



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

103000873 - Human-computer Interaction Project

DEGREE PROGRAMME

10AZ - Master Universitario En Innovación Digital

ACADEMIC YEAR & SEMESTER

2021/22 - Semester 2

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1. Description

1.1. Subject details

Name of the subject	103000873 - Human-Computer Interaction Project
No of credits	6 ECTS
Type	Optional
Academic year of the programme	First year
Semester of tuition	Semester 2
Tuition period	February-June
Tuition languages	English
Degree programme	10AZ - Master Universitario en Innovación Digital
Centre	10 - Escuela Tecnica Superior De Ingenieros Informaticos
Academic year	2021-22

2. Faculty

2.1. Faculty members with subject teaching role

Name and surname	Office/Room	Email	Tutoring hours *
Elena Villalba Mora	5110	elena.villalba@upm.es	M - 10:00 - 12:00 W - 10:00 - 12:00 F - 10:00 - 12:00 Tutoring hours and office are not confirmed for the second semester. They will be updated afterwards.

Loic Antonio Martinez Normand (Subject coordinator)	3352	loic.mnormand@upm.es	Tu - 13:00 - 15:00 Th - 13:00 - 15:00 F - 13:00 - 15:00 Tutoring hours and office are not confirmed for the second semester. They will be updated afterwards.
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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. Prior knowledge recommended to take the subject

3.1. Recommended (passed) subjects

- Design Methods For Human-computer Interaction
- Programming Of User Interfaces
- Introduction To Human-computer Interaction
- User Experience And Mobile Interaction

3.2. Other recommended learning outcomes

The subject - other recommended learning outcomes, are not defined.

4. Skills and learning outcomes *

4.1. 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

CB10 - Que los estudiantes posean las habilidades de aprendizaje que les permitan continuar estudiando de un modo que habrá de ser en gran medida autodirigido o autónomo.

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

CE-DIPO02 - Capacidad para evaluar la interacción persona-ordenador de productos y servicios de alto valor innovador

CE-DIPO03 - Habilidad para hacer conexiones entre los deseos y necesidades del consumidor o cliente y lo que la tecnología puede ofrecer

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

CE-DIPO05 - Capacidad para utilizar un enfoque de diseño centrado en el usuario para la superación de los retos organizativos y de negocio con una mentalidad empresarial

CG02 - Que los estudiantes desarrollen la autonomía suficiente para participar en proyectos de investigación y colaboraciones científicas o tecnológicas dentro su ámbito temático explorando y generando nuevas ideas sistemáticamente, en contextos interdisciplinares y, en su caso, con una alta componente de transferencia del conocimiento.

CG03 - La capacidad de usar la lengua inglesa de manera competente, es decir, con capacitación para tareas

complejas de trabajo y estudio.

CG05 - Comprensión de los principios de la gestión de proyectos, riesgo y cambio, así como poseer la capacidad de aplicar metodologías y procesos para gestionar proyectos y mitigar los riesgos.

4.2. Learning outcomes

RA19 - Apply techniques for designing and implementing prototypes of different fidelity levels

RA20 - Evaluate the usability and accessibility of prototypes

RA18 - Apply techniques for modelling the context of use

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

* 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

This course is a **multi-disciplinary project** course with user cooperation in all phases of the project, from a general described theme to a specific and finished result. The project will be reported in different media. The project is expected to be integrated with the Business Development Lab course (part of the I&E minor).

The students will be assigned to **teams**. Each team will chose a subject for developing a project of an interactive system, applying the user-centred design process stages, under the supervision of one of the professors of the course. The teams will present in the classroom the status of their projects at different stages of the design process.

