DMX4212Manufacturing Engineering

Level	4
Course Code	DMX4212
Course Title	Manufacturing Engineering
Credit value	2
Core/Optional	Core
Course Aim/s	Aim of this course is to provide core knowledge of manufacturing processes together with material considerations, economic aspects and quality.
Course Learning Outcomes (CLO):	At the completion of this course student will be able to CLO1: Select and use precision measuring instruments in manufacturing processes. CLO2: Describe the theory of metal cutting, design and tool wear mechanisms during the machining operation. CLO3: Demonstrate knowledge of components of machine tools and describe principles of machine tool design. CLO4: Describe the concepts of metal forming techniques and estimate the forces involved. CLO5: Describe use of computer technology with production machines.
Content	**Outline Syllabus:** Unit 01: Metrology Unit 02: Cutting Tools and metal cutting Unit 03: Design of Machine tools Unit 04: Metal Forming **Laboratory work**: 1. Static Acceptance Test for a Centre Lathe and Drilling Machine 2. Measurement of cutting forces using a Lathe Tool Dynamometer 3. Dependence of Chip Compression Factor on cutting conditions 4. Measurement using Optical Comparator 5. Surface Roughness Measurement 6. Screw Thread Measurement 7. Introduction to CNC Milling and CNC Turning