



GUJARAT TECHNOLOGICAL UNIVERSITY

Internet of Things

Title: 2 weeks UG Internship on Internet on Things

Duration [contact hours]: 02 weeks [05 Days/week, Min. 30 hours]

Mode: Offline

Fee: Rs. 2000/-

Max batch size: 30 students.

Rationale:

- The course provide an insight of IoT and concepts.
- The course focus on to gain the hands on about the Real-time operations of IoT and solutions

Course Content:

Module	Content	No of Hours	Faculty/Instructor
1.	Introduction of IoT, IoT and digitisation, IoT application and challenges, Working with sensors, relays and display	3	Day 1: Prof. (Dr.) Komal Borisagar
	IoT Development Platform: Architecture of IoT development Board, Boards and Shields, ADC and communication port details on board, Hardware and software interrupts	3	Day 2: Prof. Raj Hakani
2.	IoT Communication Protocols: Basics of serial communications HTTP protocol MQTT protocol	3	Day 3: Industry Expert Mr. Jignesh Patoliya e-infochip, Ahmedabad
	Hands on practice on IoT Builder: Builder Platform-2, Working with Node MCU and ESP-32	3	Day 4: Prof. (Dr.) Gautam Makwana/ Prof. Puja Singh
3.	Introduction to Python: Values and Data types, Operators and Operands, Type conversion Functions, Errors and Debugging.	3	Day 5: Prof. Arpita Maheriya
	Working with Python Libraries: Sequences and Iteration, Essential Libraries, Data Wrangling.	3	Day 6: Prof. Aanal Raval/ Prof. Arpita Maheriya



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4.	Introduction to Deep Learning/ML: Regression, Decision Tree, K-means Clustering, Model Evaluation and Dimensionality, ANN.	3	Day 7: Prof. Aanal Raval
	IoT and Cloud Services: Introduction to cloud services, How to use cloud services for IoT applications	3	Day 8: Industry Expert Mr. Nirav Parpatani e-infochip, Ahmedabad
5.	Mini Project Real time problem solutions	3	Day 9: Prof. Raj Hakani / Prof. Rutika Ghariya
	Industrial visit @ E-infochips.	3	Day 10:

Learning Outcome:

After completion of the Internship, Students will be able to:

No	Course Outcomes	RBT Level*
01	Basic understanding of the IoT.	UN
02	Identification of Communication Protocols of IoT applications.	UN
03	Apply Coding skills for the IoT.	AP
04	Analyzing the Real-time IoT solutions and Implementation.	AN
05	Create a Mini project on real-time solution	EL

*RM: Remember, UN: Understand, AP: Apply, AN: Analyze, EL: Evaluate, CR: Create.
