

# Indian Institute of Technology Indore



॥ ज्ञानम् सर्वजनहिताय ॥

**Curriculum and  
Courses of Study**

**for**

**Bachelor of Design (B. Des.)**

॥ ज्ञानम् सर्वजनहिताय ॥

April 2025

[After incorporating decisions of 53<sup>rd</sup> meeting of the Senate held on April 23, 2025]

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**U.G. course structure of “Bachelor of Design (B. Des.)” Program**  
**From AY 2025-26 onwards**  
**{Senate Resolution no. 52.5}**

**Year 1: Semester I**

<b>Code</b>	<b>Course list</b>	<b>L-T-P</b>	<b>Credit</b>
SI 101	Design as Problem Solving	2-0-2	3
SI 103	Verbal and Visual Expression	0-0-4	2
SI 105	Design Methodology	2-0-2	3
SI 107	General Systems Thinking	2-1-0	3
SI 109	Understanding Innovation	2-0-0	2
SI 111	Mini Project 1	0-2-6	5
<b>Total</b>		<b>8-3-14</b>	<b>18</b>

**Year 1: Semester II**

<b>Code</b>	<b>Course list</b>	<b>L-T-P</b>	<b>Credit</b>
SI 102	Design Research	2-2-0	4
SI 104	Problem Understanding	2-0-0	2
SI 106	Graphics and Data Visualization	2-0-2	3
SI 108	Photo and Video Communication	2-0-2	3
SI 110	Design Systems	2-0-0	2
SI 112	Mini Project 2	0-2-6	5
<b>Total</b>		<b>10-4-10</b>	<b>19</b>

**Year 2: Semester III**

<b>Code</b>	<b>Course list</b>	<b>L-T-P</b>	<b>Credit</b>
SI 201	Systems Approach to Design	2-0-2	3
SI 203	Ideation Techniques	2-0-2	3
SI 205	Innovation Case Studies	2-0-2	3
SI 207	Need Identification	2-0-2	3
SI 2XX	Elective 1	X-X-X	3
SI 211	Research Project 1	0-5-2	6
<b>Total</b>		<b>10-5-12</b>	<b>21</b>

**Year 2: Semester IV**

<b>Code</b>	<b>Course list</b>	<b>L-T-P</b>	<b>Credit</b>
SI 202	Technology Tracking	2-0-2	3

SI 204	Graphic Communication	2-0-2	3
SI 206	Innovation Incubation	2-0-2	3
SI 208	Project Report Design	2-0-2	3
SI 2XX	Elective 2	X-X-X	3
SI 212	Research Project 2	0-6-2	7
<b>Total</b>		<b>10-6-12</b>	<b>22</b>

### Year 3: Semester V

Code	Course list	L-T-P	Credit
SI 351	Presentation Techniques	0-0-4	2
SI 301	Experience Design	2-0-2	3
SI 303	Planning and Conducting Pilots	2-0-2	3
SI 305	Documentation and Analysis	2-0-2	3
Electives (one to be chosen from the following verticals)			
SI 3XX	Elective 3	X-X-X	3
SI 311	Field Project 1	0-4-4	6
<b>Total</b>		<b>8-4-16</b>	<b>20</b>

### Year 3: Semester VI

Code	Course list	L-T-P	Credit
SI 302	Communities and Culture	2-0-2	3
SI 304	Financial Planning and Budget	2-0-2	3
SI 306	Project Monitoring Techniques	2-0-2	3
SI 308	IPR and Technology Transfer	2-0-2	3
SI 3XX	Elective 4	X-X-X	3
SI 312	Field Project 2	0-4-4	6
<b>Total</b>		<b>10-4-14</b>	<b>21</b>

