

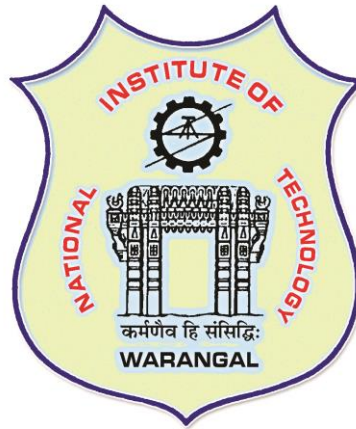
**Continuing Education Program (CEP)**

**on**

**PROCESS AUTOMATION and CONTROL**

**July 9 - 13, 2018**

**(under TEQIP – III)**



**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**

**[www.nitw.ac.in](http://www.nitw.ac.in)**

## 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, conical tank, cylindrical tank systems, cascade control with helical coils, level control in four tank system, universal process control trainer, pH control system, inverted pendulum, programmable logic controller (PLC), etc.. 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 automation and control and related domains. In addition to faculty of Chemical Engineering Department and other departments of NIT Warangal, the following people will deliver the lectures.

1. Dr. M. Chidambaram, Professor (Retd.), Dept. of Chemical Engineering, IIT Madras
2. Dr. S. Ranganathan, Honeywell Technology Solutions, Bangalore
3. Dr. K. Hariprasad, Department of Chemical Engineering, IIT Delhi
4. Dr. M. Guruprasath, Smarta Opti Solutions, Chennai
5. Dr. Babji Srinivasan, Department of Electrical Engineering, IIT Gandhinagar

The following topics will be covered during the training program.

1. **Process Automation Technologies**
2. **PID controller design for SISO and MIMO processes**
3. **System Identification**
4. **Control loop performance assessment**
5. **Model predictive control and applications**
6. **Data analytics for identification and control**
7. **MATLAB/SIMULINK for identification and control**
8. **Experimental sessions on different processes**

## 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 program and Postgraduate programs in Chemical Engineering and Process Control. 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

Faculty from AICTE recognized institutions working in Chemical Engineering, Biotechnology, Petrochemical Engineering, EEE, Electronics & Instrumentation, Instrumentation & Control Engineering departments, interested in the area of Process Control or Control Systems are eligible. Research Scholars, M.Tech students working in the area of process control/control systems or related research area are also eligible.

## 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 in Rs.
Faculty from AICTE recognized academic institutes	2,000
Research scholars/students	1,000
People from industries	5,000

The Registration fee is inclusive of course fee, refreshments during breaks, accommodation in the visitors block on sharing basis, breakfast, lunch, dinner on all five days. However, no TA/DA will be provided to the participants.

## How to apply

Application in the prescribed format (given below) should be sent along with the registration fee. The fee may be paid online in the name "TEQIP III - Funds", Account No. – 37583198741, State Bank of India, NIT Warangal Branch (IFSC Code: SBIN0020149). Filled in applications and proof of fee payment should be sent by post to the following address so as to reach on or before **June 8, 2018**. Applicants are also advised to send scanned copy of the application and proof of fee payment by e-mail.

**Address:** Dr. A. Seshagiri Rao, Coordinator, CEP- PAC  
Dr. G. Uday Bhaskar Babu, Coordinator, CEP – PAC  
Department of Chemical Engineering  
NIT, WARANGAL – 506 004, Telangana State  
E-mail: [seshagiri@nitw.ac.in](mailto:seshagiri@nitw.ac.in), [udaybhaskar@nitw.ac.in](mailto:udaybhaskar@nitw.ac.in);  
Phone No.: 8332969407; 8332969404  
[www.nitw.ac.in](http://www.nitw.ac.in)

**Applications without the payment of fee will not be considered.** The number of participants is limited to 20. The selected participants will be informed by e-mail.

## 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
09/07/2018	Registration & Inauguration	Lecture - 1		Lecture - 2	Lecture - 3		Lecture - 4		Lecture - 5
10/07/2018	Lecture - 6	Lecture - 7		Lecture - 8	Lecture - 9		MHS-1		MHS-2
11/07/2018	Lecture - 10	Lecture - 11		Lecture - 12	Lecture - 13		MHS-3		MHS-4
12/07/2018	Lecture - 14	Lecture - 15		ES-1	ES-2		ES-3		ES-4
13/07/2018	Lecture - 16	Lecture - 17	MHS-5	MHS-6	MHS-7	Valedictory			

MHS - MATLAB Hands-on Session

ES - Experimental Session

### Application Form

#### CONTINUING EDUCATION PROGRAM ON PROCESS AUTOMATION and CONTROL (July 9 – 13, 2018)

Department of Chemical Engineering, NIT WARANGAL – 506 004

1. Name and Designation:
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. Registration Fee Particulars:

Amount in Rs.:

Transaction Ref. No.:

Payment Date:

Place:

Date:

Signature of the applicant

Signature of the Head of the Department/Institute/Lab with seal