5.2. Syllabus

1. Project start
 - 1.1. Team selection
 - 1.2. Project subject area
2. Context of use
 - 2.1. Gathering information
 - 2.2. Modelling the context of use
 - 2.3. Oral presentation of context of use
3. Design of prototypes
 - 3.1. Designing the product concept
 - 3.2. Developing prototypes
 - 3.3. Oral presentation of prototype
4. Evaluation of prototypes
 - 4.1. Usability evaluation
 - 4.2. Usability evaluation
 - 4.3. Oral presentation of evaluation results

6. Schedule

6.1. Subject schedule*

Week	Face-to-face classroom activities	Face-to-face laboratory activities	Distant / On-line	Assessment activities
1	Course presentation. Outline of project schedule. Definition of teams. Project ideas Duration: 03:00		Course presentation. Outline of project schedule. Definition of teams. Project ideas Duration: 03:00	
2	Seminar - project ideas Duration: 01:00		Seminar - project ideas Duration: 01:00	Presentation of project subject Continuous assessment and final examination Presential Duration: 02:00
3	Seminar - context of use - gathering Duration: 03:00		Seminar - context of use - gathering Duration: 03:00	
4	Seminar - context of use - modelling Duration: 03:00		Seminar - context of use - modelling Duration: 03:00	
5	Seminar - product concept Duration: 01:00		Seminar - product concept Duration: 01:00	Presentation of context of use Continuous assessment and final examination Presential Duration: 02:00
6	Seminar - low fidelity prototypes Duration: 03:00		Seminar - low fidelity prototypes Duration: 03:00	
7	Seminar - low fidelity prototypes Duration: 03:00		Seminar - low fidelity prototypes Duration: 03:00	
8	Seminar - evaluation of low fidelity prototypes Duration: 01:00		Seminar - evaluation of low fidelity prototypes Duration: 01:00	Presentation of low fidelity prototype Continuous assessment and final examination Presential Duration: 02:00
9	Seminar - evaluation of low fidelity prototypes Duration: 03:00		Seminar - evaluation of low fidelity prototypes Duration: 03:00	
10	Seminar - decisions for second iteration (high fidelity) Duration: 01:00		Seminar - decisions for second iteration (high fidelity) Duration: 01:00	Presentation of the evaluation of low fidelity prototypes Continuous assessment and final examination Presential Duration: 02:00

11	Seminar - High fidelity prototypes Duration: 03:00		Seminar - High fidelity prototypes Duration: 03:00	
12	Seminar - High fidelity prototypes Duration: 03:00		Seminar - High fidelity prototypes Duration: 03:00	
13	Seminar - evaluation of high-fidelity prototypes Duration: 01:00		Seminar - evaluation of high-fidelity prototypes Duration: 01:00	Presentation of high fidelity prototype Continuous assessment and final examination Presential Duration: 02:00
14	Seminar - evaluation of high-fidelity prototypes Duration: 03:00		Seminar - evaluation of high-fidelity prototypes Duration: 03:00	
15	Seminar - project closure Duration: 01:00		Seminar - project closure Duration: 01:00	Presentation of the evaluation of the high fidelity prototype Continuous assessment and final examination Presential Duration: 02:00
16	Seminar - course conclusions Duration: 03:00		Seminar - course conclusions Duration: 03:00	
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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.

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	Presentation of project subject		Face-to-face	02:00	10%	/ 10	CB09 CG03 CE-DIPO01 CE-DIPO05
5	Presentation of context of use		Face-to-face	02:00	20%	/ 10	CE-DIPO03 CE-DIPO05 CB09 CE-DIPO01 CG03 CG05
8	Presentation of low fidelity prototype		Face-to-face	02:00	17.5%	/ 10	CE-DIPO04 CE-DIPO05 CB08 CE-DIPO01 CE-DIPO03 CB09 CG03 CG05
10	Presentation of the evaluation of low fidelity prototypes		Face-to-face	02:00	17.5%	/ 10	CE-DIPO05 CB09 CB10 CE-DIPO02 CG03 CG05
13	Presentation of high fidelity prototype		Face-to-face	02:00	17.5%	/ 10	CE-DIPO05 CB07 CB08 CB09 CE-DIPO03 CE-DIPO04 CB10 CG02 CG03 CG05

