SYLLABUS

Internet of Things 7.5 credits M7023E

Sakernas Internet

Course syllabus admitted: Autumn 2016 Sp 1 - Autumn 2017 Sp 2

DECISION DATE
2016-02-15

Luleå University of Technology 971 87 Luleå, Sweden
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LULEÅ TEKNISKA UNIVERSITET

Internet of Things 7.5 credits M7023E

Sakernas Internet

Second cycle, M7023E

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Mobila system	Computer Technology

Main field of study

Computer Science and Engineering

Entry requirements

Knowledge in network programming corresponding to D7001D Network programming and distributed applications.

Selection

The selection is based on 30-285 credits

Examiner

Christer Åhlund

Course Aim

After the course, the student

1. will have acquired a scientific foundation in the area of Internet of Things along with proven experience of programming using relevant technologies and devices;
2. will have the capacity to work in a team and collaborate;
3. has learned to create, analyze and critically evaluate different technical solutions and gain insight into research and development by understanding the limitations and new possibilities that arise with it;
4. has learned how to plan and use appropriate methods to undertake advanced programming tasks within predetermined parameters and show the ability to identify knowledge gaps and bridging these gaps by gaining new knowledge;
5. has gained the ability to understand, interpret and present scientific publications in the area.

Contents

The Internet-of-Things (IoT) course will focus on four fundamental topics: IoT Services and Applications, IoT Devices, IoT Communication Infrastructure, and IoT Systems. IoT services and applications covers different application domains within IoT, followed by IoT devices that focuses on sensing, actuating and networking aspects. IoT fusion, management systems, cyber-physical systems, middlewares and IoT related cloud computing aspects will be covered within IoT systems. IoT communication infrastructure focuses on networking and communication aspects along with machine-to-machine communication (M2M) and information-centric networking (ICN) in the realm of IoT. The course will also briefly touch upon the security and privacy issues within the area.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.

The education consists of lectures, programming and theoretical labs that will become part of project work that leads to a seminar presentation. This will involve deadlines and require written or verbal presentations. There will also be a written exam at the end of the course.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

Examination consists of a final written exam, mandatory programming assignments and presentation of theoretical assignments.

The aims of the course is examined as:

1. Final written exam, individual lab assignments and seminar;
2. Lab assignments carried out in groups;
3. Final written exam and lab assignments;
4. Lab assignments.
5. Seminar.

Literature. Valid from Autumn 2016 Sp 1

To be told later

Course offered by

Department of Computer Science, Electrical and Space Engineering

Items/credits

No items/credits available

Syllabus established

by Jonny Johansson, HUL SRT 2016-02-15