Short Term Training Program (STTP)

On

ADVANCED PROCESS CONTROL

(07-11 MARCH, 2016)

Coordinators
Dr. A. SESHAGIRI RAO
Dr. G. UDAY BHASKAR BABU

Organized by
Department of Chemical Engineering
National Institute of Technology
WARANGAL – 506 004
Telangana State, INDIA

Introduction

The training program is aimed at providing rich hands on experience to the participants on the use of different types of controllers for controlling different processes experimentally. The instrumentation and process control laboratory of the department is equipped with many experimental setups such as Level control in a spherical tank, cascade control with helical coils, level control in three interacting tanks, four tank system, universal process control trainer, pH control system. Different types of controllers can be used to control these processes. The participants will be given opportunity to perform experiments and understand the real time control of a process. Hands on sessions will also be held to practice MATLAB and SIMULINK for design of controllers for different types of processes such as chemical reactors, bioreactors, distillation columns, heat exchangers, crystallization processes. The lecture sessions are designed to provide the necessary theoretical background. The laboratory exercises include chemical engineering and other engineering problems, which might help the participant to understand the concepts. A few complicated problems will be demonstrated as case studies.

The Training program will be conducted by experienced people working in the area of process control and related domains. In addition to faculty of Chemical Engineering Department and other departments of NIT Warangal, the following people have accepted to deliver the lectures.

1. Prof. M. Chidambaram, Dept. of Chemical Engineering, IIT Madras
2. Dr. Kirubakaran, V., Lennox India Technology Centre, Chennai
3. Dr. Guruprasath Muralidharan, FLSmith Automation, Chennai
4. Mr. Tirtha Ghosh, GE (Oil & Gas), Hyderabad

The following topics will be covered during the training program.

1. **PID controller design for single-input-single-output (SISO) and multi-input-multi-output (MIMO) processes**
2. **Process (System) Identification**
3. **Model predictive control and applications**
4. **Soft computing techniques for identification and control**
5. **MATLAB for identification and control**
6. **Dynamic simulation using ASPEN**

About the Institute and Warangal

National Institute of Technology Warangal, an Institute of National Importance, is a premier Institution in the country imparting technical education of a very high standard leading to B.Tech degrees in various branches of engineering and M.Tech and Ph.D. programs in various specializations.

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. NIT Warangal campus is about 2 km away from Kazipet railway station and 12 km from Warangal Railway station. Passengers are advised to alight either at Kazipet or Warangal depending upon the train of travel.

About the Department

The Department of Chemical Engineering was established in the year 1964 and has recently celebrated Golden Jubilee Year. The Department offers an Undergraduate and Postgraduate programs in Chemical Engineering. The Department has also been recognized as a QIP Center for pursuing both M.Tech and Ph.D programs. The Department has experienced faculty and well established laboratories. The Instrumentation & Process Control Laboratory is equipped with a number of experimental setups to understand different concepts of process control.

Eligibility to attend the training program

People from different disciplines such as Chemical Engineering, Biotechnology, Petrochemical Engineering, EEE, Electronics & Instrumentation, Instrumentation & Control Engineering, working in the area of Process Control or Control Systems will be benefited from this workshop. **Faculty, Research Scholars, M.Tech students working in the area of process control/control systems or related area are eligible to apply.**

Accommodation

The participants will be provided accommodation (on shared basis) in the Institute Guest House/Hostels based on the mode of registration fee.

Registration fee

Category	**Registration fee without accommodation (Rs).**	**Registration fee with accommodation, breakfast and dinner (Rs).**
Faculty/scientists from academic institutes/research labs	3,500	5,000
Research scholars/students	2,000	3,000
People from industries	7,000	10,000

The Registration fee is inclusive of course fee, refreshments during breaks and working lunch. The registration fee will be refunded if the applicant is not selected/attended. No TA/DA will be provided to the participants.

How to apply

Applications in the prescribed format (given below) along with registration fee in the form of a DD, favoring**, "Professor-in-charge, Continuing Education Programs, NITW"** payable at SBH, NIT Warangal Branch (code no. 20149) should be sent by post to the following address so as to reach on or before **29th February 2016.** Applicants are also advised to send the e-copy of the application along with a scanned copy of DD by e-mail.

Address: **Coordinator, STTP-APC**
Department of Chemical Engineering
NIT, WARANGAL – 506 004, Telangana
E-mail: seshagiri@nitw.ac.in, udaybhaskar@nitw.ac.in;
Phone No.: 8332969407; 8332969404
www.nitw.ac.in

Applications without the requisite DD will not be considered. The number of participants is limited to 30. Participants will be selected on first cum first serve basis. The selected participants will be informed by e-mail / SMS.

Tentative Schedule of the Training Program

Date/Time	9.00 am – 10.00 am	10.00 - 11.00 am	11.00 – 11.15 am: Tea Break	11.15 am – 12.15 pm	12.15 pm – 01.15 pm	01.15 - 02.30 pm: Lunch Break	02.30 – 04.00 pm	04.00 – 04.15 pm: Tea Break	04.15 – 05.30 pm
07/03/2016	Registration & Inauguration	Lecture - 1		Lecture - 2	Lecture - 3		Lecture - 4		Lecture - 5
08/03/2016	Lecture - 6	Lecture - 7		Lecture - 8	Lecture - 9		MHS-1		MHS-2
09/03/2016	Lecture - 10	Lecture- 1 1		Lecture - 12	Lecture - 13		MHS-3		MHS-4
10/03/2016	Lecture - 14	Lecture - 15		Lecture - 16	ES-1		ES-2		ES-3
11/03/2016	Lecture – 16	Lecture – 17		Lecture – 18	ES-4		ES-5		Valedictory

MHS - MATLAB Hands-on Session **ES - Experimental Session**

Application Form

SHORT TERM TRAINING PROGRAM ON ADVANCED PROCESS CONTROL

(07-11 March 2016)

Department of Chemical Engineering

NIT WARANGAL – 506 004

1. Name:
2. Gender: Male / Female
3. Department:
4. Institution:
5. Educational Qualification: B.Tech./M. Tech/Ph.D.
6. Address for correspondence:
7. E-mail: Phone No.:
8. Accommodation required: Yes / No
9. DD Particulars:

Amount Rs.: DD No. Date:

Place:

Date:

Signature of the applicant
