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 address the need of technological developments in Biotechnology and its allied 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 Biotechnology (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

<table>
<thead>
<tr>
<th>Faculty and Research Scholars</th>
<th>Rs.750/-</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industry Participants</td>
<td>Rs.2250/-</td>
</tr>
</tbody>
</table>

Online Transfer Details

Account Name: Electronics & ICT Academy
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– 04th June,2021.

Signature of Head of Institution (with seal)

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: annapoorani@aubit.edu.in, priya@aubit.edu.in

Address for Correspondence

Dr.G.Annapoorani
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University College of Engineering (BIT Campus)
Tiruchirappalli
Tamilnadu – 620 024
e-mail: annapoorani@aubit.edu.in
Mobile: 9942320137

Coordinators

Dr.G.Annapoorani
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Tiruchirappalli
Tamilnadu – 620 024
e-mail: annapoorani@aubit.edu.in

Mrs.V.M.Priyadharshini
Assistant Professor
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University College of Engineering (BIT Campus)
Tiruchirappalli
Tamilnadu – 620 024
e-mail: priya@aubit.edu.in
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<table>
<thead>
<tr>
<th>Date/Period</th>
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<tbody>
<tr>
<td>26.05.2021</td>
<td>03.30 PM to 04.30 PM</td>
<td>04.40 PM to 05.40 PM</td>
<td>05.50 PM to 06.50 PM</td>
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<td><strong>Introduction</strong></td>
<td><strong>Bioinformatics with Perl Exploratory Session I</strong></td>
<td><strong>Bioinformatics with Perl Exploratory Session II</strong></td>
<td><strong>DNA sequence analysis</strong></td>
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<tr>
<td>Resource Person: Dr. Michael Gromiha, Professor, Department of Biotechnology, IIT Madras</td>
<td>Resource Person: Dr. K. Uma Maheswari, Assistant Professor, Dept. of IT, University College of Engineering, Anna University, Trichy</td>
<td>Resource Person: Dr. K. Uma Maheswari, Assistant Professor, Dept. of IT, University College of Engineering, Anna University, Trichy</td>
<td>Resource Person: Dr. Perugu Shyam, Assistant Professor, Dept. of Biotechnology, NIT Warangal</td>
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<tr>
<td><strong>Protein secondary structures</strong></td>
<td><strong>Pairwise alignment</strong></td>
<td><strong>Application of bioinformatics in gene expression study</strong></td>
<td><strong>DNA Databases</strong></td>
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<td>Resource Person: Dr. Thyageshwar Chandran, Assistant Professor, Dept. of Biotechnology, NIT Warangal</td>
<td>Resource Person: Dr. Michael Gromiha, Professor, Department of Biotechnology, IIT Madras</td>
<td>Resource Person: Dr. Dev Mani Pandey, Associate Professor, Dept. of Bioengineering, Birla Institute of Technology Mesra, Ranchi.</td>
<td>Resource Person: Dr. Perugu Shyam, Assistant Professor, Dept. of Biotechnology, NIT Warangal</td>
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<td><strong>Ramachandran plot &amp; propensity</strong></td>
<td>Conservation score</td>
<td><strong>Bioinformatics with R Exploratory Session I</strong></td>
<td><strong>Bioinformatics with R Exploratory Session II</strong></td>
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<tr>
<td>Resource Person: Dr. Thyageshwar Chandran, Assistant Professor, Dept. of Biotechnology, NIT Warangal</td>
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<td>Resource Person: Dr. R. Srivatsan, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru</td>
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<td><strong>Protein secondary structure prediction</strong></td>
<td><strong>Protein sequence analysis</strong></td>
<td><strong>Bioinformatics with R Exploratory Session III</strong></td>
<td><strong>Bioinformatics with R Exploratory Session IV</strong></td>
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<td>Resource Person: Dr. Thyageshwar Chandran, Assistant Professor, Dept. of Biotechnology, NIT Warangal</td>
<td>Resource Person: Dr. Michael Gromiha, Professor, Department of Biotechnology, IIT Madras</td>
<td>Resource Person: Dr. R. Srivatsan, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru</td>
<td>Resource Person: Dr. R. Srivatsan, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru</td>
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<td>Topic</td>
<td>Resource Person</td>
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<td>30.05.21</td>
<td>Protein tertiary structure</td>
<td>Resource Person: Dr. Michael Gromiha, Department of Biotechnology, IIT Madras</td>
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<td>31.05.21</td>
<td>Protein Data Bank &amp; visualization tools</td>
<td>Resource Person: Dr. Michael Gromiha, Department of Biotechnology, IIT Madras</td>
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<td>01.06.21</td>
<td>Protein structural classification and contact maps</td>
<td>Resource Person: Dr. Michael Gromiha, Department of Biotechnology, IIT Madras</td>
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<td>02.06.21</td>
<td>Protein structural analysis</td>
<td>Resource Person: Dr. Michael Gromiha, Department of Biotechnology, IIT Madras</td>
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<td>03.06.21</td>
<td>Protein structure prediction</td>
<td>Resource Person: Dr. Michael Gromiha, Department of Biotechnology, IIT Madras</td>
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<td>04.06.21</td>
<td>Protein interactions</td>
<td>Resource Person: Dr. Michael Gromiha, Department of Biotechnology, IIT Madras</td>
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<td></td>
<td>Hydrophobicity profiles/patterns</td>
<td>Resource Person: Dr. Michael Gromiha, Department of Biotechnology, IIT Madras</td>
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<td>Bioinformatics with R Exploratory Session V</td>
<td>Resource Person: Dr. R. Srivatsan, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru</td>
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<td>Bioinformatics with R Exploratory Session VII</td>
<td>Resource Person: Dr. R. Srivatsan, Faculty Scientist, Institute of Bioinformatics and Applied Biotechnology (IBAB), Bengaluru</td>
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<td>Bioinformatics with Perl Exploratory Session III</td>
<td>Resource Person: Mrs. R. Kavitha, Assistant Professor, Dept. of CSE, University College of Engineering, Anna University, Trichy</td>
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<td>Bioinformatics with Perl Exploratory Session II</td>
<td>Resource Person: Dr. Malaya Kumar Hota, Professor, Department of Communication Engineering, School of Electronics Engineering, VIT, Vellore</td>
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<td>Bioinformatics with WEKA Exploratory Session I</td>
<td>Resource Person: Dr. D. Asir Antony Gnana Singh, Dept of CSE, University College of Engineering, Anna University, Trichy</td>
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<td></td>
<td>Bioinformatics with WEKA Exploratory Session II</td>
<td>Resource Person: Dr. D. Asir Antony Gnana Singh, Dept of CSE, University College of Engineering, Anna University, Trichy</td>
<td></td>
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</tbody>
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