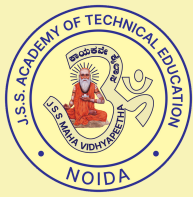# TWO WEEKS FACULTY DEVELOPMENT PROGRAMME ON

"INTEGRATION OF WSN & IOT FOR AGRICULTURE"

02-01-2023 to 13-01-2023

Sponsored By
AICTE Training and Learning (ATAL) Academy

Organized by
Department of Electronics & Communication Engineering

(UG Program NBA accredited)

JSS Academy of Technical Education
C-20/1, SECTOR-62, NOIDA-201301
Phone: +91-120-2400115, www.jssaten.ac.in

Chief Patron

His Holiness Jagadguru Sri Shivarathri Deshikendra Mahaswamiji
President, JSS Mahavidyapeetha, Mysuru

Patrons

Prof. Pradeep Kumar Mishra
Vice-Chancellor,
AKTU, Lucknow

Dr. C.G Betsurmath,
Executive Secretary,
JSSMVP, Mysuru

Prof. M. H. Dhananjaya,
Advisor JSSMVP, Mysuru

Dr. B. Suresh, Pro-Chancellor,
JSS AHER, Director-TED, JSSMVP, Mysuru

Dr. H R Mahadevaswamy,
JD-TED, JSSMVP, Mysuru

Dr. Amarjeet Singh
Principal

Convener

Dr. Arun Kumar G,
HoD, ECE, JSSATE, Noida.

Coordinator

Dr. Chhaya Dalela,
Associate Professor,
ECE, JSSATE, Noida.

Co-coordinator

Dr. Gayatri Sakya,
Assistant Professor,
ECE, JSSATE, Noida.

ABOUT JSS MAHAVIDYAPEETHA

JSS Mahavidyapeetha was established in the year 1954.The Jagadguru Sri Shivarathreeswara Mahavidyapeetha has been described by many eminent educationists as greater than a University, because under its aegis a child can begin its education in the kindergarten and proceed to earn a degree as well as a doctorate in several branches of learning. Simultaneously the Mahavidyapeetha has not neglected to strengthen the roots of our ancient knowledge, wisdom and culture and their application in the day-to-day life. Sanskrit Pathashalas, Yoga Kendras, Spiritual Retreats, Gurukulas, Art and Cultural forums are doing this work. Today the Mahavidyapeetha has grown into a center of learning that guides more than 350 institutions spread throughout Karnataka, neighboring Tamil Nadu and also in Uttar Pradesh. JSS Mahavidyapeetha has also set up institutions at Mauritius, Dubai and USA. Every year thousands of aspirants of education and knowledge join the fold of the Mahavidyapeetha. Distinguished national leaders including the first President of India, Dr. Babu Rajendra Prasad, the former President Dr. A P J. Abdul Kalam, Former Prime Minister Sri Atal Bihari Vajpayee have visited JSS Mahavidyapeetha and paid rich tribute to services rendered by the Mahavidyapeetha.

ABOUT THE INSTITUTE

JSS Academy of Technical Education, Noida (JSSATEN) is one of the leading Technical Institutions in Delhi-NCR. Established in the year 1998 by JSS Mahavidyapeetha, Ghaziabad. The Institution has set benchmarks every year, and grown into an Institution of Excellence in Technical Education. The Institution has MoUs with Texas Instruments Centre of Excellence, Nokia Mobile Innovation Labs, e-Yantra - Embedded & Robotics Lab funded by MHRD under NMEICT, Schneider Electric Substation Automation Labs and Centre for Innovation & Design are additional facilities for the students to innovate new ideas. JSSATEN is proud to mention that it has created necessary manpower and infrastructure to implement Outcome Based Education from the year 2014-15. JSSATE, Noida got the NIRF rank band 201 to 250 in 2020 and 251-300 in 2021. JSSATE, Noida got the QS I-GUAGE Gold rating.

CAMPUS HIGHLIGHTS

- More than 250 Faculty members. More than 4200 Students.
- 28 Acres of lush green campus in Delhi/NCR.
- On campus Boys & Girls Hostels.

