

4th Online Short Term Course
on
Optimization and Control Design Techniques Innovations and Challenges

(OCDT-2024)
Jan 25-29, 2024



Organized By

Department of Instrumentation and Control Engineering,

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

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About NIT Jalandhar

Dr B R Ambedkar National Institute of Technology was established in the year 1987 as Regional Engineering College and was given the status of National Institute of Technology (Deemed University) by the Government of India on October 17, 2002 under the aegis of Ministry of Human Resource Development, New Delhi. Now the Ministry of Human Resource Development, Government of India has declared the Institute as "Institute of National Importance" under the act of Parliament-2007. A large number of reputed Industrial houses in the country visit the Institution and select the final year students as Engineers/ Management Trainees. As one of the National Institutes of Technology (NIT), the Institute has the responsibility of providing high quality education in Engineering, Technology and Sciences to produce competent technical and scientific manpower for the country. The Institute offers B.Tech, M.Tech., MSc, MBA and PhD programmes in the several disciplines of Engineering, Technology and Sciences. We are pleased to inform that the institute ranked 46th in Engineering Ranking and 72nd in Overall Ranking- NIRF. NIT Jalandhar (NITJ) placed in ranking band of 651-700 amongst Asian Universities, 204th position amongst Southern Asia Universities and 6th position amongst all ranked NITs in QS Asia University Rankings 2024. NITJ has been ranked in the THE (Times Higher Education) in the ranking band of 1001-1200.

For more info kindly visit <http://www.nitj.ac.in>

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.

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

Course Contents (Tentative)

- Introduction to Design and Modern Control System
- Application of Optimization in Control and Automation Engineering
- System Modelling and Identification using Soft Computing
- Advances in Control Design Techniques
- Model Order Reduction Techniques
- Introduction to PLC, DCS and SCADA
- Robotics and It's Application in Industrial Automation
- Sliding Mode Controller
- Event Triggered Control
- Non-Linear and Robust Control Problems

Note:

- Prior registration is mandatory to attend STC
- E-certificate will be issued to the participants on successful participation in the course
- Webinar meeting link and other instructions will be shared via e-mail to all registered participants
- The tentative timing for the session per day will be **10:30am-12:30pm and 3pm-5pm.**

Registration Fee:

Faculty/Research Scholar/Students from NITJ: INR 600

Faculty/ Research Scholar /Students from Outside NITJ:

INR 600+18% GST

Registration Link

https://www.nitj.ac.in/events_registration/stc_ocdt2023/login