

	<p style="text-align: center;">Department of Information Technology (NBA Accredited)</p> <p style="text-align: center;">AICTE Sponsored Short Term Training Programme on <i>“Internet of Things: Education Canvas”</i> <i>(02nd March – 07th March, 2020)</i></p>	
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An AICTE sponsored Short Term Training Programme (STTP) on “**Internet of Things: Education Canvas**” was successfully organized by Department of Information Technology in the Swami Keshvanand Institute of Technology, Management & Gramothan, Jaipur from 02nd March, 2020 to 07th March, 2020. The programme had the primary objective to provide the state of the art trends and advancements of Internet of Things in Education Canvas to the faculty members of different organizations. Some other specific objectives which were targeted in this STTP are:

- ✓ To provide exposure to IoT Tools and Techniques to enhance the teaching and research skills.
- ✓ To form a bridge between the industry and academic institutions to update their knowledge.
- ✓ To understand the need of IoT in the research community and the software industry in India.
- ✓ To appreciate the differences among Big Data, Cloud Computing and IoT.
- ✓ To understand the need of innovative applications, such as Smart City, Smart Health, Smart Manufacturing, Smart Agriculture, etc.
- ✓ To train the participants on how to design and program the IoT based system.
- ✓ To understand the concept of Internet of Things in Education Canvas.
- ✓ To provide an exposure of recent advancements in Internet of Things.
- ✓ To provide hands-on-experience of best practices for Internet of Things through various case studies.
- ✓ To foster collaboration among researchers, industrial experts and academic professionals.

Programme Highlights

- ✓ **Number of participants:** In all 45 participants attended the STTP Programme. There were participants from all parts of the country namely Dharwad, Hubballi, Karnataka, Mumbai, Bhopal and Rajasthan.
- ✓ **Resource Persons:** Following were the key resource persons in this programme:

1	Dr. Mani Madhukar	Program Manager - University Relations, IBM India Pvt. Ltd.
2	Mr. Ishan Vaid	Subject Matter Expert, IBM India Pvt. Ltd.
3	Mr. Krishna Balaga,	Subject Matter Expert, IBM India Pvt. Ltd.
4	Mr. Sombabu Gunithi	Technical Manager, Einfochips, India.

The one-week Short Term Training Programme on Internet of Things: Education Canvas (IOT-2020) funded by AICTE was organized successfully with participation of faculty members of different fields at Swami Keshvanand Institute of Technology, Management & Gramothan under the aegis of Department of Information Technology. This course was aimed for faculty members who are teaching various disciplines of Computer Science and Engineering subjects linked with Internet of Things in colleges or Universities. There were 46 number of participants registered for this programme from different Universities and Colleges of PAN India and 45 number of participants successfully completed the programme.

Prof. M. P. Poonia, Vice-chairman (AICTE), New Delhi inaugurated the programme. In his address, Prof Poonia stressed upon the paradigm changes from black board based teaching to modern ICT base teaching and the importance of using online tools for teaching and evaluation in present days. He added importance of innovation in the field of engineering optimization.



Inaugural Ceremony of IOT-2020

Program Coordinator Professor Anil Chaudhary briefly introduced about the contents to be delivered during STTP and emphasized on the importance of the objectives of the course and possible outcomes. Further, Guest of honor Dr. Mani Madhukar, Program Manager - University Relations, IBM India Pvt. Ltd. Prof. (Dr.) Rajesh Kumar, HOD, Department of Electrical Engineering, MNIT Jaipur and Dr. Meghanshu Vashista, Associate Professor, Department of Mechanical Engineering, IIT, BHU gave a short motivational speech to the participants. Other officials of SKIT, including chairman, director and director academics welcomed all the participants for this course. The inaugural function was closed with the vote of thanks given by the Principal, Dr. Ramesh Kumar Pachar.



Inaugural Ceremony of IOT-2020

(Day-1)

Session-1 was delivered by Dr. Mani Madhukar, Program Manager- University Relations, IBM India Pvt. Ltd. where he talked about the Introduction to Cloud, Why Cloud is needed for IoT, IBM Cloud services and getting an academic account for Cloud usage. Immediately after this session, an important lecture based IBM Watson IoT platform, Demo, Understanding Blockchain for enterprise, Blockchain and IoT was taken by Dr. Mani Madhukar, Program Manager- University Relations, IBM India Pvt. Ltd. The session was aimed to provide an overview of Deep dive into Hyperledger Fabric, Hyperledger Composer, use case discussion, IoT business and opportunities. He discussed various fields of application of IoT, in the areas of Information Technology/ Computer Science and Engineering.



Dr. Mani Madhukar, Program Manager - University Relations, IBM India Pvt. Ltd. Delivering lecture on IoT platform

(Day-2)

Day-2 started with a session on Understanding Node-Red, Demo by Mr. Ishan Vaid, Subject Matter Expert, IBM India Pvt. Ltd. where he discussed basic details of Node-Red, IBM Cloud and IoT case studies. After this session, A Hands on session for Practical exercises with IBM Cloud and IoT was taken by Mr. Ishan Vaid, Subject Matter Expert, IBM India Pvt. Ltd., where he emphasized on implementation of IoT in different scenarios.



