INTRODUCTION

In recent times, MATLAB/SIMULINK has emerged as the most widely used platform among the research community for the design and analysis of engineering systems. Starting with an introduction on the fundamentals of MATLAB, the course is primarily aimed at giving extensive coverage on the algorithms and tools incorporated in MATLAB, useful for modeling and analyzing various systems in electrical and electronics engineering. In this regard, primary stress would be laid on control system, signal processing, image processing and biomedical engineering. The participants would be provided necessary skills and hand-on experience to solve the equations governing the dynamics of the system, examine the system behavior and design suitable mechanism for improving the system behavior. The simulation sessions would be augmented by the detailed descriptions about the numerical techniques and associated theoretical background behind the well developed tools and concepts. Conventional and advanced controller design techniques would be implemented using different platforms. Signal processing and data based system identification techniques would be discussed with examples of biomedical systems. The design and implementation of signal and image processing algorithms will help participants to apply them in various fields. The generalized base for the formation of complex algorithms will be provided using wavelet for signal and image processing. The participants are expected to get a clear understanding of the advantages of different algorithm along with some idea on their real time implementation.

COURSE CONTENT

- Fundamentals of MATLAB/SIMULINK and Integration of different toolboxes
- System representation in time and frequency domain
- Analyzing continuous and discrete time systems
- Conventional and advanced controller design algorithms
- Digital filter design
- Use of wavelet in digital signal processing
- Digital image segmentation and compression algorithms

ABOUT NIT RAIPUR

National Institute of Technology (NIT), Raipur formerly known as Government Engineering College (GEC), was established in the year 1956. The first President of independent India honorable **Dr. Rajendra Prasad** laid the Foundation stone of the college building on 14th September 1956. The construction work was completed in 1962 and was inaugurated on 14th March 1963 by India's first Prime Minister **Pt. Jawaharlal Nehru**. In view of its great past with 50 years old record of excellence and several strengths, the institute has been declared as National Institute of Technology (NIT) by the Central Government on 1st Dec. 2005. It is a prestigious Institute, that endeavors to produce quality Engineers in Graduate and Post-Graduate levels in various streams of Engineering. The institute offers 12 undergraduate and 6 postgraduate courses including MCA and M. Tech. in Applied Geology. The institute also offers and Ph. D programs undertake R & D activities, provides testing consultancy and other extension services.

DEPARTMENT OF ELECTRICAL ENGINEERING

Department of Electrical Engineering, NIT Raipur was established in 1958. Since its inception, the department has equipped students with the necessary skills to grasp and develop new technologies and trends in respective domains. Along with B.Tech in Electrical Engineering, the department presently runs an M.Tech programme with the specialization in Computer Technology. Also, a substantial number of Ph.D students are carrying out research in different areas of Electrical and Electronics Engineering. The department has several well equipped laboratories with state of the art facilities such as Electrical Machine Laboratory, Computer Technology Laboratory, High Voltage Laboratory, Power Electronics Laboratory, Instrumentation Laboratory and Power System Protection Laboratory.

FACULTY

The course has been designed by the faculty members of NIT Raipur keeping in consideration of the state of art in the field as pursued by the research community and industry.

PATRON

Prof. A. S. Thoke
Professor & Head
Dept of Electrical Engineering

COURSE COORDINATORS

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Assistant professor
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INTENDED PARTICIPANTS

Faculty/Scientists from AICTE approved Institutions/Research organizations, Research scholars and M.E/M.Tech students with Bachelor's degree in Electrical/ Electronics/ Instrumentation & Control/ Communication Engineering and allied branches will benefit immensely from the course.

REGISTRATION

Candidates are required to fill the enclosed registration form, and send it by e- mail/fax/post to the Coordinator. The participation will be confirmed on a first come first basis upto a maximum of 30 candidates. The course fee (INR 2500/- for M.E/M.Tech/Ph.D students, INR 3000/- for faculties/scientists) in the form of demand draft drawn in favor of "**The Director, NIT Raipur**" should be sent to the Coordinators on or before 30th July, 2013. The course fee will cover expenses towards lecture notes, course kit, tea & snacks and working lunch. Accommodations may be provided in Hostels for participants coming from distant places with applicable charges.

REGISTRATION FORM

Short Term Course on

MATLAB BASED DESIGN AND IMPLEMENTATION OF ADVANCED CONTROL, SIGNAL & IMAGE PROCESSING ALGORITHMS

16 August – 21 August 2013

1. Name: _____
   (Capital Letters with Surname underlined)
2. Designation: _____
3. Qualification: _____
4. Specialization: _____
5. Department: _____
6. Organization: _____
7. Teaching/Industrial Experience:
8. Mailing Address: _____
   _____
   _____
   Phone _____
   FAX _____
   E-mail_____
9. Accommodation required: YES / NO
10. Registration Fee:
    DD No. _____Date _____
    Issuing Bank:_____

Date SIGNATURE

Sponsorship Certificate

On the event of selection, Mr/Ms. _____ will be relieved for participation of the above short course.

SIGNATURE OF THE HEAD OF THE INSTITUTE /SPONSORING AUTHORITY (WITH DATE AND SEAL)

Short Term Course

On

MATLAB BASED DESIGN AND IMPLEMENTATION OF ADVANCED CONTROL, SIGNAL & IMAGE PROCESSING ALGORITHMS

16 August – 21 August, 2013

Coordinators

Dr. Subhojit Ghosh
Dr. Narendra D Londhe

Organized by

DEPARTMENT OF ELECTRICAL ENGINEERING
NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR – 492010, CHATTISHGARH