

DMX5307 Mechanical Engineering Design Project

Level	5
Course Code	DMX5307
Course Title	Mechanical Engineering Design Project
Credit value	3
Core/Optional	Core (Mechanical)
Course Aim/s	To provide the student with the knowledge of processes involved in the design of mechanical engineering components and systems.
Course Learning Outcomes (CLO):	<p>At the completion of this course student will be able to:</p> <p>CLO1: Identify problems requiring solutions by mechanical engineering designs, perform a feasibility study and generate conceptual design solutions.</p> <p>CLO2: Determine optimum design concepts by following appropriate assessment criteria.</p> <p>CLO3: Evaluate alternative design concepts against the specifications by following appropriate techniques.</p> <p>CLO4: Carry out life cycle assessment and costing of a design.</p> <p>CLO5: Design mechanical engineering components and systems with the understanding of the relevant manufacturing techniques.</p>
Content	<p>Outline Syllabus:</p> <p>Session 1: Introduction to product development and design concept Session 2: Tools to support product development Session 3: Scoping Product Development, technical and business concerns Session 4: Customer Needs Session 5: Functional decomposition and Reverse Engineering Session 6: Bench marking and establishing engineering specifications Session 7: Product portfolio, portfolio architecture, product architecture Session 8: Concept generation, Concept selection, concept embodiment and model selection Session 9: Design for manufacture and assembly and for environment Session 10: Prototypes</p> <p>Activities:</p> <ol style="list-style-type: none"> 1. Individual design project 2. Group design project