



INTERNATIONAL  
CAMPUS OF  
EXCELLENCE

COORDINATION PROCESS OF  
LEARNING ACTIVITIES  
PR/CL/001



E.T.S. de Ingenieros  
Informáticos

# ANX-PR/CL/001-01

## LEARNING GUIDE

### SUBJECT

**103000710 - Assistive products**

### DEGREE PROGRAMME

10AQ - Eit Digital Master's Programme In Human Computer Interaction And Design

### ACADEMIC YEAR & SEMESTER

2018/19 - Semester 1

## Index

---

### Learning guide

1. Description.....	1
2. Faculty.....	1
3. Prior knowledge recommended to take the subject.....	2
4. Skills and learning outcomes .....	2
5. Brief description of the subject and syllabus.....	3
6. Schedule.....	4
7. Activities and assessment criteria.....	6
8. Teaching resources.....	7
9. Other information.....	9

## 1. Description

---

### 1.1. Subject details

<b>Name of the subject</b>	103000710 - Assistive products
<b>No of credits</b>	4.5 ECTS
<b>Type</b>	Optional
<b>Academic year of the programme</b>	First year
<b>Semester of tuition</b>	Semester 1
<b>Tuition period</b>	September-January
<b>Tuition languages</b>	English
<b>Degree programme</b>	10AQ - Eit digital master's programme in human computer interaction and design
<b>Centre</b>	10 - Escuela Tecnica Superior de Ingenieros Informaticos
<b>Academic year</b>	2018-19

## 2. Faculty

---

### 2.1. Faculty members with subject teaching role

<b>Name and surname</b>	<b>Office/Room</b>	<b>Email</b>	<b>Tutoring hours *</b>
Loic Antonio Martinez Normand (Subject coordinator)	3352	loic.mnormand@upm.es	Tu - 13:00 - 15:00 W - 13:00 - 15:00 F - 13:00 - 15:00 Please confirm appointment via email

Jose Luis Fuertes Castro	4307	joseluis.fuertes@upm.es	Tu - 16:30 - 19:00 W - 12:00 - 13:00 Th - 16:30 - 19:00 Please confirm appointment via email
--------------------------	------	-------------------------	---

\* The tutoring schedule is indicative and subject to possible changes. Please check tutoring times with the faculty member in charge.

### 3. Prior knowledge recommended to take the subject

---

#### 3.1. Recommended (passed) subjects

- Evaluation of interactive systems
- Introduction to human-computer interaction
- Programming of user interfaces

#### 3.2. Other recommended learning outcomes

El plan de estudios Eit Digital Master's Programme In Human Computer Interaction And Design no tiene definidos otros conocimientos previos para esta asignatura.

### 4. Skills and learning outcomes \*

---

#### 4.1. Skills to be learned

CE14 - Capacidad para conceptualizar, diseñar, desarrollar y evaluar la interacción personaordenador de productos, sistemas, aplicaciones y servicios informáticos

CG08 - Comprensión amplia de las técnicas y métodos aplicables en una especialización concreta, así como de sus límites

## 4.2. Learning outcomes

RA33 - Understand the concept and types of assistive products

RA3 - Evaluate the usability and accessibility of prototypes

RA34 - Understand the APIs for interoperability between IT and Assistive Products

RA35 - Evaluate and implement systems that use accessibility APIs

\* The Learning Guides should reflect the Skills and Learning Outcomes in the same way as indicated in the Degree Verification Memory. For this reason, they have not been translated into English and appear in Spanish.

## 5. Brief description of the subject and syllabus

---

### 5.1. Brief description of the subject

An **assistive product** is any product (including devices, equipment, instruments and software), especially produced or generally available, used by or for persons with disability for participation; to protect, support, train, measure or substitute for body functions, structures and activities; or to prevent impairments, activity limitations or participation restrictions. This course will first describe the assistive products that are normally used by persons with disabilities to use ICT products and services. It will then explain how ICT can interoperate with assistive products through the use of accessibility APIs of operating systems

### 5.2. Syllabus

1. Assistive products
  - 1.1. Assistive products: concept
  - 1.2. Assistive products: classification
2. Interoperability between information technology and assistive products
  - 2.1. Interoperability APIs
  - 2.2. Evaluation of the use of interoperability APIs
  - 2.3. Programming user interfaces with interoperability APIs

## 6. Schedule

### 6.1. Subject schedule\*

Week	Face-to-face classroom activities	Face-to-face laboratory activities	Other face-to-face activities	Assessment activities
1	<b>Course presentation. Introduction to Assistive Products. Schedule of evaluation activities</b> Duration: 02:00 Lecture			
2	<b>Inverted class: classification of assistive products</b> Duration: 01:30 Cooperative activities			<b>Active participation in inverted class</b> Other assessment Continuous assessment Duration: 00:30
3	<b>Workshop: using built-in mobile assistive products</b> Duration: 01:30 Additional activities		<b>Visit to a Geriatric Centre</b> Duration: 02:00 Additional activities	<b>Active participation in workshop</b> Group work Continuous assessment Duration: 00:30
4	<b>Seminar: working on individual exercise on one assistive product</b> Duration: 02:00 Additional activities			
5				<b>Presentation of one Assistive Product</b> Individual presentation Continuous assessment Duration: 02:00
6	<b>Inverted class: IT-AT Interoperability (ISO 13066-1)</b> Duration: 01:30 Cooperative activities		<b>Visit to CEAPAT</b> Duration: 02:00 Additional activities	<b>Active participation in inverted class</b> Other assessment Continuous assessment Duration: 00:30
7	<b>Seminar: working on analysing one Accessibility API</b> Duration: 02:00 Additional activities			
8				<b>Presentation of one Accessibility API</b> Individual presentation Continuous assessment Duration: 02:00
9	<b>Workshop: testing the use of Accessibility API</b> Duration: 01:30 Additional activities		<b>Visit to Lab Decoroso Crespo</b> Duration: 02:00 Additional activities	<b>Active participation in workshop</b> Group work Continuous assessment Duration: 00:30
10	<b>Seminar: working on exercise of testing use of Accessibility API</b> Duration: 02:00 Additional activities			

