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CONS08011 2019 Lean Principles and Quality Management

Full Title	Lean Principles and Quality Management					
Transcript Title	Lean Principles and Quality Ma					
Status	B - Uploaded to Banner Module Code CONS08011					
NFQ Level	08	ECTS Credits	05			
Subject Area	CONS - Construction	Attendance	75 %			
Grading Mode	Numeric/Percentage	Module Duration	Semester - (15 Weeks)			
Start Term	2019 - Full Academic Year 2019-20	End Term	9999 - The End of Time			
Module Leader	David Collery	Department	CENG - Civil Eng. and Construction			

Module Co-Authors

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Module Description

The aim of this module is to develop student's awareness and understanding of the key characteristics associated by improving the effective operation of the construction industry by implementing lean and quality systems. The module also evaluates the areas where lean production theories can make a significant impact in construction. Lean Construction planning underpins a wider approach to applying Lean Thinking to create significant improvements in project safety, predictability, construction and improved productivity. The module will provide the student's with an introduction to lean construction & quality management and the tools/method required to implement these processes.

Indicative Syllabus

Syllabus

- The lecturer will use real world case studies and scenarios to demonstrate the essential principles and provide content for the topics.
- Lean Construction Thinking: The student will be presented a range of information and case studies to provide an introduction to, what is Lean Thinking, Lean in Construction, adding value
 and what is waste.
- The five lean principles, identify value, map the value stream, create flow, establish pull and seek perfection.
- · Seven wastes and link to the construction industry
- Lean Process Measurement and Lean Tools
- The importance of the supply chain in construction industry, management factors and cost tradeoffs.
- ISO 18404 as a Lean Construction Transformation Model
 - ISO 12006-3:2007 Building construction -- Organization of information about construction works -- Part 3: Framework for object-oriented information
- Brainstorming method detailed knowledge of the Kazien and 10 ground rules and improvement tools Flow charting, fishbone, check sheet, Pareto chart, fishbone diagram, scatter charts, and flow charts.
- Information and communication technology/Building Information Modeling
- Implementing the Ancillary tools, quality at source, Poka Yoke, working standards, and implement Lean step to manage time, cost and resources.
- Last Planner System
- Supply Chain Management
- BIM as a Lean tool

QMS and Auditing:

- Quality Management Systems
- History and Importance of Standards,
- Purpose, content and interrelationship of ISO9000, and ISO9001
- Hierarchy of Quality Documentation
- Quality Awards
- Auditing
- Total Quality Management Quality and performance
- Customer Related Processes
- ISO 10006:2017 for quality management

≣	Learning Outcomes On completion of this module the learner will/should be able to;
1.	Critique lean principles, thinking, and practices, and their application in construction
2.	Establish the five lean principles, seven wastes and a lean quality approach in a project environment
3.	Develop process and continuous improvement skills in the application of lean tools and techniques in a project environment
4.	Evaluate and discuss the importance of Supply Change Management
5.	Assess the relative merits of Quality and Construction Management tools for using Lean, Quality and BIM synergies.

Teaching and Learning Strategies

This module will be delivered using blended learning techniques. This will include online lectures (via adobe connect or similar), workshops and work based learning where relevant and guest lectures augmented by independent learning and directed learning. This approach is expected to address student learning needs. Moodle will be used to upload educational material (i.e. presentations and recordings of online lectures plus supplementary reading material) and as a means of assessment (e.g. quizzes, uploading assignments and journals). This blended approach (lectures and workshops) brings students together to facilitate group learning.

Module Assessment Strategies

30% continual assessment blend of assignment and quizzes

Repeat Assessment Strategies

Repeat Continuous Assessment.

Programme Membership

SG_CCONS_K08 201900 Level 8 Honours Degree Add-on in Construction Project Management SG_SCONS_H08 201900 Bachelor of Science (Honours) in Construction Project Management and Applied Technology

Coursework / Continuous Assessment Breakdown

Coursework & Continuous Assessment 30 %		End of Semester / Year Formal Exam			70 %			
Coursework Assessment								
Title	Туре	Form	Failed Elemen	nt	Percent	Week		Outcomes Assessed
Quizzes	Continuous Assessment	Closed Book Exam	No		10 %	Week 5		1,2
Project	Continuous Assessment	Assignment	No		20 %	Week 7		2,4,5

End of Semester / Year Assessment							
Title	Туре	Form	Failed Element	Percent	Week	Outcomes Assessed	
Final Exam	Final Exam	Closed Book Exam	No	70 %	End of Semester	2,3,4,5	

Full Time Mode Workload						
Туре	Location	Description	Hours	Frequency	Avg Workload	
Lecture	Flat Classroom	Software applications & theory	2	Weekly	2.00	
Laboratory Practical	Computer Laboratory	Software applications & theory	1	Weekly	1.00	
Independent Learning	Not Specified	Self directed learning	4	Weekly	4.00	

Total Full Time Average Weekly Learner Contact Time 3.00 Hours

Part Time Mode Workload						
Туре	Location	Description	Hours	Frequency	Avg Workload	
Lecture	Distance Learning Suite	Software applications & theory	1	Weekly	1.00	
Laboratory Practical	Distance Learning Suite	Software applications & theory	1	Weekly	1.00	
Independent Learning	Online	Self directed learning	6	Weekly	6.00	

Total Part Time Average Weekly Learner Contact Time 2.00 Hours

Module Resources

Non ISBN Literary Resources

As per the book and ebook list.

Journal Resources

Links provided on module moodle page

URL Resources

http://leanconstructionireland.ie/

https://www.leanconstruction.org/

http://www.iglc.net/

https://www.gsb.stanford.edu/faculty-research/centers-initiatives/vcii

 $https://www.designingbuildings.co.uk/wiki/Quality_in_construction_projects$

Other Resources	
None	

Additional Information

None

Required Book List

Cover	Book Details
Surgion for therease Lean Construction Management Private	Low, S., (2014). Lean Construction Management Springer. ISBN 9789812870148 ISBN-13 9812870148
	Rafael, S., (2017). Building Lean, Building BIM . Routledge. ISBN 9781315300498 ISBN-13 1315300494
Сонзтанствой	Lange, A., (2016). Lean Construction tredition. ISBN 9783734583834 ISBN-13 3734583837
PIGITAL QUALITY MANAGEMINTIN CONSTRUCTION RUL MARIEN	Marsden, P., (2019). <i>Digital Quality Management in Construction</i> . Routledge is. ISBN 1138390828 ISBN-13 9781138390829
Construction Project Manager's Pocket Book	Cartlidge, D., (2015). <i>Construction Project Manager's Pocket Book</i> . Routledge. ISBN 9781317533597 ISBN-13 1317533593

Administratve Information				
Date Created	04-04-2019			
Module Owner	David Collery			
Date School Approved	21-06-2019			
Module Approver	Trevor McSharry			
Date Academic Council Approved	12-07-2019			