MODULE SPECIFICATION

Part 1: Information			
Module Title	Thermal Performance		
Module Code	UBLMJ8-15-M	Level	Level 7
For implementation from	2019-20		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Environment & Technology	Field	Architecture and the Built Environment
Department	FET Dept of Architecture & Built Environ		
Module type:	Standard		
Pre-requisites	None		
Excluded Combinations	None		
Co- requisites	Introduction to Facade Systems 2019-20		
Module Entry requirements	None		

Part 2: Description

Overview: Co- requisites: students must have already completed or be currently enrolled in UBLLYS-15-M Introduction to Façade Systems. This requirement is compulsory for FT and PT students. Advisory for CPD students who only intend to take an individual module.

Educational Aims: To understand building physics in relation to heat loss through the façade, and the risk of condensation.

Outline Syllabus: Many countries around the world have set tough, legally binding targets to reduce their carbon dioxide emissions significantly when compared to historical values. In response to this the regulations concerning energy use in buildings are being ever tightened.

The unit starts by introducing the different forms of heat transfer and how they relate to facades. These ideas are further developed to consider how different components and elements may be analysed and assessed.

Thermal bridging can be a significant impairment to the overall thermal performance of a façade. This unit will look at how and why thermal bridges occur, their effects, how they can be minimised and how they can be quantified.

Condensation can, in addition to being unsightly, cause material degradation, reduction in

thermal insulation and result in mould which can be harmful to people. Condensation theory and principles are introduced, together with condensation risk analysis.

Teaching and Learning Methods: The module is delivered by way of five study days for face to face teaching.

The module will be delivered by means of a series of lectures, seminars and tutorials.

Lectures and seminars will be used to enable students to support their own independent learning by exploring deeper issues pertaining to Façade Engineering and receiving formative feedback. Occasional speakers will be used to provide up to date material and context to the applications of the subject area.

A series of tutorials are designed to provide knowledge and practical skills relevant to façade engineering.

Group work and Presentations by and to the group by the students will also be used to enable students to develop the skills and capabilities to analyse problems, negotiate, make decisions and present solutions to problems.

Directed reading examining the key principles and relevant criteria relating to a number of topics of importance to façade Engineering.

Part 3: Assessment

Component A will be assessed via a video presentation of a condensation risk assessment.

Component B is assessed via a Case Study Calculation, based on a real world practical activity which a professional Façade Engineer would need to undertake, modelled around a realistic situation.

Resit strategy will consist on working through a similar form of assessment, so that the students can improve according to the feedback received.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Presentation - Component A		50 %	Video Presentation on Risk Assessment (5-7 mins)
Case Study - Component B	✓	50 %	Case study: calculations
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Presentation - Component A		50 %	Video presentation (7-10 mins)
Case Study - Component B	✓	50 %	Case study: Calculations

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	Reference
Identify energy flows into and out of building envelopes and evaluate appropriate methods of calculation	MO1
Critically evaluate the benefits of controlled air leakage through building envelopes	MO2
Critically evaluate the impact of thermal bridges on façade thermal integrity and building envelope performance	MO3
Critically evaluate building envelopes with component and whole building environmental rating schemes	MO4
Assess condensation risk and its effects on building envelope performance	MO5

Contact Hours

Independent Study Hours:	
Independent study/self-guided study	118
Total Independent Study Hours:	118
Scheduled Learning and Teaching Hours:	
Face-to-face learning	32
Total Scheduled Learning and Teaching Hours:	32
Hours to be allocated	150
Allocated Hours	150

Reading List

The reading list for this module can be accessed via the following link:

https://uwe.rl.talis.com/modules/ublmj8-15-m.html

Part 5: Contributes Towards

This module contributes towards the following programmes of study: