AICTE TRAINING AND LEARNING (ATAL) ACADEMY
SPONSORED
FACULTY DEVEOPMENT PROGRAMME
ON
DESIGN OF INTERNET OF THINGS (IOT)
SOLUTIONS FOR SUSTAINABLE
ENVIRONMENT

Name :

Designation :

Institution :

Address :

Phone (Office) :

Phone(Mobile):

Email :

Qualification :

Experience :

The given information is true to the best of my knowledge. I agree to abide by the rules & regulations governing the programme, if selected.

Place :

Date :

Signature

No Objection Certificate

Mr./Ms./Dr...............................is an employee of our Institution & the institution has no objection in him/her applying for the AICTE sponsored ATAL FDP on Design of Internet of Things (IOT) Solutions for Sustainable Environment. If selected, he / she will be permitted to attend the program.

Date: Seal   Signature of HOD/Director

ORGANIZING COMMITTEE

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Chairman , Dr.N.G.P. Research and Educational Trust
Dr. Thavamani D. Palaniswami
Secretary, Dr. N. G. P. Arts and Science College
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Coordinator

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Professor & Coordinator-Center for Internet of Things
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Co-Coordinator

Dr. K. Kavitha
Assistant Professor, Computer Applications
Dr.N.G.P. Arts and Science College, Coimbatore
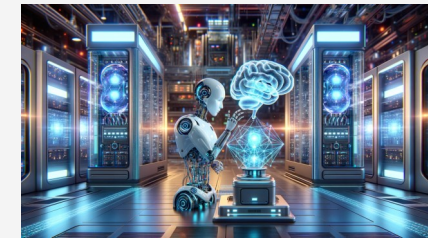Mobile Number:98411 58445 E-mail: kavitha.k@drngpasc.ac.in

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ON
DESIGN OF INTERNET OF THINGS (IOT)
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02nd to 07th September , 2024

Organized by

Faculty of Computer Science

Dr. N.G.P. ARTS AND SCIENCE COLLEGE

(An Autonomous Institution, Affiliated to Bharathiar University, Coimbatore)
Approved by Government of Tamil Nadu
Accredited by NAAC with A++ Grade (3rd Cycle-3.64 CGPA)
Dr. N.G.P. - Kalapatti Road, Coimbatore-641048, Tamil Nadu, India
Web: www.drngpasc.ac.in | Email:info@drngpasc.ac.in | Phone: +91-422-2369100

ABOUT THE INSTITUTION

Dr. N.G.P Arts and Science College was established by the Kovai Medical Center Research and Educational Trust Coimbatore in 1997. The college incepted its educational journey with 4 Under Graduate Programmes and today it is emerged as one of the major academies in self-financing institutions in Tamil Nadu, India. The college conferred with the autonomous status in 2015-2016 by the UGC and is affiliated to Bharathiar University, Coimbatore. The College was accredited by the NAAC with 'A++' Grade in the Third cycle. Our college is consecutively ranked at the national level within 100 ranks by NIRF and currently at 88th position in India. The Institution has been granted funds to undertake major and minor research projects, and conduct seminars, conferences and workshops by various funding agencies like UGC, DRDO, ICMR, ICSSR, CSIR, DST, DBT and TNSCST.

THE DEPARTMENT

The Faculty of computer Science have seven departments (CS, BCA, CT, IT, DA, Cognitive Systems, AI&ML and PG-Research), Totally 1600 and above students were pursuing the their studies in different discipline. Each department is progressed with well-qualified faculty members and fully equipped computer laboratories with high bandwidth of internet connection. The vision is to provide students with the best opportunities and environment for quality education with professional competency for life and career skills and the mission is to provide extensive knowledge and enhance the students towards the challenging environment

ATAL ACADEMY

AICTE Training & Learning (ATAL) Academy is established with the vision "To empower faculty to achieve goals of Higher Education such as access, equity & quality". AICTE is committed for development of quality technical education in the country by initiating various schemes launched by Ministry of Human Resource Development, Govt. of India. Council understands that there is a need to train the young generation in skill sector and faculty & technicians have to be trained in their respective disciplines. Training is required for increasing the knowledge & skills of students, to make them more employable & acquire global competencies.

ABOUT THE FDP

Internet of Things (IoT) applications are rapidly altering our environment. These interconnected technologies can improve our security and well-being, help us use resources more wisely, and help us create a more intelligent and sustainable future. Applications for the IoT can optimize its operations and enable you lead a more conscious existence. This FDP will help the students, research scholar, and faculty members to have real time knowledge exchange on advanced Internet of Things (IoT) applications and its benefits for real life.

