

Liverpool John Moores University

Title: EMERGENCY POWER SUPPLIES TO BUILDINGS
Status: Definitive
Code: **5609BEFDL** (123963)
Version Start Date: 01-08-2016

Owning School/Faculty: Built Environment
Teaching School/Faculty: City of Liverpool College

Team	Leader
Alfred Leung	Y

Academic Level: FHEQ5 **Credit Value:** 10 **Total Delivered Hours:** 40

Total Learning Hours: 100 **Private Study:** 60

Delivery Options

Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	30
Tutorial	10

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	REPORT	100	

Aims

The aim of this module is to develop students understanding of the power requirements of industrial & commercial building and the methods by which the standby power can be supplied and distributed within the building. It will enable them to overview of Building Energy Management System.

Learning Outcomes

After completing the module the student should be able to:

- 1 Investigate the application of rectification systems in uninterruptible/standby power supplies and the control of other plant/equipment and evaluate the system uninterruptible/standby power supply requirements to produce suitable designs.
- 2 Identify the control and management needs of buildings and the characteristics of Building Management Systems.
- 3 Investigate BMS hardware, functions and applications.

Learning Outcomes of Assessments

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

REPORT	1	2	3
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Outline Syllabus

Standby supplies: essential, critical, non-essential loads, Generator installations, single and multi-generator, automatic start-up arrangements, synchronisation,

Protection against over-current, reverse-power, voltage, frequency etc. Generator fuel and efficiency.

UPS systems; single phase, three phase-three phase, three phase-single phase. Static switch/by-pass, multi module & redundant systems. Earthing arrangements for Generator/UPS systems.

BMS system design and specification: control logic for Mechanical & Electrical engineering services installations. Planning of control strategies and Installations, control drawings. Symbols and annotation of drawings. Control points count schedules. Selection of outstations and intelligent. BMS equipment schedules and specifications.

BMS Software: node numbers and functions from controls logic drawings. Use of BMS software to generate programmes. Commissioning requirements, procedures and documentation.

Learning Activities

Lectures, tutorials, and laboratory work.

Notes

This module is a key component for those students wishing to complete the programme following an 'electrical' building services pathway. It aims to develop an understanding of the standby supplies system within large commercial/industrial

buildings and complexes. The focus of the module is to increase the range and depth of understanding of UPS and generator set for students from an electrical installations.

This module also overview the Building Management System which is the vital parts of the functionality of Building Services Engineering System.