REPORT

National Workshop

on

"Wireless Sensor Network and Ubiquitous Computing"

(WSNUC-2K20)

23rd Jan.-25th Jan. 2020

Sponsored By: Department of Science & Technology (DST), Rajasthan

Organized By:

Department of Computer Science & Engineering

Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur

Objective of WSNUC -2K20

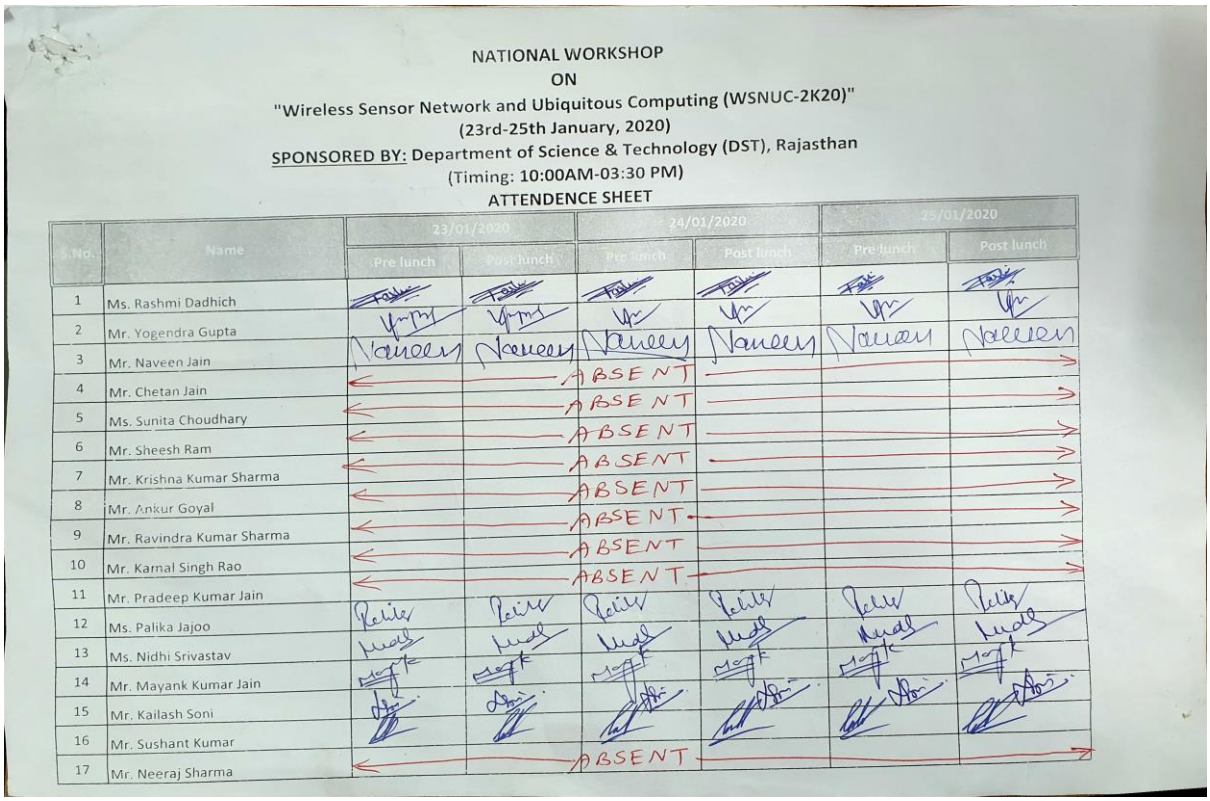
The goal of the three days National Workshop on ***Wireless Sensor Network and Ubiquitous Computing (WSNUC-2K20)*** was to train the participants on the recent trends in the field of Wireless Sensor Network and its importance in today's scenario. The workshop aimed to highlight the fundamental aspects of these topics and enable the targeted audience to apply it further for solving complex real life engineering problems.

