

Subject Description Form

Subject Code	BRE401
Subject Title	Construction Technology III
Credit Value	3
Level	Level 4
Pre-requisite / Co-requisite/ Exclusion	BRE391
Objectives	<p>This subject is intended to:</p> <ol style="list-style-type: none"> 1. examine building production during construction, in which advanced construction technologies and effective management technique are integrated. 2. to introduce special construction process like demolition. 3. introduce the concepts of sustainable design and construction.
Intended Learning Outcomes	<p><i>Students will demonstrate their ability to:-</i></p> <ol style="list-style-type: none"> 1. Solve the technological problems found on sites by workable solutions. 2. Assess and apply appropriate techniques to building production problems. 3. Apply a strategic approach to technological issues from the senior construction management point of view.
Subject Synopsis/ Indicative Syllabus	<ul style="list-style-type: none"> • <i>Site production:</i> methods of demolition and safety, building production systems, engineering approach in site/production planning, scheduling and control techniques. The integration of architectural, structural and building services in construction production. • Environmental protection and Sustainability in building design and construction. • <i>Concrete production:</i> prestressing, post-tensioning and high-strength concrete, quality control; heat control and cooling systems in mass concrete production. • <i>Prefabrication:</i> on-site and off-site production and fabrication, transportation to site, and site installation. • Robotic in construction. • Health and Safety in Construction. • Addition and Alternation works.
Teaching/Learning Methodology	<p>Interactive lectures are used to identify construction issues, to generate and explain the concepts. Theories and practices in construction production and planning and hence how to solve the problem arisen. Tutorials are conducted with the aim to consolidate the subject matters learned in the lectures and to view different perspectives of construction problems and solutions. In the lectures and tutorial, case studies are used to analyze and interpret the issues, solutions and practices of construction projects. Site visit would be arranged to incorporate what are learned in classroom situations to a real-life situation to further enhance the knowledge of application and integration of theories and practices.</p> <p>Seminar presentations are arranged for students to work in team to investigate topics either presented in lectures/tutorials or contemporary issues or state-of-art construction practices or case study of the construction of a particular building, etc.</p> <p>The learning emphasis will be on developing the students' analytical and critical approach to the solutions of production problems with particular reference to the production techniques and management issues in local situations.</p>

Assessment Methods in Alignment with Intended Learning Outcomes	<p>Assessment includes both written examination and coursework assignment.</p> <p>Students are assessed their abilities in solving technological problems found in construction project taking into account of the assessment and application of appropriate techniques and methods with a strategic approach from the construction management point of view.</p> <p>The coursework mark will be based on seminar presentations and report, and site visit reports.</p> <p>In both coursework and examination, students should demonstrate their application and appraisal of concepts and knowledge.</p> <p>Examination and coursework will constitute the 70% and 30% of the overall marks of the subject respectively.</p>	
Student Study Effort Expected	<p>Class contact:</p> <ul style="list-style-type: none"> ▪ Lecture ▪ Tutorial <p>Other student study effort:</p> <ul style="list-style-type: none"> ▪ Site Visit ▪ <p>Total student study effort</p>	<p></p> <p>21 Hrs.</p> <p>21 Hrs.</p> <p></p> <p>3 Hrs.</p> <p>Hrs.</p> <p>120 Hrs.</p>
Reading List and References	<p>Reading List:</p> <p>Chew, Y.L.M. (2009) <i>Construction Technology for Tall Building</i> 3rd edition. Singapore: World Scientific.</p> <p>Illingworth, J.R. (2000) <i>Construction Methods and Planning</i>. 2nd edition. London, New York : E & FN Spon</p> <p>Nunnally, S.W. (2004) <i>Construction Method and Management</i>, 6th edition, Upper Saddle River: Prentice Hall</p> <p>Hamer, M. (1999) <i>Construction: A 2020 Vision Report</i>, London: Construction Industry Board</p> <p>Council on Tall Buildings and Urban Habitat, (1995) <i>Architecture of Tall Buildings</i>, McGraw-Hill</p> <p>Harris F. & McCaffer R. (2006) <i>Modern Construction Management</i>, 6th Edition, Blackwell Science</p> <p>So, A.T.P. & Chan, W.L. (1999) <i>Intelligent Building Systems</i>, Kluwer Academic.</p> <p>Naylor H. (1995) <i>Construction Project Management: Planning and Scheduling</i>, Delmar</p> <p>Neale R., Price A. & Sher W. (1993) <i>Prefabricated Modules in Construction</i>, CIOB</p>	

Vallero D. & Brasier C. (2008) *Sustainable Design – The Science of Sustainability and Green Engineering*, John Wiley & Son.

Supplementary:

Allen E. (1999) *Fundamentals of Building Construction: Materials and Methods*, 3rd Edition, John Wiley & Sons

CIOB (1995) *Time for Real Improvement: Learning from Best Practice in Japanese Construction R&D*, CIOB

CIOB (1991) *Planning and Programming in Construction: A Guide to Good Practice*, CIOB