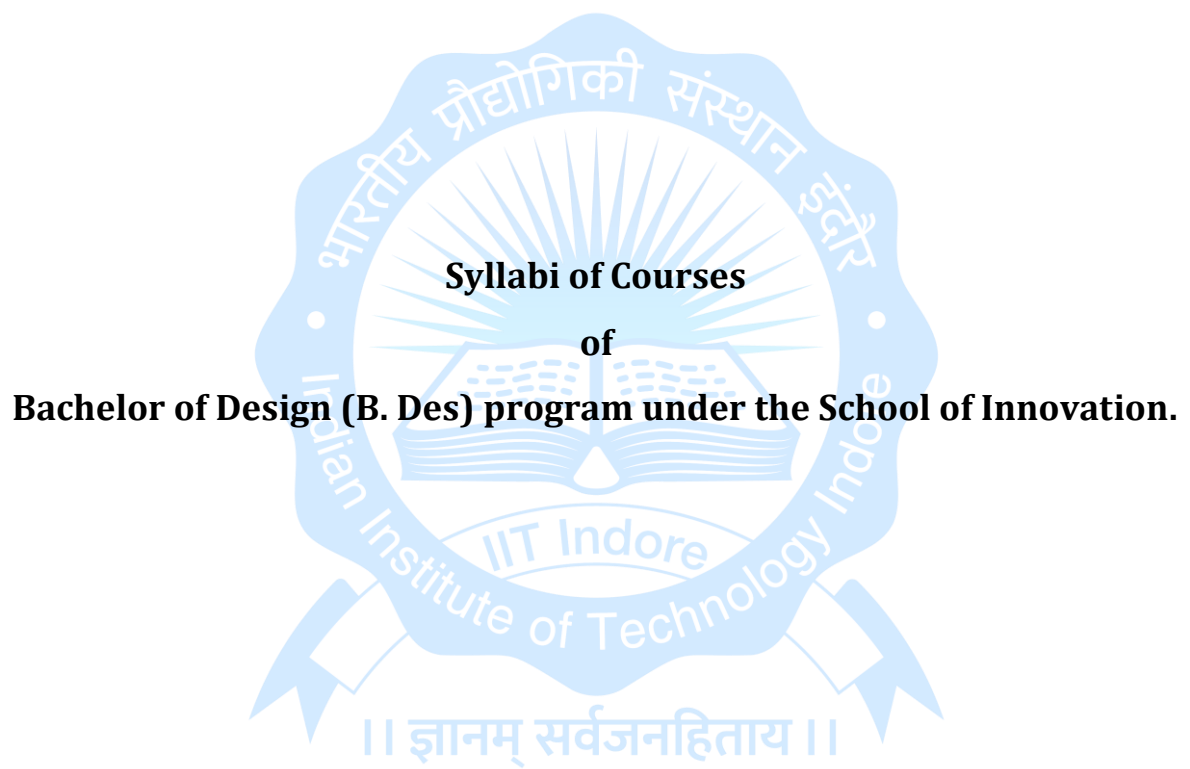
### Year 4: Semester VII

Code	Course list	L-T-P	Credit
SI 451	Systems Design (Individual)	0-2-2	3
SI 453	Systems Design (Collaborative)	0-3-2	4
SI 411	Research Project 3	0-10-4	12
<b>Total</b>		<b>0-15-8</b>	<b>19</b>

### Year 4: Semester VIII

Code	Course list	L-T-P	Credit
SI 402	Project Management and Professional Practice	2-0-2	3
SI 412	Final B. Des. Project	0-10-10	15
<b>Total</b>		<b>2-10-12</b>	<b>18</b>





Course code	SI 101
Title of the course	Design as Problem Solving
Course Category	Core course
Credit Structure	L-T-P-C 2-0-2 -3
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	Nil
Scope of the course (Objectives)	This course focuses on design as a problem-solving activity while underscoring the context specificity. It will engage with the dimensions and parameters of the problem. The focus will be to develop the ability of the students to create a problem statement for any given problem area and present it as a design brief.
Course Outcomes	The learners will: <ul style="list-style-type: none"> <li>• Develop an understanding of design as a problem-solving activity.</li> <li>• Undertake the steps involved in problem-solving.</li> <li>• Build the ability to create a problem statement for any given problem area and present it as a design brief.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>• Defining 'Design' and defining 'Problem': <ul style="list-style-type: none"> <li>○ Design as both a 'verb' and a 'noun'– an activity and the result of that activity.</li> <li>○ The varied nature and range of problems: from products to processes, from individual problems to systemic problems.</li> </ul> </li> <li>• Components of the problems solving activity: <ul style="list-style-type: none"> <li>○ Understanding the problem</li> <li>○ Clear articulation of the problems, leading to a brief and objectives of the exercise to find a solution.</li> </ul> </li> </ul>

