

## Liverpool John Moores University

Title: QUALITY SYSTEMS AND SIX SIGMA  
Status: Definitive  
Code: **6506ENGHAL** (106687)  
Version Start Date: 01-08-2016

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

Team	Leader
Russell English	Y

**Academic Level:** FHEQ6  
**Credit Value:** 12  
**Total Delivered Hours:** 26  
**Total Learning Hours:** 120  
**Private Study:** 94

### Delivery Options

Course typically offered: Semester 2

Component	Contact Hours
Lecture	18
Tutorial	6

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS1	Examination	50	2
Essay	AS2	Assignment (Quality Improvement)	25	
Essay	AS3	Assignment (Business Improvement)	25	

### Aims

*To apply principles and techniques of quality management within a modern manufacturing environment*

### Learning Outcomes

After completing the module the student should be able to:

- 1 Discuss the concepts and principles of total quality management.
- 2 Apply a range of quality techniques to monitor, analyse and improve manufacturing processes.
- 3 Evaluate a range of business improvement techniques and their impact on business performance
- 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:

EXAM	1	2	3	4
CW	1	2	4	
CW	1	3	4	

### **Outline Syllabus**

*Background and evolution of the quality movement.*

*Quality gurus and the cost of quality.*

*Quality control procedures.*

*Process capability and statistical process control techniques.*

*The continuous improvement environment, quality tools and problem solving techniques.*

*Teamwork, working relationships and leadership.*

*Quality management systems - standards and models: ISO9000:2000, the EFQM business excellence model and European Quality Awards.*

*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**

This module is taught through a combination of lectures, tutorial, small group work and video case studies.

### **Notes**

This module focuses on the practical application of quality management and project management techniques used in both service and manufacturing industry. It includes the effective management of people in projects and change.