Module Code	CE7C04
Module Name	Façade Engineering
ECTS Weighting[1]	5 ECTS
Semester taught	Semester 1
Module Coordinator/s	Adj Professor Patrick Shiel
Module Learning Outcomes with reference to the Graduate Attributes and how they are developed in discipline	LO1. General building physics and thermal performance of buildings LO2. Façade design and retrofitting of façades for improved performance LO3. Façade concepts, structures, materials, and components LO4: Ensuring compliance with Irish and UK Building Regulations LO5. Detailed use of Façade design tools – Revit and BIM, and performance analysis building energy software **Graduate Attributes: levels of attainment** To act responsibly - Introduced To think independently - Enhanced To develop continuously - Enhanced To communicate effectively - Enhanced
Module Content	Please provide a brief overview of the module of no more than 350 words written so that someone outside of your discipline will understand it. This module is focused on building façade engineering including design, construction and analysis of the building envelope, including façade thermal characteristics and building physics. The extensive façade project will be developed using Revit, and the chosen façade analysed using building energy simulation software. Students will learn to objectively and analytically examine the components of a building façade to blend visual amenity and high thermal performance to ensure compliance with the required Building Regulations
Teaching and Learning Methods	Formal and expert guest lectures Tutorials Online learning via Blackboard Practice-based work to help complete the project requirements

Assessment Component	Assessment Description	LO Addressed	% of total	Week due

[1] TEP Glossary

Assessment Details[2] **Please include the following:** • **Assessment Component** • **Assessment description** • **Learning Outcome(s) addressed** • **% of total** • **Assessment due date**	Project	Interim Project Report	LO2:LO3	10%	7
	Project	Project Presentation	LO1:LO5	15%	11
	Project	Final Project Report	LO1:LO5	25%	13
	Exam	All Material examined	LO1:LO5	50%	

Reassessment Requirements	
Contact Hours and Indicative Student Workload[2]	**Contact hours:44 hours** **Independent Study (preparation for course and review of materials): 30 hours** **Independent Study (preparation for assessment, incl. completion of assessment): 30 hours**
Recommended Reading List	• *The Passivhaus Designer's Manual : A technical guide to low and zero energy buildings*, Christina Hopfe, Taylor & Francis, 2015 • *Sustainable Construction: Green Building Design and Delivery*, Charles Kibert, Wiley, 2016 • J. Lovell, *Building Envelopes: An Integrated Approach*. Princeton Architectural Press, 2010. • *Energy Manual, Sustainable Architecture.* Detail, BirkHauser, 2008 • M. Patterson, *Structural Glass Facades and Enclosures*. John Wiley & Sons, 2011.
Module Pre-requisite	Minimal working knowledge of AutoDESK / REVIT Familiarity with basic thermal transfer characteristics
Module Co-requisite	Advancement through knowledge of REVIT, SEAI's SBEM performance analysis tool
Module Website	

[2] TEP Guidelines on Workload and Assessment

Are other Schools/Departments involved in the delivery of this module? If yes, please provide details.	
Module Approval Date	
Approved by	
Academic Start Year	September 2022
Academic Year of Date	2022-2023