

ACIA-2025

Short-Term Training Programme (STTP)

On

Applied Control & Industrial Automation



Organized by,

**Department of Electrical Engineering (EE),
Indian Institute of Engineering Science &
Technology (IIST), Shibpur, Howrah, WB**

26th-30th Aug, 2025

- **About IEST, Shibpur:** IEST, Shibpur (Erstwhile "Bengal Engineering College") is the first college to become Indian Institute of Engineering Science and Technology (IEST) in India in 2014. The Institute has a rich history. It is empowering the nation since 1856. Considering the year of establishment, it is the 3rd engineering college in India but considering the year of graduation it is the 2nd oldest engineering college in India. It has 16 departments and 8 schools. It has over 250 faculty members and a student strength of over 4000.
- **About Electrical Engineering Department:** The Department of Electrical Engineering at IEST Shibpur is one of the oldest and among the best in the country providing dynamic and scholarly environments wherein students learn independently and in collaboration with others to develop a disciplined yet innovative approach to their careers as professional engineers, researchers or teachers. The department offers an 8-semester undergraduate B.Tech course, a 10-semester dual degree (B. Tech. and M. Tech.) course and 4-semester postgraduate M.Tech. degree course in Electrical Engineering. The department also offers research programs leading to a Ph.D. degree. The department started its journey way back in the year 1912-13 and produced its first batch of graduate electrical engineers in 1936 in the erstwhile Bengal Engineering College, Shibpur. Post-independence, when the nascent nation had just started building the power plants that have been instrumental in realizing the dreams of modern India, many of the visionaries, planners and implementers were the students of this department. The postgraduate degree was first offered in 1955 and the first Ph.D. Scholar from the department came out in 1959. The faculty members of the department are vibrant combinations of experience and innovation. Other than excellence in teaching, they have also proven their worth by publishing papers in peer-reviewed journals and prestigious international conferences, authoring text and reference books, producing patents and successfully implementing state-of-the-art R & D projects. In the last few years, several research projects with a funding of few crores have been executed (funding from Central Government agencies) However, more than 10 research projects have also been funded by non-Government agencies. At present, about 15 different funded projects are being executed in the department.

➤ Short Term Training Programme (STTP) Theme

Applied control is the practical application and implementation of classical control theory principles to real-world systems, mainly focusing on designing and implementing control systems to precisely regulate and optimize the behaviour of machines, processes, or other dynamic systems across various engineering and scientific disciplines, by utilizing mathematical models and feedback mechanisms to achieve desired outcomes in specific situations. Industrial automation on the contrary as a field deals primarily with automation of industrial processes and machinery. To achieve that, a combination of classical control laws with information technologies, specialized equipment (logic controllers, IoT modules of various kinds, etc.) and robots is used to enhance manufacturing, quality control, and material handling processes. It is safe to say that today control and automation is everywhere across industries and supply chains. It is hard to imagine a factory or a production line of any kind that doesn't use any industrial automation and control technologies and tools to reach ultimate accuracy. This short term course will provide a platform to disseminate theories, technologies and practical insights in this area of control and automation among the students, academicians and industry professionals from different sectors of Electrical Engineering.

➤ Relevance in National Context

Applied control in the context of society at large refers to the practical implementation of control laws on real-time physical systems through feedback mechanisms to regulate its output behaviour while maintaining the order in achieving desired outcomes within the different power generating utilities often through a combination of theoretical rules, social norms, and informal influences, essentially acting as a way to manage the dynamics to prevent chaos or deviance. With this in the back drop Industrial automation also plays a crucial role in nation building by significantly boosting economic growth through increased productivity, cost reduction, improved quality control, and enabling the development of high-tech industries, ultimately contributing to a more competitive global standing for a developed nation.

➤ How it will Promote Science & Technology?

Real-Time Experiments and Implementation of Applied Control with cutting edge technologies of Industrial Automation will elevate scientific research and production through streamlined experiments, optimized processes to achieve unparalleled accuracy with robotic systems, machine vision, and intelligent data analysis - unlocking new frontiers in discovery while maximizing efficiency and minimizing human error. This Short term training programme (STTP) is an excellent opportunity for anyone looking to deepen their understanding of the upcoming technologies and their applications. Whether you're a seasoned professional or just starting out, you'll find valuable insights and practical skills to take your expertise to the next level.

➤ Organizing Committee

Chief Patron: Prof. V.M.S.R. Murthy, Director, IEST, Shibpur

Patrons: Registrar, Dean (R&C), Dean (Academic), IEST, Shibpur

Chairperson: Head of the Department, Electrical Engineering (EE), IEST, Shibpur, Howrah, WB.

Co-ordinators: **Dr.Reetam Mondal**, Assistant Professor, Department of Electrical Engineering (EE), IEST, Shibpur, Howrah, WB.

Dr.Roshni Maiti, Assistant Professor, Department of Electrical Engineering (EE), IEST, Shibpur, Howrah, WB.

Dr.S.A.Qasim, Assistant Professor, Department of Electrical Engineering (EE), IEST, Shibpur, Howrah, WB.

➤ Organizing Members

Prof.(Dr.)Ashoke Sutradhar, Prof.(Dr.) Anindita Sengupta, Prof.(Dr.) Aparajita Sengupta, Dr. Mousumi Mukherjee, Dr. Anirudh Nath, Dr. Pritam Paral, Department of Electrical Engineering (EE), IEST, Shibpur, Howrah, WB.

