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

L	T	P	C
		30	18

Course Code	**IDDP 421**
Course Title	**Degree / Major Research Project**

Course Learning Outcomes (CLO):

At the end of the course, the student will be able to:

1. Apply design learning and demonstrate proof of design competencies through creation of appropriate design solutions towards the professional/self-initiated design brief.
2. Analyze contextual scenarios, users' and stakeholder's needs through the application of design research methods.
3. Demonstrate good conceptual skills in developing a sharper design brief, using opportunity-mapping abilities to understand context, customer, client and commercial requirements.
4. Create new design solutions, through prototyping, testing and evaluation of the design product/service, and further refinement, if necessary.

Syllabus **Total Time Duration: 18 Weeks**

UNIT I: Selection of Organization and Design Brief **Time Duration: 2 Weeks**

i. Project Articulation: Understanding the Company/Organization's requirements
ii. Project Brief: Articulating the requirements as stated by the company/self of goals/objectives, market and user segment profile, product-service to be created, expected outcomes
iii. Project Time line: Broad articulation of phases of the design process in synchronization with Company/self initiated project's design brief requirements
iv. Project Plan Articulation: Identification of partners, service providers, budgets, regulations

UNIT II: Secondary & Primary Research **Time Duration: 4 Weeks**

i. AEIOU Analysis: Activity, Environment, Interactions, Users and Objects
ii. Secondary Research: Research to be initiated related to the subject selected of similar design initiatives, competitor brands, media strategies, literature review
iii. Primary Research: Inquiry and Observation of Users/Consumers and the service / product, Contextual study

iv. Stakeholder Study: Understanding the requirements of each significant player in the service that could impact the design offering
v. Current/ existing Product survey and detailing
vi. 7C analysis: Cause, Context, Comprehension (Use only 3C in Unit 2)

UNIT III: Empathy and Ideation **Time Duration: 6 Weeks**

i. Empathy mapping, capturing what people do, say, think, and feel in the context of the problem
ii. Synthesize User Needs (Self-esteem, Psychological needs, Safety Needs, Belonging needs, self-actualized needs etc.)
iii. Creating Story Boarding: Happy Stories and Sad Stories
iv. Creating Customer Journey Map, Scenario Building, User Persona
v. Ideation: Creative Pause, Crowd storming, Brain Storming, visualization, provocation and sketching
vi. 7C Analysis: The Check (requirements) and Conception (Drafting Possibilities)

UNIT IV: Prototyping and User Feedback **Time Duration: 6 Weeks**

i. Development of a low fidelity model on paper, clay, thermocol or any other medium
ii. Material selection and Process selection for the Prototyping
iii. Mechanical / Electrical/ electronic Assembly as per requirement
iv. Programming, Validation and testing of mock up model
v. Development of a high-fidelity model using additive manufacturing, vacuum foaming, sheet metal bending, resin printing, turning / milling machine
vi. 7C Analysis: Crafting and Connections (User Feedback)

Degree Project Documentation

- Title, Abstract and Acknowledgement
- Table of Contents
- Introduction and Initial Degree Project Brief
- Profile of Industry/client and Design brief
- Research Phase: Secondary Research, Primary Research
- Empathy Process
- Ideation Process
- Prototyping, Proof of Concept, Manufacturing Process and Material Selection
- User Feedback and Final Design Brief
- The Design Process
- Learning and Reflection
- Certificate of Completion

Degree Project Jury & Presentation

- Jury/Viva to a team consisting of External Reviewer, Internal Faculty mentor and Industry mentor
- In the case of a self-initiated project, an internal senior faculty/HoD will take the place of the Industry mentor
- Presentation to the community

Three reviews will be held, one every 6 weeks. The same team comprising the External Reviewer, Internal Faculty mentor and Industry Mentor will review and evaluate the students.

Note: The above Units/stages (from 1 to 6) are not linear; many of them are simultaneous and may move laterally.

Suggested Readings:

1. *The Ultimate Guide to Internships: 100 Steps to Get a Great Internship and Thrive in it,* Eric Woodard, Publisher: Allworth 2015
2. *Research for Designers : A guide to methods and practice*, by Gjoko Muratovski, SAGE Publisher, 2015
3. *Doing research in Design*, by Christopher Crouch and Jane Pearce, Bloomsbury Publishers, 2013
4. *Design Research Methods and Perspectives*, by Brenda Laurel, Tit Press Publishers, 2003
5. *Design for Inclusivity*, by Roger Coleman and John Clarkson, Taylor & Francis Publishers, 2016
6. *Research Methodology*, C.R. Kothari, New Age Publishers Pvt. Ltd., 2018
7. *Change by Design: How Design Thinking Transforms Organizations and Inspires Innovation*, Tim Brown with Barry Katz, Harper Collins e-books, 2009
8. *Design Thinking: Understanding How Designers Think and Work*, Nigel Cross, Bloomsbury Academic - An imprint of Bloomsbury Plc, 2011