

ABOUT THE INSTITUTE

Maulana Azad National Institute of Technology (MANIT) is one of the first eight regional colleges of engineering in the country to move into the direction of self reliance based on industrial growth. MANIT has been imparting education to graduate and postgraduate students in engineering since 1960 and is subsequently upgraded to National Institute of Technology (NIT) in 2002. The institute has been named after great educationist, scholar and first education minister of India Maulana Abul Kalam Azad. The institute is situated on a 650 acre green plateau commanding a magnificent view of the new township, new assembly house and BHEL Township. The institute has been a center of excellence for higher technical education in central India.

Bhopal, the capital of Madhya Pradesh and is commonly known as city of lakes. It is situated on the site of an 11th century city, Bhojpal, founded by Raja Bhoj. Hundreds of Moghul age pieces of architecture, which include Taj-ul-Masajid, Jama & Moti Masjid & Shaukat Mahal, are some of the monumental buildings. Pachmarhi is the nearest hill station. It is well connected from different parts of the country by rail route and air. The institute is 9 kms away from Bhopal main railway station and 6 kms from Habibganj railway station. Bhopal airport is 16 kms away from the Institute. The Bhopal temperatures during April and May vary from 30 - 35^o C.

COURSE COORDINATORS

Dr. K.R.Pardasani

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ADDRESS FOR CORRESPONDENCE

Dr. K.R.Pardasani & Dr. Usha Chouhan
Department of Mathematics, Bioinformatics & Computer
Applications

MANIT, Bhopal – 462003 (M.P.)

ELIGIBILITY

Faculty, Students, Research Scholars, IT Professionals from academic institutions, research organizations, Engineers from Industries, Government / Semi-Government organisation with specialisation in Life Sciences / Computer Sciences / Engineering / Mathematics / Medical Sciences / Pharmacy. The number of seats are limited, preference will be given on first cum- first serve, basis.

Registration Fee

- (A) Research Scholars/Students: Rs.1500/-
(B) Faculty: Rs. 2000/-
(C) Industry Professionals: Rs. 4000/-

The fee has to be paid in the form of DD drawn in favour of "DIRECTOR, MANIT, Bhopal" payable at Bhopal. The fee includes course material, lunch and refreshment.

Last date of receiving completed registration form is 15/06/2017. We also encourage sending a copy of registration through email at ycchouhan@gmail.com with Subject line BIOINFO-2017, to speed up the process. The participants sending the registration through email are requested to ensure that their DD and formal registration form should reach here not later than 20/06/2017 in any case. The registration process will be completed only if we received the DD and registration form.

We will confirm your selection through email latest by 20th June 2017. The candidates who are not selected will be intimated and their draft will be returned.

National Workshop

on

BIOINFORMATICS

June 26 - June 30, 2017

under

*Bioinformatics Infrastructure Facility
of
Department of Biotechnology, New Delhi*

Organised by



Coordinators

Dr. K.R.Pardasani

Dr. Usha Chouhan

**Department of Mathematics, Bioinformatics & Computer
Applications**

**Maulana Azad National Institute of
Technology, Bhopal-462003**

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PREAMBLE

Bioinformatics is interdisciplinary field mainly involving molecular biology and genetics, computer science, mathematics and statistics. Data intensive, large-scale biological problems are addressed from a computational point of view. The most common problems are modelling biological processes at the molecular level and making inferences from collected data. Bioinformatics solution usually involves following steps: Collect statistics from biological data. Build a computational model. Solve a computational modelling problem. Test and evaluate a computational algorithm. The ultimate goal of Bioinformatics is to enable the discovery of new biological insights as well as to create a global perspective from which unifying principles in Biology can be discerned. The course is developed keeping in mind the requirements of the current scenario of industry and to equip the students with the latest in the stream of Bioinformatics. It creates new opportunities for Biomedical Scientists and Biotechnologists to use IT tools for design of new biotech products like drugs etc. to meet the new challenges in the area of Biological sciences. Also it creates new opportunities for computer scientists and IT professionals for application of their skills and techniques in Biological sciences / Biotechnology / Medical sciences. This course will be useful for candidates who wish to pursue their career in the area of Bioinformatics. The course is designed to provide exposure of basic skills and techniques of Bioinformatics which will be useful to the candidates from Biotechnology / Biological sciences / Mathematics / Computer science / IT etc. for stepping into this new emerging interdisciplinary area. Also it may be useful to research scholars & teachers of above mentioned areas for research, development and teaching on Bioinformatics.

SIGNIFICANCE

- One of the frontier and interdisciplinary area which involves applications of Mathematics, Computer Science, IT etc. in Biological Sciences.
- Large volume of data has resulted from Biological experiments which need to be collected, described and organized in the form of databases/datawarehouses for analysis.
- The huge volume of biological data poses new challenges and opportunities for the development of computational models, Algorithms Tools and Softwares for analysis and discovering new hidden patterns and relationships in data to predict the dynamics of biological processes.

- It creates new opportunities for Biomedical scientists and Biotechnologists to use IT tools for design of new biotech products like drugs etc. to meet the new challenges of food, energy and health due to growth of population.

OBJECTIVES

- Create awareness among the participants about this new era of Bioinformatics and bring applied orientation among them.
- To expose the utility, significance and importance of Bioinformatics.
- To give exposure of various areas of Bioinformatics and their applications.
- Exposure to Computational Modelling, Simulation, various tools and techniques in Bioinformatics.

COURSE CONTENTS

- Introduction to Bioinformatics and Molecular Biology
- Biological and Bioinformatics databases and data mining
- Introduction to Mathematical Modelling and Simulation
- Sequence Analysis & Computational Models for Biological data
- Phylogenetic analysis and Proteomics
- Various Bioinformatics languages and tools related to Sequence Analysis, Evolutionary analysis and proteomics.
- Application of Modelling and Simulation to various types of Biological data like Nucleotide (DNA & RNA) and Protein sequences, their structures and relative interactions etc.
- Software tools like BLAST , FASTA, CLUSTALW, MEGA, GENSCAN, PRIMER3, PHYLODENDRON, RASMOL, SPDBV.

RESOURCE PERSONS

Faculty from IITs, NITs, Premier Institutions, Industry and Faculty from Host Institution

* Course material, lecture slides and other reference material will be provided on CDs.

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Bhopal (M.P.) – 462003

Registration Form

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✓ Please check: Academic Industry/Govt. Student

✓ Please check: Accommodation Required: Yes No

Name: _____

Designation: _____

Affiliation: _____

Mailing Address: _____

Telephone No. (with STD code): _____

Fax: _____

Email: _____

Specialisation: _____

DD No. / Date: _____

Amount: _____

Bank: _____

(DD must be drawn in favour of "DIRECTOR, MANIT, Bhopal" payable at Bhopal)

Date:

Signature of Applicant

(If required Xerox of registration form can be used)