



## Course guide

### 804242 - GAM - Gamification

**Last modified:** 22/06/2023

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

**Degree:** BACHELOR'S DEGREE IN VIDEO GAME DESIGN AND DEVELOPMENT (Syllabus 2014). (Compulsory subject).

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

#### LECTURER

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**Coordinating lecturer:** Joan Arnedo

**Others:** Joan Arnedo  
Noemí Blanch

#### PRIOR SKILLS

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You need to have a solid knowledge of game design.

#### DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

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**Specific:**

CEVJ 4. Identify and use gameplay mechanics and dynamics in non-gaming environments to enhance motivation, concentration, effort and loyalty in a wide range of sectors including education, marketing, business and health and sport.

**Transversal:**

04 COE N2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 2. Using strategies for preparing and giving oral presentations. Writing texts and documents whose content is coherent, well structured and free of spelling and grammatical errors.

05 TEQ N2. TEAMWORK - Level 2. Contributing to the consolidation of a team by planning targets and working efficiently to favor communication, task assignment and cohesion.

06 URI N2. EFFECTIVE USE OF INFORMATION RESOURCES. Managing the acquisition, structure, analysis and display of information from the own field of specialization. Taking a critical stance with regard to the results obtained.

07 AAT N2. SELF-DIRECTED LEARNING - Level 2: Completing set tasks based on the guidelines set by lecturers. Devoting the time needed to complete each task, including personal contributions and expanding on the recommended information sources.

03 TLG. THIRD LANGUAGE. Learning a third language, preferably English, to a degree of oral and written fluency that fits in with the future needs of the graduates of each course.

## TEACHING METHODOLOGY

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The course is based on a very practical and experiential training based on the game from a triple perspective:

- The playful as a necessary varnish for training.
- The use of game elements in the design of the subject.
- The game and its dynamics as a starting point to work on the theoretical contents.

The theoretical contents are introduced by the teaching staff in conjunction with practical or analytical activities, where the student is the one who takes the initiative. In that sense, all classes are participatory and dynamic. Students intervene in their own class by carrying out activities, searching for information and raising doubts about the contents studied.

The theoretical contents are consolidated by carrying out two practical tasks, called challenges, which are of great importance within the subject. These are carried out during classes and, especially, autonomously from the guidance provided in class. The face-to-face classes are used as a coworking space where work teams receive feedback from both the teacher and the rest of the students.

It is worth emphasizing that this subject does not have a final exam (see section "grading system"). Due to its characteristics, the weight of the evaluation falls on the challenges and participation in class.

## LEARNING OBJECTIVES OF THE SUBJECT

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- Show understanding of the gamification concept and gamification techniques that are applied in different sectors and, be able to design a gamification process for a specific environment.
- Identify and use game mechanics and dynamics in non-playful environments in order to enhance motivation, concentration, effort, and loyalty in very diverse sectors such as education, marketing, business, and health or sports
- Understand concepts and methods of psychology related to design.
- Use strategies to prepare and carry out oral presentations and write texts and documents with coherent content, an adequate structure and style, and a good level of spelling and grammar.
- Contribute to consolidating the team planning objectives, working effectively and favoring communication, the distribution of tasks, and cohesion.
- After identifying the different parts of an academic document and organizing the bibliographic references, design and execute a good advanced search strategy with specialized information resources, selecting the relevant information taking into account criteria of relevance and quality.
- Carry out the tasks assigned from the basic guidelines given by the professors, deciding the time that needs to be used for each task, including personal contributions and expanding the indicated sources of information.

## STUDY LOAD

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

**Total learning time:** 150 h

## CONTENTS

### What is gamification (and what isn't)?

**Description:**

Interpretation and definitions. Evolution of the term. What is a game? "Game" vs "play". Similar is not the same: toy, game, serious game, game-based learning, simulation, gamification and playful design.

**Full-or-part-time:** 14h

Theory classes: 1h

Practical classes: 2h

Guided activities: 1h

Self study : 10h

### Psychology of Motivation

**Description:**

Description of the most relevant aspects of the psychological theories on motivation that serve as the basis for gamification. Extrinsic vs intrinsic motivation. Theory of self-determination. Flow cycles.

