UNIVERSITAT POLITÈCNICA DE CATALUNYA
BARCELONATECH

Course guide
340005 - ACAP-07P40 - Accessibility Applied

Last modified: 17/05/2023

Unit in charge:	Vilanova i la Geltrú School of Engineering
Teaching unit:	709 - DEE - Department of Electrical Engineering.
	744 - ENTEL - Department of Network Engineering.

Degree:	BACHELOR'S DEGREE IN ELECTRICAL ENGINEERING (Syllabus 2009). (Optional subject).
	BACHELOR'S DEGREE IN INDUSTRIAL DESIGN AND PRODUCT DEVELOPMENT ENGINEERING (Syllabus 2009). (Optional subject).
	BACHELOR'S DEGREE IN INDUSTRIAL ELECTRONICS AND AUTOMATIC CONTROL ENGINEERING (Syllabus 2009). (Optional subject).
	BACHELOR'S DEGREE IN MECHANICAL ENGINEERING (Syllabus 2009). (Optional subject).
	BACHELOR'S DEGREE IN INFORMATICS ENGINEERING (Syllabus 2018). (Optional subject).

Academic year: 2023   **ECTS Credits:** 6.0   **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer:	Morillas Varón, Rafael (ENTEL)
Others:	Morillas Varón, Rafael
	Andrada Gascon, Pere

PRIOR SKILLS

The students must show the previous skills adquired along the Degree.

REQUIREMENTS

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Generical:
. Accessibility: Know and apply criteria of universal design in different products, environment and services.

Transversal:
04 COE N3. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
06 URI N3. EFFECTIVE USE OF INFORMATI0N RESOURCES - Level 3. Planning and using the information necessary for an academic assignment (a final thesis, for example) based on a critical appraisal of the information resources used.
05 TEQ N3. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.
07 AAT N3. SELF-DIRECTED LEARNING - Level 3. Applying the knowledge gained in completing a task according to its relevance and importance. Deciding how to carry out a task, the amount of time to be devoted to it and the most suitable information sources.

TEACHING METHODOLOGY

The aim is for students to consolidate skills obtained in the subjects of the degree by applying what he learned in (real, simulated) scenarios. Theoretical concepts will in order to put in context the framework and was the starting point for the analysis and design to realize. It will enhance the performance of work in multidisciplinary teams using project-based learning model and role playing.

LEARNING OBJECTIVES OF THE SUBJECT

The aim is for students to consolidate skills obtained in the subjects of the degree by applying what he learned in real scenarios.

STUDY LOAD

Type	Hours	Percentage
Hours small group	30,0	18.18
Hours large group	30,0	18.18
Self study	105,0	63.64

Total learning time: 165 h

CONTENTS

1. Advanced Accessibility

Description:
1.1 Link between accessibility, ICT and Engineering
1.2 Teamwork
1.3 Example: Accessibility in Public Building
1.4 Phases of a human-centred design process
1.5 Accessible documentation

Specific objectives:
Consolidate basic knowledge.

Related activities:
The lecture reinforces aspects of documentation and development phases of a project useful to the practical part of the course.

Full-or-part-time: 10h
Self study : 10h

2. Project

Description:
2.1 Teamrol and preselected project-
2.2 Requirements Analysis
2.3 Conceptual Design
2.4 Prototyping
2.5 User Experience
2.6 Project management

Specific objectives:
Specify, design and evaluate a project

Related activities:
.Some laboratory sessions are designed that serve to support the project. The tools to be used in AL-116 are: Google forms, Google SketchUp, Justinmind Prototyper among others.

Full-or-part-time: 34h
Theory classes: 34h

3. Study Case: Technology for the quality of the living day

Description:
3.1 Home healthcare services
3.2 Assistive technology
3.3 Interaction with home automation systems
3.6 Interface design
3.7 Electronic devices
3.8 Programming

Specific objectives:
Create accessible scenarios at home using engineering solutions based on ICT

Related activities:
This case study is what will define the project list and offered the basis to issue the second project.

