	CENTRE OF EXCELLENCE IN MANUFACTURING NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI
	Internet of Things Lab

Internet of Things Course – Modules	Duration: 40 Hours
PREREQUISITES	Basic Knowledge of Hardware and Software
WHO SHOULD ATTEND	Students, Engineers, Individuals, Researchers, Academicians.

MODULE 1 - INTRODUCTION TO IOT CONCEPTS   8 Hours

About IoT (What, Why, use cases), About Industry 4.0, Internet of Things Architecture, Protocols & Services – MODBUS, ProfiBus, CANBus, CANOpen, Basics of Data Acquisition Hardware, Raspberry Pi Module, Arduino Module, Basics of Machine & Sensors to be connected, Sensors, Machines/Devices - Remote Devices, Wearables, Industrial Machines, Data Acquisition Process, Connecting signals from device to DAC, Security and privacy concerns of IoT

MODULE 2 - SETTING UP YOUR DATONIS DEVELOPMENT PLATFORM
12 Hours

Platform overview - Architecture, hosting, Sign-up on the platform, create account, Data acquisition process - map parameters to Datonis, Datonis Edge Gateway Installation and Basic Configuration, Add and Manage Things - Thing Templates, Things, Groups, Access Control – Roles, Users, Key Pairs, Audit Trail Exercise –
1.   Visualize machine data on Datonis
2.   Configure alerts

Module 3 - Analytics on Datonis Platform   8 Hours

Datonis Advanced features - Rules for instream analytics, Instructions (MQTT), Analytics Engine.
Exercise -
   1. Find co-relation between two sensor metrics

Module 4 - Application Development on Datonis Platform   12 Hours

CURL Advanced - How to use APIs to use platform from console, use web framework of your choice Node.js to build a sample application
Exercise -
   1. Mechatronics Lab Integration