	<ul style="list-style-type: none"> <li>○ Multiple solutions to the same problem.</li> <li>• Assignments and discussions to understand the problem-solving process and its value in finding optimum design solutions.</li> </ul>
Suggested Books (Text Books, and Reference Books)	<p>Textbooks:</p> <ul style="list-style-type: none"> <li>• Aicher, Otl. The World as Design. Ernst &amp; Sohn, Berlin. 1991. ISBN 3-433-02404-9.</li> <li>• Jones, Christopher J. Essays in Design. John Wiley &amp; Sons. 1984. ISBN 0-471-90297-7.</li> </ul>



Course code	SI 103
Title of the course	Verbal and Visual Expression
Course Category	Core course
Credit Structure	L-T-P-C 0-0-4 -2
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	Nil
Scope of the course (Objectives)	This practice course is about developing the ability to express what has been explored and felt is necessary to develop individual creativity. The focus will be to interestingly express ideas through writing, illustrations, photography, video and image making and through speech, body actions, music and dance. Learning to turn a concept into a physical form or experiential event. Giving Form to a concept which is Formless, so that it can be seen, felt and experienced by. Through the sequential process of Exploration, Expression, Conception and Articulation, to develop the ability to create highly original and creative ideas on any theme or subject.
Course Outcomes	To develop in the students an ability to express thoughts and ideas effectively: <ul style="list-style-type: none"> <li>• Verbally through oral and written expressions and</li> <li>• Visually through images, illustrations and photographic and video images.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>• Types of images and their attributes. The drawn image and the photographic image: understanding the basic difference in their character and application in various use contexts.</li> <li>• Exercises in rendering of the same image in different modes: Realistic, Stylized, Geometric and Abstract.</li> <li>• Transformation operations on images such as Juxtaposition, Substitution, Re-composition, De-contextualization etc.</li> </ul>

	<ul style="list-style-type: none"> <li>• Explorations in varying density, colours, sharpness and edge attributes of images. Images within images. Image composites.</li> </ul>
Suggested Books (Text Books, and Reference Books)	<p>Textbooks:</p> <ol style="list-style-type: none"> <li>1. Hedgecoe, John. Complete Guide to Photography. Sterling, 1995. ISBN 9780806984278.</li> <li>2. Thomson, D'Arcy. On Growth &amp; Form. Cambridge University Press. 1992. ISBN 0-521-43776-8.</li> <li>3. Berger, John. Ways of Seeing. Pelican. 1972. ISBN 0-14-02-1631-6.</li> </ol>



Course code	SI 105
Title of the course	Design Methodology
Course Category	Core Course
Credit Structure	L - T - P – Credits 2-0-2-3
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	-
Scope of the course (Objectives)	To equip all students with the understanding of the methodology to be followed to find solution of a given problem.
Course Outcomes	<ul style="list-style-type: none"> <li>The understanding is achieved through actually going through the process of systematic design methodology and applying it in a real life situation.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>Traditional methods of relying on intuition and drawing/sketching no longer suffice for the complex design needs of today; special techniques and methods are required to allow correct decision making and finding the right direction. Design methods have moved beyond a focus on the product to the thought that precedes it.</li> <li>The course will introduce a number of methods in a way that will make it easier for designers and planners to find a method that suits a particular design situation. These include logical procedures such as systematic search and systems engineering; data gathering procedures such as literature survey and writing of questionnaires; innovative procedures such as brainstorming and synectics and system transformation; and evaluative procedures such as specification writing and the selection of criteria.</li> <li>Assignments will be carried out throughout the course to understand the methods and their application in real project situation.</li> </ul>

Suggested Books (Text Books, and Reference Books)

1. Masayoshi Furudaira, Naomi Hirabayashi Mizuno. School of Design. Suncolor. 2008. ISBN 013010009.
2. Chitale, A.K. & Gupta R.C. Product Design & Manufacturing. 1997. Prentice-Hall India. ISBN 81-203-1216-3.
3. Jones, Christopher J. Design Methods. Wiley. 1970. ISBN 978-0-471-28496-3.



