

## Liverpool John Moores University

Title: Manufacturing Processes  
Status: Definitive  
Code: **6116MSE** (120729)  
Version Start Date: 01-08-2018

Owning School/Faculty: General Engineering Research Institute  
Teaching School/Faculty: General Engineering Research Institute

Team	Leader
Martin Sharp	Y

**Academic Level:** FHEQ6  
**Credit Value:** 10  
**Total Delivered Hours:** 26  
**Total Learning Hours:** 100  
**Private Study:** 74

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	20
Practical	4

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	70	2
Essay	AS2	Analysis of an Advanced Manufacturing Process	30	

### Aims

*To enable students to understand advanced manufacturing processes, particularly those that contribute to the concept of "high value manufacturing".*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Select a suitable advanced manufacturing process in response to a need in high value manufacturing
- 2 Analyse and estimate process parameters for processing a given application
- 3 Critically examine the case for the adoption of an advanced manufacturing process.

## Learning Outcomes of Assessments

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

Examination	1	2	3
Analysis of an Advanced Man Pr	1	2	3

## Outline Syllabus

*High Value Manufacturing and Advanced Manufacturing Processes*  
*Cosworth casting process and casting automation*  
*Conventional Machining and Grinding*  
*Introduction to Laser Materials Processing*  
*Non-conventional machining (water-jet, plasma cutting, EDM and laser drilling)*  
*Rapid Prototyping and 3D printing of polymers*  
*Additive Manufacturing of metal components*  
*Moulding of plastics and advances in mould tools*  
*CFRP Manufacturing processes*  
*Superplastic forming*  
*Micromanufacturing*

## Learning Activities

Lectures, tutorial and practicals

## Notes

The module will provide students with an understanding of the more advanced materials processing technologies that can be applied to a range of materials in high value manufacturing.