Full-or-part-time: 2h
Theory classes: 2h

ACTIVITIES

Applied Accessibility Proyect

Description:
The course is structured around (real, simulated) projects for organizations in the region or units of the university. It will enhance the performance of work in multidisciplinary groups.

Specific objectives:
Know how to apply and develop skills related to accessibility applied to group work and oral communication.

Material:
Based on project requirements and resoruces available in the laboratory.

Delivery:
The Activities will be delivered and presented in the Theory classes.
The Practices will be delivered and presented in the Practices classes, and the final Internship Project will be delivered and presented the last week of the course.

Full-or-part-time: 41h
Theory classes: 26h
Laboratory classes: 15h

GRADING SYSTEM

he evaluation of the subject consists of three parts: Theory (40%), Activities (10%) and Practices (50%). For the Theory part, exams (40%), a partial exam and a final exam will be carried out in which the achievement of the contents developed in the subject will be assessed. The exam grade is obtained as Theory_Note = max (0'4 * Ex_Parcial + 0'6 * Ex_Final; Ex_Final), the Activities (10%) will be assessed individually in the Theory classes, and the evaluation of the practices (50%) based on the criteria: of difficulty and effort of the field work, the quality of the proposal presented in a technical report and the public presentation in class of the work done.

For the re-evaluation of the subject, a Final Exam of the theoretical module will be carried out.

EXAMINATION RULES.

The works must be original, technically feasible and reaching the goals set by users.

BIBLIOGRAPHY

Basic:

- Arjona Jiménez, Gonzalo. La Accesibilidad y el diseño universal entendido por todos ; de cómo Stephen Hawking viajó por el espacio [on line]. Granada: La Ciudad Accesible, 2015 [Consultation: 25/03/2022]. Available on: https://drive.google.com/file/d/0B3iK0itdBx97WGJ4UEZrTE14SVE/view?resourcekey=0-Nb_qyYyPuchSY79PqlxjwQ.

- Guia de contingut digital accessible [on line]. Lleida: Edicions de la Universitat de Lleida, 2011 [Consultation: 23/03/2022]. Available on: http://diposit.ub.edu/dspace/handle/2445/29018. ISBN 9788484093701.

- Moreno, Lourdes; Martínez, Paloma; González, Yolanda. Guía para elaborar documentación digital accesible [Recurs electrònic] : recomendaciones para Word, Power Point y Excel de Microsoft OFFICE 2010 [on line]. Madrid: CENTAC, 2014 [Consultation: 23/03/2022]. Available on: https://www.ucm.es/data/cont/docs/3-2017-03-10-Gu%C3%ADa%20para%20hacer%20documentacion%20accesible%202017.pdf. ISBN 9788461685752.

- Brusilovsky Filer, Berta Liliana. Modelo para diseñar espacios accesibles. Espectro cognitivo [Recurs electrònic] [on line]. Granada: La Ciudad Accesible, 2014 [Consultation: 20/04/2022]. Available on: https://drive.google.com/file/d/0B3iK0itdBx97ZFRuOGJqV0JhQnc/view?pref=2&pli=1&resourcekey=0-c5ezXn0udhtXRLudYHobWQ.

- ¡Pregúntame sobre accesibilidad y ayudas técnicas! [on line]. Madrid: IMSERSO, 2005 [Consultation: 18/02/2022]. Available on: http://www.ceapat.es/InterPresent1/groups/imserso/documents/binario/preguntameaccesibilidad.pdf. ISBN 8495448114.

RESOURCES

Computer material:

- Nom recurPatrick W. Roe. Towards an inclusive future, COST 219. 2007. http://www.johngilltech.com/cost219ter/inclusive_future/inclusive_future_book.pdf- Modelo de Proceso de la Ingeniería de la usabilidad y de la accessibilidad. .

Hyperlink:

- CEAPAT. Tecnologías y personas mayores. http://www.ceapat.es/InterPresent1/groups/imserso/documents/binario/reto_8.pdf