

Liverpool John Moores University

Title: Manufacturing Technology
Status: Definitive
Code: **5508ENGRIV** (117214)
Version Start Date: 01-08-2016

Owning School/Faculty: Maritime and Mechanical Engineering
Teaching School/Faculty: Maritime and Mechanical Engineering

Team	Leader
Russell English	Y

Academic Level: FHEQ5 **Credit Value:** 20 **Total Delivered Hours:** 50
Total Learning Hours: 200 **Private Study:** 150

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	36
Practical	4
Tutorial	8

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam		60	2
Report	Report 1		20	
Report	Report 2		20	

Aims

To provide an introduction to manufacturing technologies and to give an understanding and practical experience of the techniques used in modern manufacturing industries.

Learning Outcomes

After completing the module the student should be able to:

- 1 Compare and contrast the characteristics of a range of manufacturing methods for metallic, plastic and composite materials
- 2 Select suitable processes and techniques for generating geometrical forms for a given component specification.
- 3 Assess how different features on a component can be measured and their conformity to dimensional and geometric tolerances checked.

Learning Outcomes of Assessments

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

Exam	1	2	3
Lab-based assignment 1	2		
Lab-based assignment 2	3		

Outline Syllabus

*Introduction to casting processes: fluid flow and solidification. Mould design.
Prevention of casting defects. Developments in casting processes.
Bulk deformation processes: forging, rolling, extrusion, drawing.
Sheet metal working processes: shearing, bending, punching
Design differences between conventional and CNC machine tools, classification of CNC machine tools, economic benefits of CNC
Modern developments in metal cutting processes: grinding theory and practice, high speed machining, hard turning.
Machine tool control: practical aspects of control
Application of adaptive control to machining processes
Introduction to non-conventional machining*

Learning Activities

Combination of lectures, tutorials, and laboratory work

Notes

This module allows the student to study modern manufacturing processes to a depth which provides an understanding of the techniques employed in the manufacturing industries.