BUIL C1502: Building Performance and Services 1

Module Title:	Building Performance and Services 1
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	2 programme(s)

Teaching & Learning Strategies:	Integrated projects in line with studio projects to develop student's ability to recognise and illustrate application of various energy efficient details and services at site and building level. • Group/teamwork used to encourage peer learning and to support case studies /group assignments as appropriate. • Internal tests to support student learning/revision of fundamental concepts and calculations through the module. • Lecture format used to provide theoretical instructions.

Module Aim:	Building Performance Section: Introduce students to building performance measures/criteria to improve building comfort, safety and efficiency. Building services section: Introduce the student to Drainage and water supply services in domestic scale buildings. Integrate the building and its environment with the necessary mechanical utilities, and to harmonise the options with the various statutory regulations and sustainability principles.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Discuss and explain the concept of building performance and criteria to assess building performance.
LO2	Explain the fundamental principles of energy efficient buildings and be able to apply theoretical concepts underpinning efficient site and building layout planning for domestic scale buildings
LO3	Discuss and identify types of drainage and water supply services in domestic buildings and be aware of the physical and statutory regulations/standards that govern their integration.
LO4	Recognise and Select appropriate types of renewable technologies for hot water usage, and sustainable drainage interventions to manage wastewater effectively in domestic buildings.
LO5	Apply graphic conventions to represent Drainage and water supply services specific to domestic scale buildings.

Pre-requisite learning
Module Recommendations *This is prior learning (or a practical skill) that is recommended before enrolment in this module.*
No recommendations listed
Incompatible Modules *These are modules which have learning outcomes that are too similar to the learning outcomes of this module.*
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.*
No requirements listed

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Module Content & Assessment

Indicative Content
Building performance and criteria to assess building performance Sustainability, Comfort, Ecology, Acoustics, carbon foot print and Running costs, Water tightness, Layout, Occupant satisfaction, accessibility, society etc
Energy efficiency and Energy distribution Fundamentals of energy efficiency in buildings and typical energy distribution in domestic buildings
Passive design Elements of climate • Site microclimate analysis, building form, orientation and internal layout planning, Landscape considerations, Passive technology- introduction to day lighting and solar heat gain concepts.
Drainage and Treatment Processes • Drainage Systems above Ground • Waste and Soil Systems: Stacks, Sizes and Venting • Layouts and Schedules • Drainage Systems Below Ground • Foul Drains: Pipe runs, Access and venting • Drainage Works: trenches, pipe work • On-Site Effluent Treatment: domestic septic tanks • Surface Water Drains: Run-off and drainage systems • Drainage Layouts • Alternative methods of waste water management –Rain water harvesting, Grey water recycling, reed bed systems, Sustainable site development options
Hot and Cold Water Supply Domestic water supply considerations, various terminology used in the installation of a domestic water supply, procedure in installing a cold water supply to a domestic dwelling, including external works and penetration of the building structure, direct and indirect cold water supply systems, direct and indirect hot water supply systems, Cold water storage • Cold Water tank sizing and placement requirements • Hot Water Generation & Storage • Basic pipe sizing calculations • Basic hot Water cylinder sizing and placement requirements • Introduction to Solar hot water heating systems

Assessment Breakdown	%
Project	60.00%
End of Module Formal Examination	40.00%

No Continuous Assessment

Project				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	Building Performance project	1,2	30.00	n/a
Project	Building Services project	3,4,5	30.00	n/a

No Practical

End of Module Formal Examination				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	End of semester exam	1,2,3,4,5	40.00	End-of-Semester

SETU Carlow Campus reserves the right to alter the nature and timings of assessment

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Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	12 Weeks per Stage	4.00
Independent Learning Time	12 Weeks per Stage	3.33
Project	12 Weeks per Stage	3.33
	Total Hours	128.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMARC_B	Bachelor of Science (Honours) in Architectural Technology	1	Mandatory
CW_CMART_D	Bachelor of Science in Architectural Technology	1	Mandatory