MCA406: Internet of Things

Teaching Scheme	Examination Scheme
Lectures: 3 hrs/Week Tutorials: 1 hr/Week Credits: 4	Class Test -12Marks Teachers Assessment - 6Marks Attendance – 12 Marks End Semester Exam – 70 marks

Pre-requisites: Network Fundamental and Basic Introduction about Python.

Course Objectives:

7. Define the Internet of Things.
8. To discussed different type of design of IoT.
9. Describe the important computer network and there uses.
10. Introduction to challenges in Design, Development and Security.
11. Introduction to nature wise requirement of different type IoT Application.
12. Introduction to development IoT application in Python.

Detailed Syllabus

Unit-1 **Introduction to IoT-** Defining IoT, Characteristics of IoT, Physical design of IoT, Logical, design of IoT, Functional blocks of IoT, Communication models & APIs
Unit-2 **IoT & M2M-** Machine to Machine, Difference between IoT and M2M, Software, define Network
Unit-3 **Network & Communication aspects-** Wireless medium access issues, MAC protocol survey, Survey routing protocols, Sensor deployment & Node discovery, Data aggregation & dissemination
Unit-4 **Challenges in IoT-** Design challenges, Development challenges, Security challenges, Other challenges
Unit-5 **Domain specific applications of IoT-** Home automation, Industry applications, Surveillance applications, Other IoT applications
Unit-6 **Developing IoTs -** Introduction to Python, Introduction to different IoT tools, Developing applications through IoT tools, Developing sensor based application through embedded system platform, Implementing IoT concepts with python

Head
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Text and Reference Books

1. "Operating system concepts", Galvin, TMH, IV, 2006
2. "Operating system concepts & Design", Milankovic, Addision Wesely, 2010.
3. "Operating System", Madnic, TMH, 1997
4. "Operating System", A.s. Godbole, TMH, 2001.
5. "Operating System", W.Stallings, Printice Hall, VI, 2007

Course Outcomes:

After completing the course, students will be able to:

1. Experiment with various CPU scheduling algorithms with the understanding of operating system concepts
2. Explain the need for process coordination
3. Apply the various memory management strategies
4. Illustrate the various file management strategies
5. Explain about disk management

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