

<b>Course Modules</b>		
<b>S.No</b>	<b>Modules</b>	<b>Hours</b>
1	<b>IoT Management</b>	4.5
	<ul style="list-style-type: none"> <li>IoT Strategy; Capturing and Creating Value</li> <li>Technology Selection, Security &amp; Privacy Issues</li> <li>Creating and Presenting Business Case</li> </ul>	
2	<b>IoT Things (Hardware)</b>	24
	<ul style="list-style-type: none"> <li>Architecture of ARM</li> <li>Lab 1: Introduction to Tool Environment and Hello World Lab</li> <li>Architecture of ARM</li> <li>Architecture of ARM</li> <li>Lab 2: Interfacing ARM with Leds and Pushbuttons/switches</li> <li>Architecture of ARM</li> <li>Lab 3: Interfacing ARM with UART along with Leds and Pushbuttons</li> <li>Lab 4: Interfacing Sensors with ARM and polling</li> <li>Lab 5: Interfacing Sensor with ARM and ARM with Android APP via BLE</li> <li>Lab 6: ARM: Interrupts and Timers</li> <li>Lab 7: ARM: DMA</li> <li>Lab 8: Singal processing on ARM</li> <li>Lab 9: BLE Mesh</li> <li>Lab 10: BLE Mesh</li> <li>Lab 11: BLE Mesh</li> <li>Hardware round-up</li> </ul>	
3	<b>Internet of IoT (Networking)</b>	15
	<ul style="list-style-type: none"> <li>Communication Criteria</li> <li>Planning Essentials - QoS Metrics, Range, Battery Life, Bandwidth, RAT Selection</li> <li>IoT Access Technology - Part 1 of 4</li> <li>IoT Access Technology - Part 2 of 4</li> <li>IoT Access Technology - Part 3 of 4</li> <li>Mathematical Basis of Network Planning - Probability Theory, Performance Guarantees</li> <li>IoT Access Technology - Part 4 of 4</li> <li>Capacity Oriented Planning; Coverage Oriented planning; Network Dimensioning</li> <li>IoT Case Studies</li> <li>Internet of IoT round-up</li> </ul>	
4	<b>Applications and Big Data</b>	31.5
	<ul style="list-style-type: none"> <li>Introduction to Cloud and Applications</li> <li>Map Reduce and Its extensions</li> <li>Map Reduce and Its extensions Lab</li> <li>LSH</li> <li>LSH Lab</li> </ul>	

	<ul style="list-style-type: none"> <li>• Link Analysis</li> <li>• Link Analysis Lab</li> <li>• Clustering of Large Datasets</li> <li>• Clustering of Large Datasets lab</li> <li>• Frequent Itemsets</li> <li>• Frequent itemsets lab</li> <li>• Structured Data and Semantic Web</li> <li>• Introduction to RDF and OWL</li> <li>• Semantic Web and RDF/ OWL Lab</li> <li>• Mining of Health Data - Part 1</li> <li>• Mining of Health Data - Part 2</li> <li>• Docker Based container for Healthcare - Part 1</li> <li>• Docker Based container for Healthcare - Part 2</li> <li>• Applications and Big-Data round-up</li> </ul>	
5	<b>Security in IoT</b>	12
	<ul style="list-style-type: none"> <li>• System Design - Basics and Vulnerability</li> <li>• Intro to Networking - from security exploit perspectives</li> <li>• Side channel attacks and counter measures</li> <li>• Common exploits and attack methods for IoT Devices</li> <li>• Hardware Trojan Detection &amp; Trusted IC Design</li> <li>• Tools for performing exploits &amp; Attack Prevention Methods</li> <li>• Good practices in secure IoT Design</li> <li>• Security round-up</li> </ul>	
	<b>Total Program Hours</b>	<b>87 Hours</b>