Mr. Ishan Vaid, Subject Matter Expert, IBM India Pvt. Ltd. Hands on session for Building IoT Applications

(Day-3)

Day-3 started with a session on Hardware requirement for IoT, Raspberry Pi Board and its Applications. This session provided an Installation of OS in Raspberry Pi, Configuration of raspberry pi. The session was taken by Mr. Ishan Vaid, Subject Matter Expert, IBM India Pvt. Ltd. Further, a study on different type of sensors and their use cases and Discussion on Sensors application and usages, Visual recognition service, Security of IoT, Home automation project based on raspberry pi.



Lab session by Mr. Ishan Vaid, Subject Matter Expert, IBM India Pvt. Ltd. on Raspberry Pi and its Applications

(Day-4)

Mr. Krishna Balaga, Subject Matter Expert, IBM India Pvt. Ltd. taken a session on Introduction to event driven Programming and Serverless computing. The participants were benefited with the knowledge to understand the Data stream Analytics (live) on the cloud, Building Cognitive IoT Applications using Watson services.

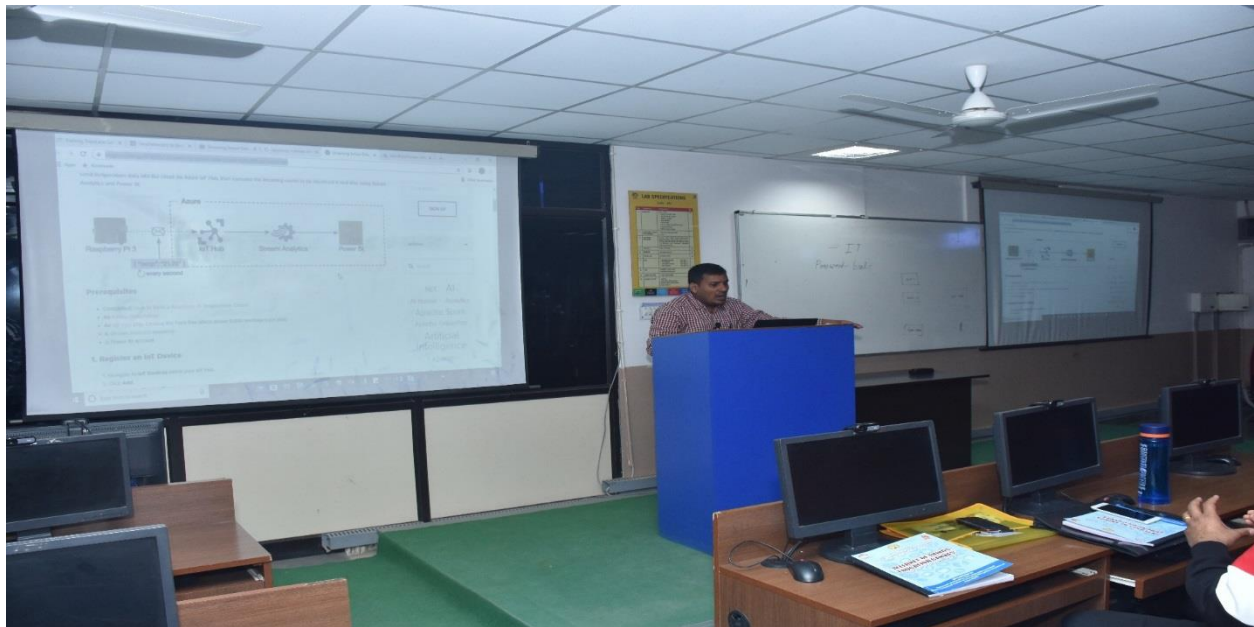
The next session was taken by Mr. Krishna Balaga, Subject Matter Expert, IBM India Pvt. Ltd. on Time series Analysis and Basics of Predictive modelling on Watson Studio and Industry 4.0 and Best Practices were discussed in this session.



Lab Session on Data Processing Using IoT

(Day-5)

The sessions of the day 5 was taken by Mr. Sombabu Gunithi, Technical Manager, Einfochips, India on Emergence of Intelligent Cloud & Intelligent Edge. The Session was based on Evolution of IoT and IoT protocols (deep dive into MQTT protocol). The last session of the day was taken on IoT architecture & relevant case studies.



Lecture on IoT and Cloud Computing by Mr. Sombabu Gunithi, Technical Manager, Einfochips, India

(Day-6)

The morning session was dedicated to the problems of Deep dive into Azure IoT and was taken by Mr. Sombabu Gunithi, Technical Manager, Einfochips, India. He presented the case studies and MQTT Essentials on IoT protocol.

Further the session on Live demonstration: MQTT and Azure IoT PaaS components, includes live demonstration of connecting simulated device to Azure IoT were taken by Mr. Sombabu Gunithi, Technical Manager, Einfochips.

Immediately after these sessions an online test based on the knowledge imparted was conducted. During compilation of the results and participants were asked to complete and give the feedback of the program.



Lecture delivered by Mr. Sombabu Gunithi, Technical Manager, Einfochips, India on IOT and Arduino

After evaluation of the online test, marks were announced and certificates were distributed. In view of the above, PEC committee submit the recommendation that STTP fulfils its prime objectives to bring the faculty members of different engineering, science and allied subjects onto one platform to update with the advances in the area of Internet of Things and would be able to provide effective teaching learning practices, expose to modern simulation tools & applications and scientific approaches of planning and execution of experiments.

Glimpses of the STTP-2020



