CSD233:DESIGN THINKING

L:3 T:0 P:0 Credits:3

Course Outcomes: Through this course students should be able to

CO1 :: understand the fundamental design thinking principles and innovative problem solving tools

CO2 :: learn when and how to apply design thinking tools and exercises

CO3 :: assess problems by gathering data through observations, and generating creative ideas for solutions

CO4 :: apply creative solutions to build innovative products & services

CO5 :: explore creative opportunities by becoming an innovative thinker

CO6 :: practice empathy in applying design techniques including user research, data collection, user experience, prototyping, and journey mapping

Unit I

Introduction to Design thinking with AI tools : Understanding the AI project life cycle, Introduction to Design Thinking Principles, Understanding Creativity, Invention, Innovation, Kinds of Problems, Emergence & Evolution of Design Thinking, Nature & Use of Design Thinking, Characteristics of Design Thinkers, Models of the Design Thinking Process, Career Opportunities in Design Thinking; Monitoring AI Innovations

Unit II

Design Thinking with AI and its Relevance in Business : How AI tools support the innovation life cycle;, Design Thinking with AI and its Impact for Innovation in Realms of Business & Life, Illustrative Examples from domains such as Banking, FMCG, Retail, Food & Beverage, and Sales & Distribution, Ethics and human values in AI innovation, Introduction to prompt engineering-Basics of AI

Unit III

EMPATHY - Deep Human Understanding with AI Support : Empathy in Design Process – It's Importance, Roots in Ethnography, Empathetic Immersion, Using AI for thematic analysis of interviews, Creating Personas & Scenarios, Customer Journey Mapping, Maps & Blueprints, AI-assisted empathy: strengths and risks, Importance of Insighting, Insighting through Interviews, Developing Empathy Map & Journey Map, Defining Problem Through Lens of Design Thinking, 'Point of View' Statement & 'How Might We' Statement

Unit IV

Ideation to Visualization - Generative AI as co-creator : Co-imagination ethics: plagiarism, creativity, originality, From Ideas to Action, Ideation – Frame & Reframe the Problem Space, Tools for Ideation & Idea Selection, Visualization in Design Thinking – Importance and Methods

Unit V

Responsible AI Principles : fairness, transparency, accountability, Prototyping & Testing, Fidelity in Prototyping, Assumptions Vs Hypothesis, Testing with customers, Communicating Innovation to Stakeholders, Responsible AI & Ethical Design

Unit VI

Design Thinking for Social Innovation Sustainability & Development : Action Project, Career Opportunities in Design Thinking, Service Design, Social Innovation & Sustainability with AI, Service Design – Nature & Process, Integrating Design Thinking into Service Innovation Process, Using AI + DT for Complex System Innovation

Text Books:

1. DESIGN THINKING FOR DUMMIES by CHRISTIAN MULLER-ROTERBERG, Wiley India

References:

1. THE DESIGN THINKING TOOLBOX: A GUIDE TO MASTERING THE MOST POPULAR AND VALUABLE INNOVATION METHODS by LARRY J. LEIFER, MICHAEL LEWRICK, AND PATRICK LINK, WILEY

2. THE DESIGN THINKING TOOLBOX: A GUIDE TO MASTERING THE MOST POPULAR AND VALUABLE INNOVATION METHODS by LARRY J. LEIFER, MICHAEL LEWRICK, AND PATRICK LINK, WILEY

3. CHANGE BY DESIGN: HOW DESIGN THINKING TRANSFORMS ORGANIZATIONS AND INSPIRES INNOVATION by TIM BROWN, HARPER