

Syllabus

Opportunities and challenges of IoT

- **Instructor:** Tamas Boday
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 - Available before and after classes, or upon request
- **Credits:** 2 (4 ECTS credits)
- **Term:** ... 2017-2018
- **Course level:** MA/MSc
- **Prerequisites:** none

Course description

Objective of the course, is to provide an introduction to Industry 4.0, Internet of Things (IoT) and related topics. The course is designed to show the convergence between consumer and industrial applications, evolution of connectivity technologies and data processing. Students will be introduced to technological and business challenges and opportunities as well as ethical concerns related to IoT.

Learning outcomes

<i>Core Learning Area</i>	<i>Learning Outcome</i>
<i>Interpersonal Communication Skills</i>	Introduce students to the terminology of Internet of Things. Improve ability to communicate and co-operate with technology managers and specialists. Demonstrate competence in effective writing and oral communication.
<i>Technology skills</i>	Get a close view to new technologies which will influence strategic business decision making now and in the future. Introduce students to the IoT challenges – distributed systems, network topologies, data validation and related topics.
<i>Cultural Sensitivity and Diversity</i>	The course will refer to some national and cultural variations in business practices, and also will underline the need to understand the context in which technology is applied. Students will be familiar with the human oriented aspects of the IoT trend (quantified self).
<i>Quantitative Reasoning</i>	Reasoning in relationship to a particular business plan is very important for managers: quantitative issues will be discussed in relation to Technology (scalability, security and supportability considerations)
<i>Ethics and Social Responsibility</i>	Students will understand ethical issues regarding specific IoT technologies, and assess privacy concerns around IoT.
<i>Management Knowledge and Skills</i>	Gain basic knowledge and skills to recognize the contributions of technology to business needs situations/scenarios. Enabling students to discuss technology-related issues with both professionals and business. Have a clear understanding of the role of the Technology in enterprises.

Reading list

A Reading Pack (RP) for this course has been compiled by the instructor. Slides provided during the course are escorted with notes. Additional readings, papers and up-to-date articles will be provided as needed. All reading materials will be available on Moodle.

All pre-read materials will be available two weeks before the classes, Presented slides are uploaded after each session.

This is a digital course and also please consider the environment – use printouts only if absolutely necessary.

Assessment

The course grade will be based on a number of two evaluation elements.

- Class attendance and participation 40%
- Final presentation and teamwork 60% (*teams of 3 to prepare 15 min pitches*)

The grading scale is as follows:

The included table serves as a generic example of the scaling applied: in line with the CEU grading policies the instructor reserves the right to adjust the scale, that is, to grade on a "curve", should it would be found that significantly more than the usual number of students would not pass the course under the indicated grading scale or should the distribution of the grades represent an unrealistic pattern.

Grades		%
A	Outstanding	96-100
A-	Excellent	90-95
B+	Very good	85-89
B	Good	80-84
B-	Satisfactory	75-79
C+	Minimum Pass	60-74
F	Fail	0-59

Class participation – 40%

40% of the grading points will be earned by a student for class participation.

Class activities include:

- Evidence of preparation,
- Contributions to class discussion,
- Bringing real life examples, based on own working experience,
- Short voluntary presentation/briefing on cases from own research (newspapers, web, etc.) in context with the topic of the particular or previous class

These points are necessarily subjective by nature. The instructor will do his best to be as fair as possible but this grading element is not open for discussions. If class attendance is below 60% for an individual, 0% is assigned to class participation.

Final presentation – 60%

Students will be assigned to teams based on class size. At the end of the course team will present business opportunities, trends etc. specific to one of the subdomains of IoT or Industry 4.0. 60% will be distributed as 20% teamwork (team assessment) 40% presented material.

Course schedule and materials for each session

Course is scheduled for 6 200 minutes sessions, one of which is going to be held in two sessions. All classes will have pre-reads, uploaded 2 weeks before the class.

1. May 11 Friday from 5.30 to 9 pm (200 min + break)
Definitions of industry terms - IoT, Industry4.0 and connected acronyms. Trends and future outlook. Why this game of play different from previous technology trends?
2. May 12 Saturday from 4 pm, 100 min.
Variety and volume of connected devices – industrial vs. consumer use cases.
 - a. May 19 Saturday from 4 pm 100 min.
IoT infrastructure - basic network theory, connectivity, architecture, nodes, sensors
3. June 1 Friday from 5.30 to 9 pm 200 min + break)
Industry specific business opportunities and challenges related to IoT
4. June 8th Friday from 5.30 to 9 pm (200 min + break)
Contd. Industry specific business opportunities and challenges related to IoT,
5. June 14th Thursday from 5.30 to 9 pm (200 min + break)
Ethical, Security and Privacy issues of connected everything
Internet of Things +AI – Rise of distributed cognitive computing?
6. June 16th Saturday from 11.45 am to 15.05 pm
Future outlook of IoT, Workshop and presentations