CE7C04: C4 – Façade Engineering [5 credits]

Module Co-ordinator(s): Adj. Prof. Patrick Shiel (shielp@tcd.ie)

Lecturer(s): Adj. Prof. Patrick Shiel
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Module organisation
Department of Civil, Structural and Environmental Engineering

Module description, aims and contribution to programme
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.

Learning outcomes
The module will allow students to analyse, design and/or synthesise in the following topics:
1. General building physics and thermal performance of buildings
2. Historical and present day building facades.
3. Façade design and retrofitting of façades for improved performance.
5. Façade structures, systems and construction.
6. Façade concepts, materials and components, and,
7. Façade design using Revit, and analysis using building energy software.

Teaching strategies
Lectures, tutorials and project work. Including lectures given by industry partners; such as IES, Arup & Autodesk.
Timetable – 3 hours lectures per week.

Assessment
A formal written end-of-term three-hour examination accounts for 50% of this module’s assessment. The other 50% will be allocated for the student façade design project comprising a final project report (25%) an interim report (10%) and a final presentations (15%).

Required Reading
Reading content will be posted to the class blog. These will include articles from relevant journals and magazines and the following textbooks;

• M. Patterson, *Structural Glass Facades and Enclosures.* John Wiley & Sons, 2011.

Further information
https://www.tcd.ie/Engineering/