Lovely Professional University, Punjab

Course Code	Course Title	Lectures	Tutorials	Practicals	Credits	
CSR102	DESIGN THINKING AND COMPLEX PROBLEM SOLVING	3	0	0	3	
Course Weightage	ATT: 5 CA: 25 MTT: 20 ETT: 50					

Course Outcomes :Through this course students should be able to

CO1 :: understand the use of the method of Design Thinking to solve everyday problems.

CO2 :: illustrate tools, methods, and frameworks in order to define problem statements.

CO3 :: develop a thinking towards day-to-day real-world problems differently.

CO4 :: use tools and frameworks for critical and creative thinking.

CO5 :: discuss design thinking method for idea creation purpose and test solutions.

CO6 :: define approaches for analyzing the complex problems and find appropriate solutions.

	TextBooks (T)		
Sr No	**Title**	**Author**	**Publisher Name**
T-1	DESIGN THINKING FOR DUMMIES	CHRISTIAN MULLER-ROTERBERG	WILEY

	Reference Books (R)		
Sr No	**Title**	**Author**	**Publisher Name**
R-1	INTRODUCTION TO INDIAN KNOWLEDGE SYSTEM: CONCEPTS AND APPLICATIONS	MAHADEVAN, B. BHAT, VINAYAK RAJAT NAGENDRA PAVANA R.N.	PHI Learning

LTP week distribution: (LTP Weeks)	
Weeks before MTE	7
Weeks After MTE	7
Spill Over (Lecture)	7

Detailed Plan For Lectures

An instruction plan is only a tentative plan. The teacher may make some changes in his/her teaching plan. The students are advised to use syllabus for preparation of all examinations. The students are expected to keep themselves updated on the contemporary issues related to the course. Upto 20% of the questions in any examination/Academic tasks can be asked from such issues even if not explicitly mentioned in the instruction plan.

An instruction plan is only a tentative plan. The teacher may make some changes in his/her teaching plan. The students are advised to use syllabus for preparation of all examinations. The students are expected to keep themselves updated on the contemporary issues related to the course. Upto 20% of the questions in any examination/Academic tasks can be asked from such issues even if not explicitly mentioned in the instruction plan.

Week Number	Lecture Number	Broad Topic(Sub Topic)	Chapters/Sections of Text/reference books	Other Readings, Relevant Websites, Audio Visual Aids, software and Virtual Labs	Lecture Description	Learning Outcomes	Pedagogical Tool Demonstration/ Case Study / Images / animation / ppt etc. Planned	Live Examples
Week 1	Lecture 1	Concepts in Thinking (Understanding how humans think)	T-1 R-1		Lecture 0:Zero Lecture Lecture1:Understand humans thinking about design process	Student will understand about design thinking process	Demonstrations with ppt	
	Lecture 2	Concepts in Thinking (Understanding how humans think)	T-1 R-1		Lecture 0:Zero Lecture Lecture1:Understand humans thinking about design process	Student will understand about design thinking process	Demonstrations with ppt	
	Lecture 3	Concepts in Thinking (various types of thinking)	T-1		Explain about various types of thinking in design process	Student will understand about user needs in design thinking process	Demonstration with PPT	
Week 2	Lecture 4	Concepts in Thinking (concepts in mental models and cognitive biases)	T-1		Describe the concept of mental models and design development	Student will understand about design thinking process	Demonstration with PPT	
		Concepts in Thinking (Developing a Design thinking Mindset)	T-1		Describe the concept of mental models and design development	Student will understand about design thinking process	Demonstration with PPT	
	Lecture 5	Concepts in Thinking (concepts in mental models and cognitive biases)	T-1		Describe the concept of mental models and design development	Student will understand about design thinking process	Demonstration with PPT	
		Concepts in Thinking (Developing a Design thinking Mindset)	T-1		Describe the concept of mental models and design development	Student will understand about design thinking process	Demonstration with PPT	
	Lecture 6	Concepts in Thinking(What is Design Thinking and how it provides a structured framework to think)	T-1		Explain the concept of design thinking framework	Students understand the use of the method of Design Thinking to solve everyday problems.	Demonstration with PPT	
Week 3	Lecture 7	Methods to understand and define problem statements (Developing the user needs by use of human centred approach)	T-1 R-1		Describe about user needs and approaches in design thinking process	Develop a thinking towards day-to-day real-world problems differently	Demonstration with PPT	

An instruction plan is only a tentative plan. The teacher may make some changes in his/her teaching plan. The students are advised to use syllabus for preparation of all examinations. The students are expected to keep themselves updated on the contemporary issues related to the course. Upto 20% of the questions in any examination/Academic tasks can be asked from such issues even if not explicitly mentioned in the instruction plan.