➤ Advisory Committee

All the faculty members of the Department of Electrical Engineering (EE), IEST, Shibpur, Howrah, WB.

➤ Eligible Participants

All UG & PG students, PhD scholars & researchers, academicians, industry personnel and other professionals related with academics/teaching can register and join the short-term program-me.

➤ Contact Persons (For Registration, Sponsorships & Free Advertisements)

• **Dr. Reetam Mondal**, Department of Electrical Engineering (EE), IEST, Shibpur, Howrah, WB,
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• **Dr.Roshni Maiti**, Department of Electrical Engineering (EE), IEST, Shibpur, Howrah, WB,
Email id: roshni.ee@faculty.iests.ac.in

• **Dr. S.A. Qasim**, Department of Electrical Engineering (EE), IEST, Shibpur, Howrah, WB,
Email id: qasim.ee@faculty.iests.ac.in

➤ Detailed STTP Programme Schedule with Different Technical Sessions

Day /Date	Name of the Speakers/Resource Persons	Topic/Title of the Talk	Time (1 st Half/Second Half)
Day 1 26.08.2025	Prof. V.M.S.R.Murthy, Director, IEST, Shibpur	Inaugural Session & Address	1 st Half (10:00 AM-11:00AM)
Day1/ 26.08.2025	Prof.(Dr.)Aparajita Sengupta, IEST, Shibpur	Control Systems - A journey (from classical to Modern to Nonlinear to learning based control) <i>[Keynote Address]</i>	1 st Half (11:00 AM-12:00Noon)
Day1/ 26.08.2025	Prof.(Dr.)Aparajita Sengupta, IEST, Shibpur	Design of H-infinity Controllers for physical systems - theory and simulation/implementation	1 st Half (12:00 Noon-1:30 PM)
Day 1/ 26.08.2025	Prof.(Dr.)Debangshu Dey, JU, Kolkata	Application of Advanced Signal Processing Tools for Industrial Automation	2 nd Half (2:30 PM-4:30PM)
Day 2/ 27.08.2025	Dr.Sambhunath Nandy, CSIR-CMERI, Durgapur	Underwater Robotics & Autonomous Systems	1 st Half (11:00 AM-1:00 PM)
Day 2/ 27.08.2025	Prof.(Dr.)Arun Ghosh, IIT Kharagpur	Reduced-Order Multivariable Control Design with Some Applications	2 nd Half (2:30 PM-4:30PM)
Day 3/ 28.08.2025	Prof.(Dr.)Jayati Dey, NIT Durgapur, WB	Control of Unmanned Aerial Vehicle (UAV)	1 st Half (11:00 AM-1:00 PM)
Day 3/ 28.08.2025	Prof.(Dr.)Subrata Chattopadhyay, NITTTR, Kolkata	PLC based Position Control System and its Application in Process Control	2 nd Half (2:30 PM-4:30PM)
Day 4/ 29.08.2025	Prof.(Dr.)Karabi Biswas, IIT Kharagpur	Fractional Order Systems	1 st Half (11:00 AM-1:00 PM)
Day 4/ 29.08.2025	Dr.Soumen Sen, CSIR-CMERI, Durgapur	Soft Robotics; actuation and sensing	2 nd Half (2:30 PM-4:30PM)
Day 5/ 30.08.2025	Mr.Indrajit Chakraborty, An Alumni & Engineer at Daimler Truck Innovation Center, India	Overview of Charging Systems in Electric Trucks	1 st Half (11:00 AM-1:00 PM)
Day 5/ 30.08.2025	Mr.Sushanta Goswami, Senior Manager, BEML Ltd . (Govt. Of India)	Remote Health Monitoring of Heavy Earth Moving Equipment & AI based Predictive Maintenance	2 nd Half (2:30 PM-4:30PM)

➤ Online Registration Fees with Details

Delegates	Indian Participants	Foreign Participants
UG,PG & PhD Students or Teaching Assistants	INR 500	150 USD
Faculty/Academicians/Techncial Staffs	INR 1000	200 USD
Industry Personnel	INR 1500	250 USD

The Registration Fees may be paid in favour of “**CONTINUING EDUCATION CENTRE - BESUS**”. The Registration Fee as mentioned above can be paid electronically (e-payment) through SWIFT/NEFT/UPI. **Quick Pay with the UPI ID: 9432104410m@pnb. You may also scan and pay to get registered through the following QR Code shown below:**



The details of Bank A/C are given below: A/C Name: **CONTINUING EDUCATION CENTRE BESUS**, A/C No: **1532010011963**, Bank: **PUNJAB NATIONAL BANK**, Branch: **BESUS BRANCH**, IFSC Code: **PUNB0153220** (Fifth Character is Zero), SWIFT CODE: **PUNBINBBXX**. **Complete the Google form after making all payments with the payment details for Registration with the link: <https://forms.gle/kr4n2jGLTDoyeBPE8>.(This is mandatory for all registered participants).**

➤ Sponsorships

Category	Amount (INR)	No. of Free Delegates
Platinum	20,000+(18% GST)	8
Gold	15,000+(18% GST)	6
Silver	10,000 +(18% GST)	4

These payments may be made through **Demand Draft/NEFT/RTGS** in favour of the account details mentioned above. All the sponsors are entitled to free advertisements.