

Subject Description Form

Subject Code	COMP5573
Subject Title	Theory and Practice of Video Game Design
Credit Value	3
Level	5
Pre-requisite/ Co-requisite/ Exclusion	Nil
Objectives	<p>The objectives of this subject are to:</p> <ol style="list-style-type: none"> 1. Equip engineering / computer science students with the knowledge, tools, and techniques needed to conceptualize, design, and develop computer games 2. Exploring various game genres, player psychology, reward systems, elements of game design, and other key aspects 3. Gain a comprehensive understanding of game development processes from ideation to implementation
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <p><u>Professional/academic knowledge and skills</u></p> <ol style="list-style-type: none"> a) gain a comprehensive understanding of various game genres, and apply this knowledge in the design of genre-specific games; b) learn the psychological principles that drive player behavior and engagement, and design games that cater to different player motivations; c) analyze and implement effective in-game reward systems to enhance player motivation and experience; d) understand and integrate essential elements of game design, such as mechanics, dynamics, aesthetics, and narrative, into cohesive game projects; e) develop the skills to brainstorm creative game ideas and rapidly prototype to test game mechanics and concepts; f) learn to prepare persuasive game pitches and develop comprehensive Game Design Documents (GDDs) that guide the development process; <p><u>Attributes for all-roundedness</u></p> <ol style="list-style-type: none"> g) build up a good degree of understanding of business/ industrial practice which is usually not available in the campus; h) improve interpersonal, communication and other soft skills.

**Subject Synopsis/
Indicative Syllabus**

Understanding Game Genres

- 1. Analyze and Evaluate Game Genres:** Understand and critically evaluate different types of game genres, their historical development, and their impact on the gaming industry and culture.
- 2. Design Genre-specific Games:** Demonstrate the ability to design a game that aligns with the characteristics and constraints of a specific genre.

Understanding Player Psychology

- 3. Identify Player Motivations:** Understand various psychological factors that influence player behavior, such as motivation, engagement, and reward systems.
- 4. Design for Player Experience:** Apply psychological principles to design games that offer compelling experiences tailored to different player types.

Understanding and Designing Reward Systems

- 5. Analyze Reward Mechanisms:** Analyze and critique reward mechanisms in existing games, including progression systems, achievements, and in-game economics.
- 6. Implement Effective Reward Systems:** Design and implement a balanced and motivating reward system within a game prototype.

Understanding Elements of Game Design

- 7. Element Identification:** Understand and articulate the core elements of game design such as mechanics, dynamics, aesthetics, and narrative.
- 8. Design Integration:** Demonstrate the ability to integrate these elements cohesively in a game design project.

Idea Brainstorming and Prototyping

- 9. Idea Generation:** Use brainstorming techniques and tools to generate unique and creative ideas for game concepts.
- 10. Rapid Prototyping:** Create low-fidelity prototypes to test game design concepts and mechanics.

Game Pitching

- 11. Prepare a Game Pitch:** Develop a concise and persuasive pitch presentation aimed at stakeholders, showcasing the game's concept, market potential, and design.
- 12. Pitch Evaluation:** Evaluate and provide constructive criticism on game pitches from peers.

Documentation and Game Design Document (GDD)

- 13. Develop a GDD:** Create a comprehensive Game Design Document that outlines the game's concept, mechanics, design, monetization strategy, and technical requirements.
- 14. Document Review:** Understand the importance of iterative documentation and demonstrate the ability to revise and update the Game Design Document in response to feedback and development challenges.

<p>Teaching/Learning Methodology</p>	<p>Lectures, Tutorials and Labs</p> <p>The subject material will be delivered through lectures, tutorials, and labs. Lectures will focus on the delivery of the theoretical foundations and practical knowhows. Guest lectures from the industry or practitioners will be invited to introduce the game design and pitching in solving real-world problems. Tutorials and labs will provide students guidance and opportunities in applying what they have learned during the lectures in the design, development and evaluation of game design.</p> <p>Group Project and Individual Assignments</p> <p>Group project and individual assignments will provide students with in-depth opportunities to practice the lecture concepts, as well as to assess their ability to apply these concepts in practical scenarios.</p> <p>Examination</p> <p>The final examination will assess students on their grasp of the subject materials.</p>																																																																						
<p>Assessment Methods in Alignment with Intended Learning Outcomes</p>	<table border="1" data-bbox="507 875 1433 1451"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="8">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th>f</th> <th>g</th> <th>h</th> </tr> </thead> <tbody> <tr> <td>Continuous Assessment</td> <td rowspan="2">55%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Individual Assignments and Group Project</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Final Examination</td> <td>45%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Total</td> <td>100 %</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>The course will be assessed by three individual assignments, one group projects, and the final examinations.</p> <p>The individual assignments are designed to reinforce the theoretical foundations and practical knowhows learned during the lectures. The group project is used to develop students' ability in solving problems by using systematic approaches, collaboration with peer students, and quick prototyping of game when facing real-world scenarios. Individual contributions to the group project will be evaluated through self-reported contribution lists and workload distribution lists. The final examination is used to assess students on their grasp of the subject materials.</p>										Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)								a	b	c	d	e	f	g	h	Continuous Assessment	55%	✓	✓	✓	✓	✓	✓	✓	✓	✓	Individual Assignments and Group Project										Final Examination	45%	✓	✓	✓	✓	✓	✓				Total	100 %									
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Student Study Effort Expected	Class contact:	
	▪ Lectures	26 Hrs.
	▪ Tutorials and Labs	13 Hrs.
	Other student study effort:	
	▪ Group Project, Individual Assignments, and Final Examination	66 Hrs.
	Total student study effort	105 Hrs.
Reading List and References	<p>Textbook:</p> <ol style="list-style-type: none"> Schell, J. (2008). The Art of Game Design: A book of lenses. CRC press. Robert Zubek (2020). Elements of Game Design. The MIT Press <p>Reference Books:</p> <ol style="list-style-type: none"> Fullerton, T. (2014). Game design workshop: a playcentric approach to creating innovative games. CRC press. Anthropy, A., & Clark, N. (2014). A game design vocabulary: Exploring the foundational principles behind good game design. Pearson Education. JMIR Serious Games. ISSN 2291-9279 Cyberpsychology, Behavior, and Social Networking, ISSN: 2152-2715 Online ISSN: 2152-2723 	