Week 3	Lecture 8	Methods to understand and define problem statements (Developing the user needs by use of human centred approach)	T-1 R-1		Describe about user needs and approaches in design thinking process	Develop a thinking towards day-to-day real-world problems differently	Demonstration with PPT	
	Lecture 9	Methods to understand and define problem statements (Use of empathy mapping)	T-1		Explain the first step in design thinking	Students will understand about the approach to analyse and solve the complex problems	Demonstration with PPT	
Week 4	Lecture 10	Methods to understand and define problem statements (Use of empathy mapping)	T-1		Explain the first step in design thinking	Students will understand about the approach to analyse and solve the complex problems	Demonstration with PPT	
	Lecture 11	Methods to understand and define problem statements (defining the target segment to define the customer needs / problems to be addressed)	T-1		Capture knowledge about a user's behaviors and attitudes	Develop a thinking towards day-to-day real-world problems differently	Demonstration with PPT	
	Lecture 12	Methods to understand and define problem statements (defining the target segment to define the customer needs / problems to be addressed)	T-1		Capture knowledge about a user's behaviors and attitudes	Develop a thinking towards day-to-day real-world problems differently	Demonstration with PPT	
Week 5	Lecture 13	Techniques in Solution Ideation(Generation of ideas using creative methods)	T-1		Explain how to generate ideas for design thinking process	Student will learn about use of design thinking method to define, ideate and test solutions	Demonstration with PPT	
	Lecture 14				Test			
	Lecture 15	Techniques in Solution Ideation(Creative Problem Solving Process)	T-1		Explain the problem solving concept in design thinking	Students will understand about the approach to analyse and solve the complex problems	Demonstration with PPT	
Week 6	Lecture 16	Techniques in Solution Ideation(Creative Problem Solving Process)	T-1		Explain the problem solving concept in design thinking	Students will understand about the approach to analyse and solve the complex problems	Demonstration with PPT	
	Lecture 17	Techniques in Solution Ideation(Evaluation and prioritization of solutions)	T-1 R-1		Explain the solutions for design thinking process problems	Students will understand about the approach to analyse and solve the complex problems	Demonstration with PPT	

An instruction plan is only a tentative plan. The teacher may make some changes in his/her teaching plan. The students are advised to use syllabus for preparation of all examinations. The students are expected to keep themselves updated on the contemporary issues related to the course. Upto 20% of the questions in any examination/Academic tasks can be asked from such issues even if not explicitly mentioned in the instruction plan.

Week 6	Lecture 18	Techniques in Solution Ideation(Evaluation and prioritization of solutions)	T-1 R-1		Explain the solutions for design thinking process problems	Students will understand about the approach to analyse and solve the complex problems	Demonstration with PPT	
Week 7	Lecture 19	Techniques in Solution Ideation(Ideation Methods)	T-1		Describe how to ideate in design thinking process	Student will learn about use of design thinking method to define, ideate and test solutions	Demonstration with PPT	
		SPILL OVER						
Week 7	Lecture 20				Spill Over			
	Lecture 21				Spill Over			
		MID-TERM						
Week 8	Lecture 22	Prototyping and Testing (Data Validate ideas)	T-1		Identify innovative solutions to the problem	Student will learn about use of design thinking method to define, ideate and test solutions	Demonstration with PPT	
	Lecture 23	Prototyping and Testing(use of prototyping concepts)	T-1 R-1		Identify the best possible solution for each problem found and how to create prototype	Student will learn about use of design thinking method to define, ideate and test solutions	Demonstration with PPT	
	Lecture 24	Prototyping and Testing(use of prototyping concepts)	T-1 R-1		Identify the best possible solution for each problem found and how to create prototype	Student will learn about use of design thinking method to define, ideate and test solutions	Demonstration with PPT	
Week 9	Lecture 25	Prototyping and Testing(Use of online tools for prototyping)	T-1		Learn tools for prototyping	Be able to use tools and frameworks for critical and creative thinking	Demonstration with PPT	
	Lecture 26				Presentation - Case Based			
	Lecture 27	Prototyping and Testing (Concepts and basics in testing prototypes)	T-1		Define testing stage and its need	Student will learn about use of design thinking method to define, ideate and test solutions	Demonstration with PPT	
Week 10	Lecture 28	Complex Problem Solving Techniques(Methods to learn on how-to approach to solve problems)	T-1		Explain methods to solve complex problems	Students will understand about the approach to analyse and solve the complex problems	Demonstration with PPT	

An instruction plan is only a tentative plan. The teacher may make some changes in his/her teaching plan. The students are advised to use syllabus for preparation of all examinations. The students are expected to keep themselves updated on the contemporary issues related to the course. Upto 20% of the questions in any examination/Academic tasks can be asked from such issues even if not explicitly mentioned in the instruction plan.

