

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 of a Simple Mechanical Device

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