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MODULE DESCRIPTOR

Module Title

Environment and Services Technology 1

Reference	SU2016	Version	2
Created	July 2021	SCQF Level	SCQF 8
Approved	May 2019	SCQF Points	15
Amended	September 2021	ECTS Points	7.5

Aims of Module

To provide the student with the ability to apply and understand the principles of building science to services systems for low/medium rise buildings.

Learning Outcomes for Module

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

1	Develop an understanding of the environmental considerations of comfort in low/medium rise buildings from regulatory minimum to best sustainable practice.
2	Develop the knowledge of building services and how this is applied to low/medium rise buildings in practice.
3	Recognise and adopt the need for low energy practice by adopting forward thinking strategies.

Indicative Module Content

The module provides an understanding of the principles and applications for the following systems: heating systems; cooling systems; natural and mechanical ventilation; water supply, waste and rain water drainage; daylight and electric light including electrical installation. Thermal comfort principles and the requirements for fabric efficiency (FEE). The topic of acoustics will be examined to include sound insulation; sound absorption and reverberation time. Finally, the principles of services distribution and integration in a building are outlined.

Module Delivery

This is a workshop based module supplemented with practical work, which includes laboratory experiments. A substantial part of the module is devoted to student centred learning, computer exercises where necessary and private study. Directed reading to services journals, core texts and resource material is encouraged.

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Indicative Student Workload	Full Time	Part Time
Contact Hours	40	N/A
Non-Contact Hours	110	N/A
Placement/Work-Based Learning Experience [Notional] Hours	N/A	N/A
TOTAL	150	N/A
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:	50%	Outcomes Assessed:	1, 3
Description:	Coursework in the form of a report focused on the application of knowledge and understanding based on the environment within buildings and how they influence the comfort and energy efficiency of low/medium sized buildings.				

Component 2

Type:	Coursework	Weighting:	50%	Outcomes Assessed:	2
Description:	Coursework in the form of a report or technical booklet on the application of building services in small/medium sized buildings.				

MODULE PERFORMANCE DESCRIPTOR

Explanatory Text

The overall module grade is based on 50% weighting of Component 1 (coursework Y axis) and 50% weighting of Component 2 (coursework X axis). An overall minimum grade D is required to pass the module.
Non-submission of either component will result in an NS grade.

		Coursework:						
		A	**B**	**C**	**D**	**E**	**F**	**NS**
Coursework:	**A**	A	A	B	B	C	E	
	B	A	B	B	C	C	E	
	C	B	B	C	C	D	E	
	D	B	C	C	D	D	E	
	E	C	C	D	D	E	E	
	F	E	E	E	E	E	F	
	NS	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.

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ADDITIONAL NOTES

Reports may be assessed as coursework or by interview panel.

INDICATIVE BIBLIOGRAPHY

1	Chadderton, D. K., Building Services Engineering (2013).
2	McMullan, R., Environmental Science in Building, 8th Edition. (2017)
3	Greeno, Roger (2014), Building Services, Technology and Design
4	Hall, F & Greeno, R (2017) 9th Ed, Building Services Handbook
5	Zeumer, M etal (2008) Energy Manual (Construction Manuals)