

**One Week**  
**Short Term Course**  
**on**  
**“Recent Industrial trends in Control and Optimization**  
**(RICO-2024)”**  
**(Self-Sponsored)**  
**June 05-09, 2024**  
**(Virtual Mode)**



Organized by

Department of Instrumentation and Control Engineering

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

---

### **About NIT Jalandhar**

Dr B R Ambedkar National Institute of Technology 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 eleven disciplines of Engineering and Technology. This institute recently started the center of energy and environment in collaboration with collaboration from Sardar Swaran Singh National Institute of Bio-Energy, Kapurthala and Centre of Artificial Intelligence. NITJ also offer with the Research Programmes leading to Master of Technology (M.Tech.) and Doctor of Philosophy (Ph.D).

### **About Department of Instrumentation and Control Engineering**

The Department of Instrumentation and Control Engineering commenced its Bachelor of Technology (B. Tech.) degree programme and M Tech (Full Time and Part Time) Degree Programme. The Ph.D. Programme has also been offered since 2005 in various specialisations. 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 & 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.

### **About the Short Term Course**

Recently, advanced control design (data-driven control and optimization based control) is in demand due to highly non-linear and complex nature of systems. The key objective of the course is to familiar the participants regarding academia and industry involvement in current R&D activities. Further, it is to introduce the fundamental on machine learning and its application in control domain as well as active disturbance rejection control (ADRC), internal model control (IMC) and modern control approaches (Event-triggered control (ETC) and sliding mode control (SMC)). In addition, the applications of the above control design in various engineering domains (Power System, Renewable Energy Systems, Process Plants, Biomedical Control, Autonomous Systems, Robotics, and Electric Vehicles).

### **Contents of the Short Term Course**

Advanced Control Theory	Learning based Control Design
ADRC Design	Machine Learning
Robust and Resilient Control	Model Predictive Control
Data-driven Control	Event-triggered Control
AI in Control Design	Autonomous Systems
Cyber-physical Control Systems	Nature-Inspired Optimization and their Applications

**Chief Patron**  
**Prof. B. K. Kanaujia**  
Chairperson, BOG, and Director,  
NIT Jalandhar

**Patron**  
**Prof. Ajay Bansal**  
Registrar, NIT Jalandhar

**Co-Patron**  
**Prof. J. N. Chakraborty**  
Dean, R&C, NIT Jalandhar

**General Chair**  
**Prof. Narinder Singh**  
Head, Department of ICE, NITJ  
**Organizing Chair**  
**Dr. Om Prakash Verma**  
Assistant Professor

**Convener(s)**  
**Dr. Anil Kumar Yadav**  
Assistant Professor  
**Dr. Mahendra Kumar**  
Assistant Professor

**Coordinator(s)**  
**Dr. Richa Sharma**  
Assistant Professor  
**Dr. Deblina Biswas**  
Assistant Professor

### **Resource Person**

<b>Prof. Vivek Srivastava</b>	NIT Uttarakhand
<b>Prof. Prerna Gaur</b>	NSUT, New Delhi
<b>Prof. S. K. Jha</b>	NSUT, New Delhi
<b>Dr. Sambaraju Chiluveru</b>	IIT Dharwad
<b>Dr. Nalin Kumar Sharma</b>	IIT Jammu
<b>Dr. Amlan Basu</b>	University of Strathclyde, UK
<b>Dr. Satnesh Singh</b>	MNNIT Prayagraj
<b>Dr. Anurag Priyadarshi</b>	Eaton Corporation
<b>Dr. Jose Thankachan</b>	NIT Trichy
<b>Dr. Surendra Hans</b>	MNIT Jaipur
<b>Dr. Anirudh Nath</b>	IEST Shibpur
<b>Dr. Manohar Singh</b>	PEC Chandigarh
<b>Dr. Jagannath Samanthary</b>	Mathworks
<b>Dr. Pushkar</b>	NIT Trichy

### **INSTRUCTIONS FOR REGISTRATION**

- Registration Fee: Rs. 200/- + 18% (GST) for all UG, PG, PhD, faculty and industry persons.
- Participants are required to register himself/herself first, as mentioned on the registration link.
- Link of the registration and payment.  
[https://v1.nitj.ac.in/events\\_registration/stc\\_rico2024/login](https://v1.nitj.ac.in/events_registration/stc_rico2024/login)
- Shortlisted students will get an email from the organising team.
- Single registration is required to attend all lectures **on or before 30.05.2024**.
- Prior registration is mandatory to attend STC.
- E-certificates will be issued to registered participants upon successful participation in the course.
- STC meeting link and other instructions will be shared with all registered participants via e-mail/WhatsApp group.

*For any query regarding STC feel free to contact us at:*

Email: [yadavak@nitj.ac.in](mailto:yadavak@nitj.ac.in), [mahendrak@nitj.ac.in](mailto:mahendrak@nitj.ac.in), [richas@nitj.ac.in](mailto:richas@nitj.ac.in),  
[biswasd@nitj.ac.in](mailto:biswasd@nitj.ac.in)

Mobile No.: +91-9810747506; +91-7014798426

### **Link/QR Code for the Online Registration and Payment**

