

I Semester

INNOVATION and DESIGN THINKING			
Course Code	BIDTK158/258	CIE Marks	50
Teaching Hours/Week (L: T:P: S)	1:0:0	SEE Marks	50
Total Hours of Pedagogy	15	Total Marks	100
Credits	01	Exam Hours	01
Course Category: Foundation			
Preamble: This course provides an introduction to the basic concepts and techniques of engineering and reverses engineering, the process of design, analytical thinking and ideas, basics and development of engineering drawing, application of engineering drawing with computer aide.			
Course objectives:			
<ul style="list-style-type: none">• To explain the concept of design thinking for product and service development• To explain the fundamental concept of innovation and design thinking• To discuss the methods of implementing design thinking in the real world.			
Teaching-Learning Process (General Instructions)			
These are sample Strategies; which teachers can use to accelerate the attainment of the various course outcomes.			
<ol style="list-style-type: none">1. Lecturer method (L) does not mean only the traditional lecture method, but a different type of teaching method may be adopted to develop the outcomes.2. Show Video/animation films to explain concepts3. Encourage collaborative (Group Learning) Learning in the class4. Ask at least three HOTS (Higher-order Thinking) questions in the class, which promotes critical thinking5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develops thinking skills such as the ability to evaluate, generalize, and analyze information rather than simply recall it.6. Topics will be introduced in multiple representations.7. Show the different ways to solve the same problem and encourage the students to come up with their own creative ways to solve them.8. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.			
Module-1			
PROCESS OF DESIGN			
Understanding Design thinking			
Shared model in team-based design – Theory and practice in Design thinking – Explore presentation signers across globe – MVP or Prototyping			
Teaching-Learning Process	Introduction about the design thinking: Chalk and Talk method Theory and practice through presentation MVP and Prototyping through live examples and videos		
Module-2			
Tools for Design Thinking			
Real-Time design interaction capture and analysis – Enabling efficient collaboration in digital space – Empathy for design – Collaboration in distributed Design			
Teaching-Learning	Case studies on design thinking for real-time interaction and analysis		

Process	Simulation exercises for collaborated enabled design thinking Live examples on the success of collaborated design thinking	
Module-3		
Design Thinking in IT Design Thinking to Business Process modelling - Agile in Virtual collaboration environment - Scenario based Prototyping		
Teaching-Learning Process	Case studies on design thinking and business acceptance of the design Simulation on the role of virtual eco-system for collaborated prototyping	
Module-4		
DT For strategic innovations Growth - Story telling representation - Strategic Foresight - Change - Sense Making - Maintenance Relevance - Value redefinition - Extreme Competition - experience design - Standardization - Humanization - Creative Culture - Rapid prototyping, Strategy and Organization - Business Model design.		
Teaching-Learning Process	Business model examples of successful designs Presentation by the students on the success of design Live project on design thinking in a group of 4 students	
Module-5		
Design thinking workshop Design Thinking Work shop Empathize, Design, Ideate, Prototype and Test		
Teaching-Learning Process	8 hours design thinking workshop from the expert and then presentation by the students on the learning from the workshop	
Course Outcomes: Upon the successful completion of the course, students will be able to:		
CO Nos.	Course Outcomes	Knowledge Level (Based on revised Bloom's Taxonomy)
C01	Appreciate various design process procedure	K2
C02	Generate and develop design ideas through different technique	K2
C03	Identify the significance of reverse Engineering toUnderstand products	K2
C04	Draw technical drawing for design ideas	K3



H.O.D.

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