



# Trends in Robotics and Automation

4th – 15th Jul 2022

<http://www.mnit.ac.in/eict>



**Chairman, Advisory Board, EICT Academy & Director MNIT Jaipur**  
Prof. N. P. Padhy

**Honorary Academic Chair, EICT Academy**  
Prof. V. Sinha

**Chief Investigator, EICT Academy**  
Prof. Vineet Sahula, ECE

**Co- Chief Investigators, EICT Academy**  
Prof. Lava Bhargava, ECE  
Prof. Pilli Emmanuel Shubhakar  
Dr. C. Periasamy, ECE  
Dr. S. J. Nanda, ECE  
Head, ECE (Prof. Lava Bhargava)  
Head, CSE (Dr. Dinesh Gopalani)

## Preamble (Electronics & ICT Academy)

Government of India had announced a National Policy on Skill Development, which has set a target of skilling 500 million people by 2022 in the domain of Electronics & IT. Under the plan scheme of “Digital India Manpower Development”. MeitY has set up seven (07) Electronics and ICT Academies as a unit in 03 IITs, 03 NITs and 01 IIIT with an objective of faculty/mentor development/up gradation in the areas related to Electronics & ICT leading ultimately to improved employability of graduates/diploma holders. MNIT Jaipur has set up such an academy for providing specialized training to faculty and industry persons in the states/UTs of Rajasthan, Gujarat, Daman & Diu, Dadra Nagar Haveli.

### (A) Issues-

1. IT Hardware and Electronics Manufacturing industry- availability of properly trained, skilled and qualified manpower
2. Number of quality PhDs generated in IT / Computer Science is very low
3. In E & ICT domain- there is a very high degree of obsolescence of existing technologies and faster emergence of newer technologies

### (B) Approach-

1. A focused faculty training/updation programme for IT, Electronics, and related sectors
2. Spreading up and continuous updation regarding Emerging Technology
3. Training and consultancy services for Industry
4. Design, Develop and Deliver specialized modules for specific research areas and Industry
5. Providing advice and support for technical incubation and entrepreneurial activities

The course has been designed to impart programming knowledge and skills required for being an effective researcher/teacher within domain of **Robotics & Automation**. The Course is open to faculty, persons from industry, doctoral and other students. This workshop will have specific industry-led sessions which includes rigorous hand- on (practice) sessions on Robotics, sensors, actuators, biological signals, soft robots, and wearable robotics, and UAV etc. The programme will give opportunities to connect with expert for research-orientation.

### Experts/Speakers-

- 1) Prof. SK Saha, IIT Delhi;
- 2) Prof. Ashish Dutta, IIT Kanpur;
- 3) Prof. PM Pathak IIT Roorkee;
- 4) Dr Ekta Singla, IIT Ropar;
- 5) Prof. VK Gupta, IIITDM Jabalpur;
- 6) Dr Ravi Joshi, TechMagic, Japan

### Course Contents:

- Intro and text classification
- Course Contents: Introduction to Robotics, Mechanics of Manipulator and wheeled mobile robots,
- Introduction to sensors and actuators, Human Centered Robots, Introduction to Human Centered
- Robotics, basic concepts and computational models of 3D sensing, robot learning and cognition to humans and environment events, Wearable robotics, Introduction to wearable robotics, Classifications of wearable robotics, Bio-inspiration and biomechanics, Human biomechanics,
- Electroencephalography (EEG), EMG, Soft robotics, Introduction to soft robotics, design principles of soft robots, soft actuators, soft sensors, soft robot kinematics, control of soft robot, Unmanned perceive humans, understand human behaviour, and decision making and planning in response to
- Aerial vehicles, Introduction, Modeling and Dynamics Formulation, Frame Rotations and
- Representations, Dynamics of a Multirotor Micro Aerial Vehicle, UAV Control, Lab sessions for
- concept and mechanism demonstration and programming for robotics.

### Joint Principal Coordinator:

Dr. Arka P. Mazumdar	<a href="mailto:apmazumdar.cse@mnit.ac.in">apmazumdar.cse@mnit.ac.in</a>	954 965 8129 (M)
----------------------	--	------------------

### Registration:

Registration is open to graduate, postgraduate and doctoral students, faculty and industry persons. Participants will be admitted on first-come first-served basis.

Details of the programme- [http://www.mnit.ac.in/eict/acad\\_training\\_prg.php](http://www.mnit.ac.in/eict/acad_training_prg.php)

Register online at portal- <http://online.mnit.ac.in/eict>

### Registration Fee:

**Academic (student/faculty) India/SAARC:** ₹ 500/-  
**Industry/Others from India/SAARC:** ₹ 1000/-  
**Other countries (student/faculty/Industry persons):** \$ 60 /£ 50

(A) Fee once paid will not be refunded back; it may only be adjusted in future courses upon prior request.

(B) The fee covers online participation in the programme, comprehensive tutorials, practice notes & certification charges.

(C) The organizers should receive the fee through online payment gateway provided at the registration portal provided above.

→ For any other query, email us at [academy\[AT\]mnit.ac.in](mailto:academy[AT]mnit.ac.in)