

COURSE MODULE

Academic Year:2022-23

Course Code	Course Title	Core/Elective	Prerequisite	Contact Hours			Total Hrs/ Sessions
				L	T	P	
BIDTK258	Innovation & Design Thinking	Foundation	Problem solving, critical thinking, creativity, leadership, collaboration and communication	1	-	-	14

Course objectives: This course will enable students to:

CLO1: To explain the concept of design thinking for product and service development

CLO2: To explain the fundamental concept of innovation and design thinking

CLO3: To discuss the methods of implementing design thinking in the real world

Topics Covered as per Syllabus

MODULE-I

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

(RBT: L2)

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

(RBT: L2)

MODULE - 3

Design Thinking in IT - Design Thinking to Business Process modelling – Agile in Virtual collaboration environment – Scenario based Prototyping

(RBT: L2)

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.

(RBT: L2)

MODULE-5

Design thinking workshop: Design Thinking Work shop Empathize, Design, Ideate, Prototype and Test

(RBT: L3)

List of Text Books

1. John.R.Karsnitz, Stephen O'Brien and John P. Hutchinson, "Engineering Design", Cengage learning (International edition) Second Edition, 2013.
2. Roger Martin, "The Design of Business: Why Design Thinking is the Next Competitive Advantage", Harvard Business Press , 2009.
3. Hasso Plattner, Christoph Meinel and Larry Leifer (eds), "Design Thinking: Understand – Improve – Apply", Springer, 2011
4. Idris Mootee, "Design Thinking for Strategic Innovation: What They Can't Teach You at Business or Design School", John Wiley & Sons 2013.

List of Reference Books

1. Yousef Haik and Tamer M.Shahin, "Engineering Design Process", Cengage Learning, Second Edition, 2011.
2. Book - Solving Problems with Design Thinking - Ten Stories of What Works (Columbia Business School Publishing) Hardcover – 20 Sep 2013 by Jeanne Liedtka (Author), Andrew King (Author), Kevin Bennett (Author).

List of URLs, Text Books, Notes, Multimedia Content, etc

1. www.tutor2u.net/business/presentations/. /productlifecycle/default.html
2. https://docs.oracle.com/cd/E11108_02/otn/pdf/. /E11087_01.pdf
3. www.bizfilings.com › Home › Marketing › Product Development
4. <https://www.mindtools.com/brainstm.html>
5. <https://www.quicksprout.com/. /how-to-reverse-engineer-your-competit>
6. www.vertabelo.com/blog/documentation/reverse-engineering <https://support.microsoft.com/en->

[us/kb/273814](https://www.atme.ac.in/2018/02/27/3814)

7. <https://support.google.com/docs/answer/179740?hl=en>
8. <https://www.youtube.com/watch?v=2mjSDIBaUIMthevirtualinstructor.com/foreshortening.html>
9. <https://dschool.stanford.edu/.../designresources/.../ModeGuideBOOTCAMP2010L.pdf>
10. <https://dschool.stanford.edu/use-our-methods/> 6. <https://www.interaction-design.org/literature/article/5-stages-in-the-design-thinking-process>
11. <http://www.creativityatwork.com/design-thinking-strategy-for-innovation/>
12. <https://www.nngroup.com/articles/design-thinking/>
13. <https://designthinkingforeducators.com/design-thinking/>
14. www.designthinkingformobility.org/wp-content/.../10/NapkinPitch_Worksheet.pdf

Course Outcomes (Course Skill Set): Students will be able to

1. *Appreciate* various design process procedure
2. Generate and *develop* design ideas through different technique
3. *Identify* the significance of reverse Engineering to Understand products
4. *Draw* technical drawing for design ideas

Assessment Details (both CIE and SEE):

Methods of CIE need to be defined topic wise i.e.- Tests, MCQ, Quizzes, Seminar or micro project/Course Project, Term Paper). The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The student has to obtain a minimum of 35% of maximum marks in SEE and a minimum of 40% of maximum marks in CIE. Semester End Exam (SEE) is conducted for 50 marks (1 hours' duration) and scaled down to 50 marks. Based on this grading will be awarded. The student has to score a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code:	TITLE: Innovation and Design Thinking											
List of Course Outcomes	Program Outcomes											
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO-1(2)	2	2	2	-	-	-	-	-	-	-	-	2
CO-2(L2)	2	2	2	-	-	-	-	-	-	-	-	2
CO-3(L2)	2	2	2	-	-	-	-	-	-	-	-	2
CO-4(L3)	2	2	2	-	-	-	-	-	-	-	-	2
Total	8	8	4	-	-	-	-	-	-	-	-	8

Note: 3 = Strong Contribution 2 = Average Contribution 1 = Weak Contribution - = No Contribution