SALIENT FEATURES

1. JSSATE, Noida got the NIRF rank band 201 to 250 in 2020.
2. In a recent survey conducted by the Education World Magazine, JSSATE Noida, has secured 2nd Rank in the State of UP and 20th Rank at the National Level, among the top 100 Private Engineering Colleges in India.
3. Ministry of Education (MoE) Innovation Cell GoI awarded 4/5 Golden Star ranking for the Academic year 2020-21.
4. Five Departments (CSE, IT, ECE, ME & EE) are accredited by National Board of Accreditation.
5. AICTE Clean and Green Campus Award 2017- JSSATE, Noida stood I-Position in Northern Region and VII-Position at the National level.
6. Nodal Centers for the Grand Finale of Smart India Hackathon 2017, 2018 & 2019.
7. Received an award from Hon'ble HRD Minister Shri Prakash Javadekar on 21November 2018 for the constitution of Institution Innovation Council (IIC).
8. JSSATE, Noida got the QS I-GUAGE Gold rating.
9. Selected as Nodal Centre for "Value Education" under Dr. APJ AKTU Lucknow. Selected as Nodal Centre for Spoken Tutorial Training of IIT Bombay.
10. Nominated as National Cyber Defense Resource Centre under National Cyber Safety and Security Standards [NCSSS] under NCDRC, New Delhi.
11. Projects sanctioned under Central Government Flagship
    - Unnat Bharat Abhiyan (UBA), Swachh Bharat Abhiyan (SBA),
    - Sansad Adarsh Gram Yojana (SAGY), Pradhan Mantri Kaushal Vikas Yojna (PMKVY-TI).
    - Swachh Bharat Summer Internship [SBSI].
12. In the recent survey conducted by the Times Engineering Institute Ranking Survey-2021, JSSATE Noida secured 72nd Position at all India level.
13. JSSATE, Noida has selected for the AICTE-IDEA Lab project with funding of 110 Lakhs.

VISION OF THE INSTITUTE

JSS Academy of Technical Education Noida aims to become an Institution of excellence in imparting quality outcome-based education that empowers the young generation with knowledge, skills, research aptitude and ethical values to solve contemporary challenging problems.

MISSION OF THE INSTITUTE

The mission of JSS Academy of Technical Education, Noida is to
1. Develop a platform for achieving globally acceptable level of intellectual acumen and technological competence
2. Create an inspiring ambience that raises the motivation level for conducting quality research
3. Provide an environment for acquiring ethical values and positive attitude

ABOUT THE DEPARTMENT

Department of Electronics and Communication Engineering is one of the preferred branches of engineering disciplines in the academy. The Department has seen remarkable growth in terms of quality of student's intake. With the intake of 180 students, Department is NBA accredited and is committed to excellent teaching & learning process with assurance on quality education to all stakeholders. The Department has 2 IEEE Student Chapters: IEEE Robotics & Automation Society and IEEE Signal Processing Society and one IETE student Chapter. Department has sufficient labs equipped with necessary hardware and software to meet the curriculum requirements at undergraduate and post graduate level. The achievements of the students during and after graduation, faculty specialization, up-gradation in several domain areas and infrastructure to provide the latest lab facilities for research and project work are some of the highlights of the department.

ABOUT THE ATAL ACADEMY

- AICTE Training & Learning (ATAL) Academy is established with a vision to empower faculty to achieve goals of Higher Education such as access, equity and quality.
- The Academy is conducting FDP's on a large scale in the entire country. These program will help participants get acquainted with new technological developments.

VISION OF THE DEPARTMENT

To cultivate an environment for students to learn in the field of Electronics and Communication Engineering for their global acceptability for employment, higher education, research and sensitize them towards social responsibilities.

MISSION OF THE DEPARTMENT

- To provide quality and contemporary education in the domain of Electronics and Communication engineering through periodically updating, adding the curricula and lab facilities.
- Collaborate with industry and provide necessary research inputs to students for project work.
- Setting up research facility in the area of VLSI, Embedded and Electrical Communication.
- To transform students for working in multicultural global environment.

