

## Liverpool John Moores University

Title: ADVANCED MANUFACTURING  
Status: Definitive  
Code: **5505NCCG** (129438)  
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering  
Teaching School/Faculty: Nelson Campus

Team	Leader
Christian Matthews	Y

**Academic Level:** FHEQ5  
**Credit Value:** 20  
**Total Delivered Hours:** 60  
**Total Learning Hours:** 200  
**Private Study:** 140

### Delivery Options

Course typically offered: S1, S2, Sum, NS2 (S2 for Jan)

Component	Contact Hours
Lecture	60

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	Case Study	Case Study Analysis	50	
Report	Assignment	Assignment	50	

### Aims

*On successful completion of this module students will be able to analyse and evaluate the potential of using advanced manufacturing technologies to improve the competitive advantage of the organisations adopting them. The student will develop knowledge and understanding of advanced manufacturing technologies, digitalisation and a range of advanced manufacturing technologies. They will also develop their own research activities into the latest developments.*

## Learning Outcomes

After completing the module the student should be able to:

- 1 Illustrate the principles of advanced manufacturing systems engineering and explain their relevance to the design and enhancement of manufacturing systems.
- 2 Use a range of analysis tools to determine the effectiveness and efficiency of a manufacturing system, and then develop an appropriate future state for that system.
- 3 Analyse an existing manufactured product and associated process to introduce proposals for possible improvements based on the introduction of advanced manufacturing technologies.
- 4 Outline the impact of different production planning approaches and advanced manufacturing technologies on the effectiveness of a manufacturing system
- 5 Evaluate the factors that enable manufacturers to remain competitive in a rapidly changing world

## Learning Outcomes of Assessments

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

Case Study Analysis	1	2	3
Assignment	4	5	

## Outline Syllabus

*Traditional manufacturing processes*

*Advanced manufacturing processes*

*Manufacturing technologies*

*Manufactured product*

*Next industrial revolution*

*Internet of Things*

*Mass customisation*

## Learning Activities

### Lectures

These will not normally be traditional didactic lectures in which the student plays little active part, but will be delivered in small groups of up to 20 students in which their interaction with their tutor is a key ingredient of their learning experience.

Students will receive approximately 30 hours of taught material, supported by in-class exercises and discussions designed to help student assimilate learning and to provide early informal feedback on their progress.

### Independent Study

Students are expected to undertake personal reading and research into topic areas that have been stimulated from the lectures and seminars. This reading will enhance their academic work and enable valid contribution to lectures and seminars.

VLE support

This will provide links to academic web-sites and on-line journals, facilitate group discussion outside of the classroom, access to outline lecture notes, and provide students with assessment details.

## **Notes**

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