

Course Module for Level 3 – Advance Level Course

<u>Course Module Level:</u>	Level 3 - Advance Level (+Internship)
<u>Course Objective:</u>	This course will enable participants to understand insights into Mind sphere essential. Learn about applications like Mind connect IoT Extension, Advanced analytics, Creating aspects, Predictive maintenance and Visualizing Data in Fleet Manager. This course will enable participants to build end-to-end IoT solutions.
<u>Course Outcome:</u>	<ol style="list-style-type: none"> 1. Students will be able to Identify and utilize the full potential of Mind sphere. 2. Understand the concept and technological development in Industry 4.0. 3. Understands the Blockchain in IoT & IIoT, IoT ecosystem.
<u>Course Duration:</u>	3 or 5 Days
<u>Course Prerequisites</u>	<p>Basic knowledge on C Language</p> <p>Should Complete Level 2 - Intermediate Level course</p> <p>Computer Networks respective to Internet</p>

<u>Sl No</u>	<u>Lecture /Lab Wise Breakup</u>	
	<u>Chapters</u>	<u>Contents</u>
1	Introduction to Mind sphere	Overview of Mind sphere Concepts
2	MindSphere Applications	Mind Connect Lib
		Configuration of Mind connect Nano
		Interacting with the hardware
3	Introduction to PLC and TIA Portal	Overview of PLC and its application
		TIA Portal online communication

		Configuration of devices and networks.
4	Application Management	1. Asset Manager
		2. Fleet Manager
		3. Settings
		4. Developer Cockpit.
5	Asset Manager:	Introduction – Data model in Asset Manager – User interface – Creating Aspects – create assets – Sharing assets – Configuring Mind connect Element – Visual flow creator
6	Node –Red	Activities: Simulation of various industry cases using Node-red and Mindsphere
7	Contiki	Overview of Contiki Operating System and Cooja Simulator.
8	Mind connect IOT Extension and On boarding of MAPS 6S:	Integrating IOT lab with Mechatronics Lab using MindConnect Nano Box.
9	Project	