11				<b>Presentation of Testing the use of Accessibility API</b> Individual presentation Continuous assessment Duration: 02:00
12	<b>Workshop: using one Accessibility API</b> Duration: 02:00 Additional activities		<b>Visit to Acce Design</b> Duration: 02:00 Additional activities	<b>Active participation in workshop</b> Group work Continuous assessment Duration: 00:30
13	<b>Seminar: working on programming with Accessibility API</b> Duration: 02:00 Additional activities			
14	<b>Seminar: working on programming with Accessibility API</b> Duration: 02:00 Additional activities			
15				<b>Presentation of programming with Accessibility API</b> Individual presentation Continuous assessment Duration: 02:00  <b>Program developed using accessibility API</b> Individual work Continuous assessment Duration: 00:00
16				<b>Visit summaries (to be delivered shortly after each visit)</b> Individual work Continuous assessment Duration: 00:00  <b>Exam</b> Written test Final examination Duration: 02:00

The independent study hours are training activities during which students should spend time on individual study or individual assignments.

Depending on the programme study plan, total values will be calculated according to the ECTS credit unit as 26/27 hours of student face-to-face contact and independent study time.

\* The subject schedule is based on a previous theoretical planning of the subject plan and might go to through experience some unexpected changes along throughout the academic year.

## 7. Activities and assessment criteria

### 7.1. Assessment activities

#### 7.1.1. Continuous assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
2	Active participation in inverted class	Other assessment	Face-to-face	00:30	5%	/ 10	CG08
3	Active participation in workshop	Group work	Face-to-face	00:30	5%	/ 10	CG08
5	Presentation of one Assistive Product	Individual presentation	Face-to-face	02:00	15%	/ 10	CG08
6	Active participation in inverted class	Other assessment	Face-to-face	00:30	5%	/ 10	CG08
8	Presentation of one Accessibility API	Individual presentation	Face-to-face	02:00	15%	/ 10	CG08
9	Active participation in workshop	Group work	Face-to-face	00:30	5%	/ 10	
11	Presentation of Testing the use of Accessibility API	Individual presentation	Face-to-face	02:00	15%	/ 10	CG08 CE14
12	Active participation in workshop	Group work	Face-to-face	00:30	5%	/ 10	CG08
15	Presentation of programming with Accessibility API	Individual presentation	Face-to-face	02:00	10%	/ 10	CG08 CE14
15	Program developed using accessibility API	Individual work	No Presential	00:00	10%	/ 10	CG08 CE14
16	Visit summaries (to be delivered shortly after each visit)	Individual work	No Presential	00:00	10%	/ 10	

#### 7.1.2. Final examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
16	Exam	Written test	Face-to-face	02:00	100%	/ 10	CG08 CE14

#### 7.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
-------------	----------	------	----------	--------	---------------	------------------



Exam (extraordinary - July)	Written test	Face-to-face	02:00	100%	/ 10	CG08 CE14
-----------------------------	--------------	--------------	-------	------	------	--------------

## 7.2. Assessment criteria

It is strongly recommended to follow the continuous evaluation system, that grades the active participation of the student during the semester in different types of activities: cooperative learning, inverted classroom, individual presentations and individual exercises. This continuous evaluation system implies attending all the sessions. In addition, attendance to the visits is mandatory.

If the student is unable to follow the continuous evaluation system, then he or she must perform a written exam that covers all the contents of the course.

## 8. Teaching resources

### 8.1. Teaching resources for the subject

Name	Type	Notes
ISO 9999:2016 Assistive products for persons with disability -- Classification and terminology	Bibliography	International Standard that defines assistive products and provides a classification
ISO/IEC 13066-1:2011 Information technology -- Interoperability with assistive technology (AT) -- Part 1: Requirements and recommendations for interoperability	Bibliography	International Standard defining the interoperability APIs between IT and Assistive Products
ISO/IEC TR 13066-2:2016 Information technology -- Interoperability with assistive technology (AT) -- Part 2: Windows accessibility application programming interface (API)	Bibliography	Technical Report describing the accessibility API of Microsoft Windows 

<p>ISO/IEC TR 13066-3:2012 Information technology -- Interoperability with assistive technology (AT) -- Part 3: IAccessible2 accessibility application programming interface (API)</p>	<p>Bibliography</p>	<p>Technical Report describing the iAccessible2 accessibility API&lt;br /&gt;</p>
<p>ISO/IEC TR 13066-4:2015 Information technology -- Interoperability with assistive technology (AT) -- Part 4: Linux/UNIX graphical environments accessibility API</p>	<p>Bibliography</p>	<p>Technical Report describing the accessibility API of Linux/UNIX</p>
<p>ISO/IEC TR 13066-6:2014 Information technology -- Interoperability with Assistive Technology (AT) -- Part 6: Java accessibility application programming interface (API)</p>	<p>Bibliography</p>	<p>Tecnical Report describing the Java accessibility API</p>
<p>Accessible Rich Internet Applications (WAI-ARIA) 1.1</p>	<p>Web resource</p>	<p>W3C Recommendation 14 December 2017&lt;br /&gt; <a href="https://www.w3.org/TR/wai-aria/">https://www.w3.org/TR/wai-aria/</a></p>

## 9. Other information

---

### 9.1. Other information about the subject

The calendar of external visits can change, due to agenda restrictions of the entities to be visited.