OBJECTIVES

- To provide a platform for the young researchers and faculty member to grow their academic knowledge and research aptitude in the field of Internet of Things (IoT).

- To create a knowledge base among the young minds about the fundamentals of Internet of Things (IoT), Peripheral devices (Sensors/Actuators), Architecture, Data Visualization, Software platforms for design and development of IoT solutions for real life applications.

- To help scholars, young researchers and faculties to understand theoretical and practical concepts on IoT solutions for real life applications.

- To provide hands-on training to the participants on installation of open-source tools, software's, libraires, various micro controllers, prototype design, Cloud storage and real-time data analysis and data visualization

OUTCOMES

This FDP enables the Participants to:
- Understand the basic concepts of Internet of Things with various IoT Devices.
- Apply the knowledge to solve real life problem using IoT.
- Develop new prototypes and implement them in real-time applications.
- Provide inputs to develop innovative IoT prototypes in interdisciplinary areas.
- Integrate real-time IoT Applications with Cloud environment.
- Provide technical proficiency to incorporate Machine Learning tools in IoT.
- Gain insight on innovative ideas and techniques to solve cutting-edge issues.
- Remotely monitor data and control devices
- Develop real life IoT based projects

COURSE CONTENTS

- Introduction to Internet of Things (IoT)

- IoT Architecture, protocols and embedded device for real world problems (Microcontrollers, Advanced sensors, actuators and wireless communication technologies).

- IoT design using Arduino and Rasperry Pi

- Implementing IoT with Arduino , Rasperry Pi with LoRaWAN Technologies

- IoT Applications and Solutions in different environment

- AI enabled IoT applications for sustainable environment

- Developing Multidisciplinary Internet of Things Applications

- Security problems and challenges in real life IoT applications

- Implementing IoT with Arduino and Machine Learning APIs in Cloud.

- Research issues , future trends and Case Studies on Cloud based IoT Applications

ELIGIBILITY:

This FDP is open to all the Research Scholars and Faculty members from AICTE approved institutions. Certificate will be issued upon the successful completion of FDP and continuous comprehensive assessment.

REGISTRATION

No registration fee. Registration has to be done through ATAL portal (https://atalacademy.aicte-india.org/login). In addition, mail the scanned copy of registration form duly signed by the Head of the Institution via e-mail to drngpascatalfdp_iot@drngpasc.ac.in

ACCOMMODATION

Accommodation will be provided for outstation participants on prior request.

