

Course Unit	Game Theory and Culture		Field of study	Game Design	
Bachelor in	Game Design		School	School of Public Management, Communication and Tourism	
Academic Year	2023/2024	Year of study	1	Level	1-1
Type	Semestral	Semester	2	ECTS credits	6.0
Code	8309-801-1205-00-23				
Workload (hours)	162	Contact hours	T -	TP 60	PL -
			TC -	S -	E -
			OT -	O -	

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Ines Monteiro Barbedo de Magalhaes, Joana Ines Veiga Guerra da Costa Tavares

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Understand game studies as an interdisciplinary approach to the study of human behavior;
2. Master the fundamental vocabulary of game design;
3. Understand and employ the principles of ludology and narratology;
4. Know different methodologies and techniques to approach UX;
5. Know the history of digital games and its relationship with other media;
6. Apply theoretical concepts in the analysis of case studies and design of prototypes.

### Prerequisites

Before the course unit the learner is expected to be able to:  
Not applicable.

### Course contents

Module 1: History and evolution of digital games. The (inter)disciplinary area of game studies. Fundamental game design vocabulary. UX and player-centered design. Genres in digital games.

Module 2: Game theory and decision making .Analysis of results. Information sets. Rational choice/play vs random.

Modules 1 and 2: Formal elements of a game: case studies.

### Course contents (extended version)

1. History and evolution of digital games.
2. The (inter)disciplinary area of game studies:
  - The 4 dimensions of analysis (game, player, culture, ontology);
  - Some reference authors;
  - Methodologies.
3. Some fundamental debates:
  - Narratology versus ludology;
  - Ethics and digital games;
  - Gamification and games in specific contexts;
  - Media archeology.
4. Fundamental game design vocabulary:
  - Concept, gameplay, mechanic and game balance;
  - Prototyping and playtesting.
5. UX and player-centered design:
  - Balance in practical, experiential, significant and valuable aspects of interaction with a game;
  - Heuristics;
  - UX methodologies;
  - Technics and tools.
6. Genres in digital games:
  - Action;
  - Strategy;
  - Adventure;
  - Role-playing;
  - Sport;
  - Vehicle simulation;
  - Construction and management simulation;
  - Artificial life;
  - Puzzle;
  - Hybrids.
7. Game theory and decision making;
8. Simultaneous and sequential games and their representation models:
  - Normal or strategic form;
  - Extensive form;
  - Classic examples of "games" (dilemmas, zero sum, strictly competitive).
9. Analysis of results:
  - Best play and Nash equilibrium;
  - Dominant and dominated strategies;
  - Iterative method of eliminating dominated strategies;
  - Retrospective Induction.
10. Information sets:
  - Perfect vs imperfect;
  - Complete vs incomplete.
11. Rational choice/play vs random.
12. Formal elements of a game: case studies.

### Recommended reading

1. Adams, E. & Rollings, A. (2007). Fundamentals of Game Design. New Jersey: Pearson / Prentice Hall. [ISBN: 9780131687479]
2. Donovan, T. (2010). Replay: the history of videogames. East Sussex: Yellow Ant. [ISBN: 9780956507204]
3. Hiwiler, Z. (2016). Players Making Decisions: Game Design Essentials and the Art of Understanding Your Players. New Riders NRG [ISBN: 9780134396750]
4. Osborne, M. (2004). An introduction to game theory. Oxford: Oxford University Press. [ISBN: 9780195128956]

**Recommended reading**

5. Perron, B. & Wolf, M. J. P. (eds. ) (2009). The Video Game Theory Reader 2. Nova Iorque & Londres: Routledge. [ISBN: 9780415962834]

**Teaching and learning methods**

Contact Hours: Content exposition, with the aid of different audiovisual products. Questioning, in order to develop critical ability. Demonstrative method, with the aid of technical equipment. Active method, when the student solves exercises. Non-contact Hours: Active method, when the student solves proposed assignments.

**Assessment methods**

1. CONTINUOS EVALUATION (mobility students) - (Regular, Student Worker) (Final)
  - Intermediate Written Test - 25% (minimum mark 7 in 20) M1: Reading assessments 12, 5% M2: Exercises assessments 12, 5%
  - Experimental Work - 60% ((minimum mark 7 in 20) Workshops 35% Project between 1st year UCs 15% Interdisciplinary Week 10%)
  - Case Studies - 15% ((minimum mark 7 in 20) Analysis of a digital game)
2. FINAL EVALUATION (mobility students) - (Regular, Student Worker) (Supplementary, Special)
  - Final Written Exam - 25% ((minimum mark 7 in 20) M1: written assessment 12, 5% M2: written assessment 12, 5%)
  - Experimental Work - 60% ((minimum mark 7 in 20) Workshops 35% Project between 1st year UCs 15% Interdisciplinary Week 10%)
  - Case Studies - 15% ((minimum mark 7 in 20) Analysis of a digital game)

**Language of instruction**

1. Portuguese
2. English

**Electronic validation**

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14-03-2024	10-04-2024	10-04-2024	16-04-2024