

Liverpool John Moores University

Title: LEAN SIX SIGMA PROCESS IMPROVEMENT
Status: Definitive
Code: **6018SERBM** (117910)
Version Start Date: 01-08-2012

Owning School/Faculty: Liverpool Business School
Teaching School/Faculty: South Eastern Regional College

Team	Leader
Jacqueline Douglas	Y

Academic Level: FHEQ6
Credit Value: 24.00
Total Delivered Hours: 79.00
Total Learning Hours: 240
Private Study: 161

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	39.000
Workshop	39.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	Exam	Open book multiple choice examination.	25.0	1.00
Essay	Essay	Individual 3,000 word case study coursework assignment.	75.0	

Aims

- 1. To introduce students to the role of organizational processes in business performance in both services and manufacturing;*
- 2. To introduce students to process performance measures including efficiency, effectiveness and economic measures;*
- 3. To introduce students to the concepts of Six Sigma and Lean and their associated tools and techniques as means to improving process performance.*

Learning Outcomes

After completing the module the student should be able to:

- LO 1 Apply Lean principles to a selected project;
- LO 2 Apply the DMAIC methodology and its associated Six Sigma tools to a selected project;
- LO 3 Identify, analyse and evaluate business process problems independently, make reasonable judgments, draw valid conclusions and make practical recommendations as to process improvement.
- LO4 Demonstrate knowledge of Lean Six Sigma principles and tools.

Learning Outcomes of Assessments

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

Examination	LO		
	4		
Essay	LO	LO	LO
	1	2	3

Outline Syllabus

1. *The business case for Lean and Six Sigma;*
2. *Understanding processes and their role in business performance;*
3. *What is Six Sigma and Six Sigma performance;*
4. *Introduction to the DMAIC methodology;*
5. *Introduction to Lean Thinking;*
6. *Lean versus Six Sigma - Differences and Similarities;*
7. *An introduction to Lean Metrics – Takt Time, Cycle Time and OEE (Overall Equipment Effectiveness);*
8. *Tools and Techniques for continuous improvement and their use within the Six Sigma DMAIC;*
9. *An introduction to Six Sigma metrics – costs of quality, defects per million opportunities (DPMO), Sigma Quality Level (SQL) and Yield;*
10. *Six Sigma project selection;*
11. *The DMAIC methodology in detail;*
12. *Variation and Statistical Process Control (SPC);*
13. *Critical Success Factors for Lean Six Sigma.*

Learning Activities

Each session will involve a lecture followed by a practical workshop where students will gain practice in the application of various Lean and Six Sigma tools and techniques including Process Mapping, identification of value-adding and non-value adding activities, calculations including Takt Time, Cycle Time and OEE and the identification and allocation of costs of quality.

References

Course Material	Book
Author	Montgomery, D C, Jennings, C L and Pfund, M E
Publishing Year	2011
Title	Managing, Controlling and Improving Quality
Subtitle	
Edition	
Publisher	John Wiley and Sons, New York, USA
ISBN	

Course Material	Book
Author	Wedgwood, I D
Publishing Year	2007
Title	Lean Sigma
Subtitle	A Practitioner's Guide
Edition	
Publisher	Prentice Hall, New York, USA
ISBN	

Course Material	Book
Author	Summers, D C S
Publishing Year	2007
Title	Six Sigma
Subtitle	Basic Tools and Techniques
Edition	
Publisher	Pearson Prentice Hall, New Jersey, USA
ISBN	

Course Material	Book
Author	Cygi, G, DeCarlo, N and Williams, B
Publishing Year	2005
Title	Six Sigma for Dummies
Subtitle	
Edition	
Publisher	Wiley Publishing, USA
ISBN	

Course Material	Book
Author	Brue, G
Publishing Year	2005
Title	Six Sigma for Managers
Subtitle	
Edition	

Publisher	McGraw-Hill, USA
ISBN	

Notes

Lean and Six Sigma methodologies both individually and combined are proven methodologies to identify and eliminate defects, waste, rework and other failures that results in financial savings and improved customer satisfaction for manufacturing and service industries including Healthcare and Financial Services. Qualified / Certificated Six Sigma practitioners are highly employable and command high salaries in the organizations for which they work. This module is designed to give you the necessary understanding and tools and techniques equivalent to Lean Six Sigma Yellow Belt certification. All students who achieve more than 60% in the examination element of the assignment will receive a Lean Six Sigma Yellow Belt Certificate of performance.