**Related activities:**

Challenge 1

**Full-or-part-time:** 20h

Theory classes: 3h

Practical classes: 4h

Guided activities: 1h

Self study : 12h

### Types of players and the elements of gamification

**Description:**

The different classifications of the types of users and users or players in which to focus the design of gamification. Essential characteristics of each type. Classification and description of the gamification mechanics and elements available to the designer ("toolbox" approach). Link to the different types of players.

**Related activities:**

Challenge 1

**Full-or-part-time:** 18h

Theory classes: 3h

Practical classes: 2h

Guided activities: 1h

Self study : 12h

### Ethical aspects of gamification

**Description:**

Ethical aspects of the psychology of motivation and the use of gamification. Reflection on cases in real life.

**Related activities:**

Challenge 1

**Full-or-part-time:** 7h

Theory classes: 1h

Self study : 6h



### The design of gamification

**Description:**

Reflecting on PBL. Formal frameworks of the correct design of gamification by stages. Main features. Most important aspects in the design process. Canvas.

**Related activities:**

Challenge 2

**Full-or-part-time:** 38h

Theory classes: 4h

Practical classes: 10h

Guided activities: 4h

Self study : 20h

### The definition stage

**Description:**

Game Thinking Techniques to think like a Game Designer. What problem do I want to solve? Defining the strategy. Hypothesis and empathy. Identifying habits.

**Related activities:**

Challenge 2

**Full-or-part-time:** 19h

Theory classes: 2h

Practical classes: 5h

Guided activities: 2h

Self study : 10h

### The design stage

**Description:**

The mastery path or the user journey. Discovery, on-boarding, immersion and mastery. Narratives, metaphors and themes. Engagement loops. Choosing the right gamification elements.

**Related activities:**

Challenge 2

**Full-or-part-time:** 18h

Theory classes: 1h

Practical classes: 5h

Guided activities: 2h

Self study : 10h



### The deploy and validate stage

**Description:**

How to create a balanced and balanced system. System modeling and prototyping. Playtesting. The journey of the creator. Research methods: qualitative vs quantitative. What does the science say about whether gamification works?

**Related activities:**

Challenge 2

**Full-or-part-time:** 16h

Theory classes: 3h

Practical classes: 2h

Guided activities: 1h

Self study : 10h

## ACTIVITIES

### Challenge 1. Research about gamified projects

**Description:**

Gamification is a methodology that can be applied to a wide variety of contexts to achieve different goals. For this challenge, the work team must decide the thematic area (health, education, fitness, business, etc.) on which to investigate the existence of gamified projects. Once this is done, look for an example of a gamified project within the chosen area, proposed by the student himself.

**Specific objectives:**

Develop the ability to analyze a gamified experience applied to an APP with mainly business objectives that implements various elements and gamification strategies. The exercise aims to familiarize the student with the identification and recognition of the structures that make up a gamification process, with the basic motivational factors and how these influence the complete design of an application.

**Material:**

- Notes of the subject
- Templates of the analysis activities carried out in class
- Bibliography of the subject
- Mobile device or computer

**Delivery:**

The delivery and evaluation is based both on a document where all the specified elements of analysis are contemplated in detail, and on the oral presentation of the work to the rest of the class.

Durant el curs, també es poden proposar sessions de seguiment o treball en equip en què és obligatori mostrar al professorat l'estat del projecte d'acord amb les vostres directrius. Tot i que aquestes sessions no siguin avaluables, i se centren exclusivament en el seguiment del projecte per oferir feedback, són obligatòries per poder ser avaluats del rept.

**Full-or-part-time:** 20h 50m

Theory classes: 5h

Self study: 15h 50m



## Challenge 2: Construction of a gamified project.

### Description:

Based on a proposal carried out by the team itself (think of a problem or environment that is in its day to day), you must develop a process of gamification, documenting and designing a prototype that presents the main dynamics of the game and gamification.

The proposal will have to consistently implement mechanics that favor the retention and loyalty of its players. This metagame will have to incorporate gamification mechanics correctly interrelated with the objectives sought in a non-playful context.

### Specific objectives:

Being able to abstract the key elements of the video game experience and combine gamification techniques that cooperate to achieve the final result and desired behaviors. Understand the existing metagame dependencies, gamification and game design.

### Material:

- Game Design Lenses Card Deck by Jesse Schell
- Periodic Table of Gamification Elements by Andrej Marczewski
- Game Thinking, by Amy Jo Kim
- Different forms of Canvas provided during the course.

