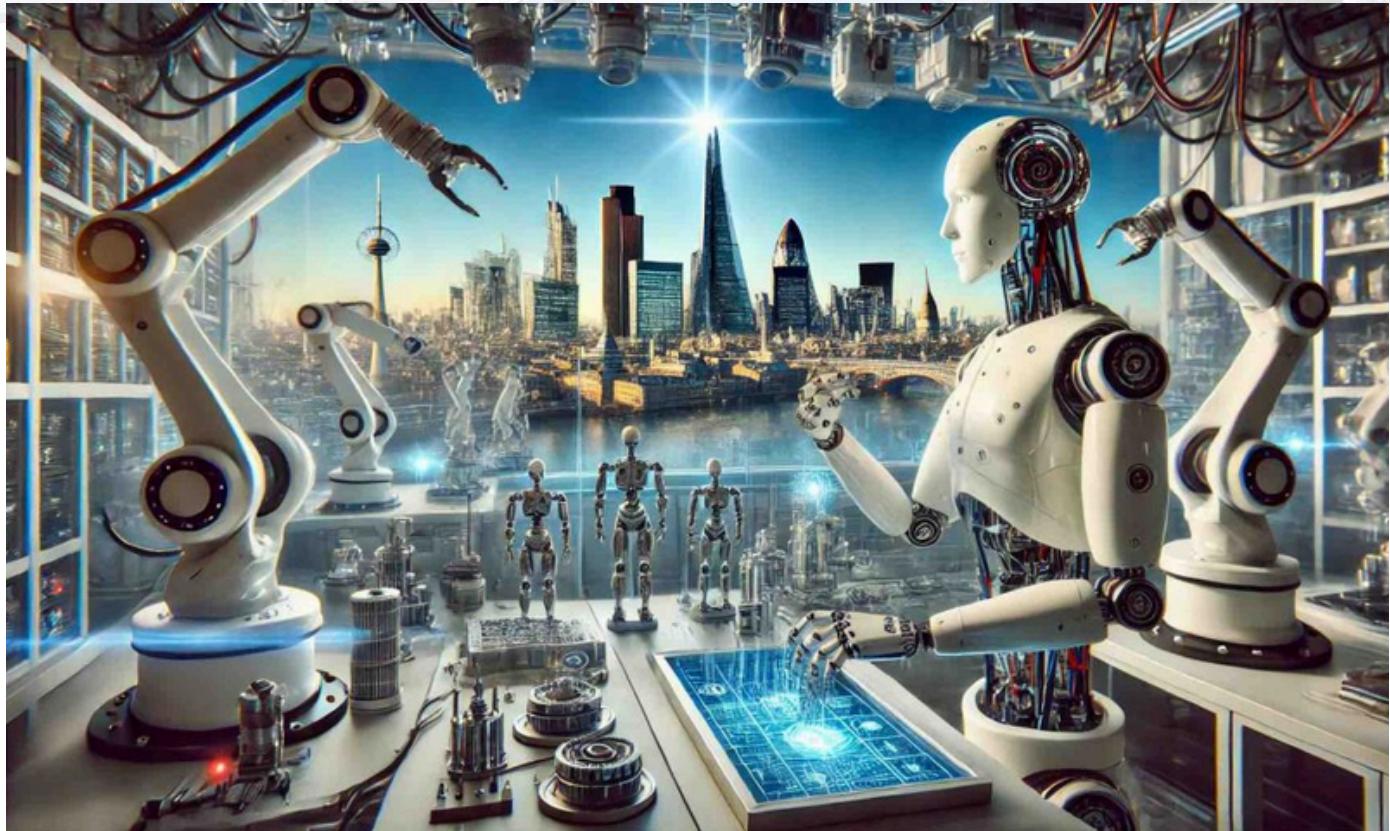


भारतीय प्रौद्योगिकी संस्थान, मंडी



PRAYAS 4.0 - 1 month residential programme

June - July 2026 | 1 Months | Offline - In Campus

A complete 1 month residential program
at IIT Mandi

Robotics , AI & IoT

Program Summary

Prayas 4.0, a certificate course on Robotics, AI & IoT

1 month residential program at IIT Mandi

| | | |
|---|----------------------|--|
| • Institute Name | • Programme Duration | • Faculty |
| IIT, Mandi | 1 Month | IIT, Mandi |
| • Learning Mode | • Daily Effort | • Certificate |
| Offline (Residential at campus) sessions by IIT Mandi Faculty | 5-6 Hours Everyday | Upon completion of the course, participants would be given certificate by IIT, Mandi |

Frequently Asked Questions

What will be the mode of learning?

