



POLITÉCNICA

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

**103000870 - Design Methods For Human-computer Interaction**

### DEGREE PROGRAMME

10AZ - Master Universitario en Innovación Digital

### ACADEMIC YEAR & SEMESTER

2019/20 - Semester 1

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## 1. Description

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### 1.1. Subject details

<b>Name of the subject</b>	103000870 - Design Methods For Human-computer Interaction
<b>No of credits</b>	3 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>	10AZ - Master Universitario en Innovación Digital
<b>Centre</b>	10 - Escuela Tecnica Superior de Ingenieros Informaticos
<b>Academic year</b>	2019-20

## 2. Faculty

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### 2.1. Faculty members with subject teaching role

<b>Name and surname</b>	<b>Office/Room</b>	<b>Email</b>	<b>Tutoring hours *</b>
Cristian Moral Martos (Subject coordinator)	5110	cristian.moral@upm.es	M - 10:00 - 12:00 M - 14:00 - 15:00 W - 12:00 - 15:00 Ask for an appointment by email.
Elena Villalba Mora	5110	elena.villalba@upm.es	M - 10:00 - 12:00 W - 10:00 - 12:00 F - 10:00 - 12:00 Ask for an appointment by

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

### 3. Skills and learning outcomes \*

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#### 3.1. Skills to be learned

CB07 - Que los estudiantes sepan aplicar los conocimientos adquiridos y su capacidad de resolución de problemas en entornos nuevos o poco conocidos dentro de contextos más amplios (o multidisciplinares) relacionados con su área de estudio

CB08 - Que los estudiantes sean capaces de integrar conocimientos y enfrentarse a la complejidad de formular juicios a partir de una información que, siendo incompleta o limitada, incluya reflexiones sobre las responsabilidades sociales y éticas vinculadas a la aplicación de sus conocimientos y juicios

CB09 - Que los estudiantes sepan comunicar sus conclusiones y los conocimientos y razones últimas que las sustentan a públicos especializados y no especializados de un modo claro y sin ambigüedades

CE-DIPO01 - Capacidad para conceptualizar, diseñar y desarrollar la interacción persona-ordenador de productos y servicios innovadores

CE-DIPO04 - Capacidad para analizar las necesidades de información que se plantean en un entorno y llevar a cabo en todas sus etapas el proceso de diseño centrado en el usuario

CG03 - La capacidad de usar la lengua inglesa de manera competente, es decir, con capacitación para tareas complejas de trabajo y estudio.

### 3.2. Learning outcomes

RA9 - Analyse qualitative data to specify the design requirements related to the context of use

RA6 - Communicate and describe the results of the stages of the user-centred design process

RA7 - Understand how to design an interactive system using a user-centred approach

RA12 - Model the user and to design adaptive user interfaces based on the user

RA10 - Understand the main heuristics that have to be considered to design a usable interactive system

RA13 - Understand methods to communicate the design intent

RA8 - Run different qualitative techniques to study the context of use (user, tasks, and environment) of an interactive system

RA11 - Understand the concept of 'user experience', and learn how to design interactive system that generate a good user experience

\* 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.

## 4. Brief description of the subject and syllabus

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### 4.1. Brief description of the subject

This course provides practical knowledge of how to use well-known and established HCI design methods as well as theoretical knowledge of how to think and reason on them during the design process. In this course we will approach interaction design from the perspective of user-centred design. Interaction design techniques will be presented to explore and refine the behaviour of products and services.

## 4.2. Syllabus

1. User-Centered design methods
2. Analysing the context of use
  - 2.1. Observation techniques
  - 2.2. Interrogation techniques
3. Specifying the context of use
  - 3.1. Methods for User specification
  - 3.2. Methods for Task specification
4. Interaction design
  - 4.1. Task scenarios and storyboards
  - 4.2. Navigation map
  - 4.3. Design heuristics
5. Low-fidelity prototyping
6. High-fidelity prototyping

