# GLS UNIVERSITY
# Bachelor of Computer Applications (BCA)
# (Elective Course)
# Semester-IV
# 210303404 DESIGN THINKING

## 1. Course Objective:

- Introduce students to a new approach design thinking that enhances innovation activities in terms of creation, sustainability and speed.
- Expand students' thinking about design and innovation beyond the design and development of new products to other fundamental sources of value creation.
- Strengthen students' individual and collaborative capabilities to identify customer needs, create sound concept hypotheses, collect appropriate data, and develop a prototype that allows for meaningful feedback in a real world environment.
- Teach students to translate broadly defined opportunities into actionable innovation possibilities and recommendations for client organizations.

## 2. Course Duration:

The course will have sessions which are divided into five modules. Each module consists of four sessions of 60 minutes each and carries a weightage of 20%.

## 3. Course Contents:

| Module No. | Modules/Sub-Modules | No. of Sessions | Weightage |
|---|---|---|---|
| I | **Introduction to Design Thinking**<br>• What is Design Thinking?<br>• Need of Design Thinking<br>• Example of Design Thinking<br>• Design Need in various fields (Education, Health & Society)<br>• Introduction to Design Thinking Process | 04 | 20% |
| II | **Empathy & Define**<br>• Identify Problems<br>• Discovering Needs<br>• Types of Research<br>• Watching & Listening<br>• Point of view & Problem Re-framing<br>• Summarize Insights | 04 | 20% |
| III | **Ideating**<br>• Explore Possibilities<br>• Define Assumption<br>• Generating and Developing Ideas Design Challenges<br>• Ideating Techniques | 04 | 20% |
| IV | **Prototype**<br>• Prototype Creation<br>• Prototype Presentation<br>• Build Tangible Models<br>• Testing | 04 | 20% |

| | | | |
|---|---|---|---|
| | • Reiterate: Evolve ideas and prototypes through feedback and constructive criticism | | |
| **V** | **Design Thinking Challenge**<br>• Design Thinking Case Studies<br>• Applying Design Thinking – Software & Hardware Perspective | 04 | 20% |

## 4. Teaching Methods:

The following pedagogical tools will be used to teach this course:

1. Lectures and Discussions
2. E-learning
3. Assignments and Presentations

## 5. Evaluation:

The students will be evaluated on a continuous basis and broadly follow the scheme given below:

| | | |
|---|---|---|
| 1. | Assignments / Presentations/ Quizzes | 30% (Internal Assessment) |
| 2. | Internal Examination | 20%(Internal Assessment) |
| 3. | External Examination | 50% (External Assessment) |

## 6. Basic Text Books:

| Sr. No | Author/s | Name of the book | Publisher | Edition |
|---|---|---|---|---|
| - | - | - | - | - |

## 7. Reference Books:

| Sr. No | Author/s | Name of the book | Publisher | Edition |
|---|---|---|---|---|
| R1 | Frederick P. Brooks | The Design of Design: Essays from a Computer Scientist | Addison-Wesley Professional | First |
| R2 | Michael G. Luchs, Scott Swan, Abbie Griffin | Design Thinking: New Product Development Essentials from the PDMA | WILEY | First |
| R3 | This is service design doing | - | O'REILLY | - |

## 8. List of Journals / Periodicals / Magazines / Newspapers etc.:

| Sr. No | Links |
|---|---|
| unit 1 | https://www.youtube.com/watch?v=4nTh3AP6knM<br>https://www.youtube.com/watch?v=ir3E-TEUk48&t=277s<br>https://www.youtube.com/watch?v=_WI3B54m6SU<br>https://www.youtube.com/watch?v=-ySx-S5FcCI |
| unit 2 | https://www.youtube.com/watch?v=q654-kmF3Pc<br>https://www.youtube.com/watch?v=TNAdanuvwtc |
| unit 3 | https://www.youtube.com/watch?v=zbLxs6te5to |
| unit 4 | https://www.youtube.com/watch?v=Q4MzT2MEDHA |
| unit 5 | https://www.youtube.com/watch?v=bpVzgW8TUQ0<br>https://www.youtube.com/watch?v=l08W-9u3vx8 |

## 9. Session Plan:

| Session No. | Topics/Chapters |
|---|---|
| 1-2 | Introduction to Design Thinking, Example of Design Thinking |
| 3-6 | Need of Design Thinking, Phases of Design Thinking |
| 7-8 | Identify Problem |
| 9-10 | Qualitative Research, Problem Reframing |
| 11-12 | Explore Possibilities, Assumption, |
| 13-16 | Developing Ideas Design Challenge, Prototype Creation and Presentation |
| 16-18 | Testing, Evolve ideas and prototypes through feedback and constructive criticism |
| 19-20 | Stages of methodology through a simple design challenge |

## 10. Learning Outcomes:

On successful completion of this subject, students should be able to:

- Understand and explain the foundational principles of Design Thinking
- Undertake a critical and empathetic analysis of a problem setting
- Demonstrate skills in ideation
- Discuss the relationship between human desires, organizational needs and design characteristics
- Defend and justify design decisions
- Develop comprehensive skills is customer-centric evaluation