

# Manufacturing Operations Management

## Module Information

2022.01, Approved

### Summary Information

Module Code	6107SBC
Formal Module Title	Manufacturing Operations Management
Owning School	Engineering
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 6
Grading Schema	40

### Teaching Responsibility

LJMU Schools involved in Delivery
LJMU Partner Taught

### Partner Teaching Institution

Institution Name
Sino British College of USST

### Learning Methods

Learning Method Type	Hours
Lecture	44
Tutorial	22

### Module Offering(s)

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

## Aims and Outcomes

Aims	The module deals with modern, world class service and manufacturing operations management and quality control principles. The work explores: The relationship between manufacturing data and organisation in terms of planning, scheduling and cost, lean/agile manufacturing, and modern quality control management principles in world class organisation.
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**After completing the module the student should be able to:**

### Learning Outcomes

Code	Number	Description
MLO1	1	Use the principles of control of resources in a modern manufacturing organisation, apply the planning and control of information, data and resources in the efficient execution of manufacturing.
MLO2	2	Apply decision making tools in service and manufacturing companies.
MLO3	3	Apply a range of quality techniques (e.g. SPC, QFD, FMEA) to monitor, analyse and improve business processes.
MLO4	4	Understand the six sigma methodologies and apply the DMAIC model to an improvements activity.

## Module Content

Outline Syllabus	Demand management: forecasting, patterns of demand; qualitative and quantitative methods. Master production scheduling and Operations planning: the master scheduling process, rough-cut capacity planning fences, final assembly scheduling, Bill of Material structure and design, Materials requirements planning, Manufacturing Resources Planning, Enterprise Resources Planning systems, scheduling and inventory control. Lean manufacturing, just-in-time - the culture and manufacturing techniques, kanbans, one-piece flow and set-up time reduction. Background and evolution of the quality movement. Quality gurus and the cost of quality. Quality control procedures, Process capability and statistical process control techniques. Process design for quality considerations: design for assembly, liaison diagrams, key characteristics to enable quality conformance. Quality management systems - standards and models: ISO9000:2000. Business improvement techniques - FMEA, QFD and value management. The six sigma approach, its methodologies. The DMAIC project model and six sigma process mapping.
Module Overview	
Additional Information	This module aims to equip the student with important underpinning engineering skills relating to manufacturing operations and quality systems. A student must therefore successfully complete all sections of the module to a satisfactory level.

## Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Centralised Exam	Examination	70	2	MLO1, MLO2, MLO3, MLO4
Report	Analysis and written report	30	0	MLO1, MLO2, MLO3, MLO4

## Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Rob Darlington	Yes	N/A

**Partner Module Team**

Contact Name	Applies to all offerings	Offerings
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