### Delivery:

The delivery and evaluation is based on a document with the gamification plan, following the stages of the design scheme of gamified experiences explained in class (Definition, Design and Validation), the oral presentation of the work to the rest of the class and the creation of navigable prototypes, "mockups" or schemes.

During the course, follow-up sessions or teamwork may also be proposed in which it is mandatory to show teachers the status of the project in accordance with their guidelines. Although these sessions are not evaluable, and focus exclusively on project monitoring to provide feedback, they are mandatory in order to be evaluated for the challenge.

**Full-or-part-time:** 20h 50m

Theory classes: 5h

Practical classes: 15h 50m

## GRADING SYSTEM

### - Projects:

Challenge 1: Initial research of a gamified project, with a weighting of 20% of the final grade of the subject.

Challenge 2: Construction of a gamified project, with a weighting of 45% of the final grade of the subject.

### - Midterm Exam:

A midterm exam with a weighting of 25% of the final grade of the subject.

### - Participation and voluntary tasks in class:

The ability to actively contribute ideas to class and participation in specific activities proposed by teachers is taken into account with up to 10% of the final grade of the course.

This note takes into account only those attitudes or activities that could be considered "beyond the call of duty" and not just attending class or completing tasks that would already be expected to be solved in class as part of the learning process.

### - Re-evaluation:

Students who have failed the subject can take the re-assessment, regardless of the grade they have obtained (there is no minimum grade to be eligible, as long as the final grade is suspended, but different from NP).

In the case of this subject, the grade obtained in the re-assessment test replaces the mark obtained in the partial exam, only if it is higher. This fact can allow to pass the subject, always counting its maximum weight related to the total.

In any case, if you choose this route, the final grade of the subject may not exceed 5.

## BIBLIOGRAPHY

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### Basic:

- Burke, B. Gamify: how gamification motivates people to do extraordinary things. Bibliomotion, 2014.
- Koster, R. A theory of fun for game design. 2nd ed. O'Reilly Media, 2013. ISBN 9781449363215.
- Huizinga, J. Homo ludens. Routledge, 2014.
- Marczewski, A. Even Ninja Monkeys like to play. Blurb Inc, 2015.
- Zichermann, G., Cunningham, C. Gamification by design: implementing game mechanics in web and mobile apps. O'Reilly Media, 2011. ISBN 9781449397678.
- Amy Jo Kim. Game Thinking. 2a. gamethinking.io, 2018. ISBN 099978854X.

### Complementary:

- Rigby, S.; Ryan, R. Glued to games: how to video games draw us in and hold us spellbound. Praeger, 2011. ISBN 9780313362248.
- Flanagan, M. Critical play. Radical Game Design. Cambridge,
- Hodent, C. The Gamer's Brain. 2018.
- Carrión del Val, Salvador; de la Cuz Morales, Sergio et ál.. La Torre de Salfumán. 1. 77Mundos, 2018. ISBN 8494667211.
- Lankoski, Petri ; Björk, Staffan . Game Research Methods: An overview. 1. lulu.com, 2015. ISBN 1312884738.

## RESOURCES

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### Other resources:

Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011, September). From game design elements to gamefulness: defining "gamification". In Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments (pp. 9-15).

Bertran, F. A., Segura, E. M., Duval, J., & Isbister, K. (2019). Chasing Play Potentials: Towards an Increasingly Situated and Emergent Approach to Everyday Play Design. In Conference on Designing Interactive Systems (pp. 1265-1277).

Juul, J. (2010). The game, the player, the world: Looking for a heart of gameness. *Plurais Revista Multidisciplinar*, 1(2).

Whitton, N. (2009). Learning with digital games: A practical guide to engaging students in higher education. Routledge.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American psychologist*, 55(1), 68.

Pink, D. H. (2011). Drive: The surprising truth about what motivates us. Penguin.

Mora, A., Planas, E., & Arnedo-Moreno, J. (2016, November). Designing game-like activities to engage adult learners in higher education. In Proceedings of the fourth international conference on technological ecosystems for enhancing multiculturalism (pp. 755-762).

Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, 84(2), 191

Arnedo-Moreno, J., Tesconi, S., Galindo, M. J. M., García-Solórzano, D., & García, M. F. (2019). A Study on the Use of Gameful Approaches in Self-paced "learn to code"(SPL2C) Apps. In *GamiLearn*.

