SERV H1505: Building Services I

Module Title:	Building Services I
Language of Instruction:	English

Credits:	10

NFQ Level:	6

Module Delivered In	1 programme(s)

Teaching & Learning Strategies:	Lectures Practical's Private study

Module Aim:	The aims of the module are: (1) give students a basic knowledge of the technology associated with the installation and operation of building services (2) to give the student an appreciation of how the building shell and the services are interlinked

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	To explain what a building service is and to examine how the building shell and the services are interlinked
LO2	To describe the services used to modify and protect the built environment
LO3	To describe the systems and installations that are used to provide building services and to describe how the services and systems are accommodated in 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
(1) The Building (9 hours lectures) (a) Climate (b) Zoning (c) Site characteristics and sustainability (d) The building envelope and design implications (e) Building shapes (f) The occupants and human comfort
(2) Principles of Heat (10 hours lectures, 10 hours tutorials) (a) Heat Energy (b) Heat capacity and Density (c) Changes in state (d) Heat transfer methods (e) Insulating Materials and Thermal Bridges (f) Introduction to Elemental U-values Theory and calculations (g) Introduction to heat loss energy & calculations
(3) Electricity (6 hours lectures, 12 hours tutorials) (a) Introduction to the physics of electricity (b) Basic electrical laws calculations (c) Electrical circuit calculations (d) Basic energy calculations
(4) Basic Ventilation Theory (10 hours lectures) (a) The need for fresh air (b) Sources of fresh air (c) Introduction to types of ventilation
(5) Waste management & refuse services (6 hours lectures) (a) Nature, storage and collection (b) Treatment, tipping, control, recycling (c) Hazardous waste, treatment, disposal
(6) Circulation Services (4 hours lectures) (a) Circulation: horizontal, vertical, people, goods (b) Systems: lifts and escalators, types of elements (c) Installations: schedules and builders work
(7) Water Services (8 hours lectures) (a) The water cycle (b) External Water Supply: Sources, Treatment and Storage (c) Internal Water Supply: Storage, water distribution and control (d) Internal Water Distribution: Mains, cold, hot and fire water service pipes (e) Recycling water systems (grey water) (f) Water meters
(8) Drainage Systems above Ground (7 hours lectures) (a) Waste: Appliances, Plumbing and waste branches (b) Soil: Soil appliances, Plumbing and Soil branches (c) Waste and Soil Systems: Stacks, Sizes, falls and Venting (d) Layouts and Schedules (e) Sustainable drainage
(9) Drainage Systems below Ground (7 hours lectures) (a) Foul Drains: Pipe runs, access and venting (b) Drainage Works: trenches, pipe work and testing (c) On-Site Effluent Treatment: domestic septic tanks (d) Surface Water Drains: Run-off and drainage systems (e) Layouts and Builders works

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

No Continuous Assessment

Project

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	No Description	1,2,3	40.00	n/a

No Practical

End of Module Formal Examination

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	No Description	1,2,3	60.00	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	30 Weeks per Stage	3.00
Estimated Learner Hours	30 Weeks per Stage	3.00
	Total Hours	180.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMBSE_D	Bachelor of Science in Construction Management with Buildings Services	1	Mandatory