RGPV (DIPLOMA WING) BHOPAL	OBE CURRICULUM FOR THE COURSE	FORMAT-3	Sheet No. 1

Branch	Computer Science and Engineering	Semester	fifth

Course Code	C04	Course Name	Internet of Things

Course Objective: The objective of this course is to provide an understanding of the technologies and the standards relating to the Internet of Things and to develop skills on IoT technical planning.		Teach Hrs	Marks
Course Outcome 1	• Understand the vision of IoT from a global context	20	20
Learning Outcome 1	• Demonstrate the basics of Internet of things	10	PT 1(10)
Contents	The Internet of Things Today, Time for Convergence, Towards the IoT Universe, Internet of Things Vision, IoT Strategic Research and Innovation Directions, IoT Applications, Future Internet Technologies		
Method of Assessment	Internal Theory Examination		
Learning Outcome 2	• Explain IoT infrastructure, network and standardization	10	ET(10)
Contents	Infrastructure, Networks and Communication, Processes, Data Management, Security, Privacy & Trust, Device Level Energy Issues, IoT Related Standardization, Recommendations on Research Topics.		
Method of Assessment	End Term Theory Examination		
Course Outcome 2	• Understand the basics of Machine to Machine and Internet of Things.	20	20

Learning Outcome 1	• Explain the transaction from M2M to IoT.	10	ET(10)
Contents	M2M to IoT – A Basic Perspective,Introduction, M2M Value Chains, IoT Value Chains, An emerging industrial structure for IoT, The international driven global value chain and global information monopolies.		
Method of Assessment	End Term Theory Examination		
Learning Outcome 2	• Discuss the Architectural Overview of M2M and IoT.	10	ET(10)
Contents	M2M to IoT- overview, Building an architecture, Main design principles and needed capabilities, An IoT architecture outline, standards considerations		
Method of Assessment	End Term Theory Examination		
Course Outcome 3	• Interface I/O devices, sensors & communication modules	20	30
Learning Outcome 1	• Explain basic components of sensor node and types of sensors	6	PT(10)
Contents	Sensor, Basic components and challenges of a sensor node, Sensor features, Sensor resolution; Wireless Sensor Networks and its Applications; Sensor classes: Analog, Digital, Scalar, Vector Sensors; Sensor Types bias, drift, Hysteresis error, quantization error;		
Method of Assessment	Internal Quiz/Assignments		
Learning Outcome 2	• Explain the actuators and its types.	6	TW(10)
Contents	Actuator; Actuator types: Hydraulic, Pneumatic, electrical, thermal/magnetic, mechanical actuators, soft actuators		

Method of Assessment	Internal Quiz/Assignments		
Learning Outcome 3	• Understand the basics of IoT Networking.	8	ET(10)
Contents	IoT Components, Functional components of IoT, IoT service oriented architecture, IEEE 802.15.4, ZigBee and its types, RFID Features, RFID working principle and applications, NFC (Near Field communication), Bluetooth		
Method of Assessment	End Term Theory Examination		
Course Outcome 4	• Develop real life IoT based projects	20	20
Learning Outcome 1	• Explain basic IoT platforms.	10	ET(10)
Contents	IoT Platforms, Arduino, Raspberry Pi Board, Other IoT Platforms		
Method of Assessment	End Term Theory Examination		
Learning Outcome 2	• Illustrate basics of cloud technology used for IoTs.	10	ET(10)
Contents	Data Analytics for IoT, Cloud for IoT, Cloud storage models & communication APIs, IoT case studies		
Method of Assessment	End Term Theory Examination		
Course Outcome 5	• Application of IoT in Industrial and Commercial Building Automation and Real World Design Constraints.	10	10

Learning Outcome 1	• Explain Internet of Things Privacy and Security.	10	ET(10)
Contents	Introduction, Overview of Governance, Privacy and Security Issues, Contribution from FP7 Projects, Security, Privacy and Trust in IoT-Data-Platforms for Smart Cities, Data Aggregation for the IoT in Smart Cities		
Method of Assessment	End Term Theory Examination		

Abbreviation:

PT: Progressive Test TW: Term Work ET: External Theory