Week 10	Lecture 29	Complex Problem Solving Techniques(Steps to frame the problem)	T-1		Describe steps to frame a problem	Develop a thinking towards day-to-day real-world problems differently	Demonstration with PPT	
	Lecture 30	Complex Problem Solving Techniques(not just the symptoms - diagnose a problem)	T-1		Describe technique to diagnose a problem	Students understand the use of the method of Design Thinking to solve everyday problems.	Student will learn about use of design thinking method to define, ideate and test solutions	
Week 11	Lecture 31	Complex Problem Solving Techniques(find the root causes of the problem)	T-1		In depth explanation of finding root cause for problems	Develop a thinking towards day-to-day real-world problems differently	Demonstration with PPT	
	Lecture 32	Complex Problem Solving Techniques(structure using mutually exclusive and collectively exhaustive components)	T-1		Explain stages of design thinking process	Student will learn about use of design thinking method to define, ideate and test solutions	Demonstration with PPT	
	Lecture 33	Complex Problem Solving Techniques(identify and execute the solution)	R-1		Explain steps of design thinking process for solutions	Student will learn about use of design thinking method to define, ideate and test solutions	Demonstration with PPT	
Week 12	Lecture 34	Concepts in Knowledge Frameworks(Understand the framework for establishing the right knowledge)	T-1		Discuss framework of design thinking process	Be able to use tools and frameworks for critical and creative thinking	Demonstration with PPT	
		Concepts in Knowledge Frameworks(Be able to question)	T-1		Discuss framework of design thinking process	Be able to use tools and frameworks for critical and creative thinking	Demonstration with PPT	
	Lecture 35	Concepts in Knowledge Frameworks(Understand the framework for establishing the right knowledge)	T-1		Discuss framework of design thinking process	Be able to use tools and frameworks for critical and creative thinking	Demonstration with PPT	
		Concepts in Knowledge Frameworks(Be able to question)	T-1		Discuss framework of design thinking process	Be able to use tools and frameworks for critical and creative thinking	Demonstration with PPT	
	Lecture 36				Project			
Week 13	Lecture 37	Concepts in Knowledge Frameworks(derive clarity and focus in thinking)	T-1		Explain about focus in thinking and how to evaluate the solution	Be able to use tools and frameworks for critical and creative thinking	Demonstration with PPT	

An instruction plan is only a tentative plan. The teacher may make some changes in his/her teaching plan. The students are advised to use syllabus for preparation of all examinations. The students are expected to keep themselves updated on the contemporary issues related to the course. Upto 20% of the questions in any examination/Academic tasks can be asked from such issues even if not explicitly mentioned in the instruction plan.

Week 13	Lecture 37	Concepts in Knowledge Frameworks(Evaluate a solution)	T-1		Explain about focus in thinking and how to evaluate the solution	Be able to use tools and frameworks for critical and creative thinking	Demonstration with PPT	
	Lecture 38	Concepts in Knowledge Frameworks(derive clarity and focus in thinking)	T-1		Explain about focus in thinking and how to evaluate the solution	Be able to use tools and frameworks for critical and creative thinking	Demonstration with PPT	
		Concepts in Knowledge Frameworks(Evaluate a solution)	T-1		Explain about focus in thinking and how to evaluate the solution	Be able to use tools and frameworks for critical and creative thinking	Demonstration with PPT	
	Lecture 39	Concepts in Knowledge Frameworks(logic / reasoning behind the solution)	T-1		Describe logic behind solution of a given problem and its feasibility	Students will understand about the approach to analyse and solve the complex problems	Demonstration with PPT	
		Concepts in Knowledge Frameworks(the feasibility of the solution)	T-1		Describe logic behind solution of a given problem and its feasibility	Students will understand about the approach to analyse and solve the complex problems	Demonstration with PPT	
Week 14	Lecture 40	Concepts in Knowledge Frameworks(impacts of the solution)	T-1		Explain about solution impacts on given problem	Students understand the use of the method of Design Thinking to solve everyday problems.	Demonstration with PPT	
		SPILL OVER						
Week 14	Lecture 41				Spill Over			
	Lecture 42				Spill Over			
Week 15	Lecture 43				Spill Over			
	Lecture 44				Spill Over			
	Lecture 45				Spill Over			

Scheme for CA:

CA Category of this Course Code is:A0203 (2 best out of 3)

Component	Weightage (%)	Mapped CO(s)
Presentation - Case Based	50	CO3, CO4
Project	50	CO5, CO6

An instruction plan is only a tentative plan. The teacher may make some changes in his/her teaching plan. The students are advised to use syllabus for preparation of all examinations. The students are expected to keep themselves updated on the contemporary issues related to the course. Upto 20% of the questions in any examination/Academic tasks can be asked from such issues even if not explicitly mentioned in the instruction plan.

Test	50	CO1, CO2

Details of Academic Task(s)

Academic Task	Objective	Detail of Academic Task	Nature of Academic Task (group/individuals)	Academic Task Mode	Marks	Allottment / submission Week
Presentation - Case Based	To develop the analytic skills of the student.	CA2 will be based upon presentation based evaluation of Case Study. Specific topic will be assigned to the students.It is a group activity where topic is allocated to the students, students will create a of report with idea and present the idea . Rubric: Novelty of idea and report submission : 15 marks Presentation : 10 marks Viva : 5 marks	Group	Online	30	3 / 8
Project	To evaluate student understanding based on project submission.	Here students will submit the project with prototype developed based on case study . Rubric: Project submission : 15 marks Presentation : 10 marks Viva : 5 marks	Group	Online	30	7 / 12
Test	To evaluate the knowledge of students based on the syllabus covered	Students would be evaluated on the basis of their performance in the written class test. Syllabus to be covered from week1 to week 4	Individual	Offline	30	4 / 5