



Project Course on Internet of Things in Healthcare

Course Information Form

Title

COURSE TITLE Technical project based course in healthcare applications using Internet of Things.

Student

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DATE OF BIRTH 13 November 1992
ID/PASSPORT NUMBER
COUNTRY OF CITIZENSHIP Hungary
UNIVERSITY Budapest University of Technology and Economics

University

UNIVERSITY KTH Royal Institute of Technology
CITY Stockholm
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TIME PERIOD 8th-12th of June

Working Hours

Lectures	20
Tutorials	3
Group Seminars or Workshops	2
Laboratory Work	4
Project or Field Work	4
Individual Work	0
Other Methods	0
TOTAL WORKING HOURS	33

Examination Form

☐	Written Exam
☐	Oral Exam
☐	Essay
☒	Project or Practical Work
☐	Continuous Assessment
☐	Seminar

ECTS Credits

TOTAL NUMBER OF WORKING HOURS 33
EQUIVALENT AMOUNT OF ECTS CREDITS 1.0
LOCAL CREDITS (optional) -
LOCAL CREDIT SYSTEM (optional) -



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Course Description

Aims and Objectives

In this summer course you'll explore the theory and practice of IoT. IoT is the idea that artefacts can be infinitely connected and the vast amounts of data the sensors and devices produce can be used, reused and expanded upon to realise novel products and services.

IoT is one of the most rapidly emerging commercial fields within ICT. Products, services and companies pop up on an almost daily basis, see for example *Ten New IoT Companies Go Live*¹ or the slightly ironic *The Useless Side of the Internet of Things*². To what extent these efforts will be commercially viable, time will tell. But the inventiveness and sense of marvel is apparent.

In this course we want you to reach a deep understanding and knowledge about the concepts through a series of short talks and tutorials, intertwined with longer practical sessions. Learning by doing, epiphany by building.

We've teamed up with academic partners that have contributed in defining the field, and commercial partners for both hardware and software with the longest possible experience in creating tools and solutions for IoT.

To further focus the exploration through development, you'll have direct access to representatives from innovation entrepreneurs within medicine technology and you'll work on real-life problems from the healthcare domain.

What you'll learn:

- The history, theory and practice of IoT
- Get experience in the tools and the methods for developing IoT solutions
- Get experience in needs driven development

Schedule

Day 1: Introductory lecture on the methodology for the course. Presentation of the healthcare cases to choose between by the Innovation Office at Stockholm County Council³. Tutorial on the soft- and hardware platforms that will be used, Texas Instrument's sensor tags⁴ and Evothings Studio⁵.

Day 2: Field trip to two hospitals, Danderyds sjukhus and Södersjukhuset. At the end of the day, presentation of the first Hello World-demo based on the case.

Day 3: Project work and presentation of the Visualization Studio.

Day 4: Guest lecture by Jin Moen on IoT⁶. Project work plus presentation, critique and feedback.

Day 5: Project work and final presentation.

CITY Stockholm
DATE 12.06.2015
NAME BJÖRN THURESSON



¹ <http://techcrunch.com/2015/02/12/at-the-techstars-rga-demo-day-ten-new-iot-companies-go-live/>

² <http://motherboard.vice.com/read/the-useless-side-of-the-internet-of-things>

³ <http://slinnovation.se/>

⁴ <http://www.ti.com/tool/cc2541dk-sensor>

⁵ <http://evothings.com/>

⁶ <https://www.til.se/people/jin-moen>



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Explanation of Terms

ECTS (EUROPEAN CREDIT TRANSFER SYSTEM) CREDITS: Numeric value allocated to course unit to describe the student workload required to complete it. In ECTS 60 credits represent the workload of an academic year of study, and this workload is equivalent with 1500-1800 hours per year. Thus, one ECTS credit is equivalent with 25-30 working hours. The official source of this information is:

http://ec.europa.eu/education/programmes/socrates/ects/index_en.html.

According to this, an example of equivalent workload and ECTS would be:

Working Hours	ECTS Credits
12½-15	0,5
25-30	1,0
37½-45	1,5
50-60	2,0
62½-75	2,5
...	...

LOCAL CREDITS: Local system of measuring student workload, for example weeks of study, contact hours, hours per week, grade points, etc.

CONTACT: Official contact person to whom it is possible to contact in the matter of university's questions in recognition of credits. It could be local ECTS coordinator, international relations coordinator or professor.

FIELDS LOCAL CREDITS/LOCAL CREDIT SYSTEM: these fields are considered optional as some universities do not use a local credit system to calculate student workload.

SEMINAR: Discussion group where student interacts with the professor.

OTHER METHOD: Any other method of learning not stated, for example company visit, case study, etc.