

A Six-Day Short-Term Training
Program on
**Computational Research
Techniques using MATLAB**
(CRT2016)

26th -31th December, 2016

Self-Financed



Coordinators

Dr. Hari Kumar Voruganti
Dr. Syed Ismail
Dr. K. Kiran Kumar



Organized by
Mechanical Engineering Department
National Institute of Technology Warangal,
Telangana, India-506 004.

About The Course

Availability of computational resources and the demand for faster production lead to a greater emphasis on virtual engineering in which many engineering problems needs to be solved using a computer. This kind of computational research or problem solving requires a strong background in mathematical methods, computational skills and knowledge of at least one scientific computing tools.

MALAB is a software tool which provides the numerical computing environment and fits the bill, perfectly. It allows the users to solve variety of engineering problems and also analyze the data with a lot of visualization (plotting) options. Though it is primarily for numerical computing, there are a lot of additional facilities called toolboxes/apps for genetic algorithms, optimization, neural networks, simulations (Simulink) etc.

It is has been noted that though mathematical methods and computational tools are introduced at both UG and PG level, somehow the background is not sufficient to conduct independent research and solve real life problems. In this context, a short-term training program on “Computational Research Techniques using MATLAB” is designed to fill these gaps and strengthen the participants with required skills to work as an independent researcher. More than 50% of the time will be devoted to lab sessions on MATLAB in which participants will try and implement the mathematical methods and discover the features.

Objectives of the Course

- ✓ To train academicians and research scholars on computational tools to solve Engineering Problems.
- ✓ To provide rigorous hands on experience to the participants, so that the participant will be able to tackle computational problems in engineering confidently after the course.

Course Content

- Fundamentals of Numerical Computing and MATLAB.
- Functions & Programming in MATLAB.
- Numerical Linear Algebra.
- Optimization Methods.
- Ordinary Differential Equations.
- Partial Differential Equations.
- Data Modelling and Visualization.
- SIMULINK.
- Specialized Toolboxes/Apps: Neural Networks, Robotics, Statistics etc.
- Solving about 100 problmes related to above topics using MATLAB.

Note that, a set of case studies and participant problems discussion is scheduled for last day.

Application Procedure

Brochure and registration form can also be downloaded from our institute website: <http://www.nitw.ac.in>. Candidates may send their filled in registration form along with a Demand Draft taken in favour of “**Professor-in-charge, Continuing Education Programmes, NITW**” payable at SBH, NITW branch (Code: 20149). The filled in Registration form along with the DD should reach on or before **16-12-2016**.

About the Department

The department of Mechanical Engineering offers an UG program, seven PG programs and a Ph. D program as well. The department has liaison with reputed industries and R &D organizations like NFTDC, BHEL, DMRL, DRDL etc. Presently the department is handling several R & D projects and consultancy works. The department has also been recognized as QIP centre for M. Tech and Ph. D.

About the Institute and Warangal

National institute of Technology Warangal (NITW) formerly known as Regional Engineering College, Warangal (RECW) is the first among the 20 RECs setup as joint venture of the Government of India and State Government. Over the years, the college has established itself as a premier institution imparting technical education of high standards, leading to the B. Tech. degrees in various branches of engineering, and M. Tech. and Ph.D. programs in different specializations. With a view to give further impetus to the technical education, the Central Government upgraded the REC to NIT, and conferred the Deemed to be University status.

Warangal is known for its rich historical and cultural heritage. It is situated at a distance of 140 km from Hyderabad. Warangal is well connected by rail and road. The campus is 2 km away from Kazipet railway junction and 12 km away from Warangal railway station. Participants are advised to alight at Kazipet or Warangal depending upon the train of travel.

Registration Fees Details

| Category | Option-A | Option-B |
|----------|----------|----------|
| Faculty | 7000 | 5000 |
| Students | 4000 | 3000 |
| Industry | 14000 | 11000 |

Option-A: Fee includes Kit, Lodging and Boarding.

Option-B: Fee includes Kit and Lunch only.

Note that, accommodation inside NITW campus is very limited and same will be provided to participants on first-cum-first-serve basis.

Contact Information

Dr. Hari Kumar Voruganti +91 8985929103.

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<http://sites.google.com/site/crtmatlab2016>

The filled in Registration form along with the DD should reach us by post on or before **16-12-2016**. A soft-copy of DD and registration form can be sent by email as an advance copy. Selected candidates will be informed through email immediately after the receipt of registration form by post.

Coordinator, CRT2016

**Mechanical Engineering Department
National Institute of Technology
Warangal-506 004.Telananga. India.**

Resource Persons

Lectures and lab sessions will be handled by the faculty of NIT Warangal and invited faculty from IITs and industry.

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Mechanical Engineering .Department,
NIT Warangal, 506004. Telangana.

Registration Form

1 Name:

2. Designation:

3. Organization:

4. Address for communication:

Email:

Phone/ Mobile No:

7. Accommodation required (Tick): Yes/No

8. DD Particulars:

Amount: Rs.

DD No:

Date:

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 and shall attend the course completely.

Place & Date:

(Signature of the applicant)

Details and Signature of Sponsoring Authority.