IMPORTANT DATES

Apply on or before : 26.08.2024

Intimation to selected candidates : 28.08.2024

AICTE ATAL Academy Basic FDP: Schedule

Title : Design of Internet of Things (IoT) Solutions for Sustainable Environment

Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
9:00 − 9:30 **Inauguration** **Name of the Expert:** *Dr. Rajesh P. Barnwal* **Designation:** *Principal Scientist* **Organization:** *CSIR-CMERI, Durgapur West Bengal, INDIA*					
9:30 − 12:00 **Session 1** **Name of the Expert:** *Dr. Rajesh P. Barnwal* **Designation:** *Principal Scientist* **Organization:** *CSIR-CMERI, Durgapur West Bengal, INDIA* **Experience in Years:** *20 + Years* **Topic to be taught:** *Introduction to Internet of Things*	**9:30 − 12:00** **Session 3** **Name of the Expert:** Dr. K. Subramanian **Designation:** Technical Lead **Organization:** Enthu Technology Solutions India Pvt Ltd **Experience in Years:** 14 Years **Topic to be taught:** *IoT design using Arduino/ Rasperry*	**9:30 − 12:00** **Session 5** **Name of the Expert:** *Dr. R. Jegan* **Designation:** Assistant Professor **Organization:** *Karunya Institute of Technology and Sciences, (Deemed to be University), Coimbatore* **Experience in Years:** 14 Years **Topic to be taught:** AI enabled IoT applications for sustainable environment	**9:30 − 12:00** **Session 7** **Name of the Expert:** *Dr.U. Srinivasulu Reddy* **Designation:** Associate Professor **Organization:** *NIT, Trichy* **Experience in Years:** 20 years **Topic to be taught:** *Developing Multidisciplinary Internet of Things Applications*	**9:00 − 1:00** **Industrial visit** **Name of the Organization:** Enthu Technology Solutions India Pvt Ltd **Complete address with pincode :** Plot No: 32, P.M.R Layout, 5th Street, Block - B, Deepa Mill Road, Goldwins, Civil Aerodrome Post, Coimbatore 641014, Tamil Nadu TN, India	**9:30 − 12:00** **Session 10** **Name of the Expert:** Dr. K. Saravanan **Designation:** *Associate Professor* **Organization:** *Anna University, Chennai* **Experience in Years:** 20 years **Topic to be taught:** *Research issues, Future Trends and Innovations and Case Studies on Cloud*
12:00 − 1:00 **Article Discussion** **Title of the Research Paper:** 1.Internet of Things Based Smart Irrigation System Using ESP WROOM 32 2.An IoT-based and cloud-assisted AI driven monitoring platform for smart manufacturing: design architecture and experimental validation **Name of the journal:** 1. Journal on Internet of Things 2.Journal of Manufacturing Technology Management **Year of Publication:**2022,2023	**12:00 − 1:00** **Article Discussion** **Title of the Research Paper:** 1. Sustainable Environmental Design Using Green IOT with Hybrid Deep Learning and Building Algorithm for Smart City 2. Internet of things (IoT)-based on real-time and remote boiler fuel monitoring system: **Name of the journal:** 1.*Journal of Grid Computing* 2. *Discov Internet Things* **Year of Publication:**2023	**12:00 − 1:00** **Article Discussion** **Title of the Research Paper:** 1.Utilizing an Internet of Things (IoT) Device, Intelligent Control Design, and Simulation for an Agricultural System 2.Design and implementation of intelligent monitoring system for agricultural environment in IoT **Name of the journal:** **1.**IoT 2. Internet of Things **Year of Publication:**2024	**12:00 − 1:00** **Article Discussion** **Title of the Research Paper:** 1. Sustainable collaboration: Federated learning for environmentally conscious forest fire classification in Green Internet of Things IoT) 2.Internet of Things (IoT) of Smart Homes: Privacy and Security **Name of the journal:** 1.Journal of Electrical and Computer Engineering 2.Internet of Things **Year of Publication:**2024	**Industry Type:** Product development R&D company **Area of specification:** IoT, Embedded Device	**12:00 − 1:00** **Article Summary**
1:00 − 2:00 **Lunch**	**1:00 − 2:00** **Lunch**	**1:00 − 2:00** **Lunch**	**1:00 − 2:00** **Lunch**	**1:00 − 2:00** **Lunch**	**1:00 − 2:00** **Lunch**
2:00 − 4:30 **Session 2** **Name of the Expert:** *Mr. K Thiruppathi* **Designation:** *Lead Consultant* **Organization:** *Thoughtworks India PVt* **Experience in Years:** *10 + Years* **Topic to be taught:** *IoT Architecture, protocols and embedded device for real world problems*	**2:00 − 4:30** **Session 4** **Name of the Expert:** Er. Geetha N **Designation:** Technical Engineer **Organization:** Enthu Technology Solutions India Pvt Ltd **Experience in Years:** 08 Years **Topic to be taught:** *Implementing IoT with Arduino/ Rasperry Pi and LoRaWAN Technologies*	**2:00 − 4:30** **Session 6** **Name of the Expert:** *Dr. K. Selvakumar* **Designation:** Assistant Professor **Organization:** NIT, Trichy **Experience in Years:** 15 Years **Topic to be taught:** *IoT Applications and Solutions in different environment*	**2:00 − 4:30** **Session 8** **Name of the Expert:** *Dr. J. Satheeshkumar* **Designation:** Professor **Organization:** *Bharathiar University, Coimbatore* **Experience in Years:** 23 Years **Topic to be taught:** *Security problems and challenges in real life IoT applications*	**2:00 − 4:30** **Session 9** **Name of the Expert:** *Dr. RM. Swarna Priya* **Designation:** *Associate Professor Senior* **Organization:** *Vellore Institute of Technology (VIT), Vellore* **Experience in Years:**19 Years **Topic to be taught:** *Implementing IoT with Arduino and Machine Learning APIs in Cloud*	**2:00 − 4:00** **MCQ & Reflection Journal**
4:30 − 5:30 **Hands on training IoT Lab**	**4:30 − 5:30** **Hands on training IoT Lab**	**4:30 − 5:30** **Hands on training IoT Lab**	**4:30 − 5:30** **Hands on training IoT Lab**	**4:30 − 5:30** **Hands on training IoT Lab**	**4:00 − 5:00** **Valedictory Session**