

NIRMA UNIVERSITY
INDUSTRIAL DESIGN PROGRAM
Bachelor of Design, Department of Design
Year II, Semester IV

L	T	P	C
2		9	8

Course Code	DPR 226
Course Title	Design Project II: Simple Mechanical Device & Prototype Making

Course Learning Outcomes (CLO):

Through this design project course, students will:

1. Understand the mechanics involved in a simple object or device to be improved upon
2. Design and produce a working prototype of the simple mechanical device/ appliance
3. Base their design solutions on user research, user experience and user- testing
4. Create solutions that are based on knowledge of materials and processes
5. Understand various qualitative and quantitative research methods specific to design projects

Syllabus:

Teaching hours: 165 hours

Unit 1: Basic concepts of research methods

Teaching hours: 12 hours

The course will look at the basic concepts of research methods and the tools that are generally used for quantitative and qualitative research methods

- 1.1 Survey and Questionnaire methods
- 1.2 Observation methods, stakeholder research, Ethnographic and user research
- 1.3 Market Research and opportunity mapping

Unit 2: Identification of Need

Teaching hours: 30 hours

Through application of the methods introduced in Unit 1, the students will;

- 1.1 Identify the needs of people in their daily life related to work and home environment where a mechanical device/ appliance is used.
- 1.2 Study in detail the above mentioned objects and products specific to functional and/ or other needs
- 1.3 Study User environments where such objects are in use.

Unit 3: User research, market research and opportunity Mapping

Teaching hours: 42 hours

- 3.1 Stakeholder research, Ethnographic study
- 3.2 Identification of problems/ opportunities for redesign if any, in the products studied
- 3.3 Study of existing devices/ applications in the market; materials used technology of production of the products

Unit 4: Articulation of Brief, Design Ideations, Concept finalization

Teaching hours: 81 hours

- 4.1 Redesign/ Improvement/ innovating on the product
- 4.2 Making of mock- up models
- 4.3 Making of 1.1 scale final prototype in actual materials

Suggested Readings:

1. The Design of Everyday Things by Don Norman
2. Designing Design by Kenya Hara
3. Universal principles of Design by William Lidwell, Kritina Holden and Jill Butler
4. Cradle to Cradle: Remaking the Way We Make Things by William McDonough and Michael Braungart

w.e.f. Academic year _2018 and onwards

Key: L= Lecture, T= Tutorial, P= Practical, C= Credit