ABOUT THE FDP

The growth of the Internet of Things (IoT) is explosive and unsustainable under various applications such as Smart cities, agriculture, health care, industries, etc. IoT is a technology that has deliberately grown momentum and is now silently shaping the future. IoT is an ecosystem of various interconnected physical objects that are accessible through the internet, and they can be controlled from anywhere. Wireless sensor network (WSN) is the backbone to the IoTs. Since IoT integrates with machine learning algorithms for the WSNs data, we can make Things or objects smarter, even with/without Internet connectivity for agriculture.

This FDP will provide an opportunity to highlight important interventions by way of Interdisciplinary outlook, collaboration and implementation to focus on critical needs and future areas of growth in these exciting fields.

In brief this FDP will cover Introduction of WSNs and IoTs, Integration, start-of-art WSNs algorithms, advances in IoTs and its applications, hardware and software and its uses, along with various hands-on experiments useful for agriculture.

TARGETED PARTICIPANTS

Assoc. Prof./Asst. Prof./Research Scholars/PG Scholar

To receive a Certificate, minimum required 80% attendance and overall 70% for continuous comprehensive assessments

RESOURCE PERSON

From Academia

Dr. D K Lobiyal, JNU, New Delhi.
Dr. Karan Singh, JNU, New Delhi.
Dr. Bala Murugan , VIT, Chennai.
Dr. Rajeev K Shakya, Adama Science and Technology University, Ethiopia.
Dr. Vidushi Sharma , GBU, Greater Noida.
Dr. Neeta Singh, GBU, Greater Noida.

From Industry

Mr. Sushil Kumar ,DDG, TEC, DOT, New Delhi.
Mr. Vidyadhar Jinnappa Aski, Mahindra & Mahindra Ltd, Bengaluru.
Mr. Prakash, Enthu Technology, Coimbatore.
Mr. Prince Agarwal, Exeliq Tech Solutions Pvt Ltd, Noida.
Mr. Manvendra Singh , Senraco, New Delhi.

REGISTRATION (FREE)

- **For registration of the FDP, please visit AICTE ATAL website**

  https://atalacademy.aicte-india.org/signup

ORGANIZING COMMITTEE

- **Mr. Shivaji Sinha, Asst. Prof., Dept. of ECE, JSSATE, Noida.**
- **Mrs. Monika Malik, Asst. Prof., Dept. of ECE, JSSATE, Noida.**
- **Mr. Deependra Sharma, Asst. Prof., Dept. of ECE, JSSATE, Noida.**
- **Mr. Ganesha H S, Asst. Prof., Dept. of ECE, JSSATE, Noida.**
- **Mr. Harshavardhana M N, Asst. Prof., Dept. of ECE, JSSATE,Noida.**

If you wish to seek any clarification please get in touch with

CONTACT PERSONS

Dr. Chhaya Dalela	Dr. Gayatri Sakya
Associate Professor	Assistant Professor
ECE, JSSATE, Noida	ECE, JSSATE, Noida
Mob. No. : 9873552765	Mob. No. : 9990274390
Email ID: jssecefdp@gmail.com	Email ID: jssecefdp@gmail.com

CORRESPONDANCE ADDRESS

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

JSS Academy of Technical Education

C-20/1, SECTOR-62, NOIDA-201301
Phone: +91-120-2400115, www.jssaten.ac.in
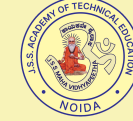

TWO WEEKS FACULTY DEVELOPMENT PROGRAM
on
"INTEGRATION OF WSN & IOT FOR AGRICULTURE"
02-01-2022 to 13-01-2023
Organized by
Department of Electronics & Communication Engineering

(UG Program NBA accredited)

JSS Academy of Technical Education

C-20/1, SECTOR-62, NOIDA-201301
Phone: +91-120-2400115, www.jssaten.ac.in

Sponsored By
AICTE Training and Learning (ATAL) Academy

REGISTRATION FORM

Name ....

Designation ....

Department ....

Institution ....

Phone/Mob. No.   ....

E-mail ID   ....

Signature of the applicant ....

Prof./Dr./Mr./Ms./Mrs...

