MODULE DESCRIPTOR

Module Title

Retrofitting: Process and Application

Reference	SUM504	Version	1
Created	July 2021	SCQF Level	SCQF 11
Approved	January 2022	SCQF Points	30
Amended		ECTS Points	15

Aims of Module

The module aims to enable students to assess existing buildings and develop appropriate retrofitting solutions using professionally adopted technical tools and standards.

Learning Outcomes for Module

On completion of this module, students are expected to be able to:

1	Define, develop, and critically appraise a comprehensive retrofitting project and generate design or process-led solutions that demonstrate clear and consistent technical understanding.
2	Evaluate scenarios relating to particular building and performance targets and select appropriate materials in terms of building performance, embodied energy/carbon, and environmental impact.
3	Identify and advise on achievable energy certification schemes using a sensitivity analysis approach.
4	Clearly present, explain, and justify integrated low carbon environmental solutions recommended for a given context.

Indicative Module Content

Students will follow comprehensive case studies and discuss different retrofitting approaches applied by professionals presenting their case studies. The module focuses primarily on detailed retrofitting strategies and projects of a relatively modest scale and complexity, all within the UK context. Software training on PHPP to enable students to undertake retrofitting projects using professional tools. Students will undertake supervised personal retrofitting project.

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Module Delivery

Module delivery takes place through structured online lectures (the majority of which are pre-recorded), designated reading material and directed study, group exercises and discussion forums, and study activities / exercises including software instruction. Learning is facilitated by regular online tutor support. Students follow a weekly Study Guide detailing learning activities and engagement expectations. Asynchronous engagement by students within a specified and allotted timeframe allows students to follow the module teaching plan, comprising a series of subjects / topics, at their own pace. Software training will take place from the start of the module and will be used in module delivery including group work of cases studies and individual project. Case studies will be presented by their representative from the industry. Consultation with personal supervisor will take place during the elaboration of the retrofitting individual project.

Indicative Student Workload	Full Time	Part Time
Contact Hours	15	15
Non-Contact Hours	285	285
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	300	300
Actual Placement hours for professional, statutory or regulatory body		

ASSESSMENT PLAN

If a major/minor model is used and box is ticked, % weightings below are indicative only.

Component 1

Type:	Coursework	Weighting:	100%	Outcomes Assessed:	1, 2, 3, 4
Description:	Assessment is in the form of an individually prepared portfolio of specific activities / outputs related to the module content. This will include an individual project relating to a specific building type and performance targets.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The overall module grade is based on 100% weighting of Component 1 (report). An overall minimum grade D is required to pass the module. Non-submission will result in an NS grade.

Module Grade	Minimum Requirements to achieve Module Grade:
A	A
B	B
C	C
D	D
E	E
F	F
NS	Non-submission of work by published deadline or non-attendance for examination

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Module Requirements

Prerequisites for Module	None.
Corequisites for module	None.
Precluded Modules	None.

INDICATIVE BIBLIOGRAPHY

1. Baeli, M. (2019). Residential retrofit: twenty case studies. Routledge.
2. Quantifying the benefits of a building retrofit using an integrated system approach: A case study Regnier, Cynthia ; Sun, Kaiyu ; Hong, Tianzhen ; Piette, Mary Ann Energy and buildings, 2018-01-15, Vol.159 (C), p.332-345
3. Pacheco-Torgal, F., Granqvist, C. G., Jelle, B. P., Vanoli, G. P., Bianco, N., & Kurnitski, J. (Eds.). (2017). Cost-effective energy efficient building retrofitting: materials, technologies, optimization and case studies. Woodhead publishing.
4. Traynor, J. (2020). Enerphit: A Step-by-Step Guide to Low-Energy Retrofit. RIBA Publishing.
5. Hunt, R., & Suhr, M. (2019). Old House Eco Handbook: A practical guide to retrofitting for energy efficiency and sustainability. Frances Lincoln.
6. Hunt, R., & Suhr, M. (2019). Old House Eco Handbook: A practical guide to retrofitting for energy efficiency and sustainability. Frances Lincoln.
7. Pacheco-Torgal, F., Granqvist, C. G., Jelle, B. P., Vanoli, G. P., Bianco, N., & Kurnitski, J. (Eds.). (2017). Cost-effective energy efficient building retrofitting: materials, technologies, optimization and case studies. Woodhead publishing
8. An introduction to fully integrated mixed methods research Creamer, Elizabeth G. author. 2018