

INTEGRAL UNIVERSITY, LUCKNOW
DEPARTMENT OF MECHANICAL ENGINEERING

COURSE: PRODUCT DESIGN AND DEVELOPMENT
COURSE CODE: ME 609

COURSE OBJECTIVES:

- To impart basic concepts of engineering product design and their applications.
- To impart knowledge about idea generation and creativity used in the development of a product.
- To let understand the use of economical aspect in product design.
- To impart concepts related to product life cycle, reliability and ergonomics.
- To impart basic knowledge about literature search, patents, standards and codes.

COURSE OUTCOMES (CO):

After completion of the course, a student will be able to

COURSE OUTCOME (CO)	DESCRIPTION
CO1	Explained the basic concepts of engineering product development design and their Applications. Also discussed the Design definitions, the role and nature of design, old and new design methods, Design by evolution. Physical reliability & Economic feasibility of design concepts.
CO2	Demonstrate about Product specifications, Tolerance specifications, Taguchi loss factor concepts, Quality functions deployment, Functional specifications of products, Form and function, Development of alternatives.
CO3	Demonstrate the concept of Product specifications, Tolerance specifications, Taguchi loss factor concepts, Quality functions deployment, Functional specifications of products, Form and function, Development of alternatives.
CO4	Demonstrate the concepts of Holistic product development approaches-Form product concept to decommissioning, Environment requirements, Life cycle design, Product life cycle management systems, concurrent engineering in development of products.
CO5	Explained about the Internet based approach to product development involving users. Democratization of innovation, connecting products to services, Experience innovation, robust design, Patents and Intellectual properties, product Developments.

CO-PO MAPPING:

	CO	PO1 Engineering Knowledge	PO2 Problem Analysis	PO3 Design/development of solutions	PO4 Conduct investigations into complex problems	PO5 Modern tool usage	PO6 Engineer and Society	PO7 Environment and Sustainability	PO8 Ethics	PO9 Individual and Team work	PO10 Communication	PO11 Project Management and Finance	PO12 Lifelong learning
C O 1	Explained the basic concepts of engineering product development design and their Applications. Also discussed the Design definitions, the role and nature of design, old and new design methods, Design by evolution. Physical reliability & Economic feasibility of design concepts.	3	3	2	2	2	2	2					3
C O 2	Demonstrate about Product specifications, Tolerance specifications, Taguchi loss factor concepts, Quality functions deployment, Functional specifications of products, Form and function, Development of alternatives.	3	3	3	2	2	3						2
C O 3	Demonstrate the concept of Product specifications, Tolerance specifications, Taguchi loss factor concepts, Quality functions deployment, Functional specifications of products, Form and function, Development of alternatives.	3	3	2	2	2	3					2	2
C O 4	Demonstrate the concepts of Holistic product development approaches-Form product concept to decommissioning, Environment requirements, Life cycle design, Product life cycle management systems, concurrent engineering in development of products.	3	2	2	2	3	3	3					2
C O 5	Explained about the Internet based approach to product development involving users. Democratization of innovation, connecting products to services, Experience innovation, robust design, Patents and Intellectual properties, product Developments.	3	1	1	1	1	3	2					3
3: Strong contribution, 2: average contribution, 1: Low contribution													