.... is permitted to attend the workshop for the entire duration, if selected.

Place:
Date:

Approving Authority
(Signature and Seal)

PROGRAM SCHEDULE - WEEK 1

Week 1 – Online (7:00 pm – 9:30 pm)					
Day 1 (02-01-22)	**Day 2 (03-01-22)**	**Day 3 (04-03-22)**	**Day 4 (05-01-22)**	**Day 5 (06-01-22)**	**Day 6 (07-01-22)**
7:00 – 7:50 Session 1 (I) Wireless Sensor Networks: Architecture and Protocols	7:00 – 7:50 Session 2 (I) IoT and 5G Technology and Use Cases in Agriculture	7:00 – 7:50 Session 3 (I) Trust Management in Wireless Sensor Networks	7:00 – 7:50 Session 4 (I) Exploring Edge AI for IoT	7:00 – 7:50 Session 5 (I) Simulation of WSN and IoT in NS-3 for different applications and performance analysis of Wireless Sensor Networks.	7:00 – 7:50 Session 6 (I) Sensor Networks and IoT Fundamentals
8:00 – 8:50 Session 1 (II) Wireless Sensor Networks: Architecture and Protocols	8:00 – 8:50 Session 2 (II) IoT and 5G Technology and Use Cases in Agriculture	8:00 – 8:50 Session 3 (II) Trust Management in Wireless Sensor Networks	8:00 – 8:50 Session 4(II) Role of Modern Technologies in manufacturing Industries 4.0/5.0 solutions.	8:00 – 8:50 Session 5 (II) LoRaWAN simulation in NS-3	8:00 – 8:50 Session 6 (II) MAC Layer in WSN
9:00 – 9:30 Session 1 Interactions	9:00 – 9:30 Session 2 Interactions	9:00 – 9:30 Session 3 Interactions	9:00 – 9:30 Session 4 Interactions	9:00 – 9:30 Session 5 Interactions	9:00 – 9:30 Week 1 MCQs

**TWO WEEKS FACULTY DEVELOPMENT PROGRAMME
ON
"INTEGRATION OF WSN & IOT FOR AGRICULTURE"**

PROGRAM SCHEDULE - WEEK 2

Week 2 – Offline (9:00 am – 4:30 pm) (Hands on Session)				
Day 1 (09-01-22)	Day 2 (10-01-22)	Day 3 (11-01-22)	Day 4 (12-01-22)	Day 5 (13-01-22)
9:00 – 9:30	9:30 – 12:00 Session 8	9:30 – 12:00 Session 10	9:30 – 12:00 Session 12	9:30 – 12:00 Session 14
Inauguration	LoraWAN: Use cases for agriculture like soil fertility monitoring, smart irrigation, fertilizer sprinkler etc.	LoraWAN: Use cases in Smart Agriculture	IOT-Based Remote Monitoring Application with WSN Module using LABVIEW	Simulation of IoT using Contiki
9:30 – 12:00 Session 7 IoT with LoRaWAN	12:00 – 1:00 Article 1 Discussion	12:00 – 1:00 Article 2 Discussion	12:00 – 1:00 MCQs	12:00 – 1:00 Visit Report (Team)
12:00 – 1:00 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 Travel forVisit	2:00 – 4:00 Session 9 LoraWAN : Use cases for agriculture like soil fertility monitoring, smart irrigation, fertilizer sprinkler etc.	2:00 – 4:00 Session 11 LoraWAN : Use cases in Smart Agriculture	2:00 – 4:00 Session 13 IOT-Based Remote Monitoring Application with WSN Module using LABVIEW	2:00 – 3:00 (Reflection Journal)
2:00 – 4:00 Visit STMicroelectronics, Greater Noida	4:00 – 5:15 Teaching Practice	4:00 – 5:15 Teaching Practice	4:00 – 5:15 Teaching Practice	3:00 – 4:00 Feedback
4:00 – 5:00 Travel back				4:00 – 5:00 Valedictory

TWO WEEKS FACULTY DEVELOPMENT PROGRAMME
ON
"INTEGRATION OF WSN & IOT FOR AGRICULTURE"