Directorate General of Training

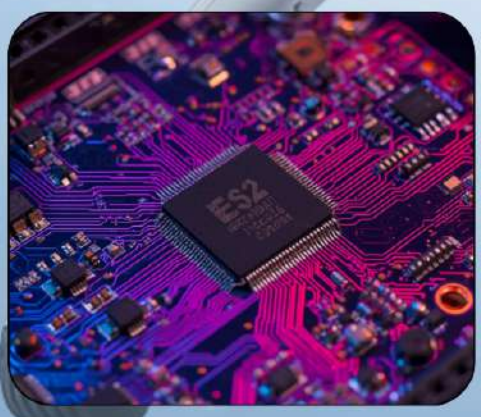
भारत अंतरिक्ष अकादमी

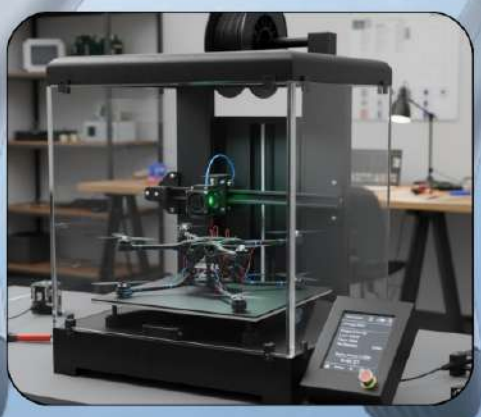
INDIA SPACE ACADEMY

INDIA SPACE ACADEMY

DEPARTMENT OF SPACE EDUCATION

INDIA SPACE WEEK





Directorate General of Training

Integrated Training Program on Rapid Prototyping, Embedded Systems and Automation

THE INTERNET OF THINGS

India Space Academy

Integrated Training Program on Rapid Prototyping, Embedded Systems and Automation

ORGANIZED BY

INDIA SPACE ACADEMY

IN COLLABORATION WITH

NSTI and **WEGYANIK**

INDIA SPACE ACADEMY

India Space Academy is an academic institution under the Department of Space Education of India Space Week. India Space Week is an autonomous body supported by the central and state governments. The role of India Space Week is to promote space education and employment among the students, teachers, and research scholars of schools, colleges, universities, and institutions. The academy develops workshops that spread awareness about the current requirements of the space industry. Additionally, it develops various programs to equip students with the necessary information, skills, practical experience, research exposure, and training to make them future-ready.

National Skill Training Institute

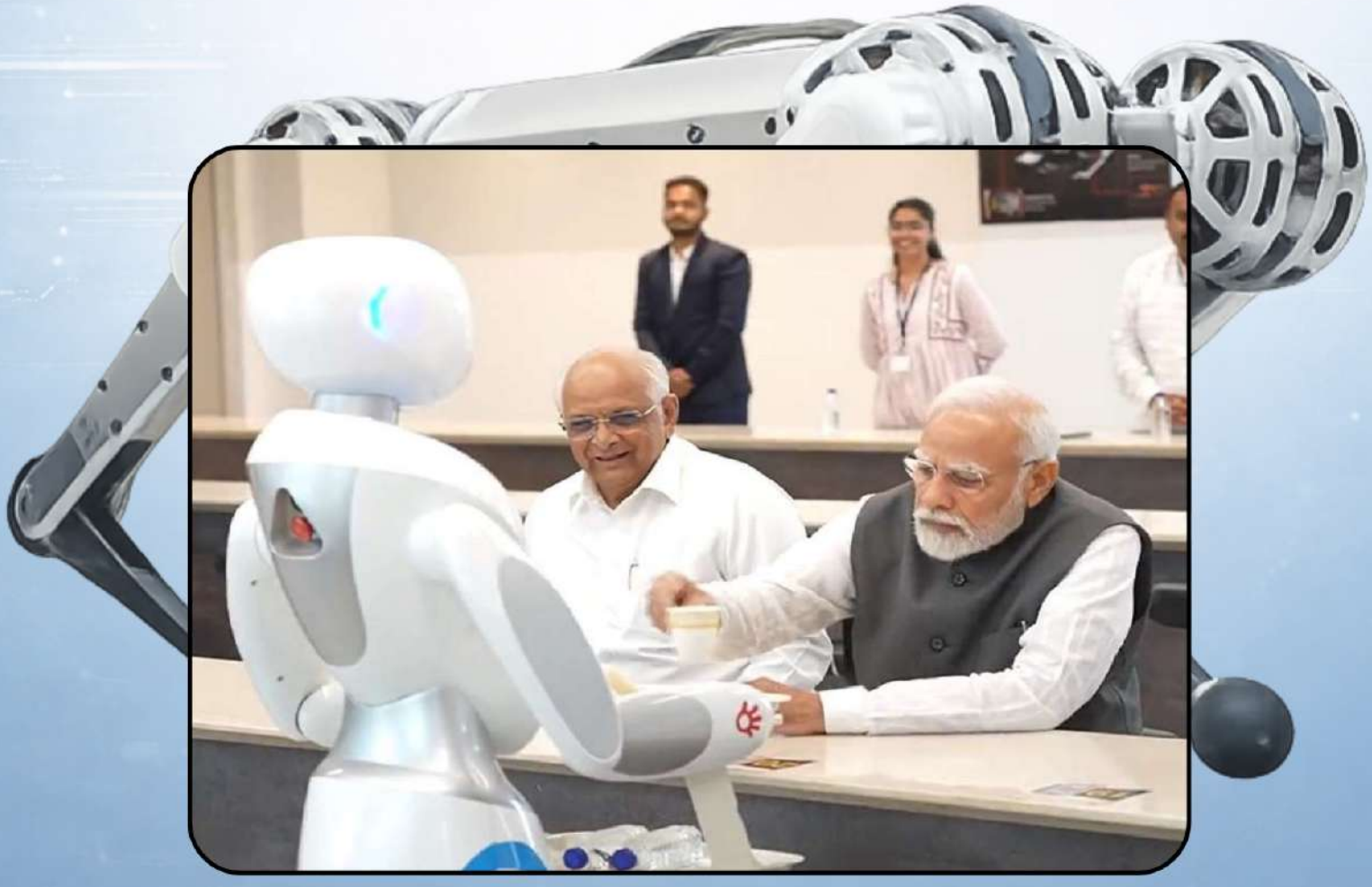
The National Skill Training Institute (NSTI) is a premier vocational training organisation functioning under the Directorate General of Training (DGT), within the Ministry of Skill Development and Entrepreneurship. Established to upgrade the technical skills of the country's workforce, these institutes primarily focus on the Craft Instructor Training Scheme (CITS) to prepare qualified instructors for Industrial Training Institutes (ITIs), alongside offering Craftsmen Training Schemes (CTS) for youth. With over 30 locations nationwide—including specialised NSTI (Women) centres to promote gender-specific economic empowerment—the institutes provide advanced training in traditional engineering trades as well as "New Age" sectors like Cloud Computing, AI, and Drone Technology

