Subject Description Form

Subject Code	BRE4393
Subject Title	Temporary Work Design
Credit Value	3
Level	4
Pre-requisite	BRE361 & BRE302
Objectives	Bring students' attention to the vertical integration of the subject areas learned in Level 2 such as Structure, Construction Technology, Engineering Mathematics along with the working experience gained in Industrial Centre to the subject areas of Level 3 Structure II & Construction Technology & Materials II through design project whilst the inter-relation of the horizontal integration between subjects are also important in solving a problem-based project work. Integrate and apply knowledge gained from individual subject areas in technology, management, economics and legal aspects.
Intended Learning Outcomes	Upon completion of the subject, students will be able to: a) Design falsework and formwork for building construction b) Appraise alternative solutions to falsework and formwork design c) Recognize the inter-relationship and interdependence of various areas in construction related to temporary works, such as cost, time, safety, and quality assurance d) Comprehend the design and construction operations, technology & structure, management, economics and legal impacts of the construction industry both locally and in other countries through guided learning and case study. e) Understand the implications of temporary design and construction in professional and social contexts; develop and improve communications skills and teamwork spirits in term project, and international/comparative study.
Subject Synopsis/ Indicative Syllabus	• Introduction, basic concepts of formwork and falsework. • Bamboo scaffolding: design and safety • Metal scaffolding: components, loads, foundations, and design • shoring design • Formwork materials, formwork types, and quality of finishes • Project handout and briefing • Design of slab forms • Design of wall forms • Design of beam forms • Design of column forms • Selection of horizontal formwork systems • Selection of vertical formwork systems
Teaching/Learning Methodology	Structured lecture/tutorial sessions are carried out at different stages during the progress of project to provide learning support to students in achieving the intended learning outcomes. Lecture/tutorial sessions of 1.0 hours per week are intended for teaching of key concepts, principles, and methods in temporary works design/application. The students are provided with useful resources on Blackboard for self study.

A structured design project based on real life situation is to be used for term project and consists of the several components for applied learning:

1. Understand the structural elements of building components,
2. Prepare design of falsework systems to facilitate the construction of the structural elements.
3. Evaluate the different systems of formwork and falsework and to appraise alternation solutions.
4. Propose a suitable structural form for the formwork of various building components, and to prepare the subsequent design drawings, structural calculations and specifications
5. Produce plan and proposal for the falsework/formwork to facilitate building construction
6. Appreciate the multi-objective nature of building construction related to temporary works

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	
Temporary Works Design Report	100%	✓	✓	✓	✓	✓	
Total	100 %						

Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:
The subject is project-based, the students will work in groups to complete the design report, which requires efforts from each team members to demonstrate that the group understands the problems and documents the solutions in a professional report.

Student Study Effort Expected

Class contact:	
▪ LEC	26Hrs.
▪ PW	39Hrs.
Other student study effort:	
▪ SELF-STUDY/REPORT WRITING	95 Hrs.
▪	Hrs.
Total student study effort	160 Hrs.

Reading List and References

Reading List:

No standard textbook is recommended, since students have to refer to various literatures in order to achieve the requirement of the design project. Reference will be made to current articles in journals, local newspaper, would press, proceedings dealing with topics of current importance.

	Recommended: The Concrete Society (1995), *Formwork A guide to good practice*, 2nd Edition. Illingworth J.R. (1987). *Temporary Works: Their Role in Construction*, Thomas Telford, London. Labour Department (2014). Code of Practice for Bamboo Scaffolding Safety. Available from: http://www.labour.gov.hk/eng/public/os/B/Bamboo.pdf Building Department (2001). Guidelines on the Design and Construction of Bamboo Scaffolds. Available from: http://www.bd.gov.hk/english/documents/code/GDCBS.pdf Wong, Francis K.W. (1998). Bamboo Scaffolding Safety Management for the Building Industry in Hong Kong. Labour Department (2013). *Code of Practice for Metal Scaffolding Safety*. Available from: http://www.labour.gov.hk/eng/public/os/B/mss.pdf Chudley, R. (1999). *Advanced Construction Technology*, 3rd ed. revised by Roger Grano, Longman. Illingworth, J.R. (2000). *Construction Methods and Planning*, 2nd ed., E & FN Spon.