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Introduction To Internet Of Things

By Prof. Sudip Misra | IIT Kharagpur

[Go to course](#) ([course?user_email=rohithvadde60@gmail.com](#)) **Learners enrolled: 35738**


Prof Sudip Misra



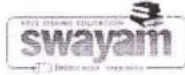
Internet of Things (IoT) is presently a hot technology worldwide. Government, academia, and industry are involved in different aspects of research, implementation, and business with IoT. IoT cuts across different application domain verticals ranging from civilian to defence sectors. These domains include agriculture, space, healthcare, manufacturing, construction, water, and mining, which are presently transitioning their legacy infrastructure to support IoT. Today it is possible to envision pervasive connectivity, storage, and computation, which, in turn, gives rise to building different IoT solutions. IoT-based applications such as innovative shopping system, infrastructure management in both urban and rural areas, remote health monitoring and emergency notification systems, and transportation systems, are gradually relying on IoT based systems. Therefore, it is very important to learn the fundamentals of this emerging technology.

INTENDED AUDIENCE : CSE, IT, ECE, EE, Instrumentation Engg, Industrial Engineering**PREREQUISITES** : Basic programming knowledge

Summary


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Course Status :


 Completed
 (<https://swayam.gov.in/>)
 Elective

 (https://swayam.gov.in/nc_details/NPTEL)

Course Type :

Duration :

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Category :

- Computer Science and Engineering
- Systems
- Programming

Credit Points :

3

Level :

Undergraduate

Start Date :

24 Jan 2022

End Date :

15 Apr 2022

Enrollment Ends :

07 Feb 2022

Exam Date :

23 Apr 2022 IST

Note: This exam date is subjected to change based on seat availability. You can check final exam date on your hall ticket.

This is an AICTE approved FDP course

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 (https://www.addtoany.com/share?url=https%3A%2F%2Fonlinecourses.nptel.ac.in%2Fnoc22_cs53%2Fpreview&title=Introduction%20To%20Internet%20Of%20Things%20-%20Course)

Course layout

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

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

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

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

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

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

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

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

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


Week 10: Fog Computing, Smart Cities and Smart Homes

Week 11: Connected Vehicles, Smart Grid, Industrial IoT

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

Books and references

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


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Availability: https://www. Introduction-IoT-Sudip-Misra/dp/1108959741/ref=sr_1_1?dchild=1&keywords=sudip+misra&qid=1627359928&sr=8-1
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 Research Papers

Instructor bio



Prof. Sudip Misra

IIT Kharagpur

Dr. Sudip Misra is a Professor in the Department of Computer Science and Engineering at the Indian Institute of Technology Kharagpur. Prior to this he was associated with Cornell University (USA), Yale University (USA), Nortel Networks (Canada) and the Government of Ontario (Canada). He received his Ph.D. degree in Computer Science from Carleton University, in Ottawa, Canada. He has several years of experience working in the academia, government, and the private sectors in research, teaching, consulting, project management, architecture, software design and product engineering roles. His current research interests include Wireless Ad Hoc and Sensor Networks, Internet of Things (IoT), Computer Networks, Streaming Systems, and algorithm design for emerging communication networks. Dr. Misra is the author of over 260 scholarly research papers, including 140+ reputed journal papers. He has won seven research paper awards in different conferences. Recently, he and his students won Samsung Innovation Award and the IEEE ComSoc Student Competition. He was awarded the fellow of NASI. He was also awarded the IEEE ComSoc Asia Pacific Outstanding Young Researcher Award at IEEE GLOBECOM 2012, Anaheim, California, USA. He was also the recipient of several academic awards and fellowships such as the Young Scientist Award (National Academy of Sciences, India), Young Systems Scientist Award (Systems Society of India), Young Engineers Award (Institution of Engineers, India), (Canadian) Governor General's Academic Gold Medal at Carleton University, the University Outstanding Graduate Student Award in the Doctoral level at Carleton University and the National Academy of Sciences, India - Swarna Jayanti Puraskar (Golden Jubilee Award). Dr. Misra was also awarded the Canadian Government's prestigious NSERC Post-Doctoral Fellowship and the Humboldt Research Fellowship in Germany. Dr. Misra has been serving the editorial boards of distinguished journals such as the Transactions on Vehicular Technology, Transactions on Mobile Computing, International Journal of Communication Systems (Wiley) and the IET Wireless Sensor Systems (UK). In the past, he served as the Associate Editor/Editorial Board Member of the Telecommunication Systems Journal (Springer), Security and Communication Networks Journal (Wiley), and the EURASIP Journal of Wireless Communications and Networking, IET Communications Journal, and the Computers and Electrical Engineering Journal (Elsevier). Dr. Misra has published 10 books in the areas of wireless ad hoc networks, wireless sensor networks, wireless mesh networks, communication networks and distributed systems, network reliability and fault tolerance, and information and coding theory, published by reputed publishers such as Cambridge University Press, Springer, Wiley, and World Scientific.

