

## Liverpool John Moores University

Title: BUILDING SERVICES SPECIALISMS  
Status: Definitive  
Code: **6105BEUG** (118005)  
Version Start Date: 01-08-2019  
  
Owning School/Faculty: Built Environment  
Teaching School/Faculty: Built Environment

Team	Leader
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**Academic Level:** FHEQ6      **Credit Value:** 24      **Total Delivered Hours:** 48  
**Total Learning Hours:** 240      **Private Study:** 192

### Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24
Tutorial	24

**Grading Basis:** 40 %

### Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Artefacts	AS1	Artefact 1	50	
Artefacts	AS2	Artefact 2	50	

### Aims

*To provide students with an opportunity for further study in areas of building services engineering which are often seen as specialist; i.e. public health engineering and lighting*

*To further develop students capability to appreciate the concepts behind the practice of lighting and to be able to produce efficient and sustainable artificial/natural lighting*

*schemes that meet the requirements of persons within buildings.*

*To further develop the student's understanding of the principles and practices for the sustainable design, operation and commissioning of distribution services associated with public health, fire engineering, fuel and specialist gas installations.*

## **Learning Outcomes**

After completing the module the student should be able to:

- 1 Discuss the concepts that support the science of lighting and evaluate the characteristics of available light sources.
- 2 Analyse and select lighting control systems to successfully integrate artificial and natural light suitable for various internal and external situations and applications.
- 3 Carry out calculations and measurements in lighting and produce energy efficient lighting designs for a range of building environments.
- 4 Analyze buildings and identify the need for public health engineering services.
- 5 Produce and evaluate sustainable designs for public health engineering systems for medium sized and large complex public sector, industrial and commercial buildings.

## **Learning Outcomes of Assessments**

The assessment item list is assessed via the learning outcomes listed:

ARTEFACT 1	1	2	3
ARTEFACT 2	4	5	

## **Outline Syllabus**

*Lighting concepts: visual comfort, lighting levels, lighting geometry, colour, illuminance variation and shadows, lumen design, daylighting calculations. Controls and energy management. Lighting and Building Regulations. Interior lighting for domestic, commercial and industrial applications. Exterior lighting: displaying buildings, outdoor sports lighting, road lighting, residential areas.*

*Needs analysis and legislative requirements.*

*Analysis and evaluation of design guides and legislation concerning all aspects of public health engineering.*

*Sustainability and energy efficiency in public health engineering.*

*Cold & Hot Water Installations and plant for complex and multi-storey commercial buildings.*

*Water systems commissioning maintenance and treatment.*

*Above and below ground drainage systems. Reconciling existing outdated legacy drainage and sewerage systems with modern sustainable systems, sustainable urban drainage schemes, grey and black water re-cycling schemes, rainwater harvesting and re-cycling.*

*Mechanical fire engineering systems.*

*Integration of public health engineering systems – water systems with drainage, mechanical fire fighting, fire protection and other building services installations. Fuel gas, industrial gases, medical gas and compressed air installations.*

## **Learning Activities**

Lectures, tutorials and case studies.

## **Notes**

This module provides students with an opportunity for in depth study of public health engineering and lighting in buildings, areas of building services engineering which are often seen as specialist.