Attractive Features of WSNUC-2K20

1. Eminent speakers from different organizations(NITs and Central Universities), who shared their knowledge with the participants :
   - Dr. A. Nagaraju, Assistant Professor, Department of Computer Science, Central University of Rajasthan, India.
   - Dr. Ramesh Babu Batula, Assistant Professor, Department of Computer Science & Engineering, Malaviya National Institute of Technology (MNIT), Jaipur, India.
   - Dr. Arka Prokash Mazumdar, Assistant Professor, Department of Computer Science & Engineering, Malaviya National Institute of Technology (MNIT), Jaipur.
   - Dr. Ritesh Patel, Associate Professor, Department of Computer Engineering, Charotar University of Science and Technology, Gujarat, India.
2. The workshop included Lab Sessions with Hands on NS3 in which specifically designed program based on the theory sessions were carried out.
3. The workshop was sponsored by DST, Rajasthan and organized by the Department of Computer Science & Engineering at Swami Keshvanand Institute of Technology, Management and Gramothan, Jaipur.
4. The purpose of the event was to provide a platform for participants, interested in this field irrespective of the stream. Here they could interact among themselves and grab the opportunity to make them aware with recent trends in the emerging fields.

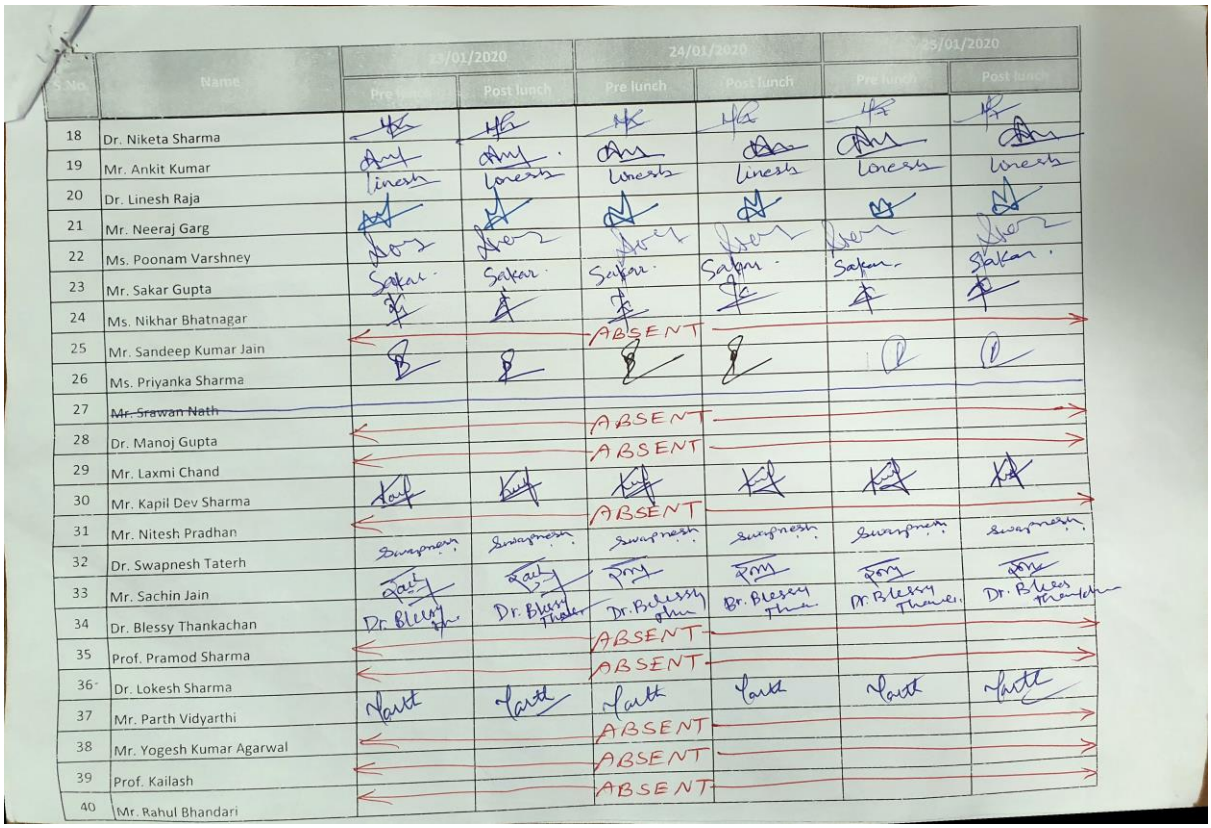
Participants Summary

Attendance Sheet of Participants:



