**Liverpool** John Moores University

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|---|---|
| Title: | Manufacturing Systems Engineering |
| Status: | Definitive |
| Code: | **5504MTC** (125786) |
| Version Start Date: | 01-08-2019 |
| Owning School/Faculty: | Maritime and Mechanical Engineering |
| Teaching School/Faculty: | Maritime and Mechanical Engineering |

| Team | Leader |
|---|---|
| Rob Darlington | Y |
| Jun Ren | |
| Ian Jenkinson | |

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|---|---|---|---|---|---|
| **Academic Level:** | FHEQ5 | **Credit Value:** | 20 | **Total Delivered Hours:** | 41 |
| **Total Learning Hours:** | 200 | **Private Study:** | 159 | | |

**Delivery Options**
Course typically offered: Semester 2

| Component | Contact Hours |
|---|---|
| Online | 24 |
| Tutorial | 15 |

**Grading Basis:** 40 %

**Assessment Details**

| Category | Short Description | Description | Weighting (%) | Exam Duration |
|---|---|---|---|---|
| Exam | AS2 | Examination | 50 | 2 |
| Report | AS1 | Report based on work based learning activity | 50 | |

**Aims**

*To introduce the concept of a factory as a manufacturing system and the fundamental approaches used to design, control and evaluate the system*

## Learning Outcomes

After completing the module the student should be able to:

1 Evaluate the performance of a manufacturing system.
2 Apply inspection and quality control techniques to monitor and control a manufacturing system.
3 Design and optimise the performance of a manufacturing system.

## Learning Outcomes of Assessments

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

| | | |
|---|---|---|
| Examination | 1 | 2 |
| Work based project | 3 | |

## Outline Syllabus

*Overview of manufacturing operations. Manufacturing performance metrics and economics. Systems approach applied to manufacturing. Types of manufacturing system. Single station, manual assembly, automated production, flexible manufacturing. Lean manufacturing. Quality control systems: SPC, six-sigma, Taguchi methods. Production planning and control systems. Supply chain. Introduction to simulation and optimization techniques.*

## Learning Activities

On-line lectures and tutorials, campus based tutorials, work based learning.

## Notes

The module introduces types of manufacturing systems, their operational management and quality control and improvement systems.