Course code	SI 107
Title of the course	General Systems Thinking
Course Category	Core Course
Credit Structure	L - T - P – Credits 2-1-0-3
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	-
Scope of the course (Objectives)	<ul style="list-style-type: none"> <li>To explain and have students develop an understanding of systems, system behavior, and system components as a required understanding for handling system-level projects.</li> </ul>
Course Outcomes	<ul style="list-style-type: none"> <li>The students will be able to identify and differentiate between various kinds of systems and follow a systems approach in problem-solving.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>Systems as a group of interacting or interrelated elements that act according to a set of rules to form a unified whole. Boundaries, structure, purpose and function of a system.</li> <li>General Systems thinking as a powerful approach for understanding the nature of why situations are the way they are, and how to go about improving results.</li> <li>System analysis, and the meticulous breakdown of a system into its organized components or parts. Systems &amp; Subsystems. A subsystem as a self-contained system in a larger system. Contribution of subsystems to meet the main goal by receiving inputs from, and transfer to, other subsystems of a system.</li> <li>Types of Systems: Physical or Abstract, Open or closed, Permanent or Temporary, Natural or Man-Made, Deterministic or Probabilistic. Organizations as Systems.</li> <li>Organization Structures: Pyramid or Hierarchical, Matrix Structure, Committees and Juries, Cyclic</li> </ul>

	<p>Structure, Staff Organization or Cross-functional teams. System model, and Systems architecture.</p> <ul style="list-style-type: none"> <li>Quantitative and Qualitative Analysis of Systems. Systems Thinking as a style of thinking/reasoning and problem solving.</li> </ul>
Suggested Books (Text Books, and Reference Books)	<ol style="list-style-type: none"> <li>Weinberg, Gerald M. An Introduction to General Systems Thinking. Dorset House Publishing. 2001. ISBN 0-932633-49-8</li> </ol>



Course code	SI 109
Title of the course	Understanding Innovation
Course Category	Core Course
Credit Structure	L - T - P – Credits 2-0-0-2
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	-
Scope of the course (Objectives)	<ul style="list-style-type: none"> <li>To explain the fundamental nature of Innovation, the circumstances under which innovation occurs and various types of innovations as commonly acknowledged.</li> </ul>
Course Outcomes	<ul style="list-style-type: none"> <li>The students will be able to understand the value of innovation and be able to plan for innovation to meet given needs of a particular focus area at the end of the course.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>Innovation definition: Newness and Improvement in a given situation as fundamental attributes of innovation. Types of Innovations: Incremental or sustaining innovations; Evolutionary innovations; Revolutionary (Radical) innovations; Disruptive Innovations.</li> <li>Innovation for societal needs: opportunities and benefits. Economic, human and technological dynamics involved in innovation. Interactivities and interdependence between different innovation agents and factors.</li> </ul>
Suggested Books (Text Books, and Reference Books)	<ol style="list-style-type: none"> <li>Verganti, Roberto. Design-Driven Innovation. Harvard Business Review Press. 2022. ISBN 978-1-4221-2482-6.</li> </ol>

	<p>2. Davila, Tony and others. Making Innovation Work. Wharton School Publishing. 2006. ISBN 83-317-0301-0.</p> <p>3. Archer, Bruce L. Technological Innovation: A Methodology. Royal College of Art, 1971. ISBN-13. 978-0856370007.</p>
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Course code	SI 111
Title of the course	Mini Project 1
Course Category	Core Course
Credit Structure	L - T - P – Credits 0-2-6-5
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	-
Scope of the course (Objectives)	<ul style="list-style-type: none"> <li>• The scope or objectives of a Mini Design Project typically focus on enabling students to apply theoretical knowledge to practical, real-world problems through a structured and manageable project.</li> <li>• It may involve small-scale designs or prototypes that are achievable within the constraints of time, budget, and resources.</li> </ul>
Course Outcomes	<ul style="list-style-type: none"> <li>• Capability to identify, analyze, and formulate design requirements for a given problem and develop innovative solutions.</li> <li>• The students will learn plan and manage project milestones, resources, and timelines effectively, ensuring the completion of the project within the given constraints.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>• A short project involving innovation in an identified area of unsolved problem, incorporating the full process of identifying a problem, studying and analyzing it, developing a problem brief and proposing a solution, along with a model or drawing explaining the solution.</li> </ul>