NATIONAL WORKSHOP
ON
"Wireless Sensor Network and Ubiquitous Computing (WSNUC-2K20)"
(23rd-25th January, 2020)
SPONSORED BY: Department of Science & Technology (DST), Rajasthan
(Timing: 10:00AM-03:30 PM)
ATTENDENCE SHEET

S.No.	Name	23/01/2020		24/01/2020		25/01/2020	
		Pre lunch	Post lunch	Pre lunch	Post lunch	Pre lunch	Post lunch
1	Ms. Rashmi Dadhich						
2	Mr. Yogendra Gupta						
3	Mr. Naveen Jain						
4	Mr. Chetan Jain		ABSENT				
5	Ms. Sunita Choudhary		ABSENT				
6	Mr. Sheesh Ram		ABSENT				
7	Mr. Krishna Kumar Sharma		ABSENT				
8	Mr. Ankur Goyal		ABSENT				
9	Mr. Ravindra Kumar Sharma		ABSENT				
10	Mr. Karnal Singh Rao		ABSENT				
11	Mr. Pradeep Kumar Jain						
12	Ms. Palika Jajoo						
13	Ms. Nidhi Srivastav						
14	Mr. Mayank Kumar Jain						
15	Mr. Kailash Soni						
16	Mr. Sushant Kumar						
17	Mr. Neeraj Sharma		ABSENT				



S.No.	Name	23/01/2020		24/01/2020		25/01/2020	
		Pre lunch	Post lunch	Pre lunch	Post lunch	Pre lunch	Post lunch
18	Dr. Niketa Sharma						
19	Mr. Ankit Kumar						
20	Dr. Linesh Raja						
21	Mr. Neeraj Garg						
22	Ms. Poonam Varshney						
23	Mr. Sakar Gupta						
24	Ms. Nikhar Bhatnagar			ABSENT			
25	Mr. Sandeep Kumar Jain						
26	Ms. Priyanka Sharma						
27	~~Mr. Sawan Nath~~			ABSENT			
28	Dr. Manoj Gupta			ABSENT			
29	Mr. Laxmi Chand						
30	Mr. Kapil Dev Sharma						
31	Mr. Nitesh Pradhan			ABSENT			
32	Dr. Swapnesh Taterh						
33	Mr. Sachin Jain						
34	Dr. Blessy Thankachan						
35	Prof. Pramod Sharma			ABSENT			
36	Dr. Lokesh Sharma			ABSENT			
37	Mr. Parth Vidyarthi						
38	Mr. Yogesh Kumar Agarwal			ABSENT			
39	Prof. Kailash			ABSENT			
40	Mr. Rahul Bhandari			ABSENT			

S.No	Name	23/01/2020		24/01/2020		25/01/2020	
		Pre lunch	Post lunch	Pre lunch	Post lunch	Pre lunch	Post lunch
41	Mr. Sanjay Bhandari	←		ABSENT			→
42	Ms. Deepa Modi						
43	Mr. Gajanand Sharma						
44	Mr. Jitesh Kumar Jain	←		ABSENT			→
45	Mr. Srawan Nath						
46	Ms. Shaina	←		ABSENT			→
47	Mr. Ashutosh Kumar						
48	Dr. Naveen Hemrajani						
49	Dr.Padmanjali A Hagaragi	←		ABSENT			→
50	Mr. Mohnish Vidyarthi						
51	Mr. Ganpat Singh Chauhan						
52	Dr. Bright Keswani						
53	Ms. Richa Rawal						
54	Ms. Sanju Choudhary						
55	Ms. Priyanka						
56	Mr. Amit kumar Jha						
57	Dr. Rajat Goel						
58	Mr. Rajesh Rajaan						
59	Dr. S. R. Dogiwal						
60	Mr. Mukesh Chand						
61	Ms. Haritima Dadhich						
62	Ms. Garima Gupta						
63	Mr. Sultan Singh Saini	←		ABSENT			→

