Course guide
804401 - AINT - Interactive Applications

Last modified: 20/07/2023

Unit in charge: Image Processing and Multimedia Technology Centre
Teaching unit: 804 - CITM - Image Processing and Multimedia Technology Centre.

Degree: BACHELOR'S DEGREE IN DESIGN, ANIMATION AND DIGITAL ART (Syllabus 2023). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 6.0 **Languages:** English

LECTURER

Coordinating lecturer: Sora Domenjó, Carles
Kucuktutuncu, Esen

Others:

TEACHING METHODOLOGY

Projects (70%):
Development of 3 projects based on the conceptualization and implementation of interactive prototypes using different technologies. The execution and evaluation of these practices will also involve additional tasks to reinforce the concepts explained in class, such as the oral presentation of the different projects developed. The projects will be developed in groups. Specifically, students must develop the following projects: 1) Project based on a tangible interface, equivalent to 30% of the final grade, 2) Virtual reality project, equivalent to 20% of the final grade, 3) Augmented reality projects, equivalent to 20% of the final grade.

Mid-term Exam (20%):
Theoretical exam to be held on the dates established for the midterm exams. It involves studying the contents studied in class, as well as the completion of some mandatory readings.

Attitude and participation in class (10%):
The evaluation of the student's participation in the formative activities of the subject, and the attitude of learning, will be evaluated by monitoring their interventions in class and the proportion of exercises and practices presented. This evaluation corresponds to 10% of the final grade.

Re-assessment Test:
Students that after following the continuous evaluation have failed the course, will be eligible for a re-assessment test in which only the 20% corresponding to the mid-term exam will be assessed in a two-hour long test.

LEARNING OBJECTIVES OF THE SUBJECT

- Design interactive applications and prototypes through the use of virtual reality development engines and tools applying author programming techniques integrating graphic resources, models, animations and sounds.

STUDY LOAD

Type	Hours	Percentage
Self study	90,0	60.00
Hours medium group	18,0	12.00
Hours large group	30,0	20.00
Guided activities	12,0	8.00

Total learning time: 150 h

CONTENTS

Topic 1: Interaction and interfaces

Description:
-Definition of interaction, interactivity and human-computer interaction
-Interaction design principles
-Interaction design models and affordances
-Design and evolution of digital interfaces
-Types of Interfaces: 2D, 3D, virtual and augmented reality, robots, tangibles
-Sense of agency and feedback (input, outputs, motor actions, feelings of control, cognitive bases).
-Large format interactive applications and digital art

Full-or-part-time: 25h
Theory classes: 10h
Self study : 15h

Topic 2: Tangibles Interfaces

Description:
-Introduction to tangible interfaces in the digital arts.
-Design principles
-Applications and examples
-Prototype development

Related activities:
Makey Makey + Scratch Workshop

Full-or-part-time: 25h
Practical classes: 10h
Self study : 15h

Topic 3: ViRtual Reality (VR)

Description:
-VR Definition
-Immersion, Presence, Plausibility and Embodiment in VR
-Interaction in VR
-Art in VR

Related activities:
Google Tilt Brush (Workshop)

Full-or-part-time: 50h
Practical classes: 20h
Self study : 30h

Topic 4: Augmented Reality (AR)

Description:
-Definition of AR
-Virtual and physical world relationship, role of interaction.
-Types of AR
-Art in AR

Related activities:
SparkAR Workshop

Full-or-part-time: 50h
Practical classes: 20h
Self study : 30h

GRADING SYSTEM

EXAMINATION RULES.

Projects:
The projects will begin during class time in the time slot set for this purpose and must be completed outside the scheduled class time following the instructions described in Project Exercise Sheet and given by the professor. Some of the proposed exercises must be done in groups and others individually. This will be clearly stated in the exercises/projects statements. The resolution of the practical exercises/projects will have to be uploaded to campus virtual, following the established dates and terms. At the end of the projects/practical exercises, the required files will need to be handed in (campus virtual). The correct management of the documentation provided is an aspect related to the competences to be acquired and is, therefore, subject to evaluation. The evaluation of the practical exercises does not only involve the resolution of the proposed exercises, but also the defense of the results when the student is required to do so at the beginning of the classes.

Exams:
The exam of the subject will take place in class. The questions and problems proposed in the exams refer mainly to the theoretical content of the subject, as well as to an article that the students will have to read. Content related to the different practical exercises may also be included in the exam. The total number of points in the grade for each exam question will be given. Reviews and/or complaints regarding the exams will be made exclusively on the dates and times established in the Academic Calendar.

Any incident that does not allow to solve the practical exercises or theoretical exam in the indicated term must be communicated to the corresponding professor or to the head of studies; after this communication, the pertinence or not of the causes that motivate the non-presentation of the exercise/exam will be solved and the alternatives will be established to complete the evaluation if the causes are justified. When one of the projects/practical exercises or exam is not delivered or completed on time without justification, the student will be graded with the lowest grade possible in the corresponding to the activity.

BIBLIOGRAPHY

Basic:
- Murray, Janet. Inventing the medium: principles of interaction design as a cultural practice. London: MIT Press, 2012.
- Manovich, Lev. The language of New Media [on line]. Cambridge, Mass: MIT Press, 2001Available on: https://mitpress.mit.edu/books/language-new-media.
- Sora Domenjó, Carles. Temporalidades digitales. Análisis del tiempo en los new media y las narrativas interactivas.. Comunicación #45. . Barcelona: UOC Press, 2016. ISBN 978-84-9116-601-6.
- Sharp, Helen; Preece, Jenny; Rogers, Yvonne. Interaction design : beyond human-computer interaction . Fifth edition. Indianapolis, IN : Wiley, [2019]. ISBN 9781119547259.
- Christiane, Paul. Digital Art (World of Art). Thames & Hudson, 2003. ISBN 050020367.
- Norman, Donald A. The Design of everyday things . Revised and expanded edition. New York : Basic Books, [2013]. ISBN 9780465050659.