

Summary Information

Module Code	6102MSE
Formal Module Title	Manufacturing Systems
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
Engineering

Learning Methods

Learning Method Type	Hours
Lecture	12
Tutorial	16

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	This module develops student's ability to design and improve manufacturing systems to meet the demands of a range of stakeholders.
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Evaluate data to plan and control manufacturing systems
MLO2	2	Model and appraise system behaviour to predict performance and make improvements
MLO3	3	Design systems to meet customer and stakeholder needs

Module Content

Outline Syllabus	Demand forecasting. Master Production Scheduling (MPS) and operations planning. Bill of Materials (BOM) structure and design. Material Requirements Planning (MRP) and Enterprise Resource Planning (ERP) systems, scheduling, and inventory control. Organisation and control of production processes. Quality management and control systems. Introduction to systems thinking. System conceptualisation and mapping. Simulation methods (Monte Carlo, System Dynamics, Discrete Event and Agent based). Model verification and validation. Decision making technologies.
Module Overview	
Additional Information	This module is designed to develop the skills needed to design and improve manufacturing systems in a complex world. The module uses a systems-based approach to design systems which are efficient but are also able to satisfy sustainability and social metrics.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Open book examination	70	2	MLO1, MLO2, MLO3
Report	Written report	30	0	MLO1, MLO2, MLO3

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Jun Ren	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings
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