IIT Mandi
Proposal for a New Course

Course number : **ME-523**
Course Name : Product Design
Credit Distribution : *3-0-0-3, Elective*
Intended for : B.Tech./M.Tech/Ph.D.
Prerequisite : None
Mutual Exclusion : None

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1. Preamble:

The objective of this work is to introduce the perspectives of marketing, design and manufacturing. The content of the course makes the students aware of the realities of the industrial practices and the roles executed by essential members of the product development team. Each chapter begins with the different products ranging from industrial equipment to consumer products.

2. Course Modules with quantitative lecture hours:

Introduction, generic development process, opportunity identification
Characteristics of Successful Product Development, Generic Product Development Process, Concept development, Generic product development process, Opportunity structure and the associate process. [10]

Product planning, customer needs and product specification
Product planning process (Identification, Evaluation, Allocation), Importance of latent needs, Customer needs identification, Target specifications, Final product specifications [09]

Concept generation, selection and testing
Activity of concept generation, Five step method, Choosing a concept, Concept screening and scoring, Concept tests, Survey population and format, response measurement and reflecting on the results [09]

Product architecture, Industrial design, Design for environment and economics
Product Architecture, Modularity, Implications of the Architecture, Establishing the Architecture, Assessing the Need for Industrial Design, Impact of Industrial Design, Quality assessment, Design for environment and associated process, Elements of Economic Analysis, Economic analysis process, Patents and IPR, Case studies across all the disciplines [14]

3. Text books:

1. K T Ulrich and S D Eppinger, Product Design and Development, McGraw Hill, 2000.
2. K Otto and K Wood, Product Design, Pearson Education, Inc. 2001
3. K G Cooper, Rapid Prototyping Technology, Marcel Dekker, Inc. 2001
4. D T Pham and S SDimov, Rapid Manufacturing, Springer-Verlag, 2001

4. Similarity with the existing courses: None

5. Justification of new course proposal if cumulative similarity content is >30%:

Not Applicable