

Faculty Development Program on Software Tools for Academicians

HRDC, Fakir Mohan University

13th – 18th Dec, 2021



Chief Patron

Prof. Santosh Kumar Tripathy
Vice Chancellor

Patron

Prof. Munesh Chandra Adhikary
Director, HRDC

Coordinator

Dr. Ashanta Ranjan Routray
Reader

PG Department of I & CT

Organized by

HRDC, Fakir Mohan University, Vyasa Vihar,
Balasore, Odisha, India – 756019

www.fmuniversity.nic.in

Link for Registration:

<https://tinyurl.com/bdav23wx>

Whatsapp link :

<https://tinyurl.com/46y63kwj>

About F.M. University

The Fakir Mohan University, Vyasa Vihar, Balasore was established by the Government of Odisha, under Section 32 of the Odisha Universities Act, 1989 (Act 5 of 1989) and it was notified vide the Government's Notification No. 973, dated 3rd July 1999. It has been duly recognized by the UGC under Section 2(f) of the UGC Act vide Notification No. F-9-1/2000 (CPP-I), dated 11th February 2000 as well as under Section 12(B), vide UGC letter no. F.9-1/2000 (CPP-I) dated 23rd December 2005. The University has also been accredited by the Association of Indian Universities (AIU) since 2000 and is also a member of the Association of Commonwealth Universities (ACU), UK. At present it is functioning in two campuses: The Old Campus at Januganj, beside the National Highway near Remuna Golei and the New Campus at Nuapadhi, in and around Balasore town.

Overview

Mathematical modeling and simulation through software tools is highly required for multidisciplinary academic and research activities. This program is mainly focusing on essential introductions of software tools required for teaching UG and PG courses and research.

It also covers a wide range of applications in numerical computing, artificial Intelligence(AI)/soft computing such as neural network, machine learning, deep learning along with some other fields like image processing. The technology of image processing is mainly focused on processing the new image to enhance it, whereas, computer vision is focused on extracting information from input image.

Objective and Scope

- Primary objective of this program is to provide an exposure to the participants with the essentials of software tools required for UG and PG courses as per CBCS curriculum and some of the toolboxes based on Artificial Intelligence, Optimization, etc.
- Develop conceptual and fundamental concept of Mathematical modeling.
- Develop basic understanding of all key component of MATLAB/SCILAB/PYTHON for ML development.
- Develop understanding of numerical computing.
- Understand different types of Image processing and Machine learning based algorithm.

Course Content

- Introduction to MATLAB: Variables, Loops, Conditions, Functions, Numbers, Vectors, and Matrices in MATLAB.
- Plotting and visualization
- Solution of ODEs and PDEs
- Numerical techniques
- Soft Computing
- Basics of Image Processing and Computer Vision.
- Neural Model, Back Propagation Architecture, Faster training-numerical optimization techniques, Feature Extraction, etc.
- Neural Network Toolbox
- Machine & Deep Learning
- Basics of PYTHON programming

Program Schedule:

| Date | Session-I (3.00 PM-4.30 PM) | Session-II (4.45 PM- 6.15 PM) | Session-III (Interaction/assignments /Quiz) (6.15 PM-7PM) |
|---------------------------|--|--|--|
| 13.12.2021 (Monday) | Dr.Sudhakar Choudhary, IITRAM,Ahmedabad, Gujarat | Dr.Sudhakar Choudhary, IITRAM, Ahmedabad, Gujarat | Dr. A.R. Routray PG Department of I & CT FM University |
| 14.12.2021 (Tuesday) | Dr. Ratikanta Behera, University of Central Florida, Orlando,FL,32816,USA | Dr. Ratikanta Behera, University of Central Florida, Orlando,FL,32816,USA | Dr. A.R. Routray PG Department of I & CT FM University |
| 15.12.2021 (Wednesday) | Dr. Pradip Kr. Parida, Central University of Jharkhand | Dr. Pradip Kr. Parida, Central University of Jharkhand | Dr. A.R. Routray PG Department of I & CT FM University |
| 16.12.2021 (Thursday) | Dr.Dhurba Panda, Berhampur University | Dr.Dhurba Panda, Berhampur University | Dr. A.R. Routray PG Department of I & CT FM University |
| 17.12.2021 (Friday) | Prof. Rabindra Kishore Mishra, Berhampur University | Prof. Rabindra Kishore Mishra, Berhampur University | Dr. A.R. Routray PG Department of I & CT FM University |
| 18.12.2021 (Saturday) | Dr.Jatindra Kumar Dash, SRMUniversity,Amaravati, AP | Dr.Jatindra Kumar Dash, SRMUniversity,Amaravati, AP | Dr. A.R. Routray PG Department of I & CT FM University |