Liverpool John Moores University

Title:	Manufacturing Operations Management
Status:	Definitive
Code:	**6107MAN** (121990)
Version Start Date:	01-08-2021
Owning School/Faculty:	Engineering
Teaching School/Faculty:	Engineering

Team	Leader
Rob Darlington	Y
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Academic Level:	FHEQ6	**Credit Value:**	20	**Total Delivered Hours:**	41
Total Learning Hours:	200	**Private Study:**	159		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	33
Tutorial	6

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	70	2
Report	AS2	Coursework - Analysis and Written Report	30	

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 managment principles in world class organisation.

Learning Outcomes

After completing the module the student should be able to:

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 excecution of manufacturing.
2 Apply decision making tools in service and manufacturing companies.
3 Apply a range of quality techniques (e.g. SPC, QFD, FMEA) to monitor, anlayze and improve business processes.
4 Understand the six sigma methodologies and apply the DMAIC model to an improvements activity.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Examination	1	2	3	4
Analysis and written report	1	2	3	4

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.

Learning Activities

Lectures, tutorials and private study

Notes

This module aims to equipment 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.