

Module Information

2022.01, Approved

Summary Information

Module Code	5344BEUG
Formal Module Title	Design Economics and Project Lifecycle Value
Owning School	Civil Engineering and Built Environment
Career	Undergraduate
Credits	20
Academic level	FHEQ Level 5
Grading Schema	40

Teaching Responsibility

LJMU Schools involved in Delivery
Civil Engineering and Built Environment

Learning Methods

Learning Method Type	Hours
Lecture	11
Online	11
Workshop	22

Module Offering(s)

Display Name	Location	Start Month	Duration Number Duration Unit
JAN-CTY	CTY	January	12 Weeks

Aims and Outcomes

Aims	To analyse, and evaluate the influence of changes in design parameters on the life cycle value of a project considering multiple performance metrics and commercial targets
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After completing the module the student should be able to:

Learning Outcomes

Code	Number	Description
MLO1	1	Calculate and interpret the impact of design decisions on the life cycle value of the construction projects using several metrics.
MLO2	2	Quantify environmental impact of a given building using IT tools and evaluate life cycle value with the aim of reducing environmental impact
MLO3	3	Propose design solutions that optimises the trade-off between multiple performance metrics.
MLO4	4	Demonstrate skills in collaborative team working and leadership.

Module Content

Outline Syllabus	- Introduction to building lifecycle: Cost vs Value- Discounted cash flow: Net Present Value- Building morphology and design parameters and their impact on construction cost, energy, CO2 emissions- Software implementation, BIM Insight- Multi - Objective Optimisation: Maximisation of Net Present Value while minimising Energy Demand and CO2 emission
Module Overview	
Additional Information	This module aims to analyse, and evaluate the influence of changes in design parameters on the life cycle value of a project considering multiple performance metrics and commercial targets. On the Quantity Surveying Degree Apprenticeship programme, the knowledge learning outcomes for this module are K2, K3, K5, K6, K7, K8, K9, K14, K15, S1, S3, S10, S11, B1, B2, B3, B4 and B5.

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Module Learning Outcome Mapping
Presentation	Software Exercise	40	0	MLO1, MLO2
Presentation	Group Presentation and Report	60	0	MLO1, MLO2, MLO3, MLO4

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
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Partner Module Team

Contact Name	Applies to all offerings	Offerings
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