http://www.mp-iitd.in

MPSSDEGB
कौशल से रोजगार, समृद्धि अपार

COURSE DURATION	TEACHING HOURS	LAB HOURS
2 MONTHS	40+ HOURS	40+ HOURS

IoT in Industry 4.0 (with AI)

Career Pathway Skilling Program for Engineering Students

In Collaboration with

FITT
FOUNDATION FOR INNOVATION AND TECHNOLOGY TRANSFER
भारतीय प्रौद्योगिकी संस्थान दिल्ली
Indian Institute of Technology Delhi

About Collaboration

IIT Delhi – FITT

Foundation for Innovation and Technology Transfer (FITT) at IIT Delhi has been the vanguard of knowledge transfer activities from academia since its inception in 1992. This techno-commercial organization from academia is counted amongst the successful such organizations. FITT provides superior program management services and is steadily increasing its operational landscape. The varied roles of FITT can be seen in enabling innovations and technopreneurship, business partnerships, technology development, consultancy, collaborative R&D, technology commercialization, development programs, corporate memberships etc. These roles are necessitated by the key agenda of the Foundation to showcase the Institute's "intellectual ware" to industry, and thereby unlock its knowledge base and inculcate industrial relevance in teaching and research at IIT Delhi.

IIT Delhi is India's eminent academic and research institution. It co-develops a range of training programs from College level to working professionals and also on emerging areas like Blockchain, AI/ML, IoT, AR/VR & Cybersecurity. The CoE in IIT Delhi has been set up to conduct deep research and product development in these areas, particularly for critical infrastructures like Waterways, Smart Cities, Railways and Energy.

Foundation For Innovation And Technology Transfer

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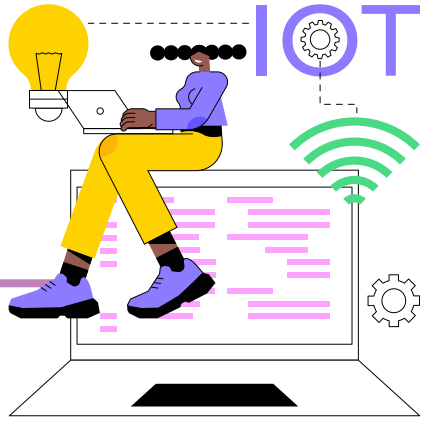
WHY SKILLING IN IoT IS THE NEED OF THE HOUR

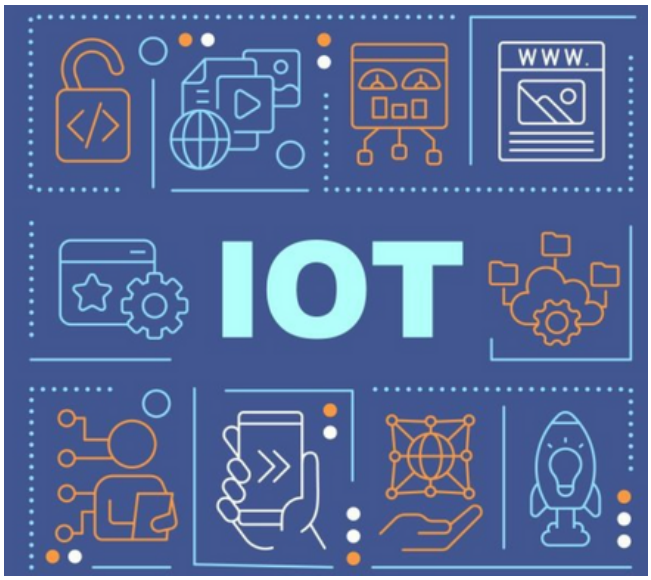


IoT connects everything, making everyday devices super smart. Mastering IoT unlocks job opportunities, enabling creations like smartwatches and aiding healthcare, agriculture, manufacturing, etc. Skills are needed everywhere, from healthcare to farming, addressing real-world issues. Learning in IoT never ends, offering futuristic innovations.

