



POLITÉCNICA

INTERNATIONAL
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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

2020/21 - Semester 1

Index

Learning guide

1. Description.....	1
2. Faculty.....	1
3. Skills and learning outcomes	2
4. Brief description of the subject and syllabus.....	3
5. Schedule.....	5
6. Activities and assessment criteria.....	8
7. Teaching resources.....	10
8. Other information.....	10

1. Description

1.1. Subject details

Name of the subject	103000870 - Design Methods For Human-computer Interaction
No of credits	3 ECTS
Type	Optional
Academic year of the programme	First year
Semester of tuition	Semester 1
Tuition period	September-January
Tuition languages	English
Degree programme	10AZ - Master Universitario en Innovación Digital
Centre	10 - Escuela Tecnica Superior de Ingenieros Informaticos
Academic year	2020-21

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
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.

* 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 *

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

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

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

* 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

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. Analysing the context of use
 - 1.1. Observation techniques
 - 1.2. Interrogation techniques
 - 1.3. Qualitative analysis
2. Interaction design
 - 2.1. Task scenarios and storyboards
 - 2.2. Navigation map
 - 2.3. Design heuristics
3. Low-fidelity prototyping
4. High-fidelity prototyping

5. Schedule

5.1. Subject schedule*

Week	Face-to-face classroom activities	Face-to-face laboratory activities	Distant / On-line	Assessment activities
1	<p>Course presentation Duration: 00:30</p> <p>1.1. Analysing the context of use Duration: 01:30</p> <p>Understanding the analysis of the context of use. TTW. Duration: 01:00</p>		<p>Course presentation Duration: 00:30</p> <p>1.1. Analysing the context of use Duration: 01:30</p> <p>Understanding the analysis of the context of use. TTW. Duration: 01:00</p>	
2	<p>Field work. Analysis of the context of use. Duration: 00:00</p>		<p>Field work. Analysis of the context of use. Duration: 00:00</p>	
3	<p>1.2. Specifying the context of use. Duration: 01:00</p> <p>Understanding the specification of the context of use. TTW. Duration: 01:00</p>		<p>1.2. Specifying the context of use. Duration: 01:00</p> <p>Understanding the specification of the context of use. TTW. Duration: 01:00</p>	
4	<p>1.3. Qualitative analysis of the context of use Duration: 01:30</p> <p>Understanding the qualitative analysis techniques. TTW. Duration: 01:30</p>		<p>1.3. Qualitative analysis of the context of use Duration: 01:30</p> <p>1.3. Qualitative analysis of the context of use Duration: 01:30</p>	
5	<p>Field work. Qualitative analysis of the context of use. Duration: 00:00</p>		<p>Field work. Qualitative analysis of the context of use. Duration: 00:00</p>	
6	<p>Tutoring: Qualitative analysis of the context of use. Duration: 02:00</p>		<p>Tutoring: Qualitative analysis of the context of use. Duration: 02:00</p>	
7				<p>Assessment of the qualitative analysis of the context of use. Presentation.</p> <p>Continuous assessment Presential Duration: 03:00</p>

8	<p>2. Interaction design Duration: 01:30</p> <p>Understanding the interaction design. TTW. Duration: 01:30</p>		<p>2. Interaction design Duration: 01:30</p> <p>Understanding the interaction design. TTW. Duration: 01:30</p>	
9	<p>3. Low-fidelity prototyping Duration: 00:30</p> <p>Understanding the low-fidelity prototyping. TTW. Duration: 01:30</p>		<p>3. Low-fidelity prototyping Duration: 00:30</p> <p>Understanding the low-fidelity prototyping. TTW. Duration: 01:30</p>	<p>Assessment of the interaction design. Report,</p> <p>Continuous assessment Not Presential Duration: 03:00</p>
10	<p>Tutoring: Low-fidelity prototyping. TTW. Duration: 02:00</p>		<p>Tutoring: Low-fidelity prototyping. TTW. Duration: 02:00</p>	
11				<p>Assessment of the low-fidelity prototyping. Presentation.</p> <p>Continuous assessment Presential Duration: 03:00</p>
12	<p>4. High-fidelity prototyping. Duration: 00:30</p> <p>Understanding the high-fidelity prototyping. TTW. Duration: 01:30</p>		<p>4. High-fidelity prototyping. Duration: 00:30</p> <p>Understanding the high-fidelity prototyping. TTW. Duration: 01:30</p>	
13	<p>Field work. High-Fidelity prototyping. Duration: 00:00</p>		<p>Field work. High-Fidelity prototyping. Duration: 00:00</p>	
14	<p>Tutoring: High-fidelity prototyping. TTW. Duration: 02:00</p>		<p>Tutoring: High-fidelity prototyping. TTW. Duration: 02:00</p>	
15				<p>Assessment of the high-fidelity prototyping. Presentation.</p> <p>Continuous assessment Presential Duration: 03:00</p>
16				
17				<p>Final exam.</p> <p>Continuous assessment Presential Duration: 03:00</p> <p>Final exam.</p> <p>Final examination Presential Duration: 03:00</p>

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 schedule is based on an a priori planning of the subject; it might be modified during the academic year, especially considering the COVID19 evolution.

6. Activities and assessment criteria

6.1. Assessment activities

6.1.1. Continuous assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
7	Assessment of the qualitative analysis of the context of use. Presentation.		Face-to-face	03:00	10%	4 / 10	CB07 CE-DIPO04 CB08 CB09 CG03
9	Assessment of the interaction design. Report,		No Presential	03:00	10%	4 / 10	CE-DIPO04 CB07 CB08 CB09 CG03
11	Assessment of the low-fidelity prototyping. Presentation.		Face-to-face	03:00	30%	4 / 10	CE-DIPO01 CB07 CB08 CB09 CG03
15	Assessment of the high-fidelity prototyping. Presentation.		Face-to-face	03:00	30%	4 / 10	CE-DIPO01 CB07 CB08 CB09 CG03
17	Final exam.		Face-to-face	03:00	20%	5 / 10	CE-DIPO01 CE-DIPO04 CB07 CB08 CB09 CG03

6.1.2. Final examination

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

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	CE-DIPO01 CE-DIPO04 CB07 CB08 CB09 CG03

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

In this first semester of the academic year 2020-21, and due to the COVID-19 situation, academic activities are scheduled to be online, unless the pandemic conditions improve substantially. That means that "face to face" evaluation activities will be performed online though videoconferences.

7. Teaching resources

7.1. Teaching resources for the subject

Name	Type	Notes
Moodle of the course	Web resource	https://moodle.upm.es/titulaciones/oficiales
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.

8. Other information

8.1. Other information about the subject

Note: In this first semester of the academic year 2020-21 the teaching and the assessment will be online, due to the COVID-19 situation.