Course code	SI 102
Title of the course	Design Research
Course Category	Core Course
Credit Structure	L - T - P – Credits 2-2-0-4
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	-
Scope of the course (Objectives)	<ul style="list-style-type: none"> <li>The course has been designed to explain the value of Design Research as the first step in problem solving and innovation, and also give a broad understanding of various design research methodologies and their application in various contexts.</li> </ul>
Course Outcomes	<ul style="list-style-type: none"> <li>After the course, the students will be able to carry out independent design research in a given problem area and also document the results of the research for analysis and design brief formulation.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>Design Research as a tool to develop a keen sense of observation, experimentation, investigation and questioning leading to a grasp of a given situation, in the natural or man-made.</li> <li>Developing conceptual clarity about the phenomena, processes, laws and principles that contribute to the physicality of the world.</li> <li>A historical overview of procedures and methods of Design Research as developed over the years. New research methods based on digital data collection, analysis and modelling.</li> </ul>
Suggested Books (Text Books, and Reference Books)	<ol style="list-style-type: none"> <li>Muratovski, Gjoko. Research for Designers. Sage. 2022. ISBN 9781529708158.</li> <li>Michel, Ralf ed. Design Research Now. Birkhauser. 2007. ISBN 978-3-7643-8471-5.</li> </ol>

Course Code	SI 104
Title of the Course	Problem Understanding
Course Category	Core Course
Credit Structure	L-T-P-Credits 2-0-0-2
Name of the Concerned Department	School of Innovation
Prerequisite if any	
Course Objective	The main objective of the course is to explain the value of precise articulation of the nature of a problem, because the precise articulation already creates a direction for solution finding. The students will learn to describe a problem area in specific terms without generalizations or ambiguity.
Course Outcomes	After the course, the students will be able to create a clear project brief, based on the articulation of the problem.
Course Content	<ul style="list-style-type: none"> <li>• Exploration of the world and phenomena around us is the first step to generate original knowledge through one's own experience, and not knowledge which is told or given by others.</li> <li>• Generating insights by exploring a problem domain.</li> <li>• Methods of understanding a problem area, and exploring the world around them: both natural and man-made and understand the various kinds of experiences which exist; as well as what creates various phenomena.</li> <li>• User behaviour observation. Observing without disturbing the existing situation. Documenting the observations.</li> <li>• Analysing and concluding. Generalising. Documenting the conclusions resulting in problem brief formulation.</li> </ul>
Suggested Books (Text Books, and Reference)	1. Aicher, Otl. Analogous & Digital, Ernst & Sohn, 1994. ISBN: 3-433-02403-0

Books)

2. Brown, David C. & Chandrasekaran B. Design problem solving: knowledge structures and control strategies, Morgan Kaufmann, 1989. ISBN: 9781483258881



Course Code	SI 106
Title of the Course	Graphics and Data Visualization
Course Category	Core Course
Credit Structure	L-T-P-Credits 2-0-2-3
Name of the Concerned Department	School of Innovation
Prerequisite if any	
Course Objective	To establish the value of information visualisation as an important tool for decision making.
Course Outcomes	The students will learn the difference between data and information; and also the basics of visual processing of both qualitative and quantitative data. As a result of the learnings acquired in this course, the students will be able to create visualisations of both static and dynamic data to help decision making.
Course Content	<ul style="list-style-type: none"> <li>• The role of Information visualization in making data digestible and turning raw information into actionable insights.</li> <li>• Insights from the fields of human-computer interaction, visual design, computer science, and cognitive science, among others.</li> <li>• Design principles for creating graphic visualizations like charts, maps and diagrams from quantitative and qualitative information, syntactic and semantic aspects of visual diagrams, pictorial diagrams and the need for labelling, self-evident data diagrams, dynamic diagrams and visual display of dynamic data,</li> <li>• Visualization of events and activities in terms of time and space representations.</li> <li>• The exercises and assignments include creating graphic visualizations of given data, from simple to complex.</li> </ul>
Suggested Books (Text	

