UHS1XXC/UHS2XXC: INNOVATION&DESIGNTHINKING

(1:0:2)

UNIT – I

UnderstandingDesignthinking: **3 Hrs.**

Introduction about the design thinking, steps in Design Thinking Empathize, Design, Ideate, Prototype and Test, Explorepresentationsigners acrossglobe–MVPor Prototyping.

UNIT – II

ToolsforDesign Thinking: **4 Hrs.**

Importance of tools for design thinking**,** Visualization**,** Journey mapping,Value chain analysis,Mind mapping,Rapid concept development, Assumption testing,Prototyping,Customer co-creation,Learning launches,Storytelling.

UNIT – III

DesignThinkinginIT:4 Hrs.

Agile in Virtual collaboration environment – ScenariobasedPrototyping.

DTForstrategicinnovations: Growth – Story telling representation, predictability- Strategic Foresight, Change – Sense Making,

UNIT – IV

DTForstrategicinnovations:4 Hrs.

Relevance–Valueredefinition,ExtremeCompetition–experiencedesign, Standardization–

Humanization,CreativeCulture–Rapidprototyping,StrategyandOrganization–BusinessModel

design.

Total: L 15Hrs.

List of Experiments (Any 08)

1) Demonstration of Double-sided PCB prototyping
2) Implementation of Electronic Door Bell
3) Implementation of water level indicator
4) Creation of simple web pages using HTML, w3schools.com
5) Sense and display the body/room temperature using Arduino board/Raspberry pie.
6) Explore and analyze Open Datasets
7) Creation of Google form and analyze the data on the Google sheet created.
8) Cut any profile using the laser cutter
9) Print the primitive models by using 3D Printer
10) Extract the information of a free form surface from a given part using 3D Scanner
11) Demonstrate various machining operations, cutting tools and their applications on Wood lathe / CNC router
12) Demonstration of various power tools and their applications

TextBooks:

1. John R.Karsnitz,Stephen O'BrienandJohn P. Hutchinson,"Engineering Design",Cengagelearning(Internationaledition)2nd edition,2013.

2. Roger Martin, "The Design of Business: Why Design Thinking is the Next Competitive Advantage",HarvardBusinessPress,2009.

3. HassoPlattner,ChristophMeinelandLarryLeifer(eds),"DesignThinking:Understand–Improve–Apply",Springer,2011

4. Idris Mootee, "Design Thinking for Strategic Innovation: What They Can't Teach You at BusinessorDesignSchool", JohnWiley&Sons2013.

Reference Books:

1. YousefHaikandTamerM.Shahin,"EngineeringDesignProcess",CengageLearning,2nd edition,2011.

2. Book-SolvingProblemswithDesignThinking-TenStoriesofWhatWorks(ColumbiaBusinessSchoolPublishing)Hardcover–20Sep2013byJeanneLiedtka(Author),AndrewKing(Author),KevinBennett(Author).

3. **ActivityBasedLearning(SuggestedActivitiesinClass)/PracticalBasedlearning**http://dschool.stanford.edu/dgift/

4. https://onlinecourses.nptel.ac.in/noc19_mg60/preview

Course Outcomes:

Uponthesuccessful completionofthecourse,studentsshouldbeableto:

CO1: Demonstrate the knowledge and concepts of design thinking.

CO2: Recognize the suitable tool for designthinking.

CO3: Describe the role of design thinking in IT industry.

CO4: Identify and demonstrate design thinking solutions to business challenges.

Course Articulation Matrix: Mapping of Course Outcomes(CO)with Programme Outcomes(PO)and Programme Specific Outcomes(PSO)

No	Programme Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
	Course Outcomes															
	At the end of the course the student should be able to:															
1	Appreciate and demonstrate the knowledge and concepts of design thinking.	1	3	3	3	2	1	1	1	1	1		1			
2	Recognize the need and select suitable tool of design thinking.	1	2	3	3	3	1		1							
3	Describe the role of design thinking in IT industry.	1		2	1	1										
4	Identify and demonstrate design thinking solutions to business challenges.	1	2	1	1	2	1	1	1	1	1	1	1			