

## BASIC DETAILS:

<b>Subject:</b>	PRODUCCIÓN DE VIDEOJUEGOS		
<b>Id.:</b>	31840		
<b>Programme:</b>	DOBLE GRADO EN INGENIERÍA INFORMÁTICA Y DISEÑO Y DESARROLLO DE VIDEOJUEGOS		
<b>Module:</b>	DISEÑO DE VIDEOJUEGOS		
<b>Subject type:</b>	OBLIGATORIA		
<b>Year:</b>	4	<b>Teaching period:</b>	Segundo Cuatrimestre
<b>Credits:</b>	6	<b>Total hours:</b>	150
<b>Classroom activities:</b>	70	<b>Individual study:</b>	80
<b>Main teaching language:</b>	Inglés	<b>Secondary teaching language:</b>	Inglés
<b>Lecturer:</b>		<b>Email:</b>	

## PRESENTATION:

Video games are one of the most complex forms of software and cultural creations. Both, video game development and publishing are intricate and collaborative works. Different milestones and challenges should be addressed in the video game production process: technical issues in software development, problems of documentation design, content creation, team roles, group dynamics, risk analysis and process management.

## PROFESSIONAL COMPETENCES ACQUIRED IN THE SUBJECT:

<b>General programme competences</b>	G01	Ability to use learning strategies independently for use in the continuous improvement of professional practice.
	G02	Ability to analyse and synthesise problems of their professional activity and apply in similar environments.
	G03	Ability to achieve common results through teamwork in a context of integration, cooperation and encouraging critical discussion.
	G04	Ability to critically think about information, data and lines of action and their implementation in relevant social, scientific ethical issues.
	G05	Ability to communicate in Spanish and English for professional issues in oral and written form.
	G06	Ability to solve complex problems or contingencies that arise during professional activity within any organisation and adapt to the needs and demands of their professional environment.
	G07	Ability to handle different complex knowledge models through a process of abstraction and its application to approach and solve problems.
	G08	Ability to understand the role of the scientific method in the generation of knowledge and its application to a professional environment.
	G09	Ability to work with respect for the environment and society through the proper use of technology and its application in promoting a sustainable economy and environment.
	G10	Ability to master information and communication technologies and their application in their professional field.
<b>Specific programme competences</b>	E01	Ability to solve mathematical problems inherent to engineering. Ability to apply knowledge about: algebra; geometry; differential and integral calculus; optimisation and numerical methods
	E02	Ability to understand and master the concepts of the general laws of classical mechanics, fields, waves and electromagnetism and their application for solving video game development problems.
	E03	Ability to develop the use and programming of computers, operating systems, databases and software and their application in the development of video games.
	E04	Ability to understand and master the basic concepts of discrete logic, algorithmic mathematical and computational complexity, and their application for solving engineering problems.
	E05	Ability to program applications both correctly, and efficiently, choosing the most appropriate paradigm and programming languages, applying knowledge of basic algorithmic procedures and using the types and structures of the most appropriate data.
	E06	Ability to learn, understand and evaluate the structure and architecture of computers, as well as their basic components.
	E07	Ability to design, analyse and implement applications based on the characteristics of the database.
	E08	Ability to learn and master the features, functionality and structure of the Distributed Systems, Computer Networks and the Internet and design and implement applications based on them.



E09	Ability to learn and master the tools necessary for the storage, processing and access to information systems, including web-based.
E10	Ability to be familiar with the characteristics, functions and structure of operating systems.
E11	Ability to develop online games for multiple players.
E12	Ability to understand and analyse the structure, organisation, function and interconnection of the devices and systems in video game platforms.
E13	Ability to discover, design and assess the main foundations and techniques of player-computer interaction that guarantee the accessibility and usability of the systems, services and IT applications including video games.
E14	Ability to apply the main foundations and techniques of the smart systems and their practical application in diverse environments.
E15	Ability to apply the main foundations and techniques of programming in real time.
E16	Ability to fully manage and plan software projects and handle suitable tools to do so.
E17	Ability to understand and analyse the structure and function of the main hardware systems and peripherals in video game platforms.
E18	Ability to understand and apply the principles of ergonomics and "Design for all" in order to develop universally accessible interfaces and devices in the field of video games.
E19	Ability to recognise and apply the principles, methodologies and life cycle of software engineering.
E20	Ability to generate and analyse expressive and narrative resources and their application to video games.
E21	Ability to execute the art of video games, create characters and settings.
E22	Ability to manage techniques and tools used for artistic representation and expression.
E23	Ability to use creative processes in the design and development of video games.
E24	Ability to specially visualise and have knowledge of the graphical representation techniques, both in terms of traditional methods of metrical geometrics and descriptive geometrics using computer-assisted design application.
E25	Ability to design and create graphical elements and their application in the development of video games.
E26	Ability to perform the design and creation of animated characters and their application in the development of video games.
E27	Ability to apply the methods in the creation and preservation of synthetic images
E28	Ability to perform the design and construction of models with the information necessary for the creation and display interactive images.
E29	Ability to understand and apply the techniques of visualisation, animation, simulation and interaction on models
E30	Ability to design, develop, select and evaluate applications and systems, ensuring reliability, safety and quality, according to ethical principles and legislation and regulations.
E31	Ability to perform the evaluation of video games from their different approaches.
E32	Ability to evaluate, use and spread game engines.
E33	Ability to develop production developments in the field of video games.
E34	Ability to create and analyse games on their fundamentals and develop the understanding of what are the keys that determine how they work and their development.
E35	Ability to know and understand the video game industry from a business point of view
E36	Ability to identify and implement legal and ethical aspects of the gaming industry
E37	Ability to design and create sounds and sound environments and their application in game development
E38	Ability to produce an original project that integrates the skills acquired throughout the degree along with its presentation and defence before a university tribunal that relates to the field of design and game development.

