Module Proforma

Approved, 2022.02

Summary Information

Module Code	7303BEUG
Formal Module Title	Operational Performance and Modelling
Owning School	Civil Engineering and Built Environment
Career	Postgraduate Taught
Credits	20
Academic level	FHEQ Level 7
Grading Schema	50

Module Contacts

Module Leader

Contact Name	Applies to all offerings	Offerings
Hu Du	Yes	N/A

Module Team Member

Contact Name	Applies to all offerings	Offerings
Saiful Bhuiyan	Yes	N/A
Muhammad Ahmad	Yes	N/A

Partner Module Team

Contact Name	Applies to all offerings	Offerings

Teaching Responsibility

LJMU Schools involved in Delivery
Civil Engineering and Built Environment

Learning Methods

Learning Method Type	Hours
Lecture	12
Workshop	22

Module Offering(s)

Offering Code	Location	Start Month	Duration
SEP-CTY	CTY	September	12 Weeks

Aims and Outcomes

Aims	To develop the student's skills to conduct design and in-use building performance evaluation, and use data and model to identify performance issues related to building operation in practice.

Learning Outcomes

After completing the module the student should be able to:

Code	Description
MLO1	Evaluate the performance gap among compliance model, building design, operation, and in-use baseline
MLO2	Identify performance issues in practice, including technical issues relating to construction, commissioning, operations and controls or malfunction in systems and equipment.
MLO3	Interpret and analyse data though analysing design documents and operation and maintenance manuals, spot-measurements, longitudinal metering and monitoring, and stakeholder interviews.
MLO4	Develop a dynamic thermal simulation model, calibrate to actual energy use and create in-use baseline model, and interpret and analyse data from dynamic energy model.
MLO5	Work effectively as part of a collaborative professional team.

Module Content

Outline Syllabus
Building performance evaluation methodology including commissioning, energy assessment, post occupancy evaluation Introduction to building performance evaluation case studies Introduction to soft landing Energy model calibration methodology Model-based building performance evaluation and analysis Data analysis and visualisation Introduction to Digital Twin

Module Overview
This module aims to develop the student's skills to conduct design and in-use building performance evaluation, and use data and model to identify performance issues related to building operation in practice.

Additional Information
Workshops include group work, software training and presentations, online training and data collection

Assessments

Assignment Category	Assessment Name	Weight	Exam/Test Length (hours)	Learning Outcome Mapping
Report	Report	40	0	MLO3, MLO5, MLO2, MLO1
Portfolio	Portfolio	60	0	MLO3, MLO2, MLO4, MLO1