

DMX7402 Analysis of Manufacturing Systems and Processes

Level	7
Course Code	DMX7402
Course Title	Analysis of Manufacturing Systems and Processes
Credit value	4
Core/Optional	Core
Course Aim/s	Aim of this course is to provide a solid foundation on various methods of modeling and analysis of advanced manufacturing systems and processes.
Course Learning Outcomes (CLO):	<p>At the completion of this course student will be able to:</p> <p>CLO1: Discuss concepts and philosophy of advanced manufacturing systems.</p> <p>CLO2: Explain the role of automation in manufacturing.</p> <p>CLO3: Explain various methods of modeling and analysis of assembly lines.</p> <p>CLO4: Adapt FMS concept in a manufacturing environment.</p> <p>CLO5: Examine importance of robots in manufacturing systems.</p> <p>CLO6: Assess industrial material handling systems.</p> <p>CLO7: Evaluate important methods and issues in planning and operation of manufacturing systems.</p> <p>CLO8: Demonstrate solid foundations on the modelling and analysis of Advanced Manufacturing Systems.</p>
Content	<p>Outline Syllabus:</p> <p>Unit 01: Overview of manufacturing systems Unit 02: Industrial Automation Unit 03: Assembly lines Unit 04 : Flexible Manufacturing Systems Unit 05 : Industrial robotics and Expert Systems Unit 06: Material handling systems Unit 07: Planning and control hierarchy Unit 08: Manufacturing Systems and Models Unit 09: Performance Modelling and Analysis of Manufacturing System</p> <p>Laboratory Work:</p> <ol style="list-style-type: none"> 1. Pneumatic and hydraulic systems in manufacturing automation. 2. PLC programming for manufacturing 3. Modelling and simulation of flexible manufacturing systems 4. The use of manufacturing support systems in manufacturing automation