S.No	Name	23/01/2020		24/01/2020		25/01/2020	
		Pre lunch	Post lunch	Pre lunch	Post lunch	Pre lunch	Post lunch
64	Ms. Shanu Tripathi						
65	Ms. Rubal Deep Gill						
66	Mr. Harpreet Sungh Gill						
67	Ms. Anjali Pandey						
68	Mr. Mahender Kumar Beniwal						
69	Mr. Sunil Dhankhar						
70	Dr. Neha Janu						
71	Ms. Anjana Sangwan						
72	Ms. Shushila Vishnoi						
73	Mr. Vipin Jain						
74	Ms. Suman Sharma						

Objective:

- ✓ To bring together the Communities and Researchers, who are working in the Areas of Ubiquitous Computing, Wireless Sensor Network and Internet of Things.
- ✓ To make them clear understanding about Current Developments in Ubiquitous Computing, Wireless Sensor Network and types of Wireless Sensor Networks used in Internet of Things.
- ✓ To Provide Knowledge about Wireless Sensor Network, Communication Protocols, Clustering Algorithms, Routing Algorithms and Sensor Node Scheduling algorithms to be used in various Industrial and Societal Applications and to Create Ubiquitous Computing Environment for such applications.
- ✓ To provide Awareness, Knowledge and Usage of Various Tools for Implementing Ubiquitous and Wireless Sensor Network applications.
- ✓ To make them aware about Practical Problems and Challenges for implementing Wireless Sensor Network like Energy, Size Problem and its Solution.
- ✓ To Provide Hands to carry out Further Experimental work, Research work, Simulations and Analysis in Wireless Sensor Network Area.

The analysis of Wireless Sensor Network, Ubiquitous Computing and Internet of Things has become an important aspect as many organizations have been collecting massive amounts of Domain-specific data, which can contain useful information about problems such as Artificial Intelligence, Cyber Security, Fraud Detection, Marketing, and Medical Informatics. The highly focused technique are used in Wireless Sensor Network and Internet of Things, where a huge amount of raw data is uncategorized.

This Programme is designed to provide the state of the art trends and advancements in Wireless Sensor Network and Ubiquitous Computing. The Programme focuses on theoretical aspects and provides hands on experience to participants so that they become able to participate in Research & Development activities in their respective institutions. It also enables them to promote industry-institute collaborations by working on the Industrial Projects, and solve the Current Research Problems.

