

Introduction to Internet of Things (MCA-E11)

Unit 1: Introduction to IoT: Part I, Part II, Sensing, Actuation, Basics of Networking: Part-I

Unit 2: Basics of Networking: Part-II, Part III, Part IV, Communication Protocols: Part I, Part II

Unit 3: Communication Protocols: Part III, Part IV, Part V, Sensor Networks: Part I, Part II

Unit 4: Sensor Networks: Part III, Part IV, Part V, Part VI, Machine-to-Machine Communications

Unit 5: Interoperability in IoT, Introduction to Arduino Programming: Part I, Part II, Integration of Sensors and Actuators with Arduino: Part I, Part II

Unit 6: Introduction to Python programming, Introduction to Raspberry Pi, Implementation of IoT with Raspberry Pi

Unit 7: Implementation of IoT with Raspberry Pi (contd), Introduction to SDN, SDN for IoT

Unit 8: SDN for IoT (contd), Data Handling and Analytics, Cloud Computing

Unit 9: Cloud Computing(contd), Sensor-Cloud

Unit 10: Fog Computing, Smart Cities and Smart Homes

Unit 11: Connected Vehicles, Smart Grid, Industrial IoT

Unit 12: Industrial IoT (contd), Case Study: Agriculture, Healthcare, Activity Monitoring

The contents of the syllabus available at

https://onlinecourses.nptel.ac.in/noc23_cs83/preview

Books and references

1) S. Misra, A. Mukherjee, and A. Roy, 2020. *Introduction to IoT*. Cambridge University Press.

Availability: [https://www.amazon.in/Introduction-IoT-Sudip-](https://www.amazon.in/Introduction-IoT-Sudip-Misra/dp/1108959741/ref=sr_1_1?dchild=1&keywords=sudip+misra&qid=1627359928&sr=8-1)

[Misra/dp/1108959741/ref=sr_1_1?dchild=1&keywords=sudip+misra&qid=1627359928&sr=8-1](https://www.amazon.in/Introduction-IoT-Sudip-Misra/dp/1108959741/ref=sr_1_1?dchild=1&keywords=sudip+misra&qid=1627359928&sr=8-1)

2) S. Misra, C. Roy, and A. Mukherjee, 2020. *Introduction to Industrial Internet of Things and Industry 4.0*. CRC Press.