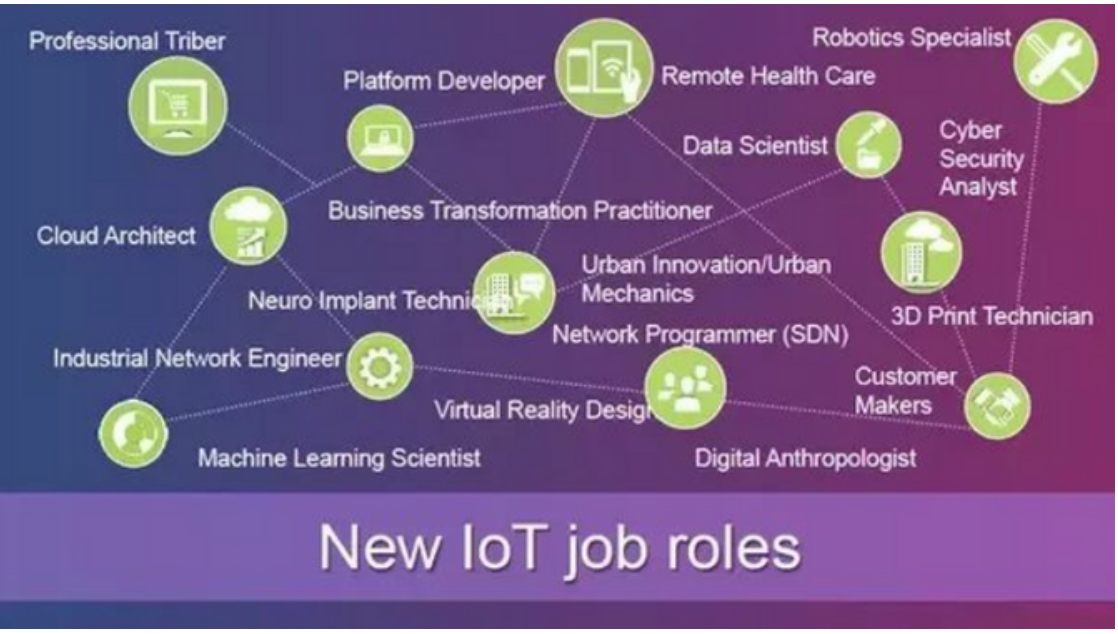
To excel in IoT-related roles, mastering programming languages, understanding hardware components and networking protocols, and possessing data analytics and security skills are crucial. Acquire these skills through online courses, hands-on projects using development kits, participation in hackathons, and seeking internships or entry-level positions in IoT-focused companies. Continuous learning, staying updated with industry trends, and practical experience are vital to thriving in IoT careers.

Jobs in IoT are booming and provide fantastic salaries.
Indian companies are seeking skilled individuals now and in the future. Our program aims to prepare students for industry-ready roles, equipping them for placements and the corporate world. Various companies in India like Cisco, Amazon, Wipro, L&T, SAP, Bosch, Qualcomm, IBM, GE, and Accenture offer diverse roles in IoT.

Cisco seeks IoT Solutions Architects and Customer Support Engineers, while Amazon hires IoT Systems Architects and Software Development Engineers. Companies like Wipro, L&T, SAP, Bosch, Qualcomm, IBM, GE, and Accenture also have openings in different IoT domains, including platform development, engineering, and solution architecture.



Individuals who undergo training and acquire skills in IoT can explore diverse career opportunities as shown in Figure.



So, studying IoT is like learning the secret language of the future. It's all about making things smarter, cooler, and more connected.

Plus, it's also a ticket to a world of exciting and emerging job roles in technology where you can make the next big thing!

Course Name - Basics of IoT Framework and utilization in 5G Environment

In this course, students will learn the basic fundamentals of IoT, its integration with 5G, and how IoT devices and sensors can be used in a 5G network environment.