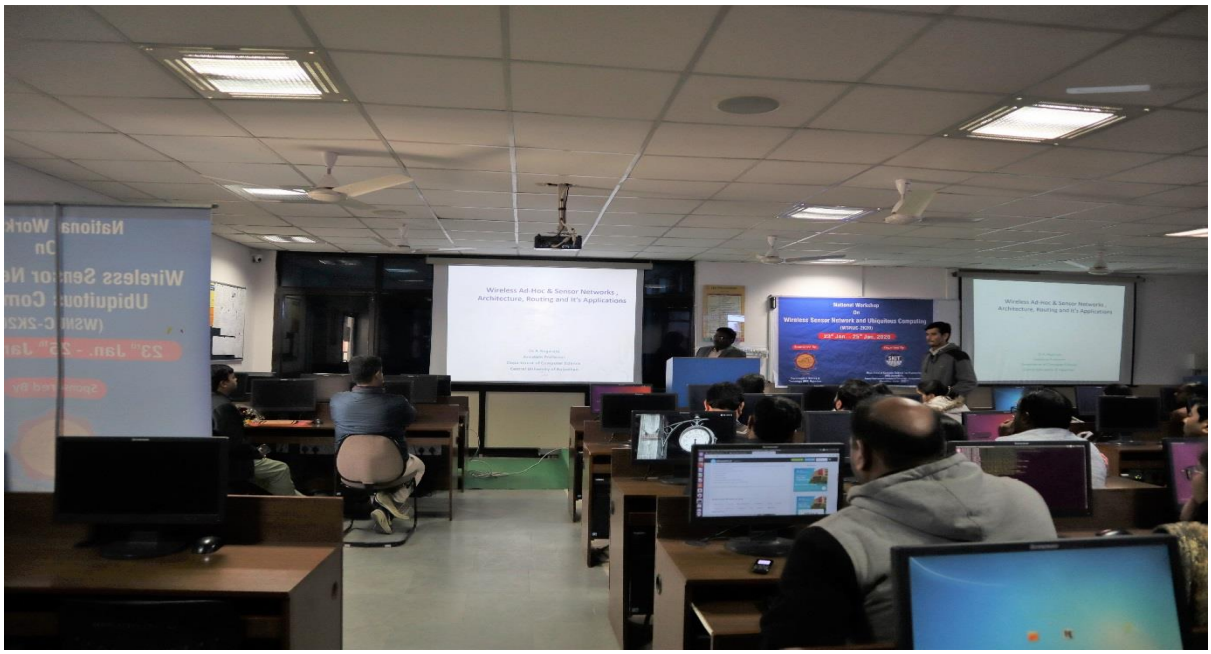
The Objective of this Workshop is to understand the Wireless Sensor Network and its use in Internet of Things. With the advancement of Wireless Sensor Network and Ubiquitous Computing, humans have made to collect data faster. In this workshop, participants learnt,

how to build and develop a Wireless Sensor Network to collect real time data and analyze it using Internet of Things.

Department: Computer Science & Engineering
Number of Participants: 50
Tools Used: NS3
Venue: Industry Academia Interface Lab (IAI Lab)

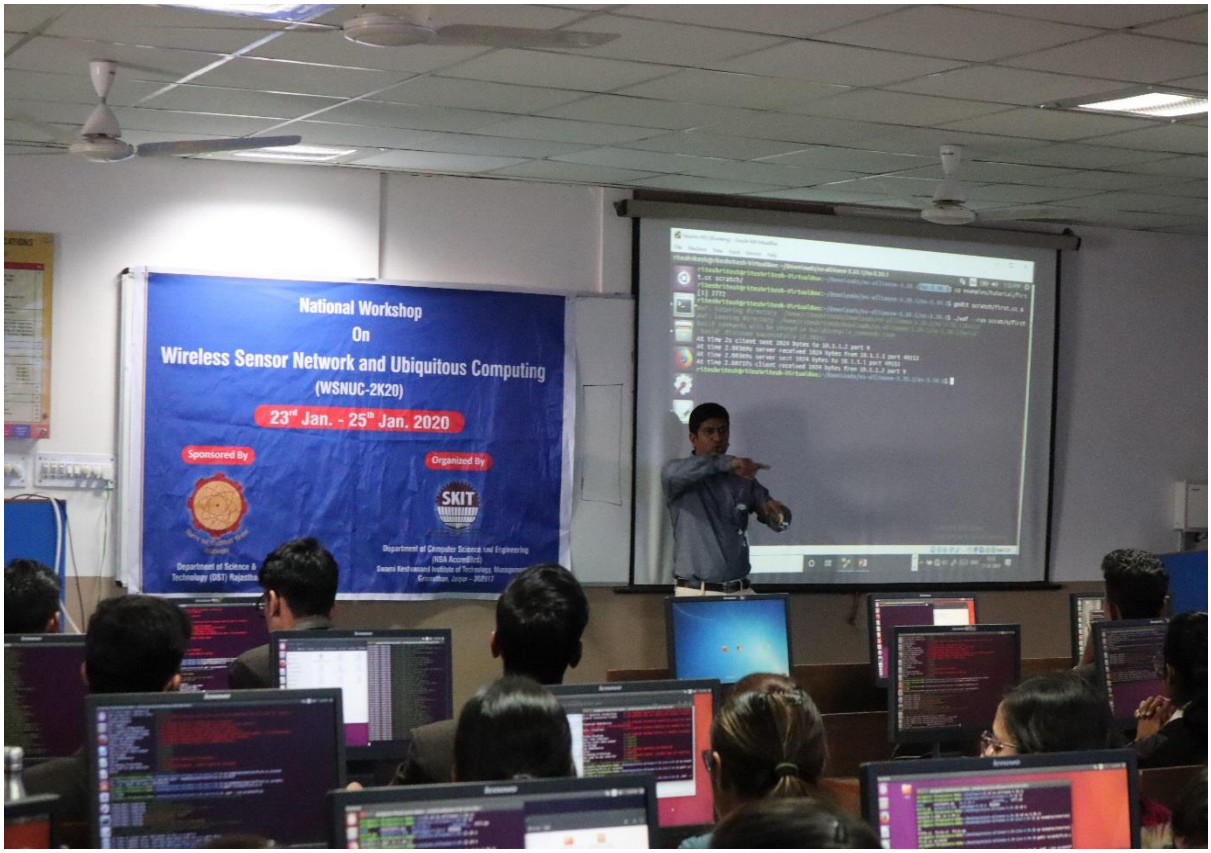
Group Photograph along with the Industry Experts