There will be 5-6 hours daily classes conducted by the IIT Mandi faculty. The programme is spread for a duration of 1 month. The learning experience will include rich discussions with eminent faculty and seasoned peers, case-based learning, assignments and quizzes and guided capstone project work for which the participants will have to put in an additional effort.

Who evaluates the assignments, projects and simulations for this programme?

The examination and evaluation of graded submissions, project work and simulations, if any, is at the discretion of the IIT Mandi's faculty.

Who grades/gives inputs on the assignments and projects?

Examination/Evaluation shall be conducted by the Institute.

What type of certificate will I receive?

Upon successful completion of the programme, participants will be awarded a certificate of completion and will be eligible to receive IIT Mandi's certificate.

Will Bsates/Institute help with placement services?

This programme is designed with some of the best faculty and to cover relevant topics in a manner that creates positive career outcomes. Over 85% Bsates learners have witnessed career growth post completing their programme. As an additional service, we provide job placement assistance, resume writing guidance, navigating job search and interview prep along with this programme. All this guidance is provided over recorded videos, this is not live

How long will I have access to the learning materials?

The primary mode of learning for this programme is via live online sessions with faculty members. The recorded videos and learning material will be available throughout the duration of the programme.

Where will I stay and have food during my stay at IIT Mandi?

Participant's will stay in the IIT Mandi hostel and meals would be served at IIT Mandi hostel mess.

Where will I do practical sessions?

Participants would be utilizing the Labs and lecture halls of IIT Mandi during the course.

Programme Mentors



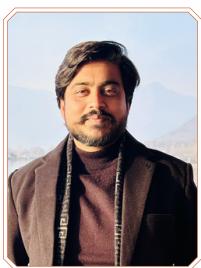
Prof. Akhilanand Pati Tiwari
Professor
School of Computing & Electrical Engineering



Prof. Manoj Thakur
Professor
School of Mathematical & Statistical Sciences



Prof. Rahul Vaish
Professor
School of Mechanical and Materials Engineering



Dr. Tushar Jain
Associate Professor
School of Computing & Electrical Engineering



Dr. Puran Singh
Associate Professor
School of Management



Dr. Kaushik Halder
Assistant Professor
School of Computing & Electrical Engineering



Dr. Narendra Kumar Dhar
Assistant Professor
School of Computing & Electrical Engineering



Dr. Yanumula Venkata Karteek
Assistant Professor
School of Computing & Electrical Engineering



Dr. Indu Joshi
Assistant Professor
School of Mechanical and Materials Engineering

Course Outline

Week 1: Introduction to Robotics, AI, and IoT

- ◆ Topics Covered:
 - Overview of Robotics, AI, and IoT
 - Key components of a robot (sensors, actuators, controllers)
 - Basics of Artificial Intelligence & Machine Learning
 - IoT Architecture & Communication Protocols (MQTT, HTTP, CoAP)
 - Applications of Robotics & IoT in real-world scenarios

- ◆ Practical/Assignments:
 - Setting up Arduino/Raspberry Pi for IoT
 - Introduction to Python for AI & Robotics
 - Simple IoT application: LED control via a web dashboard

Week 2: AI and Machine Learning for Robotics

- ◆ Topics Covered:
 - AI vs ML vs Deep Learning in Robotics
 - Computer Vision for Robotics (Image Processing & Object Detection)
 - Neural Networks for Robot Decision-Making
 - Reinforcement Learning in Robotics
 - Edge AI: Running AI models on IoT devices

- ◆ Practical/Assignments:
 - Implementing Object Detection using OpenCV
 - Training a simple ML model for gesture recognition
 - Hands-on with Edge AI (TensorFlow Lite on Raspberry Pi)

Week 3: IoT for Robotics & Cloud Integration

- ◆ Topics Covered:
 - IoT & Robotics: How they work together
 - Communication between Robots using IoT (MQTT, WebSockets)
 - Cloud Platforms for IoT (AWS IoT, Google IoT, Azure IoT)
 - Security & Privacy in IoT systems
 - Robotics Process Automation (RPA)

- ◆ Practical/Assignments:
 - Connecting a robot to the cloud using MQTT
 - Controlling a robotic arm via an IoT dashboard
 - Implementing security mechanisms in IoT communications

Week 4: Advanced Robotics & Future Trends

- ◆ Topics Covered:
 - Swarm Robotics & Multi-Agent Systems
 - Human-Robot Interaction & NLP in Robotics
 - Autonomous Navigation & SLAM
 - Digital Twin for Robotics
 - Future Trends: IoT, Smart Cities, and Industry 4.0