Course Objectives:

- Provide a basic foundation in IoT concepts, principles, and technologies.
- Explore seamless integration of IoT with 5G networks, emphasizing the advantages of 5G, such as high data speeds, low latency, and massive device connectivity.
- Examine real-world IoT applications across diverse domains, including smart cities, healthcare, agriculture, and industry, allowing students to appreciate the breadth of IoT's impact.
- Give abroad overview to students for design, implementation, and deployment of IoT solutions, including sensor selection, data management, and network connectivity.
- Understand the complexities of managing the vast amounts of data generated by IoT devices within the context of 5G networks.
- Provide basic insights into IoT applications tailored to specific industries, allowing students to identify opportunities and challenges in domains like healthcare, manufacturing, and agriculture.

Prerequisites

- High school diploma, equivalent.
- Basic understanding of mathematics and programming fundamentals.
- Familiarity with the basics of internet/networking is desirable.
- Familiarity with the basics of communication theory is desirable, but not mandatory.
- Familiarity with at least one programming language is beneficial but not mandatory.
- Access to a computer with internet connectivity for programming assignments and project work.

Learning Outcomes

Upon completing this course, students should be able to:

- Understand the basic concepts and principles of the Internet of Things (IoT), including device connectivity, data collection, and communication protocols.
- Explain how IoT seamlessly integrates with 5G networks, leveraging the high-speed, low-latency, and massive device connectivity features of 5G for enhanced IoT applications.
- Broadly evaluate a variety of practical IoT applications in different industries, including smart cities, agriculture, healthcare, and manufacturing.
- Understanding of IoT design and implementation within a 5G environment.
- Recognize industry-specific IoT use cases, identify opportunities, and navigate challenges in healthcare, manufacturing, agriculture, and other sectors.
- Promote ethical considerations in IoT data collection and usage, emphasizing privacy, responsible data handling, and ethical IoT practices.
- Develop a future-ready mindset, allowing students to adapt to evolving IoT and 5G landscapes by staying informed about emerging technologies and standards.

MODULES	TOPICS COVERED
Module 1: Introduction to IoT	What is IoT?
	Historical Development of IoT
	IoT Ecosystem and Key Components
Module 2: IoT Communication Protocols	IoT Communication Technologies (basics)
	MQTT, CoAP, and HTTP in IoT (basics)
	Intro to LPWAN Technologies (LoRa, Sigfox)
	Intro to IoT Device-to-Cloud Communication

MODULES	TOPICS COVERED
Module 3: 5G Fundamentals	Basic Overview of 5G Networks
	5G Architecture and Components
	Benefits of 5G in IoT Applications
Module 4: IoT Device Selection and Configuration	Types of IoT Devices (Sensors, Actuators)
	Basic overview of IoT Device Selection Criteria
	Short brief on IoT Device Configuration and Management
Module 5: Data Management in IoT	Data Collection and Aggregation – basic concepts
	Data Analytics and Edge Computing – intro and basic knowledge
	Data Security and Privacy in IoT – an overview
Module 6: Industry-specific IoT Applications	Intro to Smart Cities and Urban IoT
	Basics of IoT in Healthcare , Agriculture, Manufacturing
Module 7: Capstone Project	IoT Solution Design and Implementation Embedded Systems / Network Configurations /Data Analytics (on any one of the three)
	Project Presentation and Documentation

Enrollment Process

The FITT-IIT Delhi course is being provided to selected students free of cost by MPSSDEGB.

Eligibility: All students, all streams from 2nd year UG onwards of Madhya Pradesh. (Limited seats only)

Process: Please visit the website (https://mp-iitd.in/) and kindly fill out the below form, pay registration fees - Rs.1000/- and submit the form and receipt.

Please fill in the below form

Name.....

Institution Name.....

Student ID.....

Current Pursuing Course.....

Year..... CGPA.....

Phone..... E-Mail.....

Aadhar Number.....

Father's Name.....

Course Interested (Please Select One)

☐ Iot Builder ☐ Blockchain Builder ☐ AR/VR (CV) Builder

Enrollment fees of Rs. 1,000 payable to MPSSDEGB. The fees would be refundable on successful completion of course

Enrollment Process

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Eligibility: Past pass-outs of Madhya Pradesh UG and PG Students and existing working professionals of Madhya Pradesh. (Limited seats only)

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Please fill in the below form

Name.....

Graduation College Name.....

Employment Details.....

Year..... CGPA.....

Phone..... E-Mail.....

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