ONLINE FACULTY DEVELOPMENT PROGRAMME (FDP)
ON
BASICS OF BIO-INFORMATICS
(26th May – 04th June 2021)
Organized by
E & ICT Academy, National Institute of Technology, Warangal.
in association with
University College of Engineering BIT Campus
Tiruchirappalli – 620 024

Preamble:

"Electronics & ICT Academy" was set up at NIT Warangal with financial assistance from MeitY, GoI. The jurisdiction of this academy is Telangana, Andhra Pradesh, Karnataka, Goa, Puducherry and Andaman & Nicobar Islands. This academy role is to offer faculty development programmes in standardized courses and emerging areas of Electronics, Information Communication Technologies, training & consultancy services for Industry, Curriculum development for Industry, CEP for working professionals, Advice and support for technical incubation and entrepreneurial activities.

About the FDP:

This faculty development program (FDP) is devoted to addressthe need of technological developments in Biotechnology and itsallied fields. Bioinformatics is an interdisciplinary field that develops methods and software tools for understanding biological data, in particular when the data sets are large and complex. Bioinformatics now entails the creation and advancement of databases, algorithms, computational and statistical techniques, and theory to solve formal and practical problems arising from the management and analysis of biological data, particularly DNA, RNA, and protein sequences.This FDP is intended to provide an insight on Basics of Bioinformatics and its applications in various fields with hands-on experience.

Major Course Contents:

- Introduction, DNA sequence analysis, DNA Databases
- Protein structure and function, protein sequence databases, sequence alignment
- PAM matrix, Global and local alignment, BLAST: features and scores
- Multiple sequence alignment, Conservation score, phylogenetic trees
- Protein sequence analysis, hydrophobicity profiles, non-redundant datasets
- Protein secondary structures, Ramachandran plot, propensity, secondary structure prediction
- Protein tertiary structure, Protein Data Bank,visualization tools, structural classification, contact maps
- Protein structural analysis, protein structure prediction
- Protein stability, energetic contributions, database, stabilizing residues, stability upon mutations
- Protein folding rates, proteins interactions, binding site residues

Faculty conducting this program:

This program will be conducted in online mode by the faculty members from NIT Warangal in association with University College of Engineering (BIT Campus) Tiruchirappalli, Tamil Nadu – 620 024; Academicians in the concerned field from Indian Institute of Technology (IIT)/National Institute of Technology (NIT)/ National Institute of Pharmaceutical Education and Research (NIPER)/Institute of Bioinformatics and applied Bio technology (IBAB)are invited to deliver lectures in the program. Speakers from industries are also expected to deliver as part of the course.

Eligibility:

The program is open to faculty of Engineering Colleges and other allied disciplines in India. Industry personnel working in the concerned /allied discipline can also attend.

Registration Fee Particulars:

The fee is to be paid either in the form of DDs or online transfer using the following details

Faculty and Research Scholars	**Rs.750/-**
Industry Participants	**Rs.2250/-**
Online Transfer Details	
Account Name: Electronics & ICT Academy NITW **IFSC: SBIN0020149** **Account No: 62423775910**	

How to apply:

Participants are required to fill the online registration form by clicking on the following link:
https://forms.gle/MndF5tUpJXAph5Qa9

Selection Criteria:

Selection will be done based on first-come-first-serve basis to a maximum number of 60 (sixty). Additionally, 10 participants from industry are allowed to participate. The list of selected participants will be intimated through e-mail. In case a candidate is not selected, the DD will be sent back. Candidates will be issued satisfactory certificates on successful completion of the course. Reservations are followed for selecting candidates as per GOI norms.

Important dates:

Last date for submission of Application : 25/05/2021
Selection by E-mail : 25/05/2021
Duration :26/05/2021 to 04/06/2021

About NIT Warangal:

National Institute of Technology, Warangal is the first among 17 RECs setup as joint venture of the Government of India and the state government. Over the years the college has established itself as a premier Institute imparting technical education of a very high standard leading to the B.Tech degrees in various branches of engineering, M.Tech. and Ph.D programs in various specializations. All B. Tech and M. Tech programmes of NIT Warangal are NBA accredited.

About UCE BIT Campus:

University College of Engineering, BIT Campus, Tiruchirappalli, has been established by the Government of Tamil Nadu as a 'Technical Institution' at Tiruchirappalli. The BIT institution is one of the constitution college of Anna University, Chennai.

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1. Name :
2. Designation :
3. Institution :
4. Email :
5. Mobile No :
6. Payment Details:
7. Address for correspondence :

8. Educational qualification :
9. Subjects taught for :
10. No. of refresher Course/ workshops attended:
11. Experience in years

Teaching: Research: Industry:

12. Do you belong to SC ☐ ST ☐

Declaration

The information provided is true to the best of my knowledge. If selected, I agree to abide by the rules and regulations of the FDP and shall attend the course for the entire duration. I also undertake the responsibility to inform the coordinators in case I am unable to attend the course.

Date: Signature of the Applicant

Sponsorship Certificate

Dr. /Mr. /Ms. ..... is an employee of our Institute/Organization and is hereby sponsored to participate in the FDP on Basics of Bio-informatics", sponsored by Electronics & ICT Academy during 26th May– 04 th June,2021.

Signature of Head of Institution
(with seal)

It is requested to all the delegates, after completion of the application form, all the payment details, a Screenshot of the payment, and scanned application form has to be uploaded in the following online registration link.

