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|  | National University of Sciences and Technology | |
| | Course Description | |
| Course Title Product Design and Development | Course Code DME 811 | Credit Hours 3 – 0 |

Textbook:

- Product Design and Development” by Karl Ulrich and Steven Eppinger (Textbook).

Reference Books:

- “Engineering Design Methods: Strategies for Product Design” 4th Edition by Nigel Cross
- “The Fundamentals of Product Design” by Richard Morris

Course Objective:

- The goal of this course is to present in a clear and detailed way a set of product development methods aimed at bringing together the marketing, design, and manufacturing functions of the enterprise.

Course Description:

Product development and design processes and methods, including product specifications, concept development, engineering drawings, design for prototyping, and manufacturing.

Course Outline:

Phases of Design Process, Production planning and feasibility, design specification. Product Development Process and Organization, Product Planning, Concept Generation, Product Architecture, Design for Manufacturing and Supply Chain, Design for Assembly, Design for Environment, Robust Design, Prototyping, Digital Twins Concept in Product Design, Product Development Economics.

ASSESSMENTS

| Description | Percentage Weightage (%) |
|--------------------|--------------------------|
| Assignments | 05-10% |
| Quizzes | 10-15% |
| Project | 05-10% |
| Mid Semester Exams | 30-40% |
| End Semester Exam | 40-50% |