**DIY a Wireless IoT Accelerometer with Arduino**

This hands-on workshop introduces participants to the fundamentals of wireless IoT sensor node development using the Arduino Devkit (Uno R4 WiFi). Over the session, students will learn to build a wireless accelerometer system from scratch, integrating modules for sensing, communication, and storage. The course begins with an introduction to the Arduino platform and its development environment. Participants will learn how to integrate an accelerometer module for acceleration sensing, an RF module for local communication and time synchronization, and a WiFi module for internet-based communication and NTP time sync. They will also implement data logging with an SD card module and enable real-time multitasking using FreeRTOS for efficient task management. By the end of the session, students will have gained hands-on experience in hardware integration, embedded programming, and real-time system design — key skills for developing modern IoT solutions in fields such as structural health monitoring and environmental sensing.

* **Accelerometer**
* **RF module**
* **Onboard Wifi**
* **SD card**
* **FIFO**
* **~~FreeRTOS~~**