WE ज्ञानिक

Wegyanik is known for its strong education ecosystem in artificial intelligence, robotics, and space technology. It provides structured online and offline programs, hands-on educational kits, and supports schools in setting up cost-effective AI, robotics, and space labs. Wegyanik actively involves students in research, innovation, and real engineering problem-solving, encouraging them to move beyond textbooks to practical exploration. Through workshops, projects, competitions, and mentorship, students gain exposure to design, prototyping, testing, and experimentation. With a clear vision that money should not limit learning, Wegyanik empowers students to build skills, confidence, and an innovation-driven mindset from an early stage.

OBJECTIVE

The objective of the Integrated Training Program on Rapid Prototyping, Embedded Systems and Automation is to provide participants with hands-on skills to transform ideas into functional prototypes, develop embedded system solutions, and implement basic automation. The program aims to strengthen practical understanding, problem-solving ability, and industry readiness through real-world applications and experiential learning.



PROGRAM HIGHLIGHTS

- All participants will receive a hands-on kit before the program begins. The kit will contain sensors, microcontrollers, and actuators, enabling practical learning and the development of 40+ projects.

- Participants will get an LMS portal where they will be getting the acess to all the material and resources like presentations, recorded lectures, quizzes, projects, reference books, and the like. The link to join the class will also be available there only. Also, they will get a link to join the WhatsApp announcement community, where all the official information will be shared.

- The program lasts one month, and the sessions will be held live via Zoom. The program will start with the basics of IoT and progress toward real-world applications such as home automation, agritech, and smart systems. Participants will then learn the fundamentals of embedded systems, including microcontroller interfacing and programming. The rapid prototyping module will cover CAD-based modelling and 3D printing to convert ideas into physical prototypes.

- The program concludes with each participant developing a functional project using the provided kit and submitting a project report, ensuring strong practical and industry-oriented learning outcomes.

PROGRAM HIGHLIGHTS

Things to Learn

- Introduction to IoT and embedded systems fundamentals.
- Understanding sensors, actuators, and microcontrollers through hands-on kits.
- Building real-world applications in home automation and agritech.
- Basics of rapid prototyping using CAD modeling.
- 3D printing of designed components and prototypes.
- System integration and development of a complete working project.
- Project documentation and report submission for evaluation.