Hands On Session:



Day-1 Lab session in IAI Lab

Day-2 Lab session in IAI Lab



Day-3 Lab session in IAI Lab

WORKSHOP SCHEDULE

National Workshop
on
"Wireless Sensor Network and Ubiquitous Computing"

(WSNUC-2020)

Sponsored By:

Department of Science & Technology (DST), Rajasthan
Duration: 3 Days (23rd-25th January, 2020)

WORKSHOP SCHEDULE

Timings	Activities
8:00 am onwards	Registration and Campus Visit (All Participants)
INAUGURAL CEREMONY DAY-1 (23rd January 2020), THURSDAY	
10:00 - 10:05 am	Inauguration at Industry Acdemia Interface (IAI) Lab
10:05 - 10:10 am	Welcome Note & About the Workshop by Prof. (Dr.) Mukesh Kumar Gupta – HOD-CS, SKIT
10:10 - 10:15 am	Motivational Speech by Prof. (Dr.) S. L. Surana (Director Academics, SKIT)
10:15 - 10:20 am	Inaugural Address by Shri Jaipal Meel, Director, SKIT
10:20 - 10:30 am	Objectives and Overview of Workshop by Expert: Dr. A. Nagaraju, Assistant Professor (CS), Central University of Rajasthan.
10:30 - 10:35 am	Group Photo Session
10:35 - 11:00 am	High Tea & Interaction
11:00 – 12:30 pm	Session on "Wireless Sensor Network, Architecture, Routing & it's Applications" by Expert: Dr. A. Nagaraju, Assistant Professor (CS), Central University of Rajasthan.
12:30 – 01:30 pm	Lunch Break
01:30 – 02:30 pm	Session on "An Artificial Intelligent Based Network Coding Algorithms for Wireless Sensor Networks" by Expert: Dr. A. Nagaraju, Assistant Professor (CS), Central University of Rajasthan.
02:30 – 03:30 pm	Hands On Session "Hands on Experience using NS3"
DAY-2 (24th January 2020), FRIDAY	
10:00 – 11:00 am	Session on "Energy Efficient Schemes in WSN" **Expert:** Dr. Ramesh Babu Batula, Assistant Professor, Department of Computer Science & Engineering, Malaviya National Institute of Technology (MNIT), Jaipur.
11:00 – 11:30 am	High Tea & Interaction
11:30 – 12:30 pm	Session on "Security Issues in WSN" **Expert:** Dr. Ramesh Babu Batula, Assistant Professor, Department of Computer Science & Engineering, Malaviya National Institute of Technology (MNIT), Jaipur.
12:30 – 01:30 pm	Lunck Break
01:30 – 02:30 pm	Session on "Autonomic Management of Ubiquitous Computing" **Expert:** Dr. Arka Prokash Mazumdar, Assistant Professor, Department of Computer Science & Engineering, Malaviya National Institute of Technology (MNIT), Jaipur.

