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340625 - TEIN-R3P01 - Internet Technologies

Coordinating unit: 340 - EPSEVG - Vilanova i la Geltrú School of Engineering

Teaching unit: 701 - AC - Department of Computer Architecture

Academic year: 2016

Degree: MASTER'S DEGREE IN AUTOMATIC SYSTEMS AND INDUSTRIAL ELECTRONICS (Syllabus 2012). (Teaching unit Optional)

ECTS credits: 5 Teaching languages: Catalan, Spanish, English

Teaching staff

Coordinator: Xavier Masip Bruin

Others: Xavier Masip Bruin

Prior skills

Basic knowledge in networking

Requirements

No requisits required

Degree competences to which the subject contributes

Specific:

4. CB10 - Skills that enable to continue studying in a way that should be self-directed and autonomous

5. CB6 - Having the knowledge and understanding to provide a basis or opportunity for originality in developing and / or applying ideas, sometimes in a research context
6. CB7 - Students can apply their knowledge and their ability to solve problems in new or unfamiliar contexts within broader (or multidisciplinary) contexts related to their field of study
7. CB9 - Students can communicate their conclusions, knowledge and rationale underpinning these, to skilled and unskilled public in a clear and unambiguous way
8. CC01 - Ability to research, design, develop and characterize advanced control systems that enable the dynamic system behave according to the operational performance requirements.

Transversal:

1. EFFECTIVE USE OF INFORMATI0N RESOURCES. Managing the acquisition, structure, analysis and display of information from the own field of specialization. Taking a critical stance with regard to the results obtained.
2. TEAMWORK. Being able to work as a team player, either as a member or as a leader. Contributing to projects pragmatically and responsibly, by reaching commitments in accordance to the resources that are available.

Teaching methodology

Theoretical sessions by the professor as well as interactive team work sessions to discuss the proposed miniprojects

Learning objectives of the subject

Improve knowledge on networking aspects with a clear focus on both, solidifying basic networking concepts and introducing new research trends dealing with current Internet weaknesses. The knowledge introduced in the last theoretical sessions is industrial-oriented, aimed at showing how new technologies may contribute to substantially improve monitoring processes and equipment automatization.

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Study load

Total learning time: 150h	Hours large group:	45h	30.00%
	Hours medium group:	0h	0.00%
	Hours small group:	15h	10.00%
	Guided activities:	0h	0.00%
	Self study:	90h	60.00%

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Content

1. Internet: Weaknesses and limitations

Learning time: 2h

Theory classes: 2h

Description:

Clear and deep decription of the current state-of-the-art in Internet, with an strong effort in showing the impact in the industrial sector. We aim at showing how new technologies may be developed in industrial environments and what the main problems yet open in this area are.

Related activities:

MP1:Building monitoring system
MP2:Vehicle connectivity platform

Specific objectives:

Provide knowledge enough about the set of reasons limiting the deployment of new services and apps, so paving the path to find out strategies to overcome the undesirable effects

2. Network parallelizing: Cloud and fog

Learning time: 2h

Theory classes: 2h

Description:

Definition of cloud, fog, and the different systems and devices enabling a suitable and efficient distribution of the overall smartness from the edge device up to the traditional cloud
Resources management
Existing problems and research trends

Related activities:

MP1:Building monitoring system
MP2:Vehicle connectivity platform

Specific objectives:

Introduce the student to the cloud and fog concepts as well as to the diversity of scenarios where these concepts are pretty useful
Analyze applicability scenarios focused on smart cities and intelligent transportation systems

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3. New business models	Learning time: 1h Theory classes: 1h

Description:
Introduce the student to the new business models leveraging TIC evolution
Provide a comprehensive understabding of the different market opportunities and market segments to come

Related activities:
MP1:Building monitoring system
MP2:Vehicle connectivity platform

Specific objectives:
Get a good knowledge about the different existing and to come market opportunities as well as a good knowledge on the expected market evolution and trend.

Qualification system

Final mark computed as::
FINAL MARK = 0,25 x (Oral presentation) + 0,75 x (MP)

Bibliography