VASAVI COLLEGE OF ENGINEERING (AUTONOMOUS), HYDERABAD
DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

COURSE NAME-DESIGN THINKING
(Open Elective) SYLLABUS FOR B.E. 3/4 – V SEMESTER

W.E.F-2022-2023

Instruction: 3 Hours	SEE: 60	Course code: U20OE630EH
Credits: 3	CIE: 40	Duration of SEE: 3 Hours

COURSE OBJECTIVES	COURSE OUTCOMES
The course will enable the learners to: 1. Understand the critical design thinking skills needed to either improve an existing product or thinking design a new product. 2. Learn to identify customer needs and draft customer needs statements as your first step toward user innovations. 3. Learn how to translate user needs into product specifications quantitatively, and how establishing product metrics can help to define those specifications. 4. Learn to apply creativity, brainstorming, and concept generation process in designing needs solutions. 5. Learn to select and implement a product development process that's aligned with your project needs. Explore prototyping methods, strategies, and real-life examples where these have been applied to create a design that represents customer needs and product specifications.	**At the end of the course the learners will be able to: -** 1. Learn the concepts that drive design thinking. 2. Submit project ideas around user Innovations. 3. Identify prospective customer needs and user groups. 4. Translate needs into product specifications 5. Build out the product architecture, Create a prototype and present the prototype.

Unit 1: Design Thinking Skills
Understand the critical design thinking skills needed to either improve an existing product or design a new product.

1.1 The Need for Design Thinking
1.2 What makes design thinking unique?
1.3 Design thinking checklist

Unit 2: Identifying Customer Needs
Learn to identify customer needs and draft customer needs statements as your first step towards user innovations.

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2.1 Think Users' First
2.2 Users' inherent needs
2.3 Empathy and Design Thinking
2.4 Asking the Right Questions
2.5 Persona Empathy map

Unit 3: Product Specifications
Learn how to translate user needs into product specifications quantitatively, and how establishing product metrics can help define those specifications

3.1 Creating a Design Brief Template
3.2 Stakeholder map template
3.3 Customer journey template
3.4 Context map template
3.5 Opportunity map template

Unit 4: Applied Creativity
Learn to apply creativity, brainstorming, and concept generation process in designing needs solutions.

4.1 The need to ideate
4.2 The Rules of ideation
4.3 Participating in an ideation session
4.4 Building a Creative Culture
4.5 Divergent—5 common ideation techniques

Unit 5: Product Development Processes and Prototyping
Learn to select and implement a product development process that's aligned to your project needs. Explore prototyping methods, strategies, and real-life examples where these have been applied to create a design that represents customer needs and product specifications.

5.1 The need for a prototype
5.2 The Need to Test and how to conduct a structured test
5.3 How to conduct the observers' debrief

METHODOLOGY
- Case Studies
- Demonstration
- Presentations
- Expert lectures
- Writing and Audio-visual lessons

ASSESSMENTS
- Online assignments
- Individual and Group

Suggested Books
The Art of Innovation, by Tom Kelley*
Insight Out, by Tina Seelig*

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Change by Design, Tim Brown
Weird Ideas That Work, by Robert Sutton*
Wired to Care, by Dev Patnaik
Rapid Viz, by Kurt Hanks and Larry Belliston

The break-up of CIE: Internal Tests + Assignments + Quizzes

1   No. of Internal tests

:   2   Max. Marks   :   30

2   No. of assignments

:   3   Max. Marks   :   5

3   No. of Quizzes

:   3   Max. Marks   :   5

Duration of Internal Tests   : 90 Minutes

BoS Signatures:-

20 June 2022