

**TEQIP-III Sponsored  
Short Term Course  
on  
Optimization and Control  
Design Techniques  
Innovations and Challenges**

**(OCDT-2018)  
January 10-14, 2019**



**Organized By**

**Department of Instrumentation and  
Control Engineering,**

**Dr. B. R. Ambedkar National Institute of  
Technology, Jalandhar, Punjab**

*in collaboration with Mentee Institute*

**Department of Electrical Engineering  
Government Women Engineering  
College, Ajmer, Rajasthan**



**About NIT Jalandhar**

Dr. B. R. Ambedkar National Institute of Technology (NIT), Jalandhar was established in the year 1987 as Regional Engineering College and was given the status of National Institute of Technology by the Government of India on October 17, 2002 under the aegis of Ministry of Human Resource Development, New Delhi. As an Institute of National Importance, it imparts high quality technical education in Engineering, Technology and Science to produce competent technical manpower for the country. The institute offers Bachelor of Technology (B.Tech.) programme in nine disciplines of Engineering and Technology along with the research programmes leading to Master of Technology (M.Tech.) and Doctor of Philosophy (Ph.D). As per the survey conducted by NIRF, DQ-CMR best technical school survey and India Today-MDRA Best Colleges Ranking in the year 2018, the institute was ranked 74<sup>th</sup>, 18<sup>th</sup> and 22<sup>nd</sup> respectively, amongst all engineering institutions, including IITs in the country.

**About Department of Instrumentation and  
Control Engineering**

The Department of Instrumentation and Control Engineering commenced its Bachelor of Technology (B. Tech.) degree programme in 1990, M Tech (Full Time) Degree Programme in Control & Instrumentation Engineering w.e.f. July, 2006 and M Tech (Part-Time) Programme w.e.f. July, 2010. The Ph.D. Programme has also been offered since 2005 in various disciplines of Instrumentation and Control Engineering.

The Department aims at providing organizations with engineers who are a best fit for the organization's needs. The department always strive to build such skills among the students in a systematic manner. Research in the department is at the leading-edge of technological innovations and encompasses all major areas of Instrumentation and

Control Engineering. The department has unique research facilities that enable leading-edge research in many areas such as Robotics and Automation, Process Control, Biomedical Instrumentation, Sensors and Wireless Networking and Intelligent Control Systems. These facilities provide an excellent opportunity for graduate students and research scholars to be trained and gain valuable experience. The Department is consolidating its efforts to promote industrial research and consultancy in relevant areas.

**About Jalandhar City**

Jalandhar is the oldest inhabited major city in the Indian state of Punjab. In recent times the city has undergone rapid urbanization and has developed into a highly industrialized centre of commerce. Jalandhar has been shortlisted for the second phase of the "Smart City" initiative of the Indian Government. Jalandhar is alongside the Grand Trunk Road and is a well-connected rail and road junction. Jalandhar is 144 km northwest of Chandigarh. Jalandhar city is approximately 390 Km from New Delhi, 70 Km from Amritsar and 28 Km from Adampur Airport Jalandhar. Various attractions in Jalandhar are: Pushpa Gujral Science City, Fun City, Shaheed-E-Azam Sardar Bhagat Museum, Company Bagh, Niku Park, Model Town, Wonder Land, Adarsh Nagar Park, Vasal Tower, Curo Highstreet, Jung-E-Azadi Museum, etc.

**Objectives of the Course**

This course makes familiar with the software and hardware flexibility, automation of tasks, and role of optimization in control design strategies. The main objective of this course is to enhance the knowledge of the participants in the modern trends in optimization and control design techniques in various process and automation industries. The aim of proposed course is to introduce fundamentals and recent techniques of optimization and control system design including modeling, simulation and

analysis of control system design, robust controller design, Model order reduction techniques etc.

#### Course Contents:

- Introduction to Modeling and Simulation
- Application of Optimization in Control and Automation Engineering
- System Identification using Soft Computing
- Advances in Control Design Techniques
- Non-Linear and Robust Control Problems
- Model Order Reduction Techniques
- Application of Process Engineering in Pulp and Paper Industry- A Case Study
- Introduction to PLC, DCS and SCADA
- Robotics and It's Application in Industrial Automation
- Layout and Challenges in Process Industries

#### General Information

• The course is open to Industry professionals, Faculty, research scholars and students from recognized Engineering colleges.

• There is **no registration fee** and only limited seats (50) are available in this course. Merit and availability of funds will be taken into consideration while selecting candidates. The application on the enclosed form duly signed by the sponsoring authority, should reach to **ocdt2018@nitj.ac.in** latest by **31.12.2018**. The candidate will be informed of his selection in advance. In case, sponsorship is likely to take time, one can send an advance photo copy, No TA/DA will be provided to attend this program.

• Accommodation can also be arranged on request at 'Guest House of Mega Hostel' on sharing basis at @ Rs. 300/- per day per person twin sharing basis. Contact Person: Mr. Shiv Sagar  
Mobile no: +91-8279939052

#### Patron

**Prof. (Dr.) Lalit Kumar Awasthi**

Director,

Dr. B. R. Ambedkar National Institute of Technology Jalandhar-144001, Punjab

#### Convener

**Prof. (Dr.) Kuldeep Singh Nagla**

Head-Department of Instrumentation and Control Engineering,

Dr. B. R. Ambedkar National Institute of Technology Jalandhar-144001, Punjab

#### Course Coordinators:

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Application Form for  
Short Term Course (STC)  
on

**“Optimization and Control Design  
Techniques Innovations and Challenges”  
Duration: 10.01.2019 to 14.01.2019**

1. Name: Ms./Mr./Dr.  
(In Block Letters)

2. Designation:

3. Age (Years):

4a. Complete Residential Address:

Email:

Mobile:

4b. Complete Official Mailing Address:

Email:

Mobile:

5. Academic Qualification (Degree onwards):

6. Specialization:

7. Teaching Experience in Years (if):

Date:

Signature of applicant

#### Important Note:

1. This application form should reach the office latest by **31.12.2018**
2. Application without Sponsorship Certificate will not be entertained.
3. Please note that 100% attendance is compulsory in the course.

#### SPONSORSHIP CERTIFICATE

The applicant is hereby sponsored and will be permitted to attend the faculty development program, if selected.

**Date:**

**Signature with Seal**

Sponsoring Authority

(Principal / Director/ HoD)