SERV H2504: Building Services II

Module Title:	Building Services II
Language of Instruction:	English

Credits:	10

NFQ Level:	6

Module Delivered In	1 programme(s)

Teaching & Learning Strategies:	Lectures projects Private study

Module Aim:	The aim of Building Services 2 is (1) to give students a basic knowledge of the technology associated with the installation and operation of building services and (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 describe the services used to modify and protect the built environment
LO2	to describe the systems and installations used to provide these services
LO3	to apply design criteria to the systems and installations used to provide these services
LO4	to describe how these services and systems are accommodated in buildings
LO5	To assess the fire safety of a building and its occupants in relation to protection and evacuation

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
U-Values (12 hours) (a) Part L Building Regulation requirements and benchmarks (b) CIBSE Guides specifications (c) Elemental and fractional U-values Theory and calculations (d) Overall U-values Theory and calculations
Thermal Comfort and Space heating (12 hours) (a) Thermal comfort (b) Heat Loss Theory and calculations (c) Offsetting heat loss methods (d) Heating systems installations and layouts
Basic Ventilation Theory (12 hours) (a) Natural Ventilation, the stack effect and atria (b) Types of mechanical ventilation systems (c) Basic ventilation calculations
Electrical Services (12 hours) (a) Electrical circuits - ring, radial and lighting (b) Electrical distribution –switchboards, switch rooms, distribution boards, busbars, metering, switches, sockets, cables types and sizes, cable trays, conduits and trunking. (c) Electrical protection – MCBs, RCDs, RCBOs, fuses (d) Electrical equipment in hazardous areas (e) Alarms – fire and security (f) Electrical fuse sizing calculations
Water Supply (12 hours) (a) Cold water storage tank sizing (b) Mains, cold, hot and fire water service pipe sizing (c) Hot water storage tank or calorifier sizing (d) Rain and grey water harvesting
Water Drainage (12 hours) (a) Soils and Waste water pipe sizing (b) Roof drainage (c) downpipe sizing (d) Underground drainage pipe sizing (e) SUDS - sustainable urban drainage systems
Fire Services (24 hours) (a) Fire: principles: propagation of fire, methods of fire spread, fire loads, the fire triangle (c) Fire fighting equipment and installations: extinguishers, water based equipment, alarms and detection, emergency lighting and signposting (d) Evacuations: staff training, evacuation routes design, travel distances and protection, stair widths and design (e) Site fire safety: evacuations, arson, hot work permits
Security (12 hours) (a) Barriers systems (b) Detection systems (c) Alarms and CCTV (d) Security personnel: internal and external security personnel recruitment, access control methods, security personnel legislation
Mobility and Access for All (12 hours) (a) TGD Part M (b) services for disabled

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	1,2,3,4,5	40.00	Sem 1 End

No Practical

End of Module Formal Examination

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	No Description	1,2,3,4,5	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	4.00
Estimated Learner Hours	30 Weeks per Stage	4.67
	Total Hours	260.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMBSE_D	Bachelor of Science in Construction Management with Buildings Services	3	Mandatory