COORDINATION PROCESS OF
LEARNING ACTIVITIES
PR/CL/001

INTERNATIONAL
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E.T.S. de Ingenieros
Informaticos

ANX-PR/CL/001-01

LEARNING GUIDE

SUBJECT

103000873 - Human-computer Interaction Project

DEGREE PROGRAMME

10AZ - Master Universitario En Innovación Digital

ACADEMIC YEAR & SEMESTER

2023/24 - Semester 2

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Learning guide

1. Description

1.1. Subject details

Name of the subject	103000873 - Human-Computer Interaction Project
No of credits	6 ECTS
Type	Optional
Academic year ot 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	2023-24

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.

* 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

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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 topic to a specific and finished high-fidelity prototype. The project will be reported in different media.

The students will be assigned to **teams**. Each team will chose a topic 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.

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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

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6. Schedule

6.1. Subject schedule*

Week	Classroom activities	Laboratory activities	Distant / On-line	Assessment activities
1	**Course presentation. Outline of project schedule. Definition of teams. Project ideas** Duration: 03:00 Lecture			
2	**Seminar - project ideas** Duration: 01:00 Additional activities			**Project topic (presentation+agreement)** Group work Continuous assessment and final examination Presential Duration: 02:00
3	**Seminar - context of use - gathering** Duration: 03:00 Additional activities			
4	**Seminar - context of use - modelling** Duration: 03:00 Additional activities			
5	**Seminar - product concept** Duration: 01:00 Additional activities			**Context of use (planning + report + presentation)** Group work Continuous assessment and final examination Presential Duration: 02:00
6	**Seminar - low fidelity prototypes** Duration: 03:00 Additional activities			
7	**Seminar - low fidelity prototypes** Duration: 03:00 Additional activities			
8	**Seminar - evaluation of low fidelity prototypes** Duration: 01:00 Additional activities			**Low fidelity prototype + evaluation planning** Group work Continuous assessment and final examination Presential Duration: 02:00
9	**Seminar - evaluation of low fidelity prototypes** Duration: 03:00 Additional activities			

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10	**Seminar - decisions for second iteration (high fidelity)** Duration: 01:00 Additional activities			**Low-fidelity prototype evaluation results (report + presentation)** Group work Continuous assessment and final examination Presential Duration: 02:00
11	**Seminar - High fidelity prototypes** Duration: 03:00 Additional activities			
12	**Seminar - High fidelity prototypes** Duration: 03:00 Additional activities			
13	**Seminar - evaluation of high-fidelity prototypes** Duration: 01:00 Additional activities			**High fidelity prototype + evaluation planning** Group presentation Continuous assessment and final examination Presential Duration: 02:00
14	**Seminar - evaluation of high-fidelity prototypes** Duration: 03:00 Additional activities			
15	**Seminar - project closure** Duration: 01:00 Additional activities			**High fidelity prototype evaluation (report + presentation)** Group work Continuous assessment and final examination Presential Duration: 02:00
16	**Seminar - course conclusions** Duration: 03:00 Additional activities			**Individual participation (across the course)** Other assessment Continuous assessment and final examination Presential Duration: 00:00
17				

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.

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7. Activities and assessment criteria

7.1. Assessment activities

7.1.1. Assessment

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
2	Project topic (presentation+agreement)	Group work	Face-to-face	02:00	4.17%	/ 10	CE-DIPO01 CE-DIPO05 CB09 CG03
5	Context of use (planning + report + presentation)	Group work	Face-to-face	02:00	20.83%	/ 10	CE-DIPO01 CE-DIPO03 CE-DIPO05 CB09 CG03 CG05
8	Low fidelity prototype + evaluation planning	Group work	Face-to-face	02:00	12.5%	/ 10	CE-DIPO01 CE-DIPO03 CE-DIPO04 CE-DIPO05 CB08 CB09 CG03 CG05
10	Low-fidelity prototype evaluation results (report + presentation)	Group work	Face-to-face	02:00	16.66%	/ 10	CE-DIPO02 CE-DIPO05 CB09 CB10 CG03 CG05
13	High fidelity prototype + evaluation planning	Group presentation	Face-to-face	02:00	16.67%	/ 10	CE-DIPO05 CB07 CB08 CB09 CE-DIPO03 CE-DIPO04 CB10 CG02 CG03 CG05