#### PRE-REQUISITES:

#### SUBJECT PROGRAMME:

#### Subject contents:

<b>1 - People &amp; Communication - Soft Skills</b>
1.1 - Introduction. People: Emotions & Skills.
1.2 - Video games industry: Market, Audience, Persona
1.3 - Dialogue & Communication

<b>2 - Leadership</b>
2.1 - Leadership Theories & Practices
<b>3 - Teams</b>
3.1 - Theories about teams
3.2 - Learning Companies & Knowledge creation in Teams
<b>4 - Designing a Game</b>
4.1 - Value proposition, Competition & Prototyping
4.2 - Lean Startup, Design Thinking, Visual Thinking and other theories.
<b>5 - Producing a Game</b>
5.1 - Project Management with Agile Methodologies
<b>6 - Funding &amp; Budget</b>
6.1 - Basic Numbers to produce a game
<b>7 - Distribution &amp; Communication</b>
7.1 - Distribution of a game
7.2 - Newsworthy
<b>8 - Branding &amp; Personal Portfolio</b>
8.1 - Personal Branding & Company Branding
8.2 - Pitching & Personal Portfolio

Subject planning could be modified due unforeseen circumstances (group performance, availability of resources, changes to academic calendar etc.) and should not, therefore, be considered to be definitive.

## TEACHING AND LEARNING METHODOLOGIES AND ACTIVITIES:

### Teaching and learning methodologies and activities applied:

This course will use the following methodologies in order to give the students the best opportunity to develop their competences: lectures, practical cases, exercises and coursework presentations.

Participation in class will be accounted in the final score. All readings, practices and works will be announced using the Online University Platform (pdu.usj.es).

### Student work load:

Teaching mode	Teaching methods	Estimated hours
<b>Classroom activities</b>	Master classes	17
	Other theory activities	3
	Practical exercises	8
	Practical work, exercises, problem-solving etc.	10
	Debates	8
	Coursework presentations	4
	Workshops	4
	Laboratory practice	8
	Participation in seminars, conferences etc.	2
	Other practical activities	3
	Assessment activities	3
<b>Individual study</b>	Tutorials	2
	Individual study	26
	Individual coursework preparation	25
	Group coursework preparation	22
	Research work	5
	<b>Total hours:</b>	150

## ASSESSMENT SCHEME:

### Calculation of final mark:

Written tests:	20	%
Individual coursework:	20	%
Group coursework:	30	%
Final exam:	20	%
Attendance and Participation:	10	%
<b>TOTAL</b>	<b>100</b>	<b>%</b>

\*Las observaciones específicas sobre el sistema de evaluación serán comunicadas por escrito a los alumnos al inicio de la materia.

## BIBLIOGRAPHY AND DOCUMENTATION:

### Basic bibliography:

BETHKE, E. Game development and production. Wordware Publishing, Inc. 2003
CHANDLER, H. M. The game production handbook. Jones & Bartlett Publishers. 2009
MARTIN, C. B.; DEUZE, M. The independent production of culture: A digital games case study. Games and culture, 4(3), 276-295. 2009
RIES, Eric. The Lean Startup: How Today's Entrepreneurs Use Continuous Innovation to Create Radically Successful Businesses. New York: Crown Business, 2011
SENGE, Peter M. The Fifth Discipline : the Art and Practice of the Learning Organization. New York :Doubleday/ Currency, 1990.
ISAACS, William. Dialogue and the Art of Thinking Together: A Pioneering Approach to Communicating in Business and in Life. New York: Currency, 1999.
BROWN, Tim, and Barry Ka'tz. Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation. 2009.

### Recommended bibliography:

BANKS, J. Co-creating videogames. Bloomsbury Publishing. 2013
CASTRONOVA, E. Synthetic worlds: The business and culture of online games. University of Chicago press. 2008
FREEMAN, R. E. Stakeholder Theory of the Modern Corporation, Perspectives in Business Ethics, 3, pp. 38-48. 2001
GABRIELSSON, M.; KIRPALANI, V. M. Born globals: how to reach new business space rapidly. International Business Review, 13(5), 555-571. 2004
GOLEMAN, D.; BOYATZIS, R. Social intelligence and the biology of leadership. Harvard Business Review, 86(9), 74-81. 2008
GOLEMAN, D.; BOYATZIS, R.; MCKEE A. Primal Leadership: the Hidden Power of Emotional Inteligence. In J. V. Gallos, Business Leadership (pp. 16-25). San Francisco: Jossey-Bass, 2008
KLEIN, L. UX for lean startups: Faster, smarter user experience research and design. CA: O'Reilly Media, Inc., 2013
KOUZES, J. M.; POSNER, B. Z. The Five Practices of Exemplary Leadership. In J. V. Gallos, Business Leadership (pp. 26-35). San Francisco: Jossey-Bass, 2008
PORTER M. E. and KRAMER, M.R. Strategy and Society: The Link Between Competitive Advantage and Corporate Social Responsibility. Harvard Business Review. December, 2006
PORTER, M. E. Competitive strategy: Techniques for analyzing industries and competition. New York, 300, 1980

### Recommended websites:

\* Guía Docente sujeta a modificaciones