

Subject Description Form

Subject Code	BRE271
Subject Title	Measurement and Estimation
Credit Value	3
Level	3
Pre-requisite / Co-requisite / Exclusion	Nil
Objectives	The objectives of this subject are to equip students with the skills and knowledge to measure and estimate building works accurately and efficiently for producing appropriate documentation in the process of building procurement.
Intended Learning Outcomes	<p>Upon completion of the subject, students will be able to:</p> <ol style="list-style-type: none"> a. Understand and interpret documents used in the procurement of building works. b. Quantify and describe building works based on the standard method of measurement. c. Build up and synthesis composition of unit rates for the costing and pricing of building works.
Subject Synopsis/ Indicative Syllabus	<p><u>Measurement of building works (for learning outcome 1):</u></p> <p>Organisation and systems of measurement including subdivision of building elements, gross measurement, schedules and other preparatory documentation such as query lists.</p> <p>Mensuration commonly used in measurement including mean girth, formulae for regular figures and methods of measuring irregular figures, interpolation and extrapolation of ground levels, gross and net floor areas.</p> <p>Measurement techniques: measurement of buildings, comparative studies of measurement procedures and examination of forward trends.</p> <p><u>Documentation of building work procurement (for learning outcome 2):</u></p> <p>Communication between client, designer, builder and estimator; types of documentation and their uses; preparation and uses of bills of quantities and specifications; preambles and preliminaries.</p> <p><u>Estimating (for learning outcome 3):</u></p> <p>Factors influencing the costing and pricing of building works.</p> <p>Evaluation of resources: labour, plant and materials. Enquiries for materials and sub-contract prices; calculation of unit rates; calculation of preliminaries and temporary works.</p> <p>Estimator's cost report to management.</p>
Teaching/Learning Methodology	The theory and rationale will be delivered in lecture periods. Practical experiences will be delivered in the tutorial periods.

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		
	1. Individual Assignment (taking off exercise, preparing taking off documents)	50%	√	√			
	2. Group Project (estimating problem)	50%	√	√	√		
Total	100%						
<p>Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p>Students are given an individual assignment (taking off exercise) from reading construction drawings to taking dimensions off from the drawings. Upon completion of the assignment 1, students will be able to achieve learning outcome 1 & 2.</p> <p>Students are given a group project to solve some estimating problems. Through the problem solving exercises relating to estimating activities, students will be able to achieve learning outcome 3.</p>							
Student Study Effort Expected	Class contact:						
	▪ Lectures		26 Hrs.				
	▪ Seminars / Tutorials		13 Hrs.				
	Other student study effort:						
	▪ Student study effort		120 Hrs.				
	Total student study effort		159 Hrs.				
Reading List and References	<p>Aqua Group (1990) <i>Tenders and Contracts for Building</i>, BSP Professional Books, Oxford.</p> <p>Aqua Group (1992) <i>Precontract Practice for the Building Team</i>, BSP Professional Books, Oxford.</p> <p>Holroyd T.M. (2000) <i>Principles of Estimating</i>, Thomas Telford, London.</p> <p>Picken D.H. & Drew D.S. (1996) <i>Building Measurement in Hong Kong: Worked Examples</i> Longman Asia Ltd., Hong Kong.</p> <p>HK Standard Method of Measurement of Building Works (SMM4) (4th Ed, combined Building Works and Building Services, 2005, incorporating the corrigenda dated Sept 2013)</p> <p>Turner D. (1983) <i>Quantity Surveying Practice and Administration</i>, Godwin, London.</p>						