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| 15 | High fidelity prototype evaluation (report + presentation) | Group work | Face-to-face | 02:00 | 16.67% | / 10 | CE-DIPO02 CE-DIPO03 CE-DIPO04 CE-DIPO05 CB07 CB08 CB09 CB10 CG02 CG03 CG05 |
| 16 | Individual participation (across the course) | Other assessment | Face-to-face | 00:00 | 12.5% | / 10 | CE-DIPO05 CB07 CB08 CB09 CB10 CG02 CG03 CG05 CE-DIPO01 CE-DIPO02 CE-DIPO03 CE-DIPO04 |

7.1.2. Global examination

Week	Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
2	Project topic (presentation+agreement)	Group work	Face-to-face	02:00	4.17%	/ 10	CE-DIPO01 CE-DIPO05 CB09 CG03
5	Context of use (planning + report + presentation)	Group work	Face-to-face	02:00	20.83%	/ 10	CE-DIPO01 CE-DIPO03 CE-DIPO05 CB09 CG03 CG05
8	Low fidelity prototype + evaluation planning	Group work	Face-to-face	02:00	12.5%	/ 10	CE-DIPO01 CE-DIPO03 CE-DIPO04 CE-DIPO05 CB08 CB09 CG03 CG05
10	Low-fidelity prototype evaluation results (report + presentation)	Group work	Face-to-face	02:00	16.66%	/ 10	CE-DIPO02 CE-DIPO05 CB09 CB10 CG03 CG05

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13	High fidelity prototype + evaluation planning	Group presentation	Face-to-face	02:00	16.67%	/ 10	CE-DIPO05 CB07 CB08 CB09 CE-DIPO03 CE-DIPO04 CB10 CG02 CG03 CG05
15	High fidelity prototype evaluation (report + presentation)	Group work	Face-to-face	02:00	16.67%	/ 10	CE-DIPO02 CE-DIPO03 CE-DIPO04 CE-DIPO05 CB07 CB08 CB09 CB10 CG02 CG03 CG05
16	Individual participation (across the course)	Other assessment	Face-to-face	00:00	12.5%	/ 10	CE-DIPO05 CB07 CB08 CB09 CB10 CG02 CG03 CG05 CE-DIPO01 CE-DIPO02 CE-DIPO03 CE-DIPO04

7.1.3. Referred (re-sit) examination

Description	Modality	Type	Duration	Weight	Minimum grade	Evaluated skills
Project - remaining phases not successfully passed	Group work	Face-to-face	04:00	100%	/ 10	CE-DIPO01 CE-DIPO02 CE-DIPO03 CE-DIPO04 CE-DIPO05 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

Progressive evaluation system

The evaluation of this course is based on a progressive evaluation system (continuous evaluation), that grades the active participation of the student during the iterative development of an interactive system, following the human-centred design process.

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The evaluation activities and their weight in the grading are described in "Assesment") above.

Global evaluation process

This course is based on the iterative development of an interactive system. Thus, the evaluation is a progressive one during the semester. Students unable to attend the classes can still submit the assignments in Moodle and will be evaluated at the same time as other students.

Given the iterative and incremental approach of the course, it is not possible to re-submit assignments at the end of the semester, but there are not minimal grades per assignment. Thus, all the evaluation items appear also as active for the global evaluation process ("Global assessment) above.

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 (normally the last iteration; high-fidelity prototype and its evaluation).

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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=587)

9. Other information

9.1. Other information about the subject

Teamwork

This course if 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..

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

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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.