<p>Books, and Reference Books)</p>	<ol style="list-style-type: none"> <li>1. Birren, Faber. Color Psychology and Color Therapy: A Factual Study of the Influence of Color on Human Life. Mockingbird Press, 2024. ISBN 1684932211.</li> <li>2. Tufte, Edward R. The Visual Display of Quantitative Information. Graphics Press. 2001, ISBN: 1930824130.</li> <li>3. Bertin, Jacques. Graphics &amp; Graphic Information Processing. De Gruyter, 1981. ISBN 9783110088687.</li> <li>4. Seymour, PHK. Human Visual Cognition. Collier MacMillan, 1979. ISBN: 0312399669.</li> </ol>
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Course code	SI 108
Title of the course	Photo and Video Communication
Course Category	Core Course
Credit Structure	L - T - P – Credits 2-0-2-3
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	-
Scope of the course (Objectives)	<ul style="list-style-type: none"> <li>The students will learn the fundamentals of both photography and videography and their use in documenting accurately a given situation. Its scope includes creative, technical, and theoretical aspects, often combining artistic expression with communication strategies.</li> </ul>
Course Outcomes	<ul style="list-style-type: none"> <li>The students will learn the language of the still and dynamic images as created by the still and video camera; and to use it effectively in a given communication context. The students will become self-sufficient in both documenting a given situation and present it to explain the nature of the problem.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>The still and the moving image as a vehicle for communication. The language of photography.</li> <li>Expressive aspects of photographic language.</li> <li>Interdisciplinary approach with experimental projects to develop a broader perspective and understanding of the language of photography and cinema.</li> <li>Projects and assignments to encourage individual exploration of specific directions, with equal emphasis given to intuitive and intellectual concerns.</li> <li>Qualitative discussions and expert interactions to develop a keen eye for detailing. Discussions on visual</li> </ul>

	<p>phenomena, new media, critical aspects and production of images.</p> <ul style="list-style-type: none"> <li>• In the outcome, they are going to showcase range of still images and develop their photographic portfolio.</li> </ul>
Suggested Books (Text Books, and Reference Books)	<ol style="list-style-type: none"> <li>1. Wilcox, James and Gibson, David. Video Communications: The Whole Picture. CRC Press. 2005. ISBN 9781578203161.</li> <li>2. Frankel, Felice C. The Visual Elements: Photography. University of Chicago Press. 2023. ISBN 978-0226827025</li> </ol>



Course code	SI 110
Title of the course	Design Systems
Course Category	Core Course
Credit Structure	L - T - P – Credits 2-0-0-2
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	-
Scope of the course (Objectives)	<ul style="list-style-type: none"> <li>The objective of the course is to familiarize students the various approaches to creating design systems for various applications; and also with creating a library of components and elements which can be configured in various ways to achieve objectives of the system being designed.</li> </ul>
Course Outcomes	<ul style="list-style-type: none"> <li>After the course, the students would have learnt to create design systems including creation of customized components.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>Design Systems as collection of reusable components, guided by clear standards, that can be assembled together to build any number of applications.</li> <li>Design Systems as essential and critical in creating exceptional user experience. Defining Standards.</li> <li>Understanding the use of Graphic Systems and Design Systems as an essential part of collaborative design projects, especially in digital products such as websites and applications, involving digital design, user experience, interaction design and front-end development.</li> <li>The Visual Design language being the core of a design system.</li> </ul>
Suggested Books (Text Books, and Reference Books)	<ol style="list-style-type: none"> <li>Anne, Jina and others. Design Systems Handbook. 2019.</li> <li>Kholmatova, Alla. Design Systems: A Practical Guide. Smashing Magazine. 2017</li> </ol>

Course code	SI 112
Title of the course	Mini Project 2
Course Category	Core Course
Credit Structure	L - T - P – Credits 0-2-6-5
Name of the Concerned Department	School of Innovation
Pre-requisite, if any	-
Scope of the course (Objectives)	<ul style="list-style-type: none"> <li>• The scope or objectives of a Mini Design Project typically focus on enabling students to apply theoretical knowledge to practical, real-world problems through a structured and manageable project.</li> <li>• It may involve small-scale designs or prototypes that are achievable within the constraints of time, budget, and resources.</li> </ul>
Course Outcomes	<ul style="list-style-type: none"> <li>• Capability to identify, analyze, and formulate design requirements for a given problem and develop innovative solutions.</li> <li>• The students will learn plan and manage project milestones, resources, and timelines effectively, ensuring the completion of the project within the given constraints.</li> </ul>
Course Content	<ul style="list-style-type: none"> <li>• A short project involving more detailed contextual research, need identification, problem articulation, ideation, generating several solutions, evaluation and taking forward the best solution to full detailing and presenting as a detailed proposal.</li> </ul>