Registration Link

https://forms.gle/MndF5tUpJXAph5Qa9

For more details about Electronics & ICT Academy, NIT, Warangal, please visit:
https://nitw.ac.in/eict

For more enquiries please contact:
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Address for Correspondence

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Coordinators

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Date/Period	03.30 PM to 04.30 PM	04.40 PM to 05.40 PM	05.50 PM to 06.50 PM	07.00 PM to 08.00 PM
26.05.2021	***Introduction*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Bioinformatics with Perl Exploratory Session I*** Resource Person: **Dr. K. Uma Maheswari**, Assistant Professor, Dept. of IT, University College of Engineering, Anna University, Trichy	***Bioinformatics with Perl Exploratory Session II*** Resource Person: **Dr. K. Uma Maheswari**, Assistant Professor, Dept. of IT, University College of Engineering, Anna University, Trichy	***DNA sequence analysis*** Resource Person: **Dr. Perugu Shyam**, Assistant Professor, Dept. of Biotechnology, NIT Warangal
27.05.2021	***Protein secondary structures*** Resource Person: **Dr. Thyageshwar Chandran**, Assistant Professor, Dept. of Biotechnology, NIT Warangal	***Pairwise alignment*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Application of bioinformatics in gene expression study*** Resource Person: **Dr. Dev Mani Pandey,** Associate Professor, Dept. of Bioengineering Birla Institute of Technology Mesra, Ranchi.	***DNA Databases*** Resource Person: **Dr. Perugu Shyam**, Assistant Professor, Dept. of Biotechnology, NIT Warangal
28.05.2021	***Ramachandran plot& propensity*** Resource Person: **Dr. Thyageshwar Chandran**, Assistant Professor, Dept. of Biotechnology, NIT Warangal	***Conservation score*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Bioinformatics with R Exploratory Session I*** Resource Person: **Dr. R. Srivatsan**, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru	***Bioinformatics with R Exploratory Session II*** Resource Person: **Dr. R. Srivatsan**, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru
29.05.2021	***Protein secondary structure prediction*** Resource Person: **Dr. Thyageshwar Chandran**, Assistant Professor, Dept. of Biotechnology, NIT Warangal	***Protein sequence analysis*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Bioinformatics with R Exploratory Session III*** Resource Person: **Dr. R. Srivatsan**, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru	***Bioinformatics with R Exploratory Session IV*** Resource Person: **Dr. R. Srivatsan**, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru

30.05.2021	***Protein tertiary structure*** Resource Person: **Dr. Thyageshwar Chandran**, Assistant Professor, Dept. of Biotechnology, NIT Warangal	***Hydrophobicity profiles/patterns*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Bioinformatics with R Exploratory Session V*** Resource Person: **Dr. R. Srivatsan**, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru	***Bioinformatics with R Exploratory Session VI*** Resource Person: **Dr. R. Srivatsan**, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru
31.05.2021	***Protein Data Bank& visualization tools*** Resource Person: **Dr. Thyageshwar Chandran**, Assistant Professor, Dept. of Biotechnology, NIT Warangal	***Protein stability*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Bioinformatics with R Exploratory Session VII*** Resource Person: **Dr. R. Srivatsan**, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru	***Bioinformatics with R Exploratory Session VIII*** Resource Person: **Dr. R. Srivatsan**, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru
01.06.2021	***Protein structural classification and contact maps*** Resource Person: **Dr. Thyageshwar Chandran**, Assistant Professor, Dept. of Biotechnology, NIT Warangal	***Stabilizing residues/ Database*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Story Of Drug Designing*** Resource Person: **Dr. Koel Mukherjee,** Assistant Professor, Dept. of Bioengineering Birla Institute of Technology Mesra, Ranchi.	***Tautomerism in chemical databases and its importance in drug design*** Resource Person: **Dr. Devendra Kumar Dhaked**, Assistant Professor, Dept. of Pharmacoinformatics, National Institute of Pharmaceutical Education and Research (NIPER), Kolkata
02.06.2021	***Protein structural analysis*** Resource Person: **Dr. Thyageshwar Chandran**, Assistant Professor, Dept. of Biotechnology, NIT Warangal	***Stability upon mutation*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Genomic Signal Processing*** Resource Person: **Dr. Sitanshu Sekhar Sahu**, Assistant Professor, Dept. of Electronics & Communication Engineering, Birla Institute of Technology Mesra, Ranchi	***Bioinformatics with Perl Exploratory Session III*** Resource Person: **Mrs. R. Kavitha**, Assistant Professor, Dept. of CSE, University College of Engineering, Anna University, Trichy
03.06.2021	***Protein structure prediction*** Resource Person: **Dr. Thyageshwar Chandran,** Assistant Professor, Dept. of Biotechnology, NIT Warangal	***Protein folding rates*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Machine Learning in Bioinformatics*** Resource Person: **Dr. Sitanshu Sekhar Sahu**, Assistant Professor, Dept. of Electronics & Communication Engineering, Birla Institute of Technology Mesra, Ranchi	***Identification of Protein-coding regions in DNA sequences using Signal Processing Techniques*** Resource Person: **Dr. Malaya Kumar Hota,** Professor, Department of Communication Engineering, School of Electronics Engineering, VIT, Vellore
04.06.2021	***Protein interactions*** Resource Person: **Dr. Michael Gromiha,** Professor, Department of Biotechnology, IIT Madras	***Molecular docking hands on (Swissdock server)*** Resource Person: **Dr. Koel Mukherjee,** Assistant Professor, Dept. of Bioengineering Birla Institute of Technology Mesra, Ranchi.	***Bioinformatics with WEKA Exploratory Session I*** Resource Person: Dr. D. Asir Antony Gnana Singh, Dept of CSE, University College of Engineering, Anna University, Trichy	***Bioinformatics with WEKA Exploratory Session II*** Resource Person: Dr. D. Asir Antony Gnana Singh, Dept of CSE, University College of Engineering, Anna University, Trichy