Course certificate

The course is free to enroll and learn from. But if you want a certificate, you have to register and write the proctored exam conducted by us in person at any of the designated exam centres.

The exam is optional for a fee of Rs 1000/- (Rupees one thousand only).

Date and Time of Exams: **23 April 2022** Morning session 9am to 12 noon; Afternoon Session 2pm to 5pm.

Registration url: Announcements will be made when the registration form is open for registrations.

The online registration form has to be filled and the certification exam fee needs to be paid. More details will be made available when the exam registration form is published. If there are any changes, it will be mentioned then.

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Please check the form for the cities where the exams will be held, the conditions you agree to when you fill the form etc. (https://swayam.gov.in/) (https://swayam.gov.in/nc_details/NPTEL)

CRITERIA TO GET A CERTIFICATE

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Average assignment score = 25% of average of best 8 assignments out of the total 12 assignments given in the course.
Exam score = 75% of the proctored certification exam score out of 100

Final score = Average assignment score + Exam score

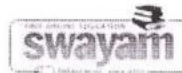
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Certificate will have your name, photograph and the score in the final exam with the breakup. It will have the logos of NPTEL and IIT Kharagpur. It will be e-verifiable at nptel.ac.in/noc (http://nptel.ac.in/noc).

Only the e-certificate will be made available. Hard copies will not be dispatched.

Once again, thanks for your interest in our online courses and certification. Happy learning.

NPTEL team



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Initiative by : Ministry of Education (Govt of India)

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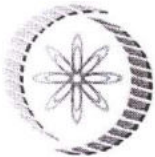
Roll No:NPTEL22CS53S13532719

To VADDE RADHA KRISHNA
C/O G.NARAYANAMMA INSTITUTE OF
TECHNOLOGY & SCIENCE (FOR WOMEN)
DEP.OF.ECE,SHAIKPET
HYDERABD
TELANGANA - 500104
PH. NO :9849071863



| No. of weeks of NPTEL Courses | Equivalence of NPTEL course with regular FDP |
|-------------------------------|--|
| 4 | $\frac{1}{2}$ FDP of one week |
| 8 | Full FDP of one week |
| 12 | $1\frac{1}{2}$ FDP |

Duration of NPTEL course: 12 Weeks



NPTEL-AICTE Faculty Development Programme

(Funded by the MoE, Govt. of India)



This certificate is awarded to

VADDE RADHA KRISHNA

for successfully completing the course

Introduction to Internet of Things

with a consolidated score of **67 %**

Prof. Andrew Thangaraj
NPTEL Coordinator
IIT Madras

(Jan-Apr 2022)

Prof. Dileep N. Malkhede

Advisor-I (Research, Institute & Faculty Development)
All India Council for Technical Education

Roll No: NPTEL22CS53S13532719

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The candidate has studied the above course through MOOCs mode, has submitted online assignments and passed proctored exams.
This certificate is therefore acceptable for promotions under CAS as per AICTE notifications dated 24th July 2018, similar to other refresher / orientation courses.

F.No. AICTE / RIFD / FDP through MOOCs / 2017-18



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Department: Electronics and Communication Engineering

2021-2022

REPORT

FDP[NPTL Course] on "Introduction to Internet of Things"

I am V.Radha Krishna ,working as Asst.Prof, in department of ECE.I attended NPTEL course [FDP] on "Introduction to Internet of Things" conducted by IIT Kharagpur form 24-01-2022 to 15-04-2022.Resource person for FDP is " Prof Sudip Misra" from IIT Kharagpur . This NPTEL Course is organized for 12 weeks. Topics covered in this FDP are Actuators, Networking, Communication Protocols, Sensor Networks, Python Programming, Implementation of IOT with Raspberry Pi, Cloud Computing, Fog Computing, Connecting vehicles, Industrial IOT etc. This FDP is useful for Teaching subjects IOT, Python Programming, Cloud Computing.

Radha Krishna
19/4/22

V.Radha Krishna

Asst.Prof,

ECE

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