

Credit Distribution, Eligibility and Pre-requisites of the Course

DISCIPLINE SPECIFIC ELECTIVE COURSE DSE-12-ADC: DESIGN THINKING

Course Title & Code	Credits	Credit distribution of the course			Eligibility Criteria	Prerequisite of the course
		Lecture	Tutorial	Practical/ Practice		
Design Thinking	4	2	0	2	Class XII	NIL

LEARNING OBJECTIVES

- To understand the basics of design thinking, including its key concepts, and core elements.
- To understand the five stages of the design thinking process: Empathize, Define, Ideate, Prototype, and Test.
- To understand techniques for conducting user research, including empathy mapping, stakeholder interviews, and usability testing.
- To understand strategies for generating and evaluating creative ideas, including brainstorming, mind mapping, and prototyping.
- To understand methods for testing and refining prototypes, including user testing and iteration.

LEARNING OUTCOMES

After completing this course, the learner will be able to:

- Explain the concept and use of the design-thinking process.
- Apply empathy and user centricity to problem identification and solution development.
- Ideation techniques are utilized to generate innovative ideas.
- Develop prototypes and iterate based on user feedback.
- Apply Design Thinking concepts to the creation of products.

SYLLABUS OF DSE-12-ADC

THEORY (Credits 2; Hours 30)

UNIT I: Basics of Design, Creativity and Innovation

5 Hours

This unit will help students to understand the meaning and scope of design, creativity and innovation.

- Design – Definition, concept and scope
- Importance and requirement of good design
- Creative thinking process, developing a creative mind-set, overcoming creative blocks
- Innovation: Concept, significance, types and process

UNIT II: Introduction to Design Thinking

10 Hours

This unit introduces the students to the concepts related to design thinking.

- Introduction to Design Thinking
- Importance of Design Thinking
- Design Thinking Framework
- Application of Design Thinking – Case studies

UNIT III: Design Thinking Process

15 Hours

This unit creates an understanding of the design thinking process.

- Empathise - Observation Plan, Observation Techniques, Interview Plan, Interview Techniques, Creating User Personas, Problem Definition and User-Centricity
- Define - Problem statement with criteria and constraints
- Ideate - Conceptualizing using tools for idea generation – brain
- Prototype – types of prototype, development of a sample / prototype/ service/ application
- Test - Feedbacks and Critiques
- Examples and Case Studies in Design Thinking from different domains.

PRACTICAL (Credits 2; 60 Hours)

1. Case study of any successful design project in fashion and textiles.
2. Project from research to development - Creating empathy maps, defining problem statement, Ideation and sketching potential solutions, developing prototypes, user testing and feedback.

Essential Readings

- John. R. Karsnitz, Stephen O'Brien, John P. Hutchinson, (2013), *Engineering Design*, Cengage learning
- Karl Aspelund, (2015), *The Design Process*, Fairchild Books
- Lawson Bryan, (2005), *How Designers Think: The Design Process Demystified*, Architectural Press
- Pavan Soni (2020), *Design Your Thinking: The Mindsets, Toolsets, and Skill Sets for Creative Problem-solving*, Penguin Random House India Private Limited

Suggested Readings

- Charles Lambdin, Frishberg, Leo, (2016), *Presumptive Design: Design Provocations for Innovation*, Morgan Kaufmann Publishers
- Michael Lewrick, Patrick Link, Larry Leifer, (2018), *The design thinking playbook: Mindful digital transformation of teams, products, services, businesses and ecosystems*

Note: Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time