Govender, T., & Arnedo-Moreno, J. (2020, October). A Survey on Gamification Elements in Mobile Language-Learning Applications. In Eighth International Conference on Technological Ecosystems for Enhancing Multiculturalism (pp. 669-676).

Hunicke, R., LeBlanc, M., & Zubek, R. (2004, July). MDA: A formal approach to game design and game research. In Proceedings of the AAAI Workshop on Challenges in Game AI (Vol. 4, No. 1, p. 1722).

Lazzaro, N. (2004). Why We Play Games: Four Keys to More Emotion in Player Experiences.

Radoff, J. (2011). Game on. Energize your business with social media games.

Reiss, S. (2004). Multifaceted nature of intrinsic motivation: The theory of 16 basic desires. *Review of general psychology*, 8(3), 179-193

- Bartle, R. (1996). Hearts, clubs, diamonds, spades: Players who suit MUDs. *Journal of MUD research*, 1(1), 19.
- Nacke, L. E., Bateman, C., & Mandryk, R. L. (2014). BrainHex: A neurobiological gamer typology survey. *Entertainment computing*, 5(1), 55-62.
- Tondello, G. F., Wehbe, R. R., Diamond, L., Busch, M., Marczewski, A., & Nacke, L. E. (2016, October). The gamification user types hexad scale. In *Proceedings of the 2016 annual symposium on computer-human interaction in play* (pp. 229-243).
- Tondello, G. F., Mora, A., Marczewski, A., & Nacke, L. E. (2019). Empirical validation of the gamification user types hexad scale in English and Spanish. *International Journal of Human-Computer Studies*, 127, 95-111.
- Laine, T. H., & Lindberg, R. S. (2020). Designing Engaging Games for Education: A Systematic Literature Review on Game Motivators and Design Principles. *IEEE Transactions on Learning Technologies*, 13(4), 804-821
- Paul, R., & Elder, L. (2005). *A Miniature Guide to Ethical Reasoning*. The Foundation for Critical Thinking: California.
- Marczewski, A. (2017). The ethics of gamification. *XRDS: Crossroads, The ACM Magazine for Students*, 24(1), 56-59.
- Friedman, B., Hendry, D. G., & Borning, A. (2017). A survey of value sensitive design methods. *Foundations and Trends in Human-Computer Interaction*, 11(2), 63-125.
- Friedman, B., & Hendry, D. (2012, May). The envisioning cards: a toolkit for catalyzing humanistic and technical imaginations. In *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 1145-1148).
- "When the waker sleeps" (originally "The Waker Dreams"). A short story by Richard Matheson. *Galaxy #3*, december. 1950
- "The Eyes of the Overworld" (The Dying Earth #2) by Jack Vance, 1966
- Antin, J., & Churchill, E. F. (2011, May). Badges in social media: A social psychological perspective. In *CHI 2011 Gamification Workshop Proceedings* (Vol. 7, No. 2).
- Morschheuser, B., Hamari, J., & Maedche, A. (2019). Cooperation or competition—When do people contribute more? A field experiment on gamification of crowdsourcing. *International Journal of Human-Computer Studies*, 127, 7-24.
- Mora, A., Riera, D., González, C., & Arnedo-Moreno, J. (2017). Gamification: a systematic review of design frameworks. *Journal of Computing in Higher Education*, 29(3), 516-548.
- O'Brien, H. L., Cairns, P., & Hall, M. (2018). A practical approach to measuring user engagement with the refined user engagement scale (UES) and new UES short form. *International Journal of Human-Computer Studies*, 112, 28–39.
- O'Brien, H. L., Cairns, P., & Hall, M. (2018). A practical approach to measuring user engagement with the refined user engagement scale (UES) and new UES short form. *International Journal of Human-Computer Studies*, 112, 28-39.
- Chen, G., Gully, S. M., & Eden, D. (2001). Validation of a new general self-efficacy scale. *Organizational research methods*, 4(1), 62-83.
- Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and practice*, 2(1), 1-10.
- Hamari, J., Koivisto, J., & Sarsa, H. (2014, January). Does gamification work?—a literature review of empirical studies on gamification. In *2014 47th Hawaii international conference on system sciences* (pp. 3025-3034). IEEE.
- Xi, N., & Hamari, J. (2019). Does gamification satisfy needs? A study on the relationship between gamification features and intrinsic need satisfaction. *International Journal of Information Management*, 46, 210-221.