Subject Description Form

Subject Code	BRE261
Subject Title	Construction Technology and Materials I
Credit Value	3
Level	2
Pre-requisite / Co-requisite/ Exclusion	Nil
Objectives	*This subject is intended to:* 1. Equip students with an understanding of the function of buildings, and how different building elements and components behave, perform and interact among each other to achieve the general function. 2. Be aware of the range of building materials available for construction and gain an understanding of the key concepts determining classification, properties and applications.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a) Relate basic construction vocabulary and terminology of construction for various building materials, elements and components, b) Possess a knowledge of functional requirements of various building materials, elements and components and give preliminary appraisal to the performances of various building elements and components, c) Relate the inter-relationships among building materials, elements and components, d) Interpret and extract information from construction details / drawings.
Subject Synopsis/ Indicative Syllabus	**Materials (5 lectures)**: • Introduction to building materials – performance requirements, classification and general applications. • Building materials for structural use: Concrete & Steel. **Technology (8 Lectures):** • Introduction to building and the development of construction technology. System concept in modeling construction process • Introduction to different forms loadings to buildings and how different building structures respond to correspondingly • Functional requirements, vocabulary and construction processes of various major building elements/processes, including site evaluation, excavation, foundations, walls, floors, and roofs • Functional requirements, vocabulary and construction processes of various building components: including stairs, non-load bearing walls, doors, windows, suspended ceiling and finishes
Teaching/Learning Methodology	The mode of delivering the subject comprises lectures, tutorials laboratories and workshop training. Lectures aims at delivering the basic core concepts and knowledge, which are to be discussed and consolidated through tutorials.

	Demonstration at Laboratories are used for enhancing students' comprehension on the performance of various building materials, whereas workshop training provides hands on experience to student on selected construction methods.

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	e	
1.Tutorial Assessments (Materials)	15	√	√		√		
2. Laboratory / Workshop	Attendance	√	√				
3. Focus Study Report (Technology)	25	√	√	√	√		
4. Written Examination	60	√	√	√	√		
Total	100 %						

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

One to two tutorial exercises on construction materials will be used for assessment students' learning outcomes

Focus Study Report allows students to choose specific topics on Building Materials and Construction Technology to conduct in-depth study and this can enhance the depth of the knowledge learned.

The examination will comprise multi-choice questions on construction materials and problem based questions on construction technology.

The split between coursework and examinations is 40/60.

Student Study Effort Required		
	Class contact:	
	▪ Lecture	26 Hrs.
	▪ Tutorial	13 Hrs.
	▪ Laboratories / Workshop	21 Hrs.
	Other student study effort (app.) :	
	▪ Assessments	20 Hrs.
	▪ Reading and Self-learning	40 Hrs.
	Total student study effort	120 Hrs.

Reading List and References

Recommended:

Chudley R. and Greeno R. (2016) *Building Construction Handbook*, 11th ed. Perason

Chudley R. (2006) *Construction Technology*, 4th edition, Pearson/Prentice Hall

	Chudley R. (2012) *Advanced Construction Technology*, 5th edition, Perason Foster J.S., et. al. (2007) *Structure & Fabric Part I & II*, 7th Edition, Prentice Hall Dean Y. (1996) *Finishes* 4th edition, Longman Blanc A. (1994) *Internal Components*, Longman McEvoy M. (1994) *External Components*, Longman Shaeffer R.E. (2007) *Elementary Structures for Architects and Builders*, Pearson/Prentice Hall 5th edition Taylor G.D. (1994), *Materials in Construction*, 2nd edition, Longman Mamlouk M.S. and Zaniewski, J.P. *Materials for Civil and Construction Engineers*, 4th edition, Pearson Doran D., Cather R., *Construction Materials Reference Book*, 2014, Routledge **Supplementary:** HKSAR Government, *The Building Ordinance*, CAP123 HKSAR Government Printer BRE, *Digests & Current Papers*. Building Research Establishment, Garston, Watford, U.K. Francis A.J. (1989) *Introducing Structures*, Ellis Horwood Charlett A.J. (2007), *Fundamental Building Technology*, Taylor & Francis Fleming E., (2005*), Construction Technology: an illustrated introduction*, Blackwell