ACADEMIC PROGRAM

VR AND AR DESIGN

B.F.A. IN **INTERACTIVE PRODUCT DESIGN**

MODALITY: ON CAMPUS

ACADEMIC YEAR: 2023-2024

Name of the course:	VR and AR Design
Degree :	Interactive Product Design
Location:	Centro Universitario de Tecnología y Arte Digital
Modulo:	Specialized Design
Area:	Technology for Interactive Products
Year:	4º
Teaching period:	2º
Type:	OP
ECTS credits:	3
Teaching modality:	On campus
Language:	English
Lecturer / Email	0
Web page:	http://www.u-tad.com/

SUBJECT DESCRIPTION

Area description

This subject belongs to the Specialized Design module and, within it, to the area of Technology for Interactive Products. This area refers to the study and practice of the set of techniques necessary for the acquisition of the necessary knowledge for the technological development of applications and video games, focusing on the most technical part of these.

Subject description

In this subject the student will develop a knowledge of artificial intelligence programming for use in video games, taking the objectives seen in the subjects "Introduction to video game design" or "Scripting" further, but implementing them in a creative process of interactive digital products in Virtual or Augmented Reality.

This subject develops students' ability to design for the new emerging technologies of extended realities (XR). These technologies are already part of the professional trends that every designer of interactive products should be aware of.

COMPETENCIES AND LEARNING OUTCOMES

Competencies

BASIC AND GENERAL

GC2 - Knowing how to adapt to change and new situations with flexibility and versatility.

GC6 - Demonstrate motivation for quality.

GC8 - Demonstrate the ability to work in a team.

GC18 - Manage information appropriately.

CB1 - That students have demonstrated possession and understanding of knowledge in an area of study that builds on the foundation of general secondary education, and is usually at a level that, while relying on advanced textbooks, also includes some aspects that involve knowledge from the cutting edge of their field of study.

CB2 - Students are able to apply their knowledge to their work or vocation in a professional manner and possess the competences usually demonstrated through the development and defence of arguments and problem solving within their field of study.

CB3 - Students have the ability to gather and interpret relevant data (usually within their field of study) in order to make judgements that include reflection on relevant social, scientific or ethical issues.

CB4 - Students are able to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.

CB5 - That students have developed those learning skills necessary to undertake further study with a high degree of autonomy.

SPECIFIC

SC1 - Know the language necessary to communicate and structure a coherent discourse in the field of sociology, philosophy and psychology in relation to the design of interactive products.

SC7 - Knowing the practical fundamentals of the use and programming of computers and interactive product development tools.

SC8 - Evaluate the ethical, technical and creative implications of technology in the design of interactive products.

SC18 - Apply theoretical and practical knowledge of product design for content development.

SC20 - Knowing the determining factors of the consumer market of interactive products, taking into account the knowledge and respect for social and cultural environments.

SC21 - Understand the principles of design applied to multiple consumer devices.

Learning outcomes

Use current game engines to create video games.

Use basic programming to improve the design of non-complex games.

Assessing the artificial intelligence techniques needed for a video game

Adapt a video game or interactive system to different cultures

Defining a game's localization strategy based on social influences

CONTENTS

- Design of interactive applied products
- Design on new digital platforms
- Proposal of experiences in new platforms

SUBJECT SYLLABUS

Theme 1. New platforms for interactive digital leisure

Theme 2. Augmented reality systems

Theme 3. Virtual reality systems

TRAINING ACTIVITIES AND TEACHING METHODOLOGIES

TRAINING ACTIVITIES

LEARNING ACTIVITIES	Total hours	Hours of presence
Theoretical classes	18,75	18,75
Seminars and workshops	2,50	2,50
Practical classes	6,25	6,25
Tutorials	1,50	1,50
Evaluation Activities	2,50	2,50
Group work and study	5,00	0,25
Autonomous and individual study and work	38,50	0,00
TOTAL	75	32

Teaching methodologies

Expository method/Master lecture

Case studies

Exercise and problem solving

Problem-based learning

TEMPORAL DEVELOPMENT

Theme 1. New platforms for interactive digital leisure: 5 weeks

Theme 2. Augmented reality systems: 5 weeks

Theme 3. Virtual reality systems: 5 weeks

EVALUATION SYSTEM

ASSESSMENT SYSTEM	MINIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%)	MAXIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%)
Assessment of participation in class, exercises or projects of the course	10	30
Assessment of assignments, projects, reports, memos	35	70
Objective test	30	60

GRADING CRITERIA

ASSESSMENT SYSTEM	ORDINARY EVALUATION	EXTRAORDINARY EVALUATION
Assessment of participation in class, exercises or projects of the course	10	10
Assessment of assignments, projects, reports, memos	35	35
Objective test	55	55

General comments on the evaluations/assessments

- In the extraordinary call, all the failed work done during the course must be handed in, as well as the objective test in case of failure.

LIST OF REFERENCES (BOOKS, PUBLICATIONS, WEBSITES):

Key references

Virtual Reality Steven M. LaValle (2016)

Even Ninja Monkeys Like to Play: Gamification, Game Thinking and Motivational Design, Marczewski, A.C

Recommended references

Fundamentals of game design, Adams, E.

Virtual Realities, Dagstuhl Seminar (2008)

Understanding Video Games: The Essential Introduction, Egenfeldt-Nielsen, S.

The VR Book: Human-Centered Design for Virtual Reality.

REQUIRED MATERIALS, SOFTWARE AND TOOLS

Type of classroom
Projection equipment and whiteboard

Materials:
Laptop computer

Software:
Unity

Unreal