

General Elective (GE): 04 Credits

GE (II.5.1) Gamification and Design Thinking General Elective

1. Credit Distribution of the Course

Course title & Code GE (II.5.1)	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Gamification and Design Thinking	4	3	0	1	Undergraduate	-

2. Learning Objectives

The course presents theoretical frameworks and development processes for gamification and game design. It prepares students to integrate design thinking concepts and protocols in game development. The course will provide necessary skills to use software for game designing.

3. Learning Outcomes

- Explain the concept and theories for gamification;
- Identify the need based context for gamification;
- Develop game design protocols based on theoretical frameworks;
- Use game design tools to create digital tools;
- Integrate design thinking principles in game design.

4. Syllabus

Unit I Gamification: Theories and Framework - Underlying theories of gamification: Motivation theory, Self-Determination Theory, Social Constructivism theory, MDA(Mechanics, Design and Aesthetics) framework, Elements of Game Design: Goals, Targets, Interface, Rules for Rewards, Follow up), Game Mechanics (Points, Levels, Badges, Leaderboards. [15 hours]

Unit II Gamification Tools and Platform - Basic Coding for Digital Game Development, Game designing software (Scratch, Unity, Twine), Designing Interactive Simulations.

[10 hours]

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Unit III Design Thinking: Concept and Process - Design thinking as a concept and its' constructs, Key principles of design thinking, Latent need assessment, Problem Framing & Analysis. **[12 hours]**

Unit IV Innovations in Gamification - UI/UX experience for Educational Games, AR/VR in digital games, Adaptive Learning & Personalized Game Experiences. **[8 hours]**

5. Illustrative Practical Details **[30 hours]**

- Critically analyse physical and digital game.
- Conduct an empathy interview with a target user and create an empathy map.
- Create a digital or paper-based badge and reward system for a classroom or workplace.
- Modify an existing non-gamified learning activity by adding game elements and do the field testing.
- Create a design layout, game element matrix and design the game.

6. Essential Readings

- Brown, T. (2009). *Change by Design: How Design Thinking Creates New Alternatives for Business and Society*. Harper Business.
- Salen, K. & Zimmerman E. (2004). *Rules of Play: Game Design Fundamentals*. MIT Press.
- Kapp, K.M. (2012). *The Gamification of Learning and Instruction: Game-Based Methods and Strategies for Training and Education*. Pfeiffer.

7. Suggestive Reading

- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). *From game design elements to gamefulness: defining "gamification."* In Proceedings of the 2011 annual conference extended abstracts on Human Factors in Computing Systems (pp. 2425-2428).
- Surendeleg, G., & Yoon, J. (2020). *Gamification in education: A systematic review of the literature*. Springer.