Module Title **Environment and Services** **Keywords** Heating, Ventilation, Design, Acoustics, Services Integration, Water Use and Drainage	Reference SU2003 SCQF Level SCQF 8 SCQF Points 15 ECTS Points 7.5 Created May 2002 Approved July 2005 Amended August 2009 Version No. 7

This Version is No Longer Current

The latest version of this module is available here

Prerequisites for Module

None.

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To provide the student with the ability to apply 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:

Mode of Delivery

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

Assessment Plan

	Learning Outcomes Assessed
Component 1	1,3
Component 2	2,4

Component 2: assessed by coursework (60%) consisting of two components which are

1. Explain relevant scientific and technical principles in respect of building science, services systems and components.
2. Recognise the influence of building and environmental services on the design, construction and operation of low/medium rise buildings.
3. Explain the influence of fire on the design and construction of buildings.
4. Recognise and justify the need for service integration within buildings.

Indicative Module Content

The module provides an understanding of the principles and applications for the following systems: heating systems; natural and mechanical ventilation; water supply, waste drainage; rain water drainage. A review of electricity generation and distribution including, cable management; power and lighting systems layout and design. Heat gain and heat loss will be reviewed in the context of physiological needs for thermal comfort, including BREDEM, SAP and simple air conditioning systems. The topic of acoustics will be examined to include sound insulation; sound absorption; reverberation time; dB. Fire will be examined to include, means of escape; behaviour of materials; fire

independantly assessed. One component normally relates to environmental services laboratory work (30%). The second component (30%) is normally an environment and services investigative report involving directed study and library research.

Component 1: assessed by one supervised assessment (40%) in the form of an end of module examination.

Indicative Bibliography

1. Chadderton, D. K., Building Services Engineering (2012).
2. McMullan, R., Environmental Science in Building, 7th Edition. (2012)
3. Zunde, J. M. & Bougdah, J (2006), Integrated Strategies in Architecture.
4. Hall F. & Greeno R., Building Services Handbook,Routledge 2017.

Additional Notes

Where appropriate mixed discipline team working will be encouraged. Reports may be assessed as coursework or by interview panel.

fighting equipment; detectors and fire design strategies. Finally, the principles of Services distribution and integration are outlined.

Indicative Student Workload

Contact Hours	Full Time	Part Time
Assessment	12	12
Lectures	24	24
Practical Work	12	12
Tutorials	12	12
Directed Study		
Directed Study	40	40
Private Study		
Private Study	50	50