

## ENGI08039 Lean Enterprise Engineering (Part-time)

<b>Full Title</b>	Lean Enterprise Engineering (Part-time)		
<b>Status</b>	Uploaded to Banner	<b>Start Term</b>	2020
<b>NFQ Level</b>	08	<b>ECTS Credits</b>	05
<b>Module Code</b>	ENGI08039	<b>Duration</b>	18 weeks - (18 Weeks)
<b>Grading Mode</b>	Numeric	<b>Department</b>	Mechanical & Industrial Eng
<b>Module Author</b>	Paul ODowd		

### Module Description

This module covers the application of Lean Manufacturing techniques to Enterprise-level problems in manufacturing and service industries. Students will identify the Current State of an organisation's processes and, by mapping the process, identifying waste, introducing flow, and making process improvements, develop a Future State. They will look at Lean in the Services Industry and Design. The people-related aspects of Lean will be considered.

### Learning Outcomes

**On completion of this module the learner will/should be able to:**

1. Evaluate the modern approach to Enterprise-level Engineering, using lean manufacturing techniques and business process reengineering.
2. Assess the principles of Lean Services and develop lean solutions to service problems in an enterprise.
3. Appraise the application of Lean tools to the New Product Development and Introduction processes, evaluate problems and choose solutions.
4. Apply Lean Enterprise engineering techniques such as Value Stream Mapping to map the processes in a value chain, analyse value and waste, identify areas for improvement and solve enterprise problems.
5. Select and apply appropriate change management tools and strategies to optimise the implementation of Lean Thinking in an enterprise.

### Indicative Syllabus

#### Lean Enterprise Philosophy and Strategy

**Advanced Lean Analysis:** Identifying waste, Introducing flow, Mapping the process, Creating Future states

Lean design and new product introduction

Lean accounting

Lean and the wider organisation: customers, sales, suppliers, inventory and production management.

Lean services

Lean at the Macro level: Business Process Reengineering

· Process orientation, Identifying processes, Customer focus, Process optimisation

#### Introducing and implementing Lean in enterprises:

Lean and people issues

Change management

- Human and resource issues
- Driving change in organisations

### Teaching and Learning Strategy

Learners on the programme will be supported with blended online educational resources and support.

All learners have access to online training delivery tools such as "LearnOnline", Microsoft teams and Microsoft stream. There will be a

2 hours per week live online lecture where students can attend class via a laptop, PC or mobile device. Microsoft teams will enable this activity. Learner can interact with the lecturer through the chat box. The lecture will be of a theory content and will be uploaded through Microsoft stream onto "LearnOnLine". The advantage of this is learners can plan study around conflicting priorities.

There will be a 1-hour practical/laboratory work in a computer laboratory. The practical work will include individual problem-solving.

The laboratory work will involve the application of Lean Engineering tools. Case study problems will be used.

DVDs of Lean in practice will be used in labs, to provide contextual information.

Microsoft Excel will be used for some data analysis. Where appropriate, desktop Lean training games will be used, to facilitate active learning

### Assessment Strategy

50% of the assessment will be lab-based. Students may be assessed on Excel-based analysis, case-study analysis or review of theoretical concepts.

50% of the assessment will be based on industry applications. Students will apply Lean techniques or investigate how Lean techniques and philosophies are applied in industry.

### Repeat Assessment Strategies

An autumn repeat examination will be provided.

Indicative Coursework and Continuous Assessment:		100 %		
Form	Title	Percent	Week (Indicative)	Learning Outcomes
Assessment	Assessment	100 %	OnGoing	1,2,3,4,5

Blended Delivery Mode Average Weekly Workload:			3.00 Hours		
Type	Description	Location	Hours	Frequency	Weekly Avg
Online Learning	Online Delivery	Not Specified	2	Weekly	2.00
Practical	Laboratory	Engineering Laboratory	1	Weekly	1.00

### Recommended Reading Book List

John, M., (2016). *The Lean Toolbox 5th Edition*. 5<sup>th</sup> Edition. Plcsie books.  
ISBN 0956830757 ISBN-13 9780956830753

Jones, T., (2007). *The Machine that Changed the World*. UK Edition. Free Press.  
ISBN 1847370551 ISBN-13 9781847370556

Liker, K., (2004). *The Toyota Way*. 2004 Edition<sup>th</sup> Edition. McGraw Hill Professional.  
ISBN NWU:35556032752594

Mike, J., (2009). *Learning to See*. 2009 Edition<sup>th</sup> Edition. Lean Enterprise Institute.  
ISBN 9780966784305 ISBN-13 0966784308

Mike, R., (2001). *Creating Continuous Flow*. 2001 Edition<sup>th</sup> Edition. Lean Enterprise Institute.  
ISBN 9780966784336 ISBN-13 0966784332

Smalley, A., (2004). *Creating Level Pull*. 2004 Edition<sup>th</sup> Edition. Lean Enterprise Institute.  
ISBN 9780974322506 ISBN-13 0974322504

Sobek, K., (2013). *Lean Product and Process Development*. 2013 Edition<sup>th</sup> Edition. Lean Enterprises Inst Incorporated.  
ISBN 1934109436 ISBN-13 9781934109434

Jones, T., (2003). *Lean Thinking*. Free Press.  
ISBN 0743249275 ISBN-13 9780743249270

Jeffrey, K., (2016). *The Toyota Way to Service Excellence: Lean Transformation in Service Organizations*. McGraw-Hill Education.  
ISBN 1259641104 ISBN-13 9781259641107

Koenigsaecker, G., (2012). *Leading the Lean Enterprise Transformation, Second Edition*. CRC Press.  
ISBN 9781439859872 ISBN-13 1439859876

Marc, I., (2009). *Making Hospitals Work*. Lean Enterprise Academy Ltd.  
ISBN 9780955147326 ISBN-13 0955147328

### Literary Resources

The New Lean Toolbox, John Bicheno, Picsie Books, 2004

Lean thinking : banish waste and create wealth in your corporation, James P. Womack and Daniel T. Jones, London: Free, 2003

The Complete Lean Enterprise: Value Stream Mapping For Administrative And Office Processes, Beau Keyte, Drew Locher, Productivity Press

Lean Solutions : How Companies and Customers Can Create Value and Wealth Together, Daniel Jones and James Womack, Free Press, 2005.

The Lean Enterprise Memory Jogger: Create Value and Eliminate Waste Throughout Your Company , Richard L. Macinnes

Reengineering the corporation : a manifesto for business revolution / Michael Hammer & James Champy [S.I.] : HarperBusiness, 1993

Reengineering the factory : A primer for world class manufacturing / A.Richard Shores Milwaukee, WI : ASQC Quality Press, 1994

### Online Resources

The Learnonline (Moodle) page for the module will contain lecture notes, lab descriptions and supporting information.

### Other Resources

None

### Programme Membership

GA\_EINDG\_H08 202000 Bachelor of Engineering (Honours) in Industrial Engineering