This course is designed to give students an introduction to MATLAB® fundamentals along with the knowledge of the two popular MATLAB® modules namely **Machine Learning** and **Optimization**. The course consists of interactive lectures along with practice on sample problems in MATLAB environment. Problem-based MATLAB assignments will be given with hands-on training by **MathWorks** professionals.

The participants will be provided handouts/course material from **MathWorks** comprising of step by step solutions / tutorials to a variety of problems.

Course contents

MATLAB® Fundamentals

This module will provide a comprehensive introduction to the MATLAB® technical computing environment. The module is intended for beginning users and those looking for a review. Topics will include:

• Data analysis
• Visualization
• Modelling
• Programming

Machine Learning using MATLAB®

This module focuses on data analytics and machine learning techniques in MATLAB® using functionality within Statistics and Machine Learning Toolbox™ and Neural Network Toolbox™. The course demonstrates the use of unsupervised learning to discover features in large data sets and supervised learning to build predictive models. Examples and exercises highlight techniques for visualization and evaluation of results. Topics include:

• Importing and organizing data
• Finding natural patterns in data
• Building predictive models
• Evaluating and improving the model

Optimization Techniques using MATLAB®

This module will introduce applied optimization in the MATLAB® environment, focusing on using Optimization Toolbox™ and Global Optimization Toolbox. Topics include:

• Defining the problem
• Writing objective functions
• Defining constraints
• Choosing solvers and setting options
• Using global optimization methods

Resource persons

The course instructors/faculty will be primarily from MNNIT Allahabad and professionals from **MathWorks** Training Services.

MathWorks®
Accelerating the pace of engineering and science

The program is open to UG/PG students, research scholars, faculty members of engineering institutions and Industry Personnel.

Number of participants will be limited to **30** on first come-first serve basis.

Registration

Registration fees:

Rs. 5000/- : Working Professionals / Faculty

Rs. 3000/- : Students

Payable in the form of a Demand Draft in favour of "**STCMED-2018**" payable at Allahabad or pay online/NEFT to account as given below:
Account Name: **STCMED-2018**
Account No. :   **718400301000315**
Account Type: **Current Account**
Bank Name: **Vijaya Bank, MNNIT Allahabad**
IFSC Code: **VIJB0007184**

Hard copy of the duly filled and signed registration form and duly approved by the Head of Department/ Institute, along with the registration fee should reach the Coordinators on or before **May 21, 2018**. However, scanned advanced copy of registration form and DD/online payment details may be sent through email for early registration.

Mail the application form to:

Dr. Samir Saraswati
Associate Professor

Or

Dr. Praveen Kumar Agarwal
Associate Professor
Department of Mechanical Engineering
MNNIT Allahabad,
Allahabad – 211004, U.P.
Email: samir@mnnit.ac.in; pka@mnnit.ac.in
Mobile: 08004926324 / 08081622278

On prior request, accommodation may be provided to the participants **on payment basis** in the institute hostels / Guest House (EDC) (*subject to availability*). The participants have to bear their own travelling expenses.

Self Financed Short Term Course
on
Matlab based Machine Learning and Optimization
(May 28 – June 01, 2018)

1. Name:
2. Date of birth:
3. Institution:
4. Educational qualifications:
5. Class / Branch (or)
   Designation / Department:
5. Address for correspondence:

   Phone:
   E-mail:

6. Prior exposure to MATLAB:
7. Accommodation required -   Yes/ No

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 course. I also agree to inform the Coordinators in case, I am unable to attend the course.

Place:
Date: Signature of the candidate

Mr./Ms./Dr. ---
is a student / employee of our institute and is hereby allowed to participate in the **STC** on **Matlab based Machine learning and Optimization.**

Place:

Date: Signature & Stamp of Head of
              Department/Institution

About MNNIT Allahabad

Motilal Nehru National Institute of Technology Allahabad (formerly MNREC) is one of the oldest RECs setup in the country. Since 1964, it has been a centre of technological excellence in the state of UP in particular and the country in general.

The Institute offers various undergraduate and postgraduate courses such as B.Tech., M.Tech., MCA, MBA, M.Sc., M.S.W and Ph.D. degree. It has been recognized by GOI as one of the Quality Improvement Programme (QIP) centre for M.Tech. and Ph.D. program. Also, it is a lead Institution under World Bank funded GOI Project on Technical Education Quality Improvement Programme (TEQIP).

The institute is a fully residential, networked campus and is well connected by rail, road and air.

About Mechanical Engg. Department

Department of Mechanical Engineering is the leading department of the institute**.** It offers B.Tech. (Mechanical Engg. and Production and Industrial Engg.), M.Tech. (Computer Aided Design and Manufacturing, Design, Production, Product Design and Development and Thermal) and PhD. The department has 31 highly qualified faculty. More than 100 PhDs have been produced by the department which is also a QIP centre for PhD and M.Tech. The department has good laboratories which are equipped with latest software and equipments.

Self Financed

Short Term Course
on

Matlab based Machine Learning and Optimization

(May 28 - June 1, 2018)

Patron
Prof. Rajeev Tripathi
Director

Chairman
Prof. A. D. Bhatt
Head, Mechanical Engineering Department

Course Coordinators
Dr. Samir Saraswati
Dr. Praveen Kumar Agarwal

Convener
Dr. Jitendra N. Gangwar

Organized by
Department of Mechanical Engineering
Motilal Nehru National Institute of Technology
Allahabad – 211004, UP

In technical association with