Subject Description Form

Subject Code	**BSE2102**
Subject Title	**Electrical Installations II**
Credit Value	3
Level	2
Pre-requisite Co-requisite Exclusion	BSE2101 Electrical Installations I Nil Nil
Objectives	Aims: 1. To introduce the basic components and configurations of lighting system, vertical transportation system, electromechanical drives and lightning protection system. 2. To explain the design and operation principles of these electrical installations as well as their applications in a building.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a) apply the knowledge and principles on the design of lighting system, vertical transportation system, electromechanical drives and lightning protection system; b) identify, interpret and use appropriate codes, standards, guidelines and safety requirements for the design and installation of these electrical installations; c) develop and perform calculations and select appropriate electrical systems for different building applications; d) appraise the performance of the said electrical installations
Subject Synopsis/ Indicative Syllabus	**Lighting systems:** Common lamp types, luminaire functions and classifications, performance characteristics and photometric data, lighting units, lumen method, calculation of glare index, emergency lighting design, delighting and use of daylight for interior illumination. **Vertical transportation systems:** Lift traffic analysis, supervisory control system for lift system, safety requirements, escalators traffic calculation and types of arrangements. **Electromechanical drives:** drive for pump, fan, chiller, lift and escalator; motor installation, and operation requirements. **Lightning protection systems:** Mechanism of lightning, protection requirements, components of lightning protection systems.
Teaching/Learning Methodology	Approach: A systematic approach is to be taken. Students will be introduced to the basic concept of the said electrical installations. Then they will be given some case studies for each topic. They will be encouraged to find out the required information for them to solve the problem. Theories will be explained whenever necessary. Photos of the said electrical installations will be shown to the students to help their understanding. Coursework assessment: 40% It consists of in-class assessment, seminar presentation and report, and laboratory report. Examination: 60%

Assessment Methods in Alignment with Intended Learning Outcomes

Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)			
		a	b	c	d
On-line test	20	✓	✓	✓	✓
Seminar presentation	5	✓	✓		✓
Short quiz after lecture	5	✓	✓	✓	✓
Laboratory report	10	✓	✓	✓	
End-of-semester examination	60	✓	✓	✓	✓
Total	100				

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

Student Study Effort Expected

Class contact:	39 Hrs.
▪ Lecture	20 Hrs.
▪ Tutorial	9 Hrs.
▪ Seminar	3 Hrs.
▪ Laboratory	6 Hrs.
▪ Assessment	1 Hrs.
Other student study effort:	
▪ Self-study	38 Hrs.
▪ Seminar preparation	5 Hrs.
▪ Laboratory report	5 Hrs.
▪ Assessment preparation	10 Hrs.
▪ Exam preparation	23 Hrs.
Total student study effort	120 Hrs.

Reading List and References

Code for Lighting, Society of Light and Lighting, CIBSE, 2012

Lighting, D.C. Pritchard, Longman, 1999

Lamps and Lighting, Coaton J.R. and Marsden, A.M., 1993

CIBSE Guide D Transportation systems in buildings, 2015

IEC62305, Protection against lightning, 2006

AC Machines: Electromagnetics and design, B.J. Chalmers, 1991

Electric Machinery Fundamentals, S.J. Chapman, McGraw Hill, 2012