02:30 – 03:30 pm	Hands On Session "Hands on Experience using NS3" **Expert:** Dr. Arka Prokash Mazumdar, Assistant Professor, Department of Computer Science & Engineering, Malaviya National Institute of Technology (MNIT), Jaipur.
DAY-3 (25th January 2020), SATURDAY	
10:00 – 11:00 am	Session on "Architectural Structure, Design Decisions and Philosophies" **Expert:** Dr. Ritesh Patel, Associate Professor, Department of Computer Engineering, Charotar University of Science and Technology, Gujarat, India
11:00 – 11:30 am	High Tea & Interaction
11:30 – 12:30 pm	Session on "Ubiquitous intelligent applications like Health care system, wearable devices" **Expert:** Dr. Ritesh Patel, Associate Professor, Department of Computer Engineering, Charotar University of Science and Technology, Gujarat, India
12:30 – 01:30 pm	Lunck Break
01:30 – 02:30 pm	Hands On Session "Hands on Experience using NS3" **Expert:** Dr. Ritesh Patel, Associate Professor, Department of Computer Engineering, Charotar University of Science and Technology, Gujarat, India
02:30 – 03:30 pm	Closure, Feedback and Felicitation

Summary

The Analysis of Wireless Sensor Network and Ubiquitous Computing has become an important aspect as many organizations have been collecting massive amounts of domain-specific data, which can contain useful information about problems such as Smart Cities, Cyber Security, Fraud Detection, Fire Detection, Marketing, and Medical Informatics.

This Programme is designed to provide the state of the art trends and advancements in Wireless Sensor Network and Ubiquitous Computing. The Programme will focus on Theoretical aspects and provide Hands on experience to participants so that they become able to participate in Research & Development activities in their respective institutions. It also enables them to promote Industry-Institute Collaborations by working on the industrial projects, and solve the current Research Problems.

By attending this workshop, participants learn:

- To understand the concept of Wireless Sensor Network and Ubiquitous Computing.
- To provide an exposure of recent advancements in Wireless Sensor Network and Ubiquitous Computing.
- To provide hands-on-experience of best practices for Wireless Network through NS3.
- Design and develop innovative projects in the field of Wireless Sensor Network and Ubiquitous Computing.
- Applications of Wireless Sensor Network in Internet of Things.

- To foster collaboration among researchers, industrial experts and academic professionals.

