cancer Drug Designing.
- Data Clustering Analysis
- Assignment

MODULE 7

- Introduction to DNA Microarray technology
- Gene regulatory network designing
- Metabolic pathway designing
- Hidden Markov Models
- Artificial Neural Networks

MODULE 8

- Introduction to MATLAB
- Assessment Test
- Intellectual Property Rights in Bioinformatics

MODULE 9

- SWOT Analysis of Computational Biology Sector
- Market Analysis of Bioinformatics Sector
- Branding and Promotion of Bioinformatics tools and softwares
- Forecasting
- Distribution and Channel Management
- Assignment and Test

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MODULE 10

- Live Projects

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Table of Content

S. No.	Topics	Mode	Hours
1.	Introduction to Bioinformatics	T	1
2.	Concepts of Bioinformatics, Future Scope and Its Applications	T	1
3.	Biological Data Bases and its Types	Ppt	2
4.	Integration of molecular biology with Bioinformatics	Ppt	1
5	Biological Data Mining	Pc	3
6	Sequence Retrieval Techniques	Pc	2
7	Sequence Alignment	Pc	2
8	Genome Analysis	Pc	3
9	Homology and Similarity	T,Pc	3
10	Type of Divergence	T	2
11	Conserved Region	T	2
12	Substitution Matrix	T	2
13	Protein: Structure and Function Analysis	T,Pc	3
14	Molecular Modeling	T,Pc	3
15	Cladogram Analysis	Pc	2
16	Protein Structure Validation using RC Plot	Pc	2
17	Primer Designing	Pc	2
20	Data Clustering Analysis	Pc	3
21	Hidden Markov Models	T	2
22	Artificial Neural Networks	T	2
23	Introduction to MATLAB	T	3

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24	Intellectual Property Rights in Bioinformatics	T	3
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25	SWOT Analysis of Computational Biology Sector	T,Pc	3
26	Market Analysis of Bioinformatics Sector	T, Ppt	2
27	Branding and Promotion of Bioinformatics tools and softwares	T	2
28	Forecasting	T	2
29	Distribution and Channel Management	T	2

Abbreviations-

L- Lecture

P- Presentation

Pc- Practical

Salient Features of Program

- Based on focusing Industrial requirements
- Conceptual Study Approach
- Individual Attention
- 100% placements in major CRO's and Bioinformatics Companies
- Industry oriented methodology
- Special Classes on Personality Development Skills
- Workshops conducted on various topics
- Award of Certificate

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Course Objectives

Bioinformatics tools are important for storing, searching, and analyzing macromolecular sequences and structures. This course in applied bioinformatics provides an in-depth survey of modern bioinformatics tools. Students will become proficient at searching Gen Bank, downloading and analyzing sequences, working with metadata and each student will write an original computer program to complete an independent research project. Software tools for functional and evolutionary analysis of nucleic acids and proteins will also be examined.

Bioinformatics - Career Prospects:

Indian companies have strong presence in software development and Information technology solutions globally. With a huge increase in demands of biological software's and algorithms day by day, industry needs trained manpower with a sound knowledge of computational biology, Microarray data analysis, software development and Algorithm designing.

Trainees will be hired on following designation by:

- Major MNC's
- Bioinformatics companies
- Government Laboratory
- Agriinformatics companies
- Pharmaceutical R&D
- Software development companies
- Bioinformatics Faculty
- Microarray Data Analyst.
- Biological Data entry.
- Bioinformatics Research associate

[Footnote]

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Employability Enhancement Program:

The Employability Enhancement Program is a course designed to increase your chance to get good job. The competition in the Biotech industry is fierce; moreover good jobs are limited in number. Giving a job interview is a skill in itself. This skill set includes certain aspects of personality development in addition to preparing you for technical and aptitude tests. The program focuses on four major areas that need attention for an interview.

These areas are:

- Personality development
- Communication skills
- Interview skills
- Aptitude and speaking skills

We will also work upon the development of professional skills in you like:

- Team work
- Crisis handling
- Project management

This program is aimed at helping you master the art of giving an interview through a standard job screening process.

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