



MANGALORE UNIVERSITY

DEPARTMENT OF COMPUTER SCIENCE

MASTER OF COMPUTER APPLICATIONS (MCA) PROGRAMME

MCAS507 :INTERNET OF THINGS		
Hours/Week: 4 Credits : 4		I.A. Marks: 30 Exam. Marks: 70
Course Outcomes: CO1: Identify the requirements for the real world problems. CO2: Conduct a survey of several available literatures in the preferred field of study. CO3: Study and enhance software/ hardware skills. CO4: Demonstrate and build the project successfully by hardware requirements, coding, emulating		
	UNIT-I	12 Hours
Introduction to Internet of Things –Definition and Characteristics of IoT, Physical Design ofIoT – IoT Protocols, IoT communication models, IoT Communication APIs IoT enabled Technologies – Wireless Sensor Networks, Cloud Computing, Big data analytics, Communication protocols, Embedded Systems, IoT Levels and Templates Domain Specific IoTs – Home, City, Environment, Energy, Retail, Logistics, Agriculture, Industry, health and Lifestyle		
	UNIT-II	12 Hours
IoT and M2M – Software defined networks, network function virtualization, difference between SDN and NFV for IoT Basics of IoT System Management with NETCOZF, YANGNETCONF,YANG, SNMP NETOPEER		
	UNIT-III	12 Hours
Introduction to Python - Language features of Python, Data types, data structures, Control of flow, functions, modules, packaging, file handling, data/time operations, classes, Exception handling Python packages - JSON, XML, HTTPLib, URLLib, SMTPLib		

	UNIT-IV	12 Hours
IoT Physical Devices and Endpoints - Introduction to Raspberry PI-Interfaces (serial,SPI, I2C) Programming – Python program with Raspberry PI with focus of interfacing external gadgets, controlling output, reading input from pins. IoT Physical Servers and Cloud Offerings – Introduction to Cloud Storage models and communication APIs Webserver – Web server for IoT, Cloud for IoT, Python web application framework Designing a RESTful web API		
REFERENCE BOOKS 1. ArshdeepBahga and Vijay Madiseti,Internet of Things - A Hands-on Approach, Universities Press, 2015. 2. Matt Richardson & Shawn Wallace, O'Reilly (SPD),Getting Started with Raspberry Pi, 2014.		

