

## IT 863 Internet of Things (3. 0)

**Pre-requisite:** None

**Recommended Books:**

1. Internet of Things: Principals and Paradigms by Rajkumar Buyya, Amir Vahid Dastjerdi, 1<sup>st</sup> Edition, Morgan Kaufmann, 2016.

**Credit Hours:** 3 (3, 0)

**Course Objectives:**

On completion of the course, the student should be able to:

- Explain in a concise manner how the general Internet as well as Internet of Things work.
- Understand constraints and opportunities of wireless and mobile networks for Internet of Things.
- Use basic measurement tools to determine the real-time performance of packet based networks.
- Analyse trade-offs in interconnected wireless embedded sensor networks.

<b>Topics / Contents</b>	<b>Allocated Periods</b>
Introduction of Internet-of-Things, applications in various domain: smart buildings, healthcare, agriculture, urban infrastructure, transportation, assistive tracking for the blind, fundamental design issues for the future Internet, differences between Internet and Internet-of- things, design issues of Internet-of-Things, research challenges, primer on TCP/IP stack, wireless network protocol, medium access control, comparative study of ZigBee, bluetooth, ultra wide band (UWB), IEEE 802.11 a/b/g, Wi-Fi, RFID, capillary networks: data aggregation, 6LowPAN architecture, routing protocol in lossy networks (RPL): performance analysis and evaluation in TinyOS, directed acyclic graph (DAG) construction, parent-child relationship, objective function, minimum rank with hysteresis, constrained application protocol (CoAP).	<b>45</b>