

## Lab Worksheet #1

CA5305 (Internet of Things)

October 2021 – January 2022

Instructor: Dr. M. Deivamani

Due: Tuesday, October 26, 2021 (11:59pm)

**Task 1:** Watch videos following videos. There is **no deliverable** for this task.

V1: <https://www.youtube.com/watch?v=uEsKZGOxNKw>

V2: <https://www.youtube.com/watch?v=6mBO2vqLv38>

**Task 2:** Laboratory assignments will be programmed in Python. Prepare your laptop for programming in the Python environment by following the instructions provided below. The suggested Python environment is Jupyter Notebook, but you can use any Python development environment you prefer. If you are new to Python, follow the link to the Python tutorials on the <https://pythonspot.com/> page to get some basic Python understanding. There is **no deliverable** for this task.

**Task 3:** Surf web and provide brief answers (no more than 100 words per response) to the following questions:

- **Question 1:** We will be able to find IoT examples in all parts of our lives. Do online search to identify a concrete example of an IoT system (existing or futuristic) in each of the following application areas: home, healthcare, transportation, and community (i.e., four examples in total). For each example, provide a description of what the problem is that the IoT solves, how it solves it, who the users are, and what a risk of the example is (e.g., in terms of ethical concerns, privacy, safety, etc.). Limit each example description to 200 words.
- **Question 2:** Provide brief definitions (4-6 sentences) for each of the following concepts: IoT, RFID, WSN, MEMS, hype cycle, IPv4, IPv6, QoS, MAC, LED, cloud computing, edge computing.

**Task 4:** Surf web and make a study about the sensors used in Internet of Things (IoT). Provide brief definitions by understanding its' working principles, specification and characteristics with necessary illustrations for each of the following sensors: Temperature Sensor, Proximity Sensor, Pressure Sensor, IR Sensor, Ultrasonic Sensor, Humidity Sensors, Motion Detection Sensor, Level Sensor, Accelerometer Sensors, Gyroscope and Optical Sensors.

**Deliverables:** Submit your assignment report as a **PDF file**, with file name as: Your\_Register\_Number\_A0.pdf in Microsoft Teams. Clearly indicate "**Assignment 0**", place your name, roll no, and Batch (MCA(R)/MCA(SS)) at the top of the document. The deadline for this assignment is October 26, 2021, 11.59pm.