Software Demonstration & Hands-on Session

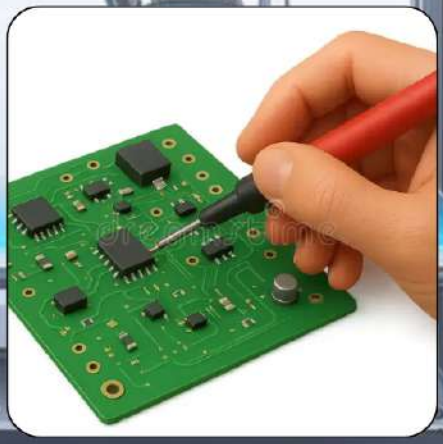
A fully hands-on session will be conducted using the provided kits, CAD software, and PCB design software. Participants will follow live demonstrations on sensor interfacing, microcontroller programming, automation basics, schematic design, PCB layout, and rapid prototyping. The session is designed to enable participants to independently design, prototype, and build complete projects after the workshop for academic and practical applications.

Hands-on Activities

- Live hardware programming and embedded coding
- Sensor data acquisition and actuator control
- CAD modelling and rapid prototyping
- Schematic and PCB design using PCB design software
- System testing, debugging, and project deployment

LEARNING OUTCOMES

- Independently design 3D models for their own ideas and convert them into physical prototypes using 3D printing
- Create and design PCBs, understanding the complete process from schematic to fabrication
- Build IoT-based projects and smart solutions by integrating hardware and software
- Develop the ability to think creatively and work on out-of-the-box ideas
- Transform innovative concepts into functional, real-world products and systems



BENEFITS OF PARTICIPATION

- Hands-on kit with more than 25 components for practical learning
- Student license of industry-oriented CAD software (Fusion 360)
- In-depth learning of embedded systems and PCB designing software
- Strong practical knowledge of IoT concepts and architectures
- Ability to design and implement complex, end-to-end IoT projects

Joining Kit with 25+ IoT Components

ABOUT WEGYANIK KIT

The Wegyanik Kit is a hands-on learning kit that includes sensors, microcontrollers, actuators, and essential components for learning embedded systems and IoT. It enables students to build 40+ practical projects, ranging from basic to advanced applications such as home automation and agritech, promoting innovation and real-world skill development.

WEGYANIK ROBOTICS KIT COMPONENTS

- ESP32
- ESP32 CABLE
- BREADBOARD
- JUMPERS MALE TO FEMALE
- JUMPERS MALE TO MALE
- RESISTOR 220 OHM
- HC04 ULTRASONIC
- IR SENSOR
- PUSH BUTTONS
- SOIL MOISTURE
- POTENTIOMETER
- DHT11
- TOUCH SENSOR
- BUZZER
- 9V MOTOR PUMP
- OLED 0.96IN
- RELAY MODULE
- RGB LED
- SG-90 SERVO MOTOR
- RED LED
- GREEN LED
- BLUE LED
- MOSFET
- Level Converter

PROGRAM DETAILS

- **Mode:** Online (Zoom Workplace)
- **Language:** English
- **Start Date of Registration:** 07 March 2026
- **Last Date of Registration:** 07 April 2026
- **Program Start Date:** 20 April 2026
- **Session Length:** 90 Minutes (Including QnA)
- **Timing:** 07:00 PM to 8:30 PM
- **Eligibility:** Undergraduate & Postgraduate students, Faculty members, research scholars, Enthusiasts.
- **Training Fee (Non-Refundable):** ₹2500/- (Including Kit)
- **Certificate:** Upon successful completion of the course and project submission, students will receive a verified professional certificate from India Space Academy.
- Registration Link: https://isa.training.indiaspaceweek.org/

KIT DELIVERY INSTRUCTIONS

- **All participants will receive the kits before the start of the program.**
- **As the Kit get dispached for delivery, the tracking id of the kit will be shared with the participant on the registered email id.**

SYSTEM REQUIREMENTS

Technical Requirements for Live Online Sessions

To ensure a seamless and high-quality learning experience, all live sessions for this programme are conducted via the Zoom video conferencing platform. While Zoom is accessible via mobile devices and tablets, we strongly recommend using a desktop or laptop computer to fully engage with the interactive features of the course.

System Specifications

Participants are advised to ensure their hardware and software meet the following minimum standards:

Operating System: Windows 8 or higher / macOS 10.7 or higher.

Processor: Dual Core 2GHz or superior (Intel i3/i5/i7 or AMD equivalent).

Memory: Minimum 4 GB RAM.

Web Browser: Current versions of Microsoft Edge (12+), Google Chrome (30+), Mozilla Firefox (27+), or Internet Explorer (11+).

Multimedia & Connectivity

Audio: Functional speakers and microphone (integrated, USB, or Bluetooth-enabled).

Video: Built-in or external USB webcam. (Optional)

Internet: A stable connection with a minimum symmetrical bandwidth of 3.0 Mbps (upload and download).

Software Installation

Before the commencement of the first session, please ensure the Zoom desktop client is installed and updated on your primary device.

CONTACT INFORMATION

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