## 5. Schedule

### 5.1. Subject schedule\*

Week	Face-to-face classroom activities	Face-to-face laboratory activities	Other face-to-face activities	Assessment activities
1	<p><b>Course presentation</b> Duration: 00:30</p> <p><b>1. User-centered design methods</b> Duration: 01:30</p>			
2	<p><b>1. Analysing the context of use</b> Duration: 01:00</p> <p><b>Understanding the analysis of the context of use. TTW.</b> Duration: 01:00</p>			
3	<p><b>Understanding the analysis of the context of use. TTW.</b> Duration: 02:00</p>			
4	<p><b>2. Specifying the context of use. Flipped classroom.</b> Duration: 02:00</p>			
5	<p><b>Understanding the specification of the context of use. TTW.</b> Duration: 02:00</p>			
6				<p><b>Assessment of the specification of the context of use. Presentation.</b></p> <p>Continuous assessment Duration: 03:00</p>
7	<p><b>3. Interaction design</b> Duration: 01:00</p> <p><b>Understanding the interaction design. TTW.</b> Duration: 01:00</p>			
8	<p><b>Understanding the interaction design. TTW.</b> Duration: 02:00</p>			

9				<b>Assessment of the interaction design. Presentation.</b>  Continuous assessment Duration: 03:00
10	<b>4. Low-fidelity prototyping</b> Duration: 00:30  <b>Understanding the low-fidelity prototyping. TTW.</b> Duration: 01:30			
11	<b>Understanding the low-fidelity prototyping. TTW.</b> Duration: 02:00			
12				<b>Assessment of the low-fidelity prototyping. Presentation.</b>  Continuous assessment Duration: 03:00
13	<b>5. High-fidelity prototyping.</b> Duration: 00:30  <b>Understanding the high-fidelity prototyping. TTW.</b> Duration: 01:30			
14	<b>Understanding the high-fidelity prototyping. TTW.</b> Duration: 02:00			
15				<b>Assessment of the high-fidelity prototyping. Presentation.</b>  Continuous assessment Duration: 03:00
16				<b>Written assignment.</b>  Final examination Duration: 03:00  <b>Written assignment.</b>  Continuous assessment Duration: 03:00
17				

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.

## 6. Activities and assessment criteria

### 6.1. Assessment activities

#### 6.1.1. Continuous assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
6	Assessment of the specification of the context of use. Presentation.		Face-to-face	03:00	10%	4 / 10	CB08 CG03 CE-DIPO04 CB09 CB07
9	Assessment of the interaction design. Presentation.		Face-to-face	03:00	10%	4 / 10	CB09 CB07 CB08 CG03 CE-DIPO04
12	Assessment of the low-fidelity prototyping. Presentation.		Face-to-face	03:00	30%	4 / 10	CB09 CB07 CB08 CE-DIPO01 CG03
15	Assessment of the high-fidelity prototyping. Presentation.		Face-to-face	03:00	30%	4 / 10	CB09 CB07 CB08 CE-DIPO01 CG03
16	Written assignment.		Face-to-face	03:00	20%	5 / 10	CB09 CB07 CB08 CE-DIPO01 CG03 CE-DIPO04

#### 6.1.2. Final examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
16	Written assignment.		Face-to-face	03:00	100%	5 / 10	CB08 CE-DIPO01 CG03 CE-DIPO04 CB09 CB07

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

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Written assignment		Face-to-face	03:00	100%	5 / 10	CB09 CB07 CB08 CE-DIPO01 CG03 CE-DIPO04

### 6.2. Assessment criteria

In the presentations, the following abilities will be evaluated:

- Quality of the oral communication skills
- Degree of understanding of the course content
- Quality of the slides
- Ability to properly manage the time given to present
- Ability to debate
- Active participation in class

## 7. Teaching resources

### 7.1. Teaching resources for the subject

Name	Type	Notes
Moodle of the course	Web resource	<a href="https://moodle.upm.es/titulaciones/oficiales">https://moodle.upm.es/titulaciones/oficiales</a>
Interaction Design: Beyond Human-Computer Interaction.	Bibliography	Helen Sharp, Yvonne Rogers, Jenny Preece. 3ª Edición. John Wiley & Sons, 2011.
Software for Use: A Practical Guide to the Models and Methods of Usage-Centered Design	Bibliography	Larry L. Constantine, Lucy A. D. Lockwood. Addison-Wesley, 1999.

Usability Engineering	Bibliography	Jakob Nielsen. AP Professional, 1993.
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## 8. Other information

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### 8.1. Other information about the subject