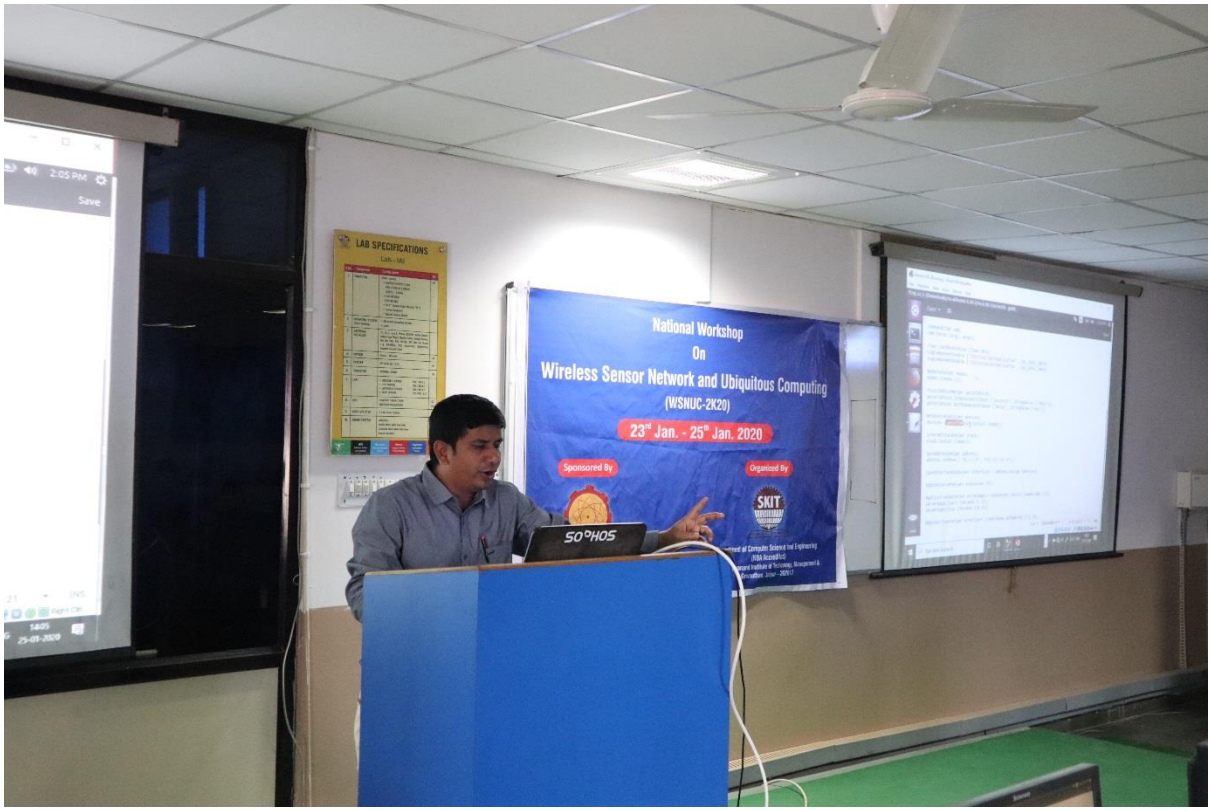
Workshop's Outcomes (R&D, Placement)

The workshop had a lot of knowledge of recent trends in Wireless Sensor Network and Ubiquitous Computing. This Workshop is very important for the Faculties, Graduate, Post Graduate students and Researchers. This workshop will definitely help the participants in the implementation of Real World Problems, Research Work as well as in Academics.

Road Ahead

The workshop will help participants in future for the Research Work & Academics.

Speaker: Dr. A. Nagaraju, Assistant Professor (CS), Central University of Rajasthan



Speaker: Dr. Ritesh Patel, Associate Professor, Department of Computer Engineering, Charotar University of Science and Technology, Gujarat

Questions & Answering Session

Certificate Distribution

Media Coverage

सेंसर नेटवर्क पर वर्कशॉप

स्वामी केशवानंद इंस्टीट्यूट ऑफ टैक्नोलॉजी में डीएसटी राजस्थान की ओर से नेशनल वर्कशॉप वायरलेस सेंसर नेटवर्क व युबिक्युट्स कम्प्यूटिंग में विभिन्न तकनीकी एक्सपर्ट ने वायरलेस सेंसर नेटवर्क फील्ड पर प्रैक्टिकल सेशन कराए। डॉ. रितेश पटेल, डॉ. सुनीता गुप्ता व डॉ. पंकज दाधीच ने वायरलेस सेंसर नेटवर्क व युबिक्युट्स कम्प्यूटिंग के संबंध में विचार व्यक्त किए और सभी प्रतिभागियों को सर्टिफिकेट देकर सम्मानित किया। कार्यक्रम के उद्घाटन समारोह में जयपाल मील (संस्थान निदेशक), शैक्षणिक निदेशक डॉ. एस.एल. सुराणा सहित कॉलेज की ओर से अन्य वक्ताओं ने भी सेशन में संबोधित किया।

Newspaper- 29th January, 2020

Workshop Outcomes

Faculties, Researchers and Participants are able:

- To understand the concept of Wireless Sensor Network and Ubiquitous Computing.
- To provide an exposure of recent advancements in Wireless Sensor Network and Ubiquitous Computing.
- To provide hands-on-experience of best practices for Wireless Network through NS3.
- Design and develop innovative projects in the field of Wireless Sensor Network and Ubiquitous Computing.
- To understand the Applications of Wireless Sensor Network in Internet of Things.
- To foster collaboration among researchers, industrial experts and academic professionals.