

MODULE CODE: ACBA6005
TITLE: Advanced Building Services and Environmental Design
DATED: 16/08/2018

LEVEL: 6
CREDITS: 20

JACS CODE: K230

AIM

- To comprehend a broad application of technologies and design techniques used to satisfy the building service requirements within large commercial or complex/multi-zone buildings, and to evaluate the design requirements of these systems with consideration to sustainable design strategies.

LEARNING OUTCOMES

Upon the successful completion of this module, the student should be able to:

- Synthesise the different HVAC requirements and installation and understand the technologies that serve large commercial or complex/multi-zone buildings.
- Critically evaluate energy provision and the principles and installation of Lighting and Power systems.
- Critically appraise system and equipment choice, design and installation practice in the context of sustainable futures, energy and cost savings.

INDICATIVE CONTENT

- Interpretation of HVAC requirements
- Available technologies to large buildings/complexes
- Heating systems - Central and localised systems, System sizing
- Ventilation and air conditioning systems - characteristics and available choices
- Energy provision and systems for Lighting and Power
- System and equipment choice, design and installation practice in the context of sustainable futures, energy and cost savings.
- SMART building
- Lifecycle assessment

LEARNING AND TEACHING STRATEGY

The study time for the module is divided as follows:

Activity type	Hours	Percentage
Scheduled learning	6048	3024%
Independent learning	140152	7076%
Tutorial learning	0	0%
TOTAL	200	100%

ASSESSMENT

Assessment Component 1

(Tick one)

☐ Written exam ☒ Coursework ☐ Practical

Mode of assessment	Volume	Weighting
Case Study Design	5000 words + design drawings	100%

Assessment Summary

Activity type	Percentage
Written exam	
Coursework	100%
Practical	
TOTAL	100%

READING LIST

Module Code	ACBA6005	
Module Title	Advanced Building Services and Environmental Design	
Classification	Reading List entry	Electronic*
Essential	Chadderton, D. (2012) <i>Building Services Engineering</i> . 6th Ed. Abingdon, Oxon: Routledge	☐
Essential	Hall, F and Greeno, R (2015) <i>Building Services Handbook</i> . 8th Ed. Abingdon, Oxon: Routledge.	☐
Essential	Mc Mullan, R. (2012) <i>Environmental Science in Buildings</i> . Basingstoke: Palgrave McMillan	☐
Further	Gekorkian, P. (2010) <i>Alternative Energy Systems in Building Design</i> . New York: McGraw-Hill Education.	☐
Further	CIBSE (2005). <i>CIBSE Guide B: Heating, Ventilating, Air Conditioning and Refrigeration</i> . London: CIBSE.	☐
Further	CIBSE (2016). <i>CIBSE Guide B2: Ventilation and Ductwork</i> . London: CIBSE	☐
Further	CIBSE (2004) <i>CIBSE Guide K: Electricity in Buildings</i> London: CIBSE.	☐