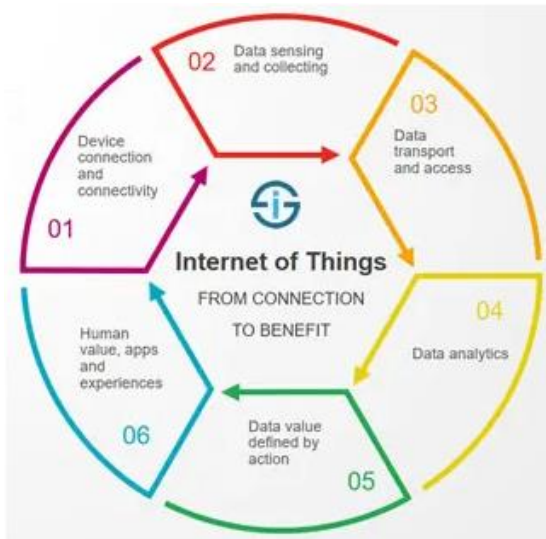


B.Tech - Internet of Things

Gudlavalleru Engineering College, Gudlavalleru

The present job scenario for engineering students is going through several hurdles and the average hike of the salary for routine ordinary jobs has drastically come down. In this regard, for obtaining careers in specialized jobs, the students have to acquire their B.Tech degree in emerging and future technologies. The Department of ECE, Gudlavalleru Engineering College has initiated B.Tech IoT (Internet of Things) Programme with the encouragement from AICTE, Government, reputed industries and take-up a challenge to shape the students for the requirements of the industry.

Internet of Things (IoT) is a fusion of various advanced technologies which is emerging as a driving force in building a new era of Technology. IoT refers to the network of any objects that are connected to internet using electronics, sensors, software and other technologies. This allows the objects to “talk” to the cloud, sending data that is processed in the cloud and then returned to the end-user. IoT mostly involves coding, database, data analysis, cloud, data interpretation, networking, hardware, circuits and electronic equipment.



Core Courses in the Curriculum:

The curriculum for IoT is prepared in consultation with industry and academic institutions. Some of the key courses are:

- Basic Courses - Linear Algebra & Calculus, Statistics and Probability, Applied physics,
- Sensors - Principles of Sensors and Data Acquisition, Transducers and Signal Conditioning.
- Embedded Systems – Analog and Digital Circuits, Computer Organization and Microprocessors, VLSI System Design, Embedded Systems Design.
- Communications – Analog and Digital Communications, Computer Networks, Wireless Communication Protocols.
- Artificial Intelligence - Data Structures and OOPS, Artificial Intelligence with Python Programming, Machine Learning.
- Cloud Computing - Database Management Systems, Cloud Computing.
- Internet of Things - Introduction to Internet of Things, IoT System Architecture.

Applications:

- Smart Cities and Smart Homes
- Business and Finance Transactions
- Agriculture and Environmental monitoring
- Smart Ticketing
- Smart Automotive Systems
- Manufacturing and Media
- Medical and Healthcare systems
- Infrastructure and Energy management
- Better quality of life for elderly people

Transport & Logistics Fleet management, Goods tracking	Utilities Smart metering, Smart grid management	Smart cities Parking sensors, Waste management, etc.	Smart building Smoke detector, Home automation
Consumers Wearables, Kids/senior tracker	Industrial Process monitoring & control, Maintenance monitoring	Environment Food monitoring/alerts, Environmental monitoring	Agriculture Climate/agriculture monitoring, Livestock tracking

Training and Skill Development Methodology:

The Department of ECE has taken up training programmes to the faculty and they are ready to explore the students about IoT. The following are the initiatives given to the B.Tech IoT students:

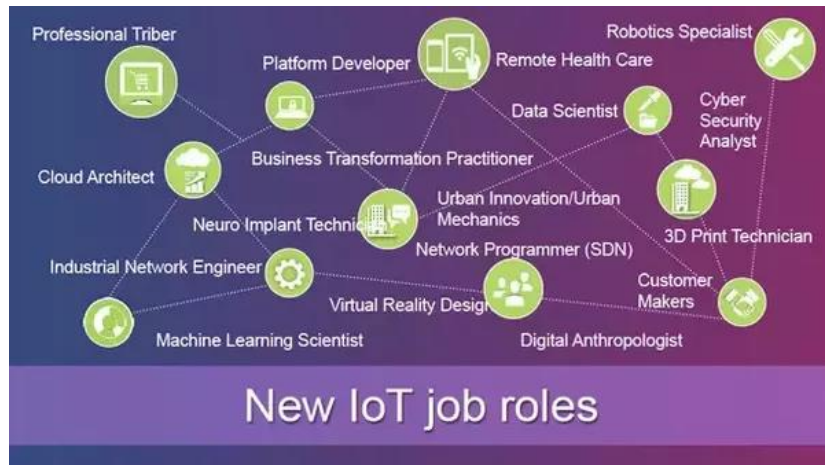
- Practical experiences in the development of IoT Systems.
- Seminars/Guest Lectures/ Training Programmes from Industry.
- Encouraging the students to do their internship, mini project, project based course, main project in the Industry.

If the students trains in the industry, they may get more exposure, rather than learning in the college.

Careers:

The developing Countries like India have to realize the potential benefits and challenges of IoT. In addition, the unique needs and challenges of implementation in less-developed regions will need to be addressed, including infrastructure readiness, market and investment incentives, technical skill requirements, and policy resources.

The IoT domain offers exciting job prospects and valuable insights into the industry. After completing B.Tech with specialization in IoT, students can work across different profiles where they will be creating applications using programming languages and allowing devices to connect to the internet. The B.Tech IoT has opened array of opportunities for the following roles:



- IoT Developer
- CAD Designer
- Embedded Engineer
- Network Engineer
- Cloud Engineer
- Data Scientist
- Data Visualization expert
- UI Engineer
- Data architect

Finally, The B.Tech IoT Programme has plenty of employment opportunities for the students in the above mentioned areas. The IoT market will grow because existing IT devices will linked to IoT. Projections for the impact of IoT on the Internet and economy are impressive, with some anticipating as many as 10,000 crores connected IoT devices and a global economic impact of more than 11 Trillion Dollars by 2025.

Current Status & Future Prospect of IoT

