

## MODULE DESCRIPTOR

### Module Title

Advanced Building Technology

Reference	ACM011	Version	3
Created	May 2017	SCQF Level	SCQF 11
Approved	August 2011	SCQF Points	15
Amended	September 2017	ECTS Points	7.5

### Aims of Module

To develop, devise and apply integrated strategies for structure, construction and environment performance of complex buildings.

### Learning Outcomes for Module

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

- 1 Develop the visual, thermal and acoustic environmental requirements for a complex building.
- 2 Devise environmental, structural and constructional strategies for a complex building.
- 3 Apply and integrate the environmental, structural and constructional strategies into the design of a complex building.

### Indicative Module Content

This module explores theories, choices, applications and integration of low energy ventilation, heating, cooling, lighting and structural solutions including specialised systems, where appropriate. The need to research and critically assess the physical properties and characteristics of building materials, components and systems, and the environmental impact of specification choices is stressed. Processes of designing details, assemblies, buildability and performance issues are explored together with the relevant regulatory requirements (e.g. fire, access, health and safety etc) and non-regulatory comfort criteria. The concept of buildings as sustainable integrated systems is emphasised.

### Module Delivery

This is delivered by a blended learning approach involving student research, online activities, targeted lectures and tutorials / seminars at which students will be expected to formally contribute. Students will be expected to undertake self-directed study to augment their learning of delivered materials.

**Indicative Student Workload**

	Full Time	Part Time
Contact Hours	33	N/A
Non-Contact Hours	117	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
<i>Actual Placement hours for professional, statutory or regulatory body</i>		

**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
Description:	Submission consists of a critical report analysing and detailing the rationale for constructional and technological aspects of the student's main design project. The analysis focus should include: ? The impact of the building on the site and environment ? Environmental impact of choice of materials, components and construction methods ? Environmental impact of choice of sources of power and water used in the operation of the building A critical analysis to be carried out of how well the studio design meets the requirements students have set. Deficiencies in the performance of the design are to be pointed out and ideas on how these could be rectified are to be put forward.				

**MODULE PERFORMANCE DESCRIPTOR****Explanatory Text**

In order to pass the module students must achieve 40% or greater.

Module Grade	Minimum Requirements to achieve Module Grade:
<b>A</b>	70% or better
<b>B</b>	60% or better
<b>C</b>	50% or better
<b>D</b>	40% or better
<b>E</b>	35% or better
<b>F</b>	Less than 35%
<b>NS</b>	Non-submission of work by published deadline or non-attendance for examination

**Module Requirements**

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

**ADDITIONAL NOTES**

The module may involve visits to construction sites and completed buildings. These will be dependent on arrangements with contractors, the existence of appropriate insurance cover and satisfaction of relevant Health and Safety regulations.

**INDICATIVE BIBLIOGRAPHY**

- 1 Bachman, L R., 2003, Integrated buildings: the systems basis of architecture, New Jersey, Wiley.
- 2 Bean, R., 2004, Lighting: Interior and Exterior, Oxford: Architectural Press.
- 3 Browne, M Neil, 1991, Asking the right questions : a guide to critical thinking, Prentice-Hall.
- 4 Deplazes, A., (ed), 2005 Constructing Architecture, Basel, Birkhauser.
- 5 Ferguson, I., 1989, Buildability in Practice, London, Mitchell Publishing.
- 6 Holgate, A. (1997), The art of structural engineering: the work of Jorg Schlaich and his team, Stuttgart, Edition Axel Menges.
- 7 Templeton, D., (ed), 1997, Acoustics in the built environment: advice for the Design Team, 2nd ed. Oxford: Architectural Press.
- 8 MacDonald, A. J., 2000, Structure and Architecture, 2nd ed. Oxford: Architectural Press.