15	Presentation of the evaluation of the high fidelity prototype		Face-to-face	02:00	17.5%	/ 10	CE-DIPO04 CE-DIPO05 CB07 CB08 CE-DIPO02 CE-DIPO03 CB09 CB10 CG02 CG03 CG05
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7.1.2. Final examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
2	Presentation of project subject		Face-to-face	02:00	10%	/ 10	CB09 CG03 CE-DIPO01 CE-DIPO05
5	Presentation of context of use		Face-to-face	02:00	20%	/ 10	CE-DIPO03 CE-DIPO05 CB09 CE-DIPO01 CG03 CG05
8	Presentation of low fidelity prototype		Face-to-face	02:00	17.5%	/ 10	CE-DIPO04 CE-DIPO05 CB08 CE-DIPO01 CE-DIPO03 CB09 CG03 CG05
10	Presentation of the evaluation of low fidelity prototypes		Face-to-face	02:00	17.5%	/ 10	CE-DIPO05 CB09 CB10 CE-DIPO02 CG03 CG05
13	Presentation of high fidelity prototype		Face-to-face	02:00	17.5%	/ 10	CE-DIPO05 CB07 CB08 CB09 CE-DIPO03 CE-DIPO04 CB10 CG02 CG03 CG05

15	Presentation of the evaluation of the high fidelity prototype		Face-to-face	02:00	17.5%	/ 10	CE-DIPO04 CE-DIPO05 CB07 CB08 CE-DIPO02 CE-DIPO03 CB09 CB10 CG02 CG03 CG05
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7.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Project - remaining phases not successfully passed		Face-to-face	04:00	100%	/ 10	CE-DIPO02 CE-DIPO03 CE-DIPO04 CE-DIPO05 CE-DIPO01 CB07 CB08 CB09 CB10 CG02 CG03 CG05

7.2. Assessment criteria

Grading criteria

The projects will be evaluated during their iterative development during the course. Grading of students will be based on:

- Quality of the oral presentations (content, communication, slides)
- Quality of the intermediate and final results
- Ability to debate
- Active participation in class

Final evaluation

This course is based on the iterative development of an interactive system. Thus, the recommended evaluation is a continuous one during the semester. However students unable to attend the classes will have the opportunity of being evaluated in a final evaluation.

That final evaluation will consist on the same iterative development of a project, but without the requirement of attending the classes for seminars and presentations. But the milestones will be the same and in the same dates.

Extraordinary evaluation

The extraordinary evaluation exists for students unable to pass the course during the semester. For that extraordinary evaluation students will have to finish whatever milestones they haven't passed.

8. Teaching resources

8.1. Teaching resources for the subject

Name	Type	Notes
Interaction Design: Beyond human-computer interaction	Bibliography	Book by Rogers, Sharp & Preece. Available in Safary Books
Moodle	Web resource	Moodle course (https://moodle.upm.es/titulaciones/oficiales/course/view.php?id=8254)

9. Other information

9.1. Other information about the subject

Teamwork

This course is based on teamwork. The number of students per team and the number of teams will be defined at the start of the course. Each team will have one professor acting as project supervisor.

Academic year 2021-22 (COVID-19)

In the second semester of the academic year 2021-21, it is expected that full presence in the campus will be possible. This is how this course and its evaluation activities have been scheduled.

If the pandemic situation makes it impossible to have full presence in the campus, and the capacity of the classrooms is limited, it might be necessary to split the class in two groups that will come to the School in alternate days. The School classrooms have teleconference equipment that enables remote participation in the class.

Sustainable development goals (SDGs)

The goal of this course is to put into practice the knowledge acquired during the academic year on the design of interactive systems, that have a good degree of usability and accessibility. Taking this into account, and considering the recommendations from the United Nations on the relationship between the SDGs and accessibility,

this course is related to the following sustainable development goals:

- **Goal 4 quality education** - to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. In today's education, interactive learning systems are essential, and they need to be usable and accessible to enable the education of everyone, including persons with disabilities.
- **Goal 8 decent work and economy growth** - to promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all. Today there are many job-related activities that rely on information and communication technology. This technology needs to be usable and accessible to enable inclusion of everyone in the workplace.
- **Goal 10 reduced inequalities** - to reduce inequality within and among countries. To increase inclusion of all persons in society, all interactive systems designed for citizen participation need to be usable and accessible.