



# NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE PLAN – PART I			
<b>Name of the programme and specialization</b>	B.Tech Computer Science and Engineering		
<b>Course Title</b>	Design Thinking		
<b>Course Code</b>	CSPE42	<b>No. of Credits</b>	3
<b>Course Code of Pre-requisite subject(s)</b>		<b>Semester</b>	IV
<b>Session</b>	July / January 2021	<b>Section (if, applicable)</b>	A&B
<b>Name of Faculty</b>	Dr. Kamalika Bhattacharjee	<b>Department</b>	CSE
<b>Official Email</b>	kamalika@nitt.edu	<b>Telephone No.</b>	
<b>Name of Course Coordinator(s) (if, applicable)</b>			
<b>Official E-mail</b>	kamalika@nitt.edu	<b>Telephone No.</b>	
<b>Course Type (please tick appropriately)</b>	<input type="checkbox"/> <b>Core-course</b>	<input checked="" type="checkbox"/> <b>Elective course</b>	
<b>Syllabus (approved in BoS)</b>			
<b>UNIT I</b> Design Thinking - Introduction - What - How - Why - Design Process - Four Questions - Ten Tools - Identify an Opportunity - Scope your opportunity - Draft your design brief. <b>UNIT II</b> Three visualizations - Visualization basics - Journey mapping - Value Chain analysis - Mind mapping. <b>UNIT III</b> Design Criteria - Design thinking brainstorming - Concepts development - develop concepts - napkin pitches. <b>UNIT IV</b> Assumption testing - Rapid Prototyping - Surface Key assumptions - make prototypes. <b>UNIT V</b> Customer co-creation - learning launch - Feedback from stake holders - Design the on-ramp - Case study.			
<b>COURSE OBJECTIVES</b>			
<ul style="list-style-type: none"> <li>To understand processes that enhances innovation activities</li> <li>To develop capabilities to identify problems/issues/needs</li> <li>To develop sound hypotheses, collect and analyze appropriate data</li> <li>To translate broadly defined opportunities into actionable innovation possibilities</li> </ul>			
<b>MAPPING OF COs with POs</b>			
<b>Course Outcomes</b>	<b>Programme Outcomes (PO) (Enter Numbers only)</b>		
<ul style="list-style-type: none"> <li>Convert real-life problems into methodical problems</li> </ul>	1, 5, 9		
<ul style="list-style-type: none"> <li>Apply various visualization principles for problem and solution representation</li> </ul>	3, 5, 6, 10		



<ul style="list-style-type: none"> <li>Design solutions by applying an integrated approach to design thinking</li> </ul>	<b>3, 6, 11, 12</b>
<ul style="list-style-type: none"> <li>Justify and prototype solutions to problems</li> </ul>	<b>1, 3, 4, 7, 8, 9, 10</b>

**COURSE PLAN – PART II**

**COURSE OVERVIEW**

This course focuses on developing methodical way to design solution to any problem and improve creative thinking skills on the field of computer science and engineering.

**COURSE TEACHING AND LEARNING ACTIVITIES**

( Add more rows)

S.No.	Week/Contact Hours	Topic	Mode of Delivery
1	1/3	Design Thinking - Introduction	Online
2	2/3	What - How – Why-- Design Process	Online
3	3/3	Four Questions - Ten Tools	Online
4	4/3	Identify an Opportunity - Scope your opportunity	Online
5	5/3	Draft your design brief	Online
6	6/3	Three visualizations - Visualization basics	Online
7	7/3	Journey mapping - Value Chain analysis-- Mind mapping	Online
8	8/3	Design Criteria - Design thinking brainstorming	Online
9	9/3	Concepts development - develop concepts - napkin pitches.	Online



10	10/3	Assumption testing - Rapid Prototyping	Online
11	11/3	Surface Key assumptions - make prototypes	Online
12	12/3	Customer co-creation - learning launch	Online
13	13/3	Feedback from stake holders - Design the on-ramp	Online
14	14/3	Case study	Online

**Text Books**

1. Jeanne Liedtka, Tim Ogilvie, Rachel Brozenske, “The Designing for Growth Field Book: A Step-by Step Project Guide”, New York: Columbia University Press, 2014.
2. Jeanne Liedtka, Tim Ogilvie, “Designing for Growth: A Design Thinking Tool Kit for Managers”, New York: Columbia University Press, 2011.

**COURSE ASSESSMENT METHODS (shall range from 4 to 6)**

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Cycle Test 1	As per Schedule	1 hr	25
2	Cycle Test 2	As per Schedule	1 hr	25
3	Assignment 1	5 <sup>th</sup> Week (2 <sup>nd</sup> Week of February)	1 week	10
4	Assignment 2	12 <sup>th</sup> Week (2 <sup>nd</sup> Week of April)	1 week	10
CPA	Compensation Assessment*	As per Schedule	1 hr	25
5	Final Assessment *	As per Schedule	2hr	30

**\*mandatory; refer to guidelines on page 4**

**COURSE EXIT SURVEY (mention the ways in which the feedback about the course shall be assessed)**

1. Students’ feedback through class committee meetings
2. Feedback questionnaire from students – from MIS at the end of the semester
3. Students may give their feedback at any time during the course to the faculty which will be duly addressed



**COURSE POLICY** (including compensation assessment to be specified)

**Mode of Correspondence:**

Through email

**Compensation Assessment Policy:**

In case of emergency, the student should submit compensatory assignments on submission of appropriate documents signed by competent authority as proof. Compensatory assessment would be framed according to the time frame available and the cycle test missed by the student.

**ATTENDANCE POLICY** (A uniform attendance policy as specified below shall be followed)

- At least 75% attendance in each course is mandatory.
- A maximum of 10% shall be allowed under On Duty (OD) category.
- Students with less than 65% of attendance shall be prevented from writing the final assessment and shall be awarded 'V' grade.

**ACADEMIC DISHONESTY & PLAGIARISM**

- Possessing a mobile phone, carrying bits of paper, talking to other students, copying from others during an assessment will be treated as punishable dishonesty.
- Zero mark to be awarded for the offenders. For copying from another student, both students get the same penalty of zero mark.
- The departmental disciplinary committee including the course faculty member, PAC chairperson and the HoD, as members shall verify the facts of the malpractice and award the punishment if the student is found guilty. The report shall be submitted to the Academic office.
- The above policy against academic dishonesty shall be applicable for all the programmes.

**ADDITIONAL INFORMATION, IF ANY**

Students can approach the faculty to clarify any doubt in any time of the working hours.

**FOR APPROVAL**

Course Faculty \_\_\_\_\_

*Ramalika Bhattacharjee*

CC- Chairperson \_\_\_\_\_

*C. Malor*

HOD \_\_\_\_\_

*[Signature]*



**Guidelines**

- a) The number of assessments for any theory course shall range from 4 to 6.
- b) Every theory course shall have a final assessment on the entire syllabus with at least 30% weightage.
- c) One compensation assessment for absentees in assessments (other than final assessment) is mandatory. Only genuine cases of absence shall be considered.
- d) The passing minimum shall be as per the regulations.

B.Tech. Admitted in				P.G.
2018	2017	2016	2015	
35% or (Class average/2) whichever is greater.		(Peak/3) or (Class Average/2) whichever is lower		40%

- e) Attendance policy and the policy on academic dishonesty & plagiarism by students are uniform for all the courses.
- f) Absolute grading policy shall be incorporated if the number of students per course is less than 10.
- g) Necessary care shall be taken to ensure that the course plan is reasonable and is objective.