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| COURSE | Name | : Modern Computing Network |
| | Code | : EE185351 |
| | Credit(s) | : 3 |
| | Semester | : III |

Description of Course

This course studies modern computers, internet of things protocols and technologies, the latest technology in the field of computer networks, namely communication skills without requiring human-to-human or human interaction with computers. IoT can be composed of several sensor nodes that are equipped by data processors, memory, batteries and wireless communication equipment (Wireless Sensor Node / WSN). The sensor node sends data to the Sink and sink sends data to the Server or Cloud Storage via the internet network.

Learning Outcomes

Knowledge

(P01) Mastering the concepts and principles of science in a comprehensive manner, and to develop procedures and strategies needed for the analysis and design of systems related to the field of power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics as a preparation for further education or professional career.

Specific Skill

(KK01) Being able to formulate engineering problems with new ideas for the development of technology in power systems, control systems, multimedia telecommunications, electronics, intelligent multimedia network, or telematics.

General Skill

(KU11) Being able to implement information and communication technology in the context of execution of his/her work.

Attitude

(S09) Demonstrating attitude of responsibility on work in his/her field of expertise independently.
(S12) Working together to be able to make the most of his/her potential.

Course Learning Outcomes

Knowledge

Able to understand the basic concepts of the internet and the internet of things working.

Specific Skill

Able to determine the performance of packet-based real time networks.

General Skill

Able to apply modern computer concepts in fields: agriculture, transportation, health and several other fields.

Attitude

Demonstrating attitude of being responsible for the work in his area of expertise independently.
Working together to be able to make the most of their potential.

Main Subjects

1. Internet and Internet of Things: layers, protocols, packages, services, network packet performance, sensor networks.
2. Transport services: TCP, UDP, socket programming.
3. Network layer: routing algorithm, (Link, DV), IP-addresses, DNS, NAT and routers.
4. Local Area Networks, MAC level, link protocols.
5. Mobile network: roaming and handoffs, mobile IP.
6. IoT: Application and architecture, case study in industry.

Reference(s)

- [1] Jan Holler, Vlasios Tsiatsis, Catherine Mulligan, Stefan Avesand, Stamatis Karnouskos, David Boyle, "From Machine-to-Machine to the Internet of Things: Introduction to a New Age of Intelligence", 1st Edition, Academic Press, 2014.
- [2] Vijay Madisetti and Arshdeep Bahga, "Internet of Things (A Hands-on-Approach)", 1st Edition, VPT, 2014.
- [3] Francis daCosta, "Rethinking the Internet of Things: A Scalable Approach to Connecting Everything", 1st Edition, Apress Publications, 2013

Prerequisite(s)

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