NIRMA UNIVERSITY
INDUSTRIAL DESIGN PROGRAMME
Bachelor of Design, Department of Design
Year IV, Semester VII

L	T	P	C
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Course Code	IDTH411
Course Title	Systems Thinking

Course Learning Outcomes (CLO):

At the end of the course the students will:
1. Understand systems thinking as a method of mapping complex ecosystems
2. Depict causal relationships between systems elements
3. Learn giga-mapping techniques to display complexity
4. Identify and sort design intervention opportunities for the system studied

Syllabus: **Total Teaching hours**: **60**

Unit 1: Understanding systems   **Teaching hours: 15**

1.1 Series of lectures from different faculty members in a seminar mode, so that students develop a multi-perspective of system complexities
1.2 Understand the importance of systems thinking and how it is different from the conventional design process based approach
1.3 System archetypes
1.4 Sociological Points of View in systems
1.5 Roles and functions of system elements
1.6 Systemic failures or shortcomings of systems thinking
1.7 Wicked problems

Unit 2: Giga-mapping: (Assignment)   **Teaching hours: 20**

2.1 Qualitative and quantitative research to establish points-of-view
2.2 Systems modeling frameworks
2.3 Information design for representation of relationships

Unit 3: Opportunity identification & causal loops: **Teaching hours: 25**

3.1 Causal loops and relationship mapping
3.2 Inflection points and impacts in the system
3.3 Understanding time as an influencer

Suggested Readings:

1 *Meadows, D. H., & Wright, D. (2015). Thinking in systems: a primer. White River Junction, VT: Chelsea Green Publishing.*
2 *The systems bible: the beginner's guide to systems large and small John Gall - General Systemantics Press - 2006*
3 *Design Issues*

w.e.f. Academic year _2020 and onwards
Key: L= Lecture, T= Tutorial, P= Practical, C= Credit