- ◆ Practical/Assignments:
 - Implementing a simple chatbot for robot interaction
 - Simulating robot movement using ROS (Robot Operating System)
 - Final Project: Build an AI-powered IoT-enabled robot

Note: Yoga & Sports sessions would also be conducted along



Program Details

Program Start Date

June - July 2026

PRAYAS (Promoting and Accelerating Young and Aspiring Students) is an initiative by the Indian Institute of Technology (IIT) Mandi aimed at nurturing innovation and technical skills among students. Launched in 2022, PRAYAS has evolved through multiple editions, each focusing on hands-on learning in emerging technologies like robotics, artificial intelligence (AI), and the Internet of Things (IoT).

Fees of the Program is 62,400/- + GST

Which includes everything like Hostel accommodation Mess charges for 1 month

Sample Certificate

Upon successful completion of the programme, participants will be awarded a certificate of completion and will be eligible to receive IIT Mandi's certificate

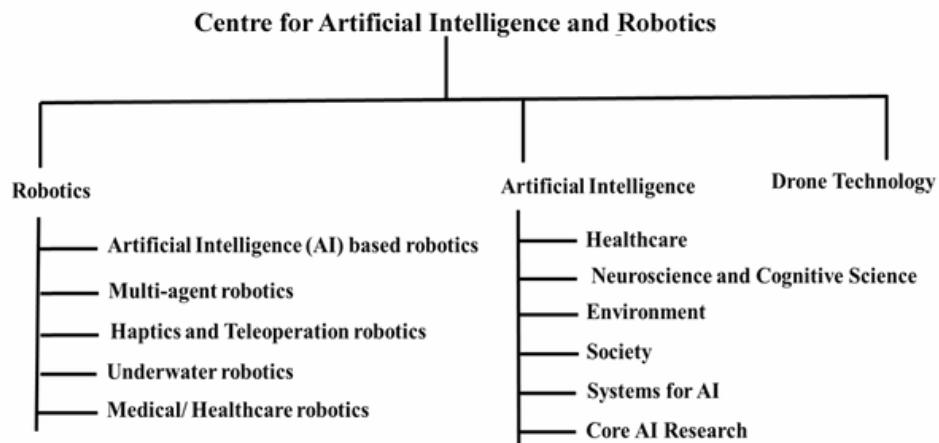


Note:

All certificate images are for illustrative purpose only and may be subject to change at the discretion of IIT Mandi. We encourage you to attend all the live sessions and make the best out of these interactive learning experiences. The recorded videos and learning material will be available throughout the duration of the programme.



Centre for Artificial Intelligence & Robotics (CAIR)



For several decades, the development of intelligent machines that help humans in various tasks are growing at a very fast pace. A myriad of applications ranging from healthcare to autonomous vehicles are powered by recent developments in artificial intelligence, robotics and drone technology.

To address the technological advancements and their potential, IIT Mandi conducted a Workshop on Healthcare Robotics and Drone Applications (WHRDA) between 27th and 29th May, 2022. As a part of the deliberations in the Workshop, several topics emerged under three main themes: a) Robotics, b) Artificial Intelligence, and c) Drone Technology. Consequent to the WHRDA Workshop, it is proposed to establish a Centre for Artificial Intelligence and Robotics (referred to as CAIR) at IIT Mandi.

The CAIR will focus on research on topics concerning Robotics, AI, and Drone technology, developing systems that complement and augment human capabilities, understanding and addressing the ethical, legal, and societal implications of this research, creating robust and trustworthy robotics and AI systems, supporting the development of related technical standards and tools, better understand the national R&D workforce needs, and enable long-term investments in these research areas.

Apply for the programme here

APPLY NOW

For Registration

Please Visit

www.cce.iitmandi.ac.in



For any queries WhatsApp an advisor on **9211287397**

For registration and any other information, please get in touch with us at:
schoolcamp@iitmandi.ac.in

In collaboration with

Bsates

At BSATES EdTech Foundation, we are committed to transforming education through innovative technology and accessible learning solutions. Our mission is to bridge the gap between traditional education and modern digital advancements, ensuring that learners from all backgrounds can access high-quality resources and skill-based training.

With a strong focus on EdTech innovation, digital learning platforms, and skill development, we strive to empower students, educators, and institutions by providing cutting-edge educational tools and interactive learning experiences. Our programs are designed